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300-FF-1 OPERABLE UNIT DATA VALIDATION
WESTINGHOUSE HANFORD COMPANY
DISTRIBUTION & FILE RECORD FORM

Task E-92-15/2
2/3/92
Rev. 0

A2-01-029 - Gen Chem; N2-01-052 - Metals;

Document Title: A2-01-029 - Pest/PCB; A2-01-029 - Volatiles
Document Number: HCS - WHC/E - 92 15/S E-029

Date: 6/3/92
Originator: DMG

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| PROJECT FILES | | |
|---|---|---|
| MANAGEMENT | | Comments |
| M-1 Correspondence | | |
| M-2 Meeting Minutes | | |
| M-3 Telecons | | |
| M-4 Statements of Work, Task Orders | | |
| M-5 Purchase Requisitions and Receipt documentation | | |
| M-6 Other Management Documents Generated | | |
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| SOURCE DATA | | |
| S-1 Original Data Packages | X | |
| S-2 Memos Transmitting Original Source Packages to WHC | | |
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| TASK TECHNICAL | | |
| T-1 Validation Calculations and Notated Packages | | |
| T-2 Progress Memos | | |
| T-3 Completeness Checklists | | |
| T-4 Draft Summary Report(s) | | |
| T-5 Final Summary Report(s) | | |
| T-6 Draft Summary Report Review Comments | | |
| T-7 Other Technical Documentation | | |

FORM

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300-FF-1 OPERABLE UNIT DATA VALIDATION
WESTINGHOUSE HANFORD COMPANY
DISTRIBUTION & FILE RECORD FORM

Task E-92-15/29
2/3/92
Rev. 0

Document Title: VOA A201029
Document Number:

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| D. Mantooth (Ebasco) | | R. Moses (HC-RL) | | | |

| PROJECT FILES | | |
|---|---|---|
| MANAGEMENT | | Comments |
| M-1 Correspondence | | |
| M-2 Meeting Minutes | | |
| M-3 Telecons | | |
| M-4 Statements of Work, Task Orders | | |
| M-5 Purchase Requisitions and Receipt documentation | | |
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| S-3 Other Original Data Documentation | | |
| TASK TECHNICAL | | |
| T-1 Validation Calculations and Notated Packages | X | |
| T-2 Progress Memos | | |
| T-3 Completeness Checklists | | |
| T-4 Draft Summary Report(s) | | |
| T-5 Final Summary Report(s) | | |
| T-6 Draft Summary Report Review Comments | | |
| T-7 Other Technical Documentation | | |

FORM

# VOLATILE ORGANIC DATA VALIDATION CHECKLIST - FORM A-1

| | | |
|---|---|---|
| PROJECT: | REVIEWER: SS | DATE: 5-18-92 |
| LABORATORY: TMA/ARLI | CASE: 01-029 | SDG: |
| SAMPLES/MATRIX: B01CG2 (SOIL) | | |
| B01CG3 ( " ) | | |
| B01CF9 ( " ) | | |
| B01CG0 ( " ) | | |
| | | |

## 1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal.

| Data Package Item | Present?: Yes | No | N/A |
|---|---|---|---|
| Case Narrative | ✓ | | |
| Data Summary | ✓ | | |
| Chain-of-Custody | | ✓ | |
| QC Summary | | | |
| Surrogate report | ✓ | | |
| MS/MSD report | ✓ | | |
| Blank summary report | ✓ | | |
| GC/MS tuning report 1-16-92 | ✓ | | |
| Internal standard summary report | ✓ | | |
| Sample Data | | | |
| Sample reports | ✓ | | |
| TIC reports for each sample | ✓ | | |
| RIC reports for all samples | ✓ | | |
| Raw and corrected spectra for all detected results | ✓ | | |
| Raw and corrected library search data for all reported TIC | ✓ | | |
| Quantitation and calculation data for all TIC | ✓ | | |
| Standards Data | | | |
| Initial calibration report 1-16-92 | ✓ | | |
| RIC and quantitation reports for initial calibration | ✓ | | |
| Continuing calibration reports | ✓ | | |
| RIC and quantitation reports for cont. calibrations | ✓ | | |
| Internal standard summary report | ✓ | | |
| Raw QC Data | | | |
| Tuning report, spectra and mass lists | ✓ | | |
| Blank analysis reports | ✓ | | |
| TIC reports for all blanks | ✓ | | |
| RIC and quantitation reports for blanks | ✓ | | |
| Raw and corrected spectra for all detected results in blanks | ✓ | | |
| Raw and corrected library search data for all reported TIC | ✓ | | |

| Data Package Item | Present?: Yes | No | N/A |
|---|---|---|---|
| Quantitation and calculation data for all TIC | ✓ | | |
| MS/MSD report forms | ✓ | | |
| RIC and quantitation reports for MS/MSD | ✓ | | |
| **Additional Data** | | | |
| Moisture/% solids data sheets | | ✓ | |
| Reduction formulae | | ✓ | |
| Instrument time logs | | ✓ | |
| Chemist notebook pages | | ✓ | |
| Sample preparation sheets | | ✓ | |

## 2. HOLDING TIMES

Complete the holding time summary form listing all samples and dates of collection and analysis.

Were all samples analyzed within holding time? Yes No N/A

ACTION: If any holding times were exceeded, but not by greater than a factor of two, qualify associated samples as estimated (J for detects or UJ for nondetects), otherwise reject all nondetects (R) and qualify all associated detects as estimated (J).

## 3. INSTRUMENT CALIBRATION, TUNING AND PERFORMANCE CHECKS

### 3.1 GC/MS TUNING AND PERFORMANCE CHECKS

Is a bromofluorobenzene tune report present for each applicable 12-h period? Yes No N/A

Do all tunes on all instruments meet the tuning criteria? Yes No N/A

Do all tunes on all instruments meet the expanded criteria? Yes No N/A

Has the laboratory made any calculation or transciption errors? Yes No N/A

Have the proper significant figures been reported? Yes No N/A

ACTION: If the mass calibration is out of specification but within the expanded criteria, qualify associated data as estimated (J for detects or UJ for nondetects). If all tuning criteria are missed, qualify all associated data as unusable (R).

### 3.2 INITIAL CALIBRATION

Is an initial calibration report provided for all instruments? Yes No N/A

Are all RSD values ≤30% (2/88 SOW)? Yes No N/A

Are all RRF values ≥0.05 (2/88 SOW)? Yes No N/A

| | | | |
|---|---|---|---|
| Are all applicable RSD values ≤20.5% (3/90 SOW)? | Yes | No | N/A |
| Are all applicable RSD values ≤40% (3/90 SOW)? | Yes | No | N/A |
| Are all applicable RRF values within SOW limits (3/90 SOW)? | Yes | No | N/A |
| Are all erratic performance compound RRF values ≥0.01 (3/90 SOW)? | Yes | No | N/A |

ACTION: With the exception of compounds that exhibit erratic performance and making allowances for up to two TCL compounds, if any RRF value is out of specification qualify all detected results for the particular compound as estimated (J) and all nondetects as unusable (R). Making allowances for up to two TCL compounds, if any RSD value is out of specification qualify all associated data as estimated (J for detects or UJ for nondetects).

### 3.3. CONTINUING CALIBRATION

| | | | |
|---|---|---|---|
| Is a continuing calibration report present for all 12-h periods in which associated samples were analyzed? | Yes | No | N/A |
| Are all RRF values ≥0.05 (2/88 SOW)? | Yes | No | N/A |
| Are all %D values ≤25% (2/88 or 3/90 SOW)? | Yes | No | N/A |
| Are all %D values ≤40% (3/90 SOW)? | Yes | No | N/A |
| Are all RRF values within SOW limits (3/90 SOW)? | Yes | No | N/A |
| Are all erratic performance compound RRF values ≥0.01 (3/90 SOW)? | Yes | No | N/A |

ACTION: With the exception of compounds that exhibit erratic performance and making allowances for up to two TCL compounds, if any RRF value is out of specification qualify all associated detected results as estimated and all nondetects as unusable (R). Making allowances for up to two TCL compounds, if any %D is out of specification, qualify all associated results as estimated (J for detects or UJ for nondetects).

## 4. BLANKS

### 4.1 LABORATORY BLANKS

| | | | |
|---|---|---|---|
| Has the laboratory conducted a method blank analysis per matrix for every 12-h period in which samples were analyzed? | Yes | No | N/A |
| Are TCL compounds present in the laboratory blanks? | Yes | No | N/A |

ACTION: Qualify all sample results ≤10 time the highest blank concentration for the common laboratory contaminants, as nondetects (U) or at the SQL if the result is <CRQL. Qualify all remaining sample results ≤5 times the blank concentration in similar fashion.

## 4.2. FIELD BLANKS

Are TCL compounds present in the field blanks? Yes No N/A

ACTION: Qualify all detected sample results $\leq 5$ times the amount in any valid field blank as nondetects (U) and note the field blank results in the validation narrative.

# 5. ACCURACY

## 5.1 SURROGATE/SYSTEM MONITORING COMPOUND RECOVERY

Are any surrogate recoveries out of specification? Yes No N/A

Are any surrogate recoveries < 10%? Yes No N/A

Are any method blank surrogate recoveries out of specification? Yes No N/A

ACTION: Qualify all associated sample results as estimated (J for detects or UJ for nondetects) for surrogates out of specification but > 10%. Qualify all associated positive sample results as estimated (J) and all nondetect results as unusable (R) for all surrogates below 10%. If method blank surrogates are out of specification and the associated sample surrogates are acceptable no qualification is necessary, however, the laboratory should be contacted for an explanation.

## 5.2 MATRIX SPIKE RECOVERY

Has an MS/MSD analysis been conducted per matrix in the sample group? Yes No N/A

Are MS/MSD recoveries within specification? Yes No N/A

Are there any calculation errors? Yes No N/A

ACTION: If an MS/MSD analysis has not been conducted contact the laboratory for an explanation. Review the MS/MSD recoveries in conjunction with other QC data such as surrogate recoveries and note the results in the validation narrative. If MS/MSD recoveries are out of specification and sample concentration is > 5 times the spike concentration, no qualification is required, otherwise qualify results as follows: Qualify positive results for the specific class of compound (aromatics and non-aromatics) as estimated (J) in all samples if associated surrogates are also out of specification. The qualification shall only be done on samples of similar matrix as the MS/MSD samples. If it is determined from the review that only the spiked samples are affected by low recoveries, qualify only the results for the spiked sample as described above. If it is determined from the review that out of specification MS/MSD recoveries are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

## 5.3 PERFORMANCE AUDIT SAMPLES

Are the performance audit sample results within the acceptance limits? Yes No N/A

ACTION: Note the results of the performance audit sample in the validation narrative.

# 6. PRECISION

## 6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATES

Are RPD values within specification? Yes No N/A

Are there any calculation errors? Yes No N/A

ACTION: Review the MS/MSD results in conjunction with other QC data such as field duplicates and note the results in the validation narrative. If MS/MSD RPDs are out of specification and sample results are >5xCRQL qualify positive results for the specific class of compound (aromatics and non-aromatics) as estimated (J). If it is determined from the review that out of specification MS/MSD results are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

## 6.2 FIELD DUPLICATE SAMPLES

Are field duplicate RPD values acceptable? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

## 6.3 FIELD SPLIT SAMPLES

Are field split RPD values acceptable? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

# 7. SYSTEM PERFORMANCE

## 7.1 INTERNAL STANDARDS PERFORMANCE

Are any internal standard area counts outside the acceptance limits? Yes No N/A

Are retention times for any internal standard outside the ±30 second windows established by the most recent calibration check? Yes No N/A

ACTION: If the area counts are outside the acceptance limits qualify all associated results as estimated (J for detects or UJ for nondetects). If it is determined from the review that out of specification area counts and relative retention times are indicative of systematic problems within the laboratory the reviewer may consider rejection of all affected sample data (R).

# 8. COMPOUND IDENTIFICATION AND QUANTITATION

## 8.1 COMPOUND IDENTIFICATION

| | | | |
|---|---|---|---|
| Are detected compounds within ±0.06 relative retention time units of the associated calibration standard? | Yes | No | N/A |
| Are all ions at a relative intensity of ≥ 10% in the standard spectra present in the sample spectra? | Yes | No | N/A |
| Do the relative intensities between the standard and sample spectra agree within 20%? | Yes | No | N/A |
| Have all ions > 10% in the sample spectra that are not present in the standard spectra been reviewed for possible background contamination? | Yes | No | N/A |
| Are molecular ions present in the reference specrum present in the sample spectrum? | Yes | No | N/A |

ACTION: If compound identification is in error and retention time and mass spectral criteria are exceeded qualify all affected positive results as unusable (R). If cross-contamination between analyses is suspected, qualify affected data as unusable (R). Note the results in the validation narrative.

## 8.2 REPORTED RESULTS AND QUANTITATION LIMITS

| | | | |
|---|---|---|---|
| Has the laboratory used the correct RRF values and internal standard(s) for quantitation? | Yes | No | N/A |
| Are results and quantitation limits calculated properly? | Yes | No | N/A |
| Has the laboratory reported the sample quantitation limits within 5xCRQL values? | Yes | No | N/A |

ACTION: If the results and quantitation limits are in error contact the laboratory for clarification and note in the validation narrative.

## 8.3 TENTATIVELY IDENTIFIED COMPOUNDS (TIC)

| | | | |
|---|---|---|---|
| Has the laboratory conducted a spectral library search on all candidate TIC peaks in accordance with the analytical SOW? | Yes | No | N/A |
| Has the laboratory properly identified and coded all TIC? | Yes | No | N/A |

ACTION: If the laboratory has failed to search the minimum number of TIC peaks in the chromatogram contact the laboratory for submittal of the required data. Qualify as nondetects (U) all TIC compounds present in samples and blanks using the review criteria specified in the validation requirements. If TIC identification is in error sample results should be qualified as nondetects (U) or unusable (R). If TIC identifications are judged valid, qualify the results as presumptive and estimated (JN).

## 9. OVERALL ASSESSMENT AND SUMMARY

| | | | |
|---|---|---|---|
| Has the laboratory conducted the analysis in accordance with the analytical SOW? | Yes | No | N/A |
| Were project specific data quality objectives met for this analysis? | Yes | No | N/A |

ACTION: Summarize all the data qualifications recommended in the foregoing sections, and complete the data validation narrative according to the requirements of Section 10.0 of the data validation requirements.

COMMENTS (attach additional sheets as necessary):

# VOLATILE ORGANIC DATA VALIDATION CHECKLIST - FORM A-1

| | | |
|---|---|---|
| PROJECT: | REVIEWER: SS | DATE: 5-18-92 |
| LABORATORY: TMA/ARLI | CASE: 01-029 | SDG: |
| SAMPLES/MATRIX: B01C62 (SOIL) | | |
| B01CG3 ( " ) | | |
| B01CF9 ( " ) | | |
| B01CGO ( " ) | | |
| | | |

## 1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal.

| Data Package Item | Present?: Yes | No | N/A |
|---|---|---|---|
| Case Narrative | ✓ | | |
| Data Summary | ✓ | | |
| Chain-of-Custody | | ✓ | |
| QC Summary | | | |
| Surrogate report | ✓ | | |
| MS/MSD report | ✓ | | |
| Blank summary report | ✓ | | |
| GC/MS tuning report 1-16-92 | ✓ | | |
| Internal standard summary report | ✓ | | |
| Sample Data | | | |
| Sample reports | ✓ | | |
| TIC reports for each sample | ✓ | | |
| RIC reports for all samples | ✓ | | |
| Raw and corrected spectra for all detected results | ✓ | | |
| Raw and corrected library search data for all reported TIC | ✓ | | |
| Quantitation and calculation data for all TIC | ✓ | | |
| Standards Data | | | |
| Initial calibration report 1-6-92 | ✓ | | |
| RIC and quantitation reports for initial calibration | ✓ | | |
| Continuing calibration reports | ✓ | | |
| RIC and quantitation reports for cont. calibrations | ✓ | | |
| Internal standard summary report | ✓ | | |
| Raw QC Data | | | |
| Tuning report, spectra and mass lists | ✓ | | |
| Blank analysis reports | ✓ | | |
| TIC reports for all blanks | ✓ | | |
| RIC and quantitation reports for blanks | ✓ | | |
| Raw and corrected spectra for all detected results in blanks | ✓ | | |
| Raw and corrected library search data for all reported TIC | ✓ | | |

| Data Package Item | Present?: Yes | No | N/A |
|---|---|---|---|
| Quantitation and calculation data for all TIC | ✓ | | |
| MS/MSD report forms | ✓ | | |
| RIC and quantitation reports for MS/MSD | ✓ | | |
| **Additional Data** | | | |
| Moisture/% solids data sheets | | ✓ | |
| Reduction formulae | | ✓ | |
| Instrument time logs | | ✓ | |
| Chemist notebook pages | | ✓ | |
| Sample preparation sheets | | ✓ | |

## 2. HOLDING TIMES

Complete the holding time summary form listing all samples and dates of collection and analysis.

Were all samples analyzed within holding time? **Yes** No N/A

ACTION: If any holding times were exceeded, but not by greater than a factor of two, qualify associated samples as estimated (J for detects or UJ for nondetects), otherwise reject all nondetects (R) and qualify all associated detects as estimated (J).

## 3. INSTRUMENT CALIBRATION, TUNING AND PERFORMANCE CHECKS

### 3.1 GC/MS TUNING AND PERFORMANCE CHECKS

Is a bromofluorobenzene tune report present for each applicable 12-h period? **Yes** No N/A

Do all tunes on all instruments meet the tuning criteria? **Yes** No N/A

Do all tunes on all instruments meet the expanded criteria? **Yes** No N/A

Has the laboratory made any calculation or transciption errors? Yes **No** N/A

Have the proper significant figures been reported? **Yes** No N/A

ACTION: If the mass calibration is out of specification but within the expanded criteria, qualify associated data as estimated (J for detects or UJ for nondetects). If all tuning criteria are missed, qualify all associated data as unusable (R).

### 3.2 INITIAL CALIBRATION

Is an initial calibration report provided for all instruments? **Yes** No N/A

Are all RSD values ≤30% (2/88 SOW)? Yes **No** N/A

Are all RRF values ≥0.05 (2/88 SOW)? **Yes** No N/A

| | | | |
|---|---|---|---|
| Are all applicable RSD values ≤20.5% (3/90 SOW)? | Yes | No | N/A |
| Are all applicable RSD values ≤40% (3/90 SOW)? | Yes | No | N/A |
| Are all applicable RRF values within SOW limits (3/90 SOW)? | Yes | No | N/A |
| Are all erratic performance compound RRF values ≥0.01 (3/90 SOW)? | Yes | No | N/A |

ACTION: With the exception of compounds that exhibit erratic performance and making allowances for up to two TCL compounds, if any RRF value is out of specification qualify all detected results for the particular compound as estimated (J) and all nondetects as unusable (R). Making allowances for up to two TCL compounds, if any RSD value is out of specification qualify all associated data as estimated (J for detects or UJ for nondetects).

### 3.3. CONTINUING CALIBRATION

| | | | |
|---|---|---|---|
| Is a continuing calibration report present for all 12-h periods in which associated samples were analyzed? | Yes | No | N/A |
| Are all RRF values ≥0.05 (2/88 SOW)? | Yes | No | N/A |
| Are all %D values ≤25% (2/88 or 3/90 SOW)? | Yes | No | N/A |
| Are all %D values ≤40% (3/90 SOW)? | Yes | No | N/A |
| Are all RRF values within SOW limits (3/90 SOW)? | Yes | No | N/A |
| Are all erratic performance compound RRF values ≥0.01 (3/90 SOW)? | Yes | No | N/A |

ACTION: With the exception of compounds that exhibit erratic performance and making allowances for up to two TCL compounds, if any RRF value is out of specification qualify all associated detected results as estimated and all nondetects as unusable (R). Making allowances for up to two TCL compounds, if any %D is out of specification, qualify all associated results as estimated (J for detects or UJ for nondetects).

## 4. BLANKS

### 4.1 LABORATORY BLANKS

| | | | |
|---|---|---|---|
| Has the laboratory conducted a method blank analysis per matrix for every 12-h period in which samples were analyzed? | Yes | No | N/A |
| Are TCL compounds present in the laboratory blanks? | Yes | No | N/A |

ACTION: Qualify all sample results ≤10 time the highest blank concentration for the common laboratory contaminants, as nondetects (U) or at the SQL if the result is <CRQL. Qualify all remaining sample results ≤5 times the blank concentration in similar fashion.

## 4.2. FIELD BLANKS

Are TCL compounds present in the field blanks? Yes No N/A

None submitted

ACTION: Qualify all detected sample results $\leq 5$ times the amount in any valid field blank as nondetects (U) and note the field blank results in the validation narrative.

# 5. ACCURACY

## 5.1 SURROGATE/SYSTEM MONITORING COMPOUND RECOVERY

Are any surrogate recoveries out of specification? Yes No N/A

Are any surrogate recoveries < 10%? Yes No N/A

Are any method blank surrogate recoveries out of specification? Yes No N/A

ACTION: Qualify all associated sample results as estimated (J for detects or UJ for nondetects) for surrogates out of specification but > 10%. Qualify all associated positive sample results as estimated (J) and all nondetect results as unusable (R) for all surrogates below 10%. If method blank surrogates are out of specification and the associated sample surrogates are acceptable no qualification is necessary, however, the laboratory should be contacted for an explanation.

## 5.2 MATRIX SPIKE RECOVERY

Has an MS/MSD analysis been conducted per matrix in the sample group? Yes No N/A

Are MS/MSD recoveries within specification? Yes No N/A

Are there any calculation errors? Yes No N/A

ACTION: If an MS/MSD analysis has not been conducted contact the laboratory for an explanation. Review the MS/MSD recoveries in conjunction with other QC data such as surrogate recoveries and note the results in the validation narrative. If MS/MSD recoveries are out of specification and sample concentration is > 5 times the spike concentration, no qualification is required, otherwise qualify results as follows: Qualify positive results for the specific class of compound (aromatics and non-aromatics) as estimated (J) in all samples if associated surrogates are also out of specification. The qualification shall only be done on samples of similar matrix as the MS/MSD samples. If it is determined from the review that only the spiked samples are affected by low recoveries, qualify only the results for the spiked sample as described above. If it is determined from the review that out of specification MS/MSD recoveries are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

## 5.3 PERFORMANCE AUDIT SAMPLES

Are the performance audit sample results within the acceptance limits? Yes No N/A

ACTION: Note the results of the performance audit sample in the validation narrative.

# 6. PRECISION

## 6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATES

Are RPD values within specification? Yes No N/A

Are there any calculation errors? Yes No N/A

ACTION: Review the MS/MSD results in conjunction with other QC data such as field duplicates and note the results in the validation narrative. If MS/MSD RPDs are out of specification and sample results are >5xCRQL qualify positive results for the specific class of compound (aromatics and non-aromatics) as estimated (J). If it is determined from the review that out of specification MS/MSD results are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

## 6.2 FIELD DUPLICATE SAMPLES

Are field duplicate RPD values acceptable? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

## 6.3 FIELD SPLIT SAMPLES

Are field split RPD values acceptable? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

# 7. SYSTEM PERFORMANCE

## 7.1 INTERNAL STANDARDS PERFORMANCE

Are any internal standard area counts outside the acceptance limits? Yes No N/A

Are retention times for any internal standard outside the ±30 second windows established by the most recent calibration check? Yes No N/A

ACTION: If the area counts are outside the acceptance limits qualify all associated results as estimated (J for detects or UJ for nondetects). If it is determined from the review that out of specification area counts and relative retention times are indicative of systematic problems within the laboratory the reviewer may consider rejection of all affected sample data (R).

## 8. COMPOUND IDENTIFICATION AND QUANTITATION

### 8.1 COMPOUND IDENTIFICATION

| | | | |
|---|---|---|---|
| Are detected compounds within ±0.06 relative retention time units of the associated calibration standard? | Yes | No | N/A |
| Are all ions at a relative intensity of ≥10% in the standard spectra present in the sample spectra? | Yes | No | N/A |
| Do the relative intensities between the standard and sample spectra agree within 20%? | Yes | No | N/A |
| Have all ions > 10% in the sample spectra that are not present in the standard spectra been reviewed for possible background contamination? | Yes | No | N/A |
| Are molecular ions present in the reference specrum present in the sample spectrum? | Yes | No | N/A |

ACTION: If compound identification is in error and retention time and mass spectral criteria are exceeded qualify all affected positive results as unusable (R). If cross-contamination between analyses is suspected, qualify affected data as unusable (R). Note the results in the validation narrative.

### 8.2 REPORTED RESULTS AND QUANTITATION LIMITS

| | | | |
|---|---|---|---|
| Has the laboratory used the correct RRF values and internal standard(s) for quantitation? | Yes | No | N/A |
| Are results and quantitation limits calculated properly? | Yes | No | N/A |
| Has the laboratory reported the sample quantitation limits within 5xCRQL values? | Yes | No | N/A |

ACTION: If the results and quantitation limits are in error contact the laboratory for clarification and note in the validation narrative.

### 8.3 TENTATIVELY IDENTIFIED COMPOUNDS (TIC)

| | | | |
|---|---|---|---|
| Has the laboratory conducted a spectral library search on all candidate TIC peaks in accordance with the analytical SOW? | Yes | No | N/A |
| Has the laboratory properly identified and coded all TIC? | Yes | No | N/A |

ACTION: If the laboratory has failed to search the minimum number of TIC peaks in the chromatogram contact the laboratory for submittal of the required data. Qualify as nondetects (U) all TIC compounds present in samples and blanks using the review criteria specified in the validation requirements. If TIC identification is in error sample results should be qualified as nondetects (U) or unusable (R). If TIC identifications are judged valid, qualify the results as presumptive and estimated (JN).

## 9. OVERALL ASSESSMENT AND SUMMARY

Has the laboratory conducted the analysis in accordance with the analytical SOW? Yes No N/A

Were project specific data quality objectives met for this analysis? Yes No N/A

ACTION: Summarize all the data qualifications recommended in the foregoing sections, and complete the data validation narrative according to the requirements of Section 10.0 of the data validation requirements.

9713528.0625



COMMENTS (attach additional sheets as necessary):

Appendix (G)

# HOLDING TIME SUMMARY - FORM B-1

| SDG: 12.01.029 | REVIEWER: CMRussell | DATE: 6/9/92 | PAGE 1 OF 1 |
|---|---|---|---|
| COMMENTS: Level 2 | | | |

| FIELD SAMPLE ID | ANALYSIS TYPE | DATE SAMPLED | DATE PREPARED | DATE ANALYZED | PREP. HOLDING TIME, DAYS | ANALYSIS HOLDING TIME, DAYS | QUALIFIER |
|---|---|---|---|---|---|---|---|
| soil ~~B10~~ B01CG2 | VOA | 1/3/92 | NA | 1/16/92 | NA | 13 | none |
| B01CG3 | ↓ | 1/3/92 | ↓ | 1/17/92 | ↓ | 14 | ↓ |
| B01CF9 | ↓ | 1/3/92 | ↓ | 1/17/92 | ↓ | 14 | ↓ |
| B01CG0 | ↓ | 1/3/92 | ↓ | 1/17/92 | ↓ | 14 | ↓ |

AS
6/12/92





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Appendix G

# CALIBRATION DATA SUMMARY - FORM B-2

| SDG: A2-01-029 | REVIEWER: CMRussell | DATE: 6/9/92 | PAGE 1 OF 1 | | |
|---|---|---|---|---|---|
| COMMENTS: Level 2 | | | | | |
| CALIB. TYPE: | INITIAL CONTINUING | INSTRUMENT: | | | |
| CALIB. DATE | COMPOUND | RF | RSD/%D/%R | SAMPLES AFFECTED | QUALIFIER |
| Tune 1/16/92 → | ICAL | | | | |
| 1/16/92 → | CCV, VBLK, B01CG2, B01CG2 MS+MSD, B01CG3 | | | | |
| ↓ ↓ | B01CF9, B01CG0 | | | | |
| ICAL 1/16/92 | acetone | | 31 %RSD | B01CG2, B01CG3, B01CF9, B01CG0 | ~~UJ~~ UJ |
| CCV 1/16/92 | chloromethane | | 26 %D | ↓ ↓ | UJ |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | HS | | | |
| | | 6/12/92 | | | |
| | | | | | |
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| | | | | | |
| | | | | | |

Appendix (G)

## BLANK AND SAMPLE DATA SUMMARY - FORM B-3

| SDG: 01029 | REVIEWER: AS | DATE: 1/10/92 | PAGE 1 OF 1 |
|---|---|---|---|
| COMMENTS: Level 2 | | | |

| SAMPLE ID | COMPOUND | RESULT | Q | RT | UNITS | 5X RESULT | 10X RESULT | SAMPLES AFFECTED | QUALIFIER |
|---|---|---|---|---|---|---|---|---|---|
| VBLK0116 | Methylene chloride | 18 | - | - | ug/kg | — | 180 | B01CF9, B01CG0, B01CG2, B01CG3 | U at value |
| | Acetone | 12 | - | - | | — | 120 | B01CF9, B01CG0, B01CG2, B01CG3 | |
| | chloroform | 1 | — | - | | — | 10 | — | |
| | unknown hydrocarbon | 10 | - | 8.20 | ~~B~~ 50 ug/kg | — | — | B01CF9 | ~~U~~ ~~JE~~ UJ line |
| low level of common lab contaminant. | carbondisulfide | | | | | | | B01CG3, B01CF9, B01CG0, B01CG2 | U at value |
| | toluene | | | | | | | B01CG3, B01CF9, B01CG0 | U at CRQL |
| | carbondisulfide | | | | | | | B01CG2 | U at CRQL |

Appendix (G)

# ACCURACY DATA SUMMARY - FORM B-4

| SDG: A2·01·029 | REVIEWER: CMRussell | DATE: 6/10/92 | PAGE 1 OF 1 | |
|---|---|---|---|---|
| COMMENTS: Level 2 | | | | |
| SAMPLE ID | COMPOUND | % RECOVERY | SAMPLE(S) AFFECTED | QUALIFIER REQUIRED |
| ① surrogates – all acceptable. Range from | | 85–101% recovery | (soils) B01CF9 B01CG0, B01CG2, B01CG3 | none |
| ② B01CG2 MS and MSD – matrix spike compound recovery acceptable; Range from 79–143% recovery. | | | | none |
| ③ all internal standard areas are acceptable. CMR | | | | none |



9713528.0628
WHC-SD-EN-SPP-002, Rev. 1

Appendix (G)

# PRECISION DATA SUMMARY - FORM B-5

| SDG: A2-01-029 | REVIEWER CWR | DATE: 6/9/92 | PAGE 1 OF 1 |
|---|---|---|---|
| COMMENTS: Level 2 | | | |

| COMPOUND | SAMPLE ID: | SAMPLE ID: | RPD | SAMPLES AFFECTED | QUALIFIER |
|---|---|---|---|---|---|
| (1) matrix spike dup | | | | | |
| All RPDs acceptable | 2-5% | | | | none |
| (2) field dup | B01G2 | B01CG3 | | | |
| Methylene chloride | 26 (U) | 29 (U) | ~~0.9%~~ | NA | none |
| Acetone | 19 (UJ) | 22 (UJ) | ~~14.6%~~ | NA | ↓ |
| carbon disulfide | ~~35~~ 5 (U) | 5 (U) | ~~50%~~ | NA | ↓ |
| toluene | ~~25~~ (U) | ~~35~~ 5 (U) | ~~40%~~ | NA | ↓ |



9713528.0630
WHC-SD-EN-SPP-002, Rev.-1

CALCULATION SUMMARY - FORM B-6

| SDG: 42-01-029 | REVIEWER: CMRussell | DATE: 6/21/92 | PAGE 1 OF 1 |
|---|---|---|---|

COMMENTS:

all CRQLs and values were recalculated + verified.
a minimum of 20% of all QC results were recalculated.

CMR

9713528.0632



# APPENDIX G
# DATA VALIDATION DOCUMENTATION

*Thermo Analytical Laboratories*

*Data Package A201029*

*Volatile Organics Analyses*

9713528.0633

THIS APPENDIX CONSISTS OF FIVE ATTACHMENTS

*Attachment 1 - Glossary of Data Qualifiers*

This attachment provides a glossary explaining all data qualifiers applied as a result of the validation.

*Attachment 2 - As Received Laboratory Sample Concentration Reports*

This attachment provides a copy of the as-received sample concentration reports. This may be a tabular summary similar to that provided in Attachment 4, or may be a copy of the laboratory reports (e.g., Form I).

*Attachment 3 - Summary of Data Qualifications (Form B-7)*

This attachment provides a complete summary of all qualifications applied as a result of the validation.

*Attachment 4 - As Qualified Data Summary*

This attachment provides a tabular data summary of all data qualified from the validation.

*Attachment 5 - Data Review Supporting Documentation*

This attachment provides copies of the data validation checklists, data summary forms, telephone contact memoranda and other documentation completed as a result of the data validation.

9713528.0634

# ATTACHMENT 1

## *Glossary of Data Qualifiers*

***U*** - Indicates the compound or analyte was analyzed for and not detected. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

***UJ*** - Indicates the compound or analyte was analyzed for and not detected. Due to quality control deficiencies identified during data validation the value reported may not accurately reflect the sample quantitation limit.

***J*** - Indicates the compound or analyte was analyzed for and detected. The associated value is estimated but the data are useable for decision making processes.

***R*** - Indicates the compound or analyte was analyzed for and due to an identified quality control deficiency the data are unusable.

***NJ*** - Indicates the presumptive evidence of a compound at an estimated value.

***N*** - Indicates presumptive evidence of a compound.

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# ATTACHMENT 2

*As Received Laboratory Sample Concentration Reports*

9713528.0636

00005
EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B01CF9

ab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-03A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R22

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 5 Date Analyzed: 01/17/92

Column: (pack/cap) PACK Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 11 | U |
| 74-83-9 | Bromomethane | 11 | U |
| 75-01-4 | Vinyl Chloride | 11 | U |
| 75-00-3 | Chloroethane | 11 | U |
| 75-09-2 | Methylene Chloride | 29 | B |
| 67-64-1 | Acetone | 21 | B |
| 75-15-0 | Carbon Disulfide | 6 | |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 11 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 11 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 11 | U |
| 591-78-6 | 2-Hexanone | 11 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 2 | J |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylene (Total) | 5 | U |

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00006

EPA SAMPLE NO.

B01CF9

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-03A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R22

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 5 Date Analyzed: 01/17/92

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 75-69-4 | METHANE, TRICHLOROFLUORO- | 6.87 | 13 | J |
| 2. | UNKNOWN HYDROCARBON | 8.20 | 19 | BJ |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01CG0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-04B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R23

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/17/92

Column: (pack/cap) PACK Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 29 | B |
| 67-64-1 | Acetone | 19 | B |
| 75-15-0 | Carbon Disulfide | 5 | J |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 3 | J |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylene (Total) | 5 | U |

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00008

EPA SAMPLE NO.

B01CG0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-04B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R23

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/17/92

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 75-69-4 | METHANE, TRICHLOROFLUORO- | 6.87 | 13 | J |

9713528.0640

00009

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01CG2

ab Name: TMA/ARLI Contract: WHC

ab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

atrix: (soil/water) SOIL Lab Sample ID: A201029-01C

ample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R18

evel: (low/med) LOW Date Received: 01/08/92

Moisture: not dec. 4 Date Analyzed: 01/16/92

olumn: (pack/cap) PACK Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 26 | B |
| 67-64-1 | Acetone | 19 | B |
| 75-15-0 | Carbon Disulfide | 3 | J |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 2 | J |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylene (Total) | 5 | U |

9216528.0641

00010
EPA SAMPLE NO.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

B01CG2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-01C

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R18

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/16/92

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 75-69-4 | METHANE,TRICHLOROFLUORO- | 6.87 | 6.7 | J |
| 2. | UNKNOWN HYDROCARBON | 29.71 | 68 | J |

9713528.0642

00011

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01CG3

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-02C

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R21

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/17/92

Column: (pack/cap) PACK Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 29 | B |
| 67-64-1 | Acetone | 22 | B |
| 75-15-0 | Carbon Disulfide | 5 | J |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 3 | J |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylene (Total) | 5 | U |

9713528.0643

00012

EPA SAMPLE NO.

B01CG3

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-02C

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R21

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/17/92

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 75-69-4 | METHANE, TRICHLOROFLUORO- | 6.87 | 17 | J |
| 2. | UNKNOWN HYDROCARBON | 29.67 | 110 | J |

9713528.0644

# ATTACHMENT 3

*Summary of Data Qualifications*

# DATA QUALIFICATION SUMMARY - FORM B-7

| SDG: 01029 | REVIEWER: AS | DATE: 6/12/02 | PAGE 1 OF 1 |
|---|---|---|---|
| COMMENTS: | | | |
| COMPOUND | QUALIFIER | SAMPLES AFFECTED | REASON |
| Ical Acetone | ~~J(+)~~ (U)(-) | B01CG2, B01CG3, B01CF9, B01CG0 | Ical exceeded %RSD |
| Ccal Chloromethane | " | " " | Ccal exceeded %D |
| Blank Methylene chloride | U at value | " " | blank contamination |
| Acetone | ↓ | " " | ↓ (<10x blank) |
| unknown TIC (RT 8.2) | UJ at value | B01CF9 | <5x blank |
| Toluene | U at CRQL | B01CF9, B01CG0, B01CG2, B01CG3 | ~~below CRQL~~ low level of common lab contam. |
| Carbon disulfide | U at CRQL | B01CG2 | low level of common lab contaminant |
| ↓ | U at value | B01CG3, B01CF9, B01CG0 | |
| unknown TIC (RT 6.9) | NJ | B01CG3, B01CG2, B01CF9, B01CG0 | presumptive evidence; estimate |
| ↓ (RT 29.7) | NJ | B01CG2, B01CG3 | ↓ |

9713528.0646

# ATTACHMENT 4

*As Qualified Data Summary*

9713528.0647

00005
EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B01CF9

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-03A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R22

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 5 Date Analyzed: 01/17/92

Column: (pack/cap) PACK Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

| CAS NO. | COMPOUND | | | Q | |
|---|---|---|---|---|---|
| 74-87-3 | Chloromethane | | 11 | ~~U~~ UJ | Cal fail |
| 74-83-9 | Bromomethane | | 11 | U | |
| 75-01-4 | Vinyl Chloride | | 11 | U | |
| 75-00-3 | Chloroethane | | 11 | U | |
| 75-09-2 | Methylene Chloride | | 29 | ~~B~~ U | <10x blank |
| 67-64-1 | Acetone | ~~low level common~~ lab contam. | 21 | ~~B~~ UJ | Cal fail RSD; <10x blank |
| 75-15-0 | Carbon Disulfide | low level common lab contam. | 6 | U | |
| 75-35-4 | 1,1-Dichloroethene | | 5 | U | |
| 75-34-3 | 1,1-Dichloroethane | | 5 | U | |
| 540-59-0 | 1,2-Dichloroethene (total) | | 5 | U | |
| 67-66-3 | Chloroform | | 5 | U | |
| 107-06-2 | 1,2-Dichloroethane | | 5 | U | |
| 78-93-3 | 2-Butanone | | 11 | U | |
| 71-55-6 | 1,1,1-Trichloroethane | | 5 | U | |
| 56-23-5 | Carbon Tetrachloride | | 5 | U | |
| 108-05-4 | Vinyl Acetate | | 11 | U | |
| 75-27-4 | Bromodichloromethane | | 5 | U | |
| 78-87-5 | 1,2-Dichloropropane | | 5 | U | |
| 10061-01-5 | cis-1,3-Dichloropropene | | 5 | U | |
| 79-01-6 | Trichloroethene | | 5 | U | |
| 124-48-1 | Dibromochloromethane | | 5 | U | |
| 79-00-5 | 1,1,2-Trichloroethane | | 5 | U | |
| 71-43-2 | Benzene | | 5 | U | |
| 10061-02-6 | trans-1,3-Dichloropropene | | 5 | U | |
| 75-25-2 | Bromoform | | 5 | U | |
| 108-10-1 | 4-Methyl-2-Pentanone | | 11 | U | |
| 591-78-6 | 2-Hexanone | | 11 | U | |
| 127-18-4 | Tetrachloroethene | | 5 | U | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 5 | U | |
| 108-88-3 | Toluene | low level common contam. | 5 ~~2~~ | ~~J~~ U | |
| 108-90-7 | Chlorobenzene | | 5 | U | |
| 100-41-4 | Ethylbenzene | | 5 | U | |
| 100-42-5 | Styrene | | 5 | U | |
| 1330-20-7 | Xylene (Total) | | 5 | U | |

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HS 6/16/92

EPA SAMPLE NO.

B01CF9

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-03A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R22

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 5 Date Analyzed: 01/17/92

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 75-69-4 | METHANE, TRICHLOROFLUORO- | 6.87 | 13 | J |
| 2. | UNKNOWN HYDROCARBON | 8.20 | 19 | BJ |

JN
~~BJ~~ UJ

6/16/92

9713528.0649

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01CG0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-04B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R23

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/17/92

Column: (pack/cap) PACK Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q | |
|---|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | ~~U~~ UJ | ccal %D |
| 74-83-9 | Bromomethane | 10 | U | |
| 75-01-4 | Vinyl Chloride | 10 | U | |
| 75-00-3 | Chloroethane | 10 | U | |
| 75-09-2 | Methylene Chloride | 29 | ~~B~~ U | <10x blank |
| 67-64-1 | Acetone — lab common contam | 19 | ~~B~~ UJ | Ical %RSD |
| 75-15-0 | Carbon Disulfide — low common lab contam | 5 | ~~B~~ U | SDX blank |
| 75-35-4 | 1,1-Dichloroethene | 5 | U | |
| 75-34-3 | 1,1-Dichloroethane | 5 | U | |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U | |
| 67-66-3 | Chloroform | 5 | U | |
| 107-06-2 | 1,2-Dichloroethane | 5 | U | |
| 78-93-3 | 2-Butanone | 10 | U | |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U | |
| 56-23-5 | Carbon Tetrachloride | 5 | U | |
| 108-05-4 | Vinyl Acetate | 10 | U | |
| 75-27-4 | Bromodichloromethane | 5 | U | |
| 78-87-5 | 1,2-Dichloropropane | 5 | U | |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U | |
| 79-01-6 | Trichloroethene | 5 | U | |
| 124-48-1 | Dibromochloromethane | 5 | U | |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U | |
| 71-43-2 | Benzene | 5 | U | |
| 10061-02-6 | trans-1,3-Dichloropropene | 5 | U | |
| 75-25-2 | Bromoform | 5 | U | |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U | |
| 591-78-6 | 2-Hexanone | 10 | U | |
| 127-18-4 | Tetrachloroethene | 5 | U | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U | |
| 108-88-3 | Toluene — low level common lab contam. | 5 ~~B~~ | ~~B~~ U | |
| 108-90-7 | Chlorobenzene | 5 | U | |
| 100-41-4 | Ethylbenzene | 5 | U | |
| 100-42-5 | Styrene | 5 | U | |
| 1330-20-7 | Xylene (Total) | 5 | U | |

AS 6/16/92

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EPA SAMPLE NO.

B01CG0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-04B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R23

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/17/92

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 75-69-4 | METHANE, TRICHLOROFLUORO- | 6.87 | 13 | ~~J~~ JN |

AS 6/15/92

9213528.0651

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01CG2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-01C

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R18

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/16/92

Column: (pack/cap) PACK Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

| CAS NO. | COMPOUND | | | Q | |
|---|---|---|---|---|---|
| 74-87-3 | Chloromethane | | 10 | ~~U~~ (U) | cal % D |
| 74-83-9 | Bromomethane | | 10 | U | |
| 75-01-4 | Vinyl Chloride | | 10 | U | |
| 75-00-3 | Chloroethane | | 10 | U | |
| 75-09-2 | Methylene Chloride | | 26 | ~~B~~ (U) | <10x blank |
| 67-64-1 | Acetone | ~~low common lab contam.~~ | 19 | ~~B~~ (U) | I cal %RSD |
| 75-15-0 | Carbon Disulfide | low common lab contam. | 5 ~~3~~ | ~~B~~ (U) | <10x blank |
| 75-35-4 | 1,1-Dichloroethene | | 5 | U | |
| 75-34-3 | 1,1-Dichloroethane | | 5 | U | |
| 540-59-0 | 1,2-Dichloroethene (total) | | 5 | U | |
| 67-66-3 | Chloroform | | 5 | U | |
| 107-06-2 | 1,2-Dichloroethane | | 5 | U | |
| 78-93-3 | 2-Butanone | | 10 | U | |
| 71-55-6 | 1,1,1-Trichloroethane | | 5 | U | |
| 56-23-5 | Carbon Tetrachloride | | 5 | U | |
| 108-05-4 | Vinyl Acetate | | 10 | U | |
| 75-27-4 | Bromodichloromethane | | 5 | U | |
| 78-87-5 | 1,2-Dichloropropane | | 5 | U | |
| 10061-01-5 | cis-1,3-Dichloropropene | | 5 | U | |
| 79-01-6 | Trichloroethene | | 5 | U | |
| 124-48-1 | Dibromochloromethane | | 5 | U | |
| 79-00-5 | 1,1,2-Trichloroethane | | 5 | U | |
| 71-43-2 | Benzene | | 5 | U | |
| 10061-02-6 | trans-1,3-Dichloropropene | | 5 | U | |
| 75-25-2 | Bromoform | | 5 | U | |
| 108-10-1 | 4-Methyl-2-Pentanone | | 10 | U | |
| 591-78-6 | 2-Hexanone | | 10 | U | |
| 127-18-4 | Tetrachloroethene | | 5 | U | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 5 | U | |
| 108-88-3 | Toluene | low common lab contam. | 5 ~~2~~ | ~~B~~ (U) | |
| 108-90-7 | Chlorobenzene | | 5 | U | |
| 100-41-4 | Ethylbenzene | | 5 | U | |
| 100-42-5 | Styrene | | 5 | U | |
| 1330-20-7 | Xylene (Total) | | 5 | U | |

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6/16/92

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00010
EPA SAMPLE NO.

B01CG2

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-01C

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R18

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/16/92

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 75-69-4 | METHANE,TRICHLOROFLUORO- | 6.87 | 6.7 | ~~J~~ JN |
| 2. | UNKNOWN HYDROCARBON | 29.71 | 68 | ~~J~~ JN |

MS
6/16/92

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EPA SAMPLE NO.

B01CG3

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-02C

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R21

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/17/92

Column: (pack/cap) PACK Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q | |
|---|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | ~~U~~ UJ | (cal/ICV) |
| 74-83-9 | Bromomethane | 10 | U | |
| 75-01-4 | Vinyl Chloride | 10 | U | |
| 75-00-3 | Chloroethane | 10 | U | |
| 75-09-2 | Methylene Chloride | 29 | ~~B~~ U | < 10x blank |
| 67-64-1 | Acetone ~~low common lab contam.~~ | 22 | ~~B~~ UJ | Ical/ICSD |
| 75-15-0 | Carbon Disulfide low common lab contam. | 5 | ~~J~~ U | <10xblank |
| 75-35-4 | 1,1-Dichloroethene | 5 | U | |
| 75-34-3 | 1,1-Dichloroethane | 5 | U | |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U | |
| 67-66-3 | Chloroform | 5 | U | |
| 107-06-2 | 1,2-Dichloroethane | 5 | U | |
| 78-93-3 | 2-Butanone | 10 | U | |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U | |
| 56-23-5 | Carbon Tetrachloride | 5 | U | |
| 108-05-4 | Vinyl Acetate | 10 | U | |
| 75-27-4 | Bromodichloromethane | 5 | U | |
| 78-87-5 | 1,2-Dichloropropane | 5 | U | |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U | |
| 79-01-6 | Trichloroethene | 5 | U | |
| 124-48-1 | Dibromochloromethane | 5 | U | |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U | |
| 71-43-2 | Benzene | 5 | U | |
| 10061-02-6 | trans-1,3-Dichloropropene | 5 | U | |
| 75-25-2 | Bromoform | 5 | U | |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U | |
| 591-78-6 | 2-Hexanone | 10 | U | |
| 127-18-4 | Tetrachloroethene | 5 | U | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U | |
| 108-88-3 | Toluene low common contam. | 5 ~~2~~ | ~~J~~ U | |
| 108-90-7 | Chlorobenzene | 5 | U | |
| 100-41-4 | Ethylbenzene | 5 | U | |
| 100-42-5 | Styrene | 5 | U | |
| 1330-20-7 | Xylene (Total) | 5 | U | |

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VS 6/18/92

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00012

EPA SAMPLE NO.

B01CG3

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-02C

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R21

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/17/92

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 75-69-4 | METHANE, TRICHLOROFLUORO- | 6.87 | 17 | ~~J~~ JN |
| 2. | UNKNOWN HYDROCARBON | 29.67 | 110 | ~~J~~ JN |

MS
6/16/92

9713528.0655

# ATTACHMENT 5

*Data Review Supporting Documentation*

5A
VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Lab File ID: 2BFB0116 BFB Injection Date: 01/16/92

Instrument ID: 4500 BFB Injection Time: 0830

Matrix:(soil/water) _____ Level:(low/med) _____ Column:(pack/cap) PACK

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 21.4 |
| 75 | 30.0 - 60.0% of mass 95 | 39.1 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 8.9 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 64.2 |
| 175 | 5.0 - 9.0% of mass 174 | 5.6 ( 8.7)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 64.1 ( 99.8)1 |
| 177 | 5.0 - 9.0% of mass 176 | 5.7 ( 8.9)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

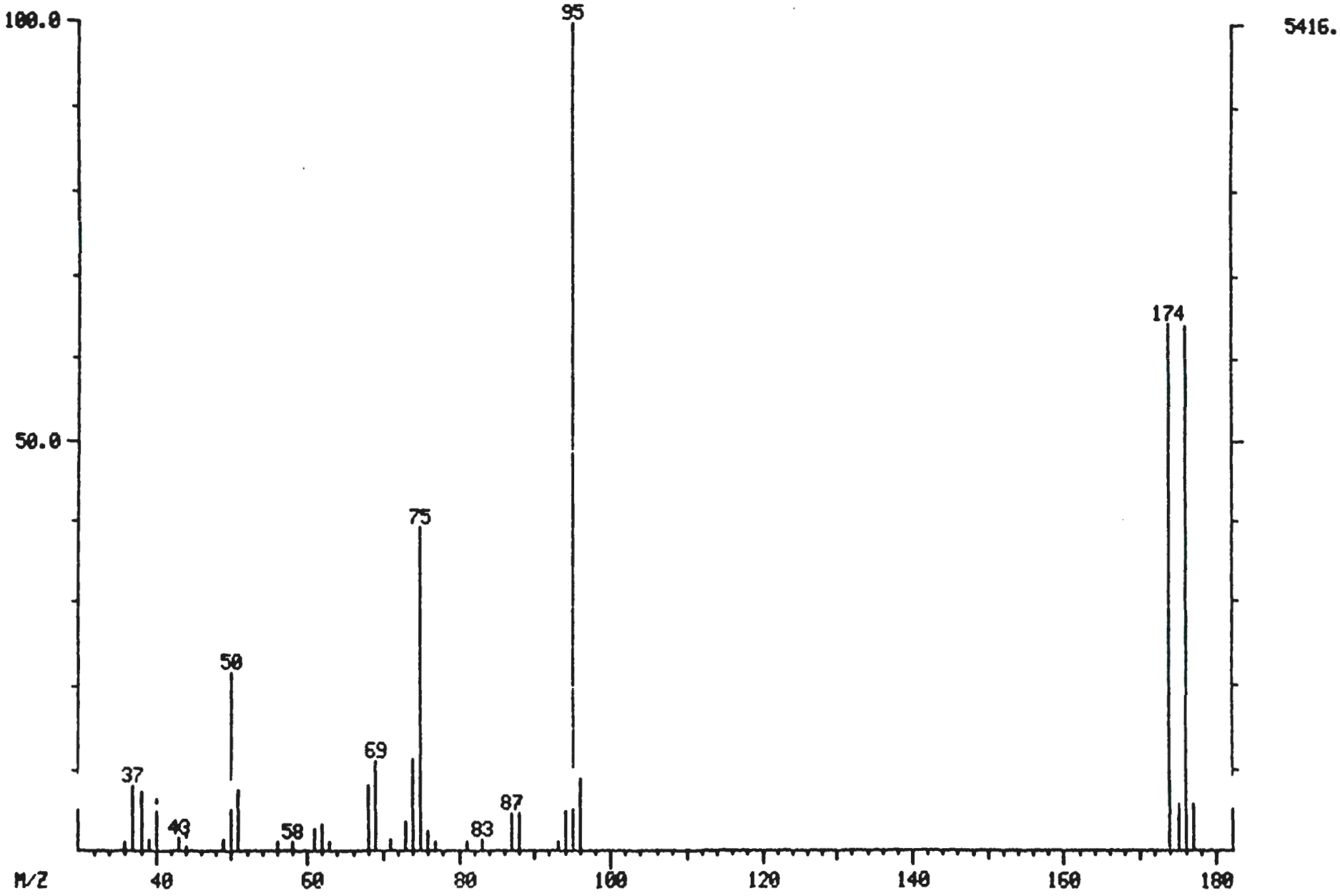
| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | VSTD020 | 20PPB-V1226A | 20116R02 | 01/16/92 | 1100 |
| 02 | VSTD050 | 50PPB-V1226A | 20116R03 | 01/16/92 | 1139 |
| 03 | VSTD100 | 100PPB-V1226A | 20116R04 | 01/16/92 | 1218 |
| 04 | VSTD150 | 150PPB-V1226A | 20116R05 | 01/16/92 | 1257 |
| 05 | VSTD200 | 200PPB-V1226A | 20116R06 | 01/16/92 | 1337 |

00157

MASS SPECTRUM
01/16/92 8:30:00 + 9:00
SAMPLE: 50NG OF BFB
CONDS.: 2UL DI
#216 TO #217 SUMMED - #206

DATA: 2BFB0116 #216
CALI: 20110R01 #3

BASE M/Z: 95
RIC: 22176.




0743720.0457

5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Lab File ID: 2BFB0116A BFB Injection Date: 01/16/92

Instrument ID: 4500 BFB Injection Time: 1412

Matrix:(soil/water) _____ Level:(low/med) _____ Column:(pack/cap) PACK

| m/e | ION ABUNDANCE CRITERIA | % RELATIVE ABUNDANCE |
|---|---|---|
| 50 | 15.0 - 40.0% of mass 95 | 26.8 |
| 75 | 30.0 - 60.0% of mass 95 | 39.0 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 8.4 |
| 173 | Less than 2.0% of mass 174 | 0.0 ( 0.0)1 |
| 174 | Greater than 50.0% of mass 95 | 68.0 |
| 175 | 5.0 - 9.0% of mass 174 | 6.1 ( 8.9)1 |
| 176 | Greater than 95.0%, but less than 101.0% of mass 174 | 65.6 ( 96.4)1 |
| 177 | 5.0 - 9.0% of mass 176 | 3.6 ( 5.5)2 |

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|---|---|---|---|---|---|
| 01 | VSTD050 | 50PPB-V1226A | 20116R07 | 01/16/92 | 1501 |
| 02 | VBLK0116 | WB011692 | 20116R08 | 01/16/92 | 1558 |
| 03 | B01CG2 | A201029-01C | 20116R18 | 01/16/92 | 2240 |
| 04 | B01CG2MS | A201029-01D | 20116R19 | 01/16/92 | 2319 |
| 05 | B01CG2MSD | A201029-01E | 20116R20 | 01/16/92 | 2358 |
| 06 | B01CG3 | A201029-02C | 20116R21 | 01/17/92 | 0036 |
| 07 | B01CF9 | A201029-03A | 20116R22 | 01/17/92 | 0115 |
| 08 | B01CG0 | A201029-04B | 20116R23 | 01/17/92 | 0154 |

9713528.0659

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

00130

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Instrument ID: 4500 Calibration Date(s): 01/16/92 01/16/92

Matrix:(soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) PACK

Min $\overline{RRF}$ for SPCC(#) = 0.300 (0.250 for Bromoform) Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF20 = 20116R02 RRF50 = 20116R03
RRF100= 20116R04 RRF150= 20116R05 RRF200= 20116R06

| COMPOUND | | RRF20 | RRF50 | RRF100 | RRF150 | RRF200 | $\overline{RRF}$ | % RSD |
|---|---|---|---|---|---|---|---|---|
| Chloromethane | # | 0.683 | 0.633 | 0.514 | 0.521 | 0.453 | 0.561 | 16.8# |
| Bromomethane | | 0.691 | 0.686 | 0.669 | 0.683 | 0.612 | 0.668 | 4.9 |
| Vinyl Chloride | * | 0.532 | 0.497 | 0.428 | 0.445 | 0.394 | 0.459 | 12.0* |
| Chloroethane | | 0.685 | 0.743 | 0.533 | 0.456 | 0.421 | 0.568 | 24.8 |
| Methylene Chloride | | 1.899 | 1.855 | 1.846 | 1.878 | 1.663 | 1.828 | 5.2 |
| Acetone | | 1.893 | 1.160 | 1.118 | 1.103 | 0.884 | 1.232 | 31.2 |
| Carbon Disulfide | | 3.458 | 3.811 | 3.796 | 3.940 | 3.557 | 3.712 | 5.3 |
| 1,1-Dichloroethene | * | 0.901 | 1.001 | 1.016 | 1.065 | 1.006 | 0.998 | 6.0* |
| 1,1-Dichloroethane | # | 2.776 | 2.915 | 2.904 | 2.960 | 2.845 | 2.880 | 2.5# |
| 1,2-Dichloroethene (total) | | 1.211 | 1.317 | 1.299 | 1.365 | 1.253 | 1.289 | 4.6 |
| Chloroform | * | 2.676 | 2.696 | 2.646 | 2.790 | 2.601 | 2.682 | 2.6* |
| 1,2-Dichloroethane | | 1.430 | 1.510 | 1.536 | 1.593 | 1.528 | 1.519 | 3.9 |
| 2-Butanone | | 0.398 | 0.318 | 0.402 | 0.427 | 0.347 | 0.378 | 11.8 |
| 1,1,1-Trichloroethane | | 0.437 | 0.434 | 0.417 | 0.431 | 0.413 | 0.426 | 2.5 |
| Carbon Tetrachloride | | 0.353 | 0.357 | 0.366 | 0.377 | 0.369 | 0.364 | 2.6 |
| Vinyl Acetate | | 4.071 | 4.114 | 4.388 | 4.484 | 4.258 | 4.263 | 4.1 |
| Bromodichloromethane | | 0.550 | 0.567 | 0.594 | 0.605 | 0.583 | 0.580 | 3.8 |
| 1,2-Dichloropropane | * | 0.468 | 0.461 | 0.476 | 0.492 | 0.480 | 0.475 | 2.5* |
| cis-1,3-Dichloropropene | * | 0.635 | 0.647 | 0.656 | 0.671 | 0.667 | 0.655 | 2.2* |
| Trichloroethene | | 0.413 | 0.418 | 0.422 | 0.430 | 0.419 | 0.420 | 1.5 |
| Dibromochloromethane | | 0.467 | 0.536 | 0.557 | 0.568 | 0.567 | 0.539 | 7.8 |
| 1,1,2-Trichloroethane | | 0.374 | 0.368 | 0.384 | 0.399 | 0.386 | 0.382 | 3.1 |
| Benzene | | 1.163 | 1.187 | 1.194 | 1.211 | 1.185 | 1.188 | 1.5 |
| trans-1,3-Dichloropropene | | 0.545 | 0.568 | 0.586 | 0.591 | 0.582 | 0.574 | 3.2 |
| Bromoform | # | 0.495 | 0.510 | 0.535 | 0.556 | 0.551 | 0.529 | 5.0# |
| 4-Methyl-2-Pentanone | | 1.140 | 1.006 | 1.081 | 1.091 | 0.977 | 1.059 | 6.3 |
| 2-Hexanone | | 0.915 | 0.734 | 0.824 | 0.833 | 0.746 | 0.810 | 9.1 |
| Tetrachloroethene | | 0.397 | 0.406 | 0.404 | 0.409 | 0.394 | 0.402 | 1.6 |
| 1,1,2,2-Tetrachloroethane | # | 1.103 | 1.067 | 1.078 | 1.078 | 1.010 | 1.067 | 3.2# |
| Toluene | * | 0.790 | 0.808 | 0.814 | 0.837 | 0.809 | 0.812 | 2.1* |
| Chlorobenzene | # | 0.921 | 0.962 | 0.970 | 0.980 | 0.947 | 0.956 | 2.4# |
| Ethylbenzene | * | 0.457 | 0.462 | 0.452 | 0.458 | 0.447 | 0.455 | 1.3* |
| Styrene | | 0.951 | 0.918 | 0.920 | 0.966 | 0.905 | 0.932 | 2.7 |
| Xylene (Total) | | 0.557 | 0.561 | 0.515 | 0.541 | 0.513 | 0.537 | 4.2 |
| Toluene-d8 | | 0.878 | 0.997 | 0.999 | 1.009 | 0.945 | 0.966 | 5.7 |
| BFB | | 0.653 | 0.713 | 0.707 | 0.704 | 0.653 | 0.686 | 4.4 |
| 1,2-Dichloroethane-d4 | | 1.158 | 1.303 | 1.317 | 1.357 | 1.243 | 1.276 | 6.1 |

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00151

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Instrument ID: 4500 Calibration date: 01/16/92 Time: 1501

Lab File ID: 20116R07 Init. Calib. Date(s): 01/16/92 01/16/92

Matrix:(soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) PACK

Min RRF50 for SPCC(#) = 0.300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

| COMPOUND | | $\overline{RRF}$ | RRF50 | %D | |
|---|---|---|---|---|---|
| Chloromethane | # | 0.561 | 0.707 | -26.0 | # |
| Bromomethane | | 0.668 | 0.654 | 2.1 | |
| Vinyl Chloride | * | 0.459 | 0.527 | -14.8 | * |
| Chloroethane | | 0.568 | 0.664 | -16.9 | |
| Methylene Chloride | | 1.828 | 1.831 | -0.2 | |
| Acetone | | 1.232 | 1.227 | 0.4 | |
| Carbon Disulfide | | 3.712 | 3.798 | -2.3 | |
| 1,1-Dichloroethene | * | 0.998 | 0.919 | 7.9 | * |
| 1,1-Dichloroethane | # | 2.880 | 3.297 | -14.5 | # |
| 1,2-Dichloroethene (total) | | 1.289 | 1.214 | 5.8 | |
| Chloroform | * | 2.682 | 2.987 | -11.4 | * |
| 1,2-Dichloroethane | | 1.519 | 1.707 | -12.4 | |
| 2-Butanone | | 0.378 | 0.347 | 8.2 | |
| 1,1,1-Trichloroethane | | 0.426 | 0.508 | -19.2 | |
| Carbon Tetrachloride | | 0.364 | 0.435 | -19.5 | |
| Vinyl Acetate | | 4.263 | 4.530 | -6.3 | |
| Bromodichloromethane | | 0.580 | 0.558 | 3.8 | |
| 1,2-Dichloropropane | * | 0.475 | 0.537 | -13.0 | * |
| cis-1,3-Dichloropropene | * | 0.655 | 0.761 | -16.2 | * |
| Trichloroethene | | 0.420 | 0.505 | -20.2 | |
| Dibromochloromethane | | 0.539 | 0.513 | 4.8 | |
| 1,1,2-Trichloroethane | | 0.382 | 0.447 | -17.0 | |
| Benzene | | 1.188 | 1.370 | -15.3 | |
| trans-1,3-Dichloropropene | | 0.574 | 0.665 | -15.8 | |
| Bromoform | # | 0.529 | 0.603 | -14.0 | # |
| 4-Methyl-2-Pentanone | | 1.059 | 0.985 | 7.0 | |
| 2-Hexanone | | 0.810 | 0.780 | 3.7 | |
| Tetrachloroethene | | 0.402 | 0.455 | -13.2 | |
| 1,1,2,2-Tetrachloroethane | # | 1.067 | 1.178 | -10.4 | # |
| Toluene | * | 0.812 | 0.898 | -10.6 | * |
| Chlorobenzene | # | 0.956 | 1.084 | -13.4 | # |
| Ethylbenzene | * | 0.455 | 0.519 | -14.1 | * |
| Styrene | | 0.932 | 1.029 | -10.4 | |
| Xylene (Total) | | 0.537 | 0.593 | -10.4 | |
| Toluene-d8 | | 0.966 | 0.999 | -3.4 | |
| BFB | | 0.686 | 0.721 | -5.1 | |
| 1,2-Dichloroethane-d4 | | 1.276 | 1.331 | -4.3 | |

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Lab File ID: 20116R08 Lab Sample ID: WB011692

Date Analyzed: 01/16/92 Time Analyzed: 1558

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: 4500

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 01 | B01CF9 | A201029-03A | 20116R22 | 0115 |
| 02 | B01CG0 | A201029-04B | 20116R23 | 0154 |
| 03 | B01CG2 | A201029-01C | 20116R18 | 2240 |
| 04 | B01CG3 | A201029-02C | 20116R21 | 0036 |
| 05 | B01CG2MS | A201029-01D | 20116R19 | 2319 |
| 06 | B01CG2MSD | A201029-01E | 20116R20 | 2358 |

COMMENTS: CLP,,,VBLK0116,L,S,WB011692,VOA,BLANK PACK,20116R07,2BFB0116A,,

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00161
EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK0116

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: WB011692

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R08

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 01/16/92

Column: (pack/cap) PACK Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 18 | |
| 67-64-1 | Acetone | 12 | |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 1 | J |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 5 | U |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylene (Total) | 5 | U |

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00162
EPA SAMPLE NO.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLK0116

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: WB011692

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R08

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ Date Analyzed: 01/16/92

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | Unknown hydrocarbon | 8.34 | 10 | J |

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Level:(low/med) LOW

| | EPA SAMPLE NO. | S1 (TOL) # | S2 (BFB) # | S3 (DCE) # | OTHER | TOT OUT |
|---|---|---|---|---|---|---|
| 01 | B01CF9 | 97 | 91 | 92 | 0 | 0 |
| 02 | B01CG0 | 97 | 94 | 92 | 0 | 0 |
| 03 | B01CG2 | 92 | 97 | 85 | 0 | 0 |
| 04 | B01CG3 | 94 | 90 | 86 | 0 | 0 |
| 05 | B01CG2MS | 100 | 98 | 89 | 0 | 0 |
| 06 | B01CG2MSD | 101 | 100 | 92 | 0 | 0 |
| 07 | VBLK0116 | 92 | 93 | 88 | 0 | 0 |

| | | QC LIMITS |
|---|---|---|
| S1 (TOL) | = Toluene-d8 | ( 81-117) |
| S2 (BFB) | = Bromofluorobenzene | ( 74-121) |
| S3 (DCE) | = 1,2-Dichloroethane-d4 | ( 70-121) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix Spike - EPA Sample No.: B01CG2 Level:(low/med) LOW

| COMPOUND | SPIKE ADDED (ug/Kg) | SAMPLE CONCENTRATION (ug/Kg) | MS CONCENTRATION (ug/Kg) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| 1,1-Dichloroethene | 52.1 | 0 | 71.0 | 136 | 59-172 |
| Trichloroethene | 52.1 | 0 | 41.1 | 79 | 62-137 |
| Benzene | 52.1 | 0 | 41.7 | 80 | 66-142 |
| Toluene | 52.1 | 1.81 | 48.6 | 90 | 59-139 |
| Chlorobenzene | 52.1 | 0 | 44.0 | 84 | 60-133 |

| COMPOUND | SPIKE ADDED (ug/Kg) | MSD CONCENTRATION (ug/Kg) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 52.1 | 74.6 | 143 | -5 | 22 | 59-172 |
| Trichloroethene | 52.1 | 42.3 | 81 | -2 | 24 | 62-137 |
| Benzene | 52.1 | 44.0 | 84 | -5 | 21 | 66-142 |
| Toluene | 52.1 | 50.1 | 93 | -3 | 21 | 59-139 |
| Chlorobenzene | 52.1 | 44.6 | 86 | -2 | 21 | 60-133 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: CLP,01029,,B01CG2,L,S,A201029-01C,VOA,EPA PACK,20116R07,2BFB0116A,20116R08,

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00179
EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B01CG2MS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-01D

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R19

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/16/92

Column: (pack/cap) PACK Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 30 | B |
| 67-64-1 | Acetone | 25 | B |
| 75-15-0 | Carbon Disulfide | 5 | J |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 5 | U |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylene (Total) | 5 | U |

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00186
EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B01CG2MSD

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-01E

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R20

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/16/92

Column: (pack/cap) PACK Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 29 | B |
| 67-64-1 | Acetone | 34 | B |
| 75-15-0 | Carbon Disulfide | 5 | J |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 5 | U |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylene (Total) | 5 | U |

8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Lab File ID (Standard): 20116R07 Date Analyzed: 01/16/92

Instrument ID: 4500 Time Analyzed: 1501

Matrix:(soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) PACK

| | | IS1(BCM) AREA # | RT | IS2(DFB) AREA # | RT | IS3(CBZ) AREA # | RT |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 21377 | 8.17 | 77876 | 16.45 | 70774 | 20.50 |
| | UPPER LIMIT | 42754 | | 155752 | | 141548 | |
| | LOWER LIMIT | 10688 | | 38938 | | 35387 | |
| | EPA SAMPLE NO. | | | | | | |
| 01 | B01CF9 | 13986 | 7.95 | 50989 | 16.50 | 43857 | 20.50 |
| 02 | B01CG0 | 15741 | 7.92 | 58105 | 16.45 | 50431 | 20.50 |
| 03 | B01CG2 | 14639 | 7.92 | 51765 | 16.45 | 43986 | 20.50 |
| 04 | B01CG3 | 14301 | 7.95 | 51335 | 16.50 | 44023 | 20.50 |
| 05 | B01CG2MS | 13588 | 7.92 | 50717 | 16.45 | 41050 | 20.50 |
| 06 | B01CG2MSD | 13523 | 7.92 | 48898 | 16.45 | 41008 | 20.50 |
| 07 | VBLK0116 | 19060 | 8.17 | 70934 | 16.50 | 63486 | 20.50 |

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

# Column used to flag internal standard area values with an asterisk

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01CF9

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-03A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R22

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 5 Date Analyzed: 01/17/92

Column: (pack/cap) PACK Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 11 | U |
| 74-83-9 | Bromomethane | 11 | U |
| 75-01-4 | Vinyl Chloride | 11 | U |
| 75-00-3 | Chloroethane | 11 | U |
| 75-09-2 | Methylene Chloride | 29 | B |
| 67-64-1 | Acetone | 21 | B |
| 75-15-0 | Carbon Disulfide | 6 | |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 11 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 11 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 11 | U |
| 591-78-6 | 2-Hexanone | 11 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 2 | J |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylene (Total) | 5 | U |

EPA SAMPLE NO.

B01CF9

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-03A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R22

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 5 Date Analyzed: 01/17/92

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 75-69-4 | METHANE, TRICHLOROFLUORO- | 6.87 | 13 | J |
| 2. | UNKNOWN HYDROCARBON | 8.20 | 19 | BJ |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01CG0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-04B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R23

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/17/92

Column: (pack/cap) PACK Dilution Factor: 1.0

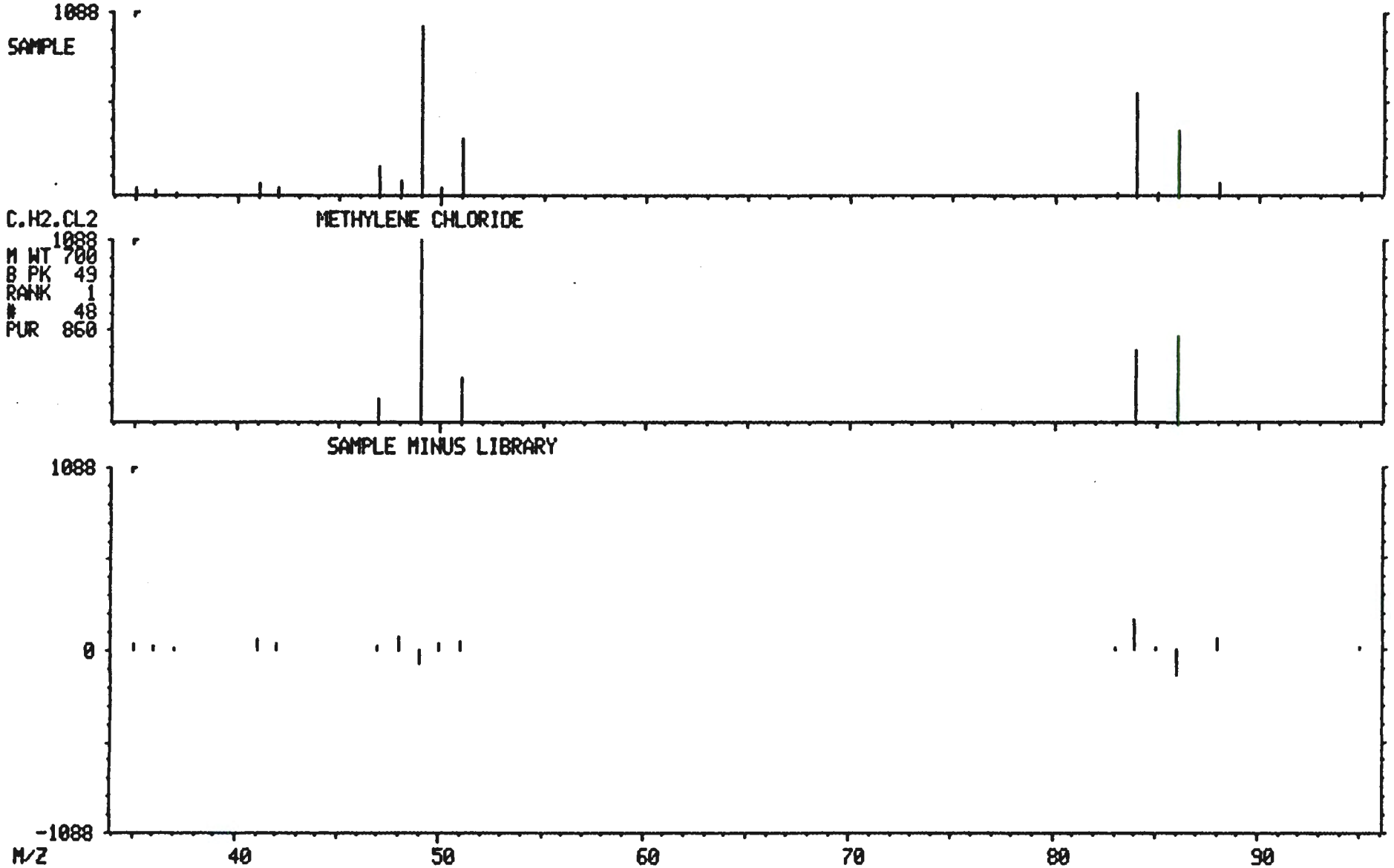
| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 29 | B |
| 67-64-1 | Acetone | 19 | B |
| 75-15-0 | Carbon Disulfide | 5 | J |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 3 | J |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylene (Total) | 5 | U |

000071

LIBRARY SEARCH
01/17/92 1:54:00 + 4:55
SAMPLE: CLP,01029,,B01CG0,L,S,A201029-04B,VOA,EPA
CONDS.: PACK,20116R07,2BFB0116A,20116R08,
ENHANCED (S 15B 2N 0T)

DATA: 20116R23 # 118
CALI: 20116R23 # 3

BASE M/Z: 49
RIC: 14847.




9712528.0672

00074

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CONDS.: PACK,20116R07,2BFB0116A,20116R08,
ENHANCED (S 15B 2N 0T)

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CALI: 20116R23 # 3

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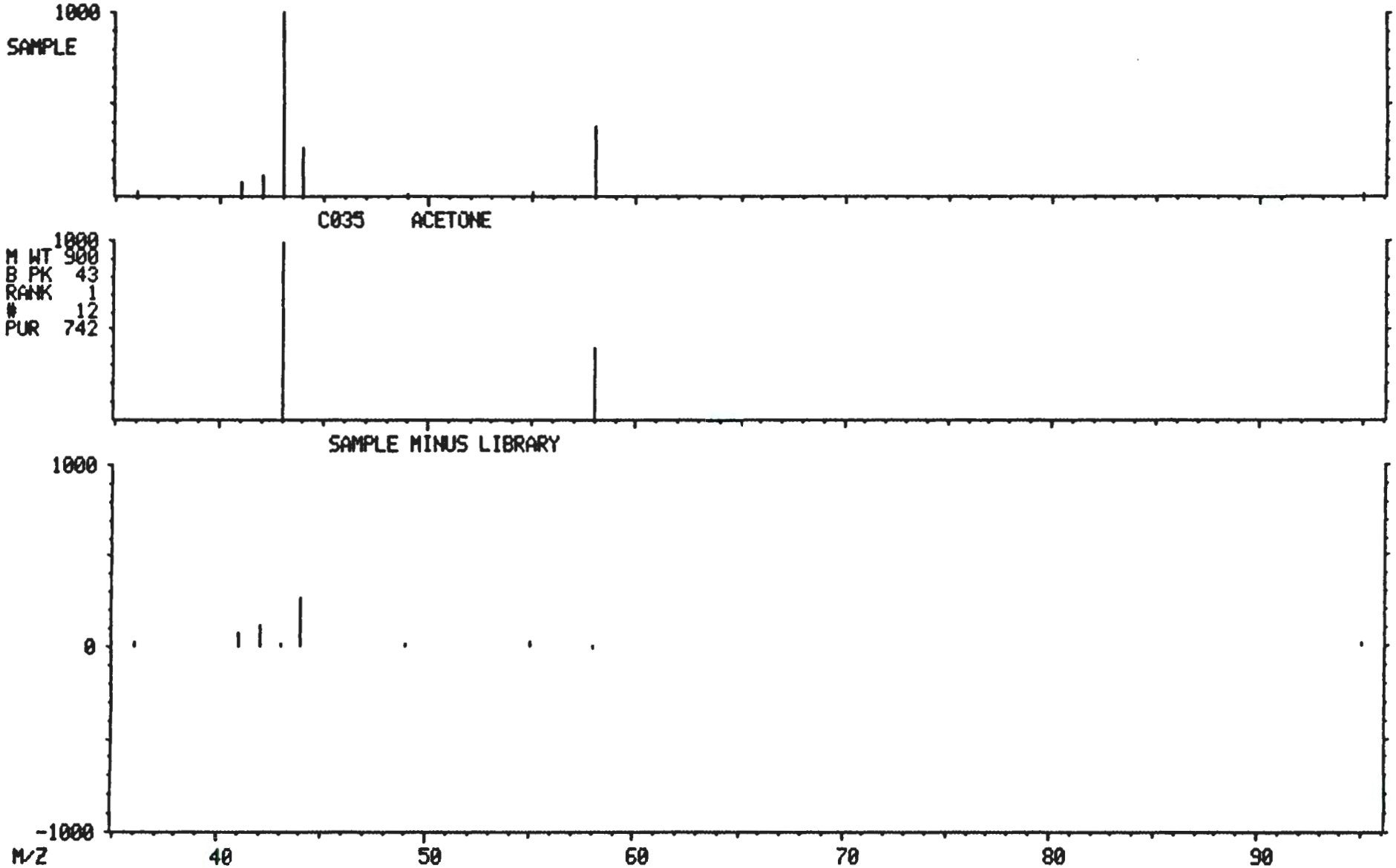
RIC: 2037.



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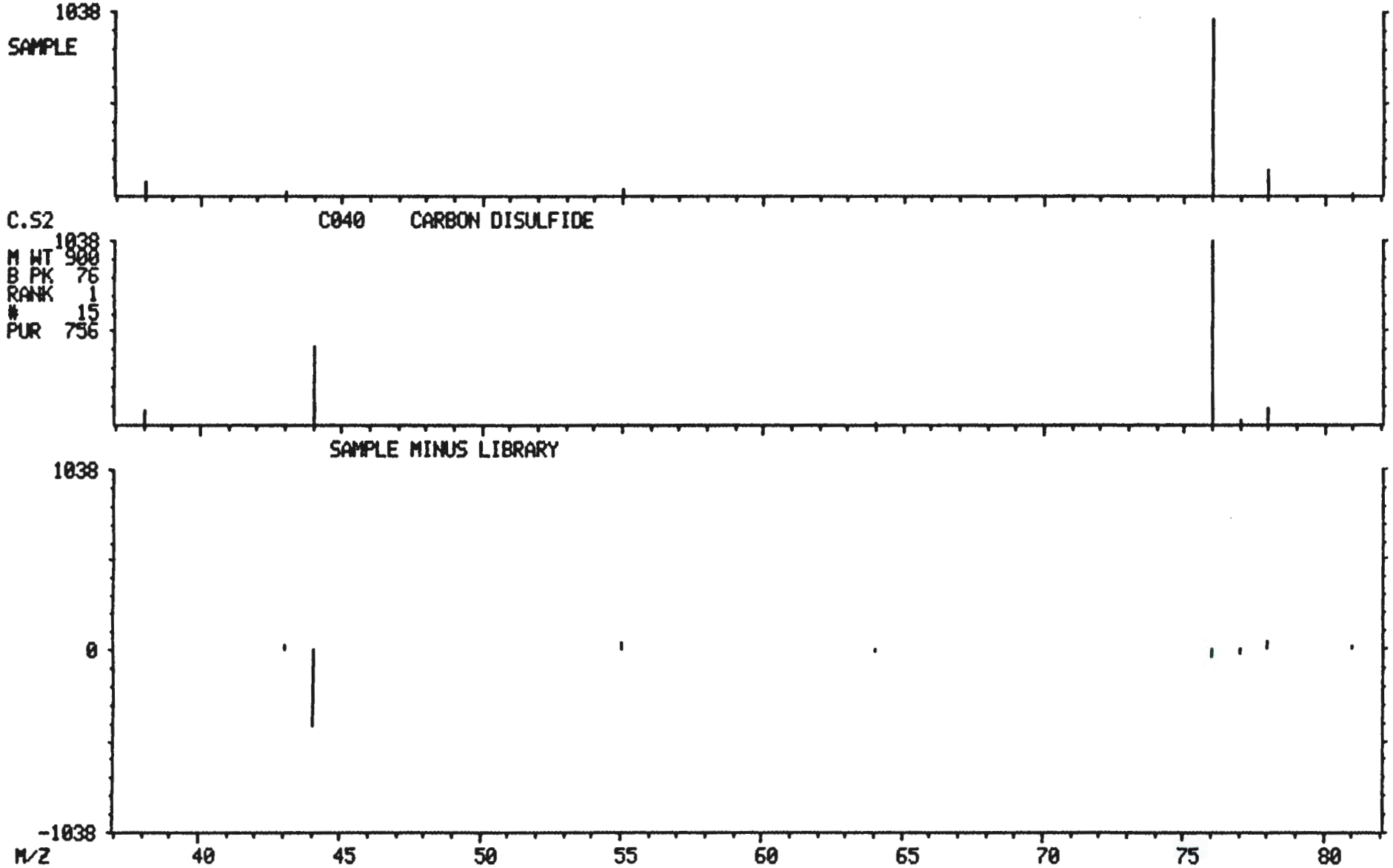
LIBRARY SEARCH
01/17/92 1:54:00 + 6:22
SAMPLE: CLP,01029,,B01CG0,L,S,A201029-04B,VOA,EPA
CONDS.: PACK,20116R07,2BFB0116A,20116R08,
ENHANCED (S 15B 2N 0T)

DATA: 20116R23 # 153
CALI: 20116R23 # 3

BASE M/Z: 76
RIC: 1435.



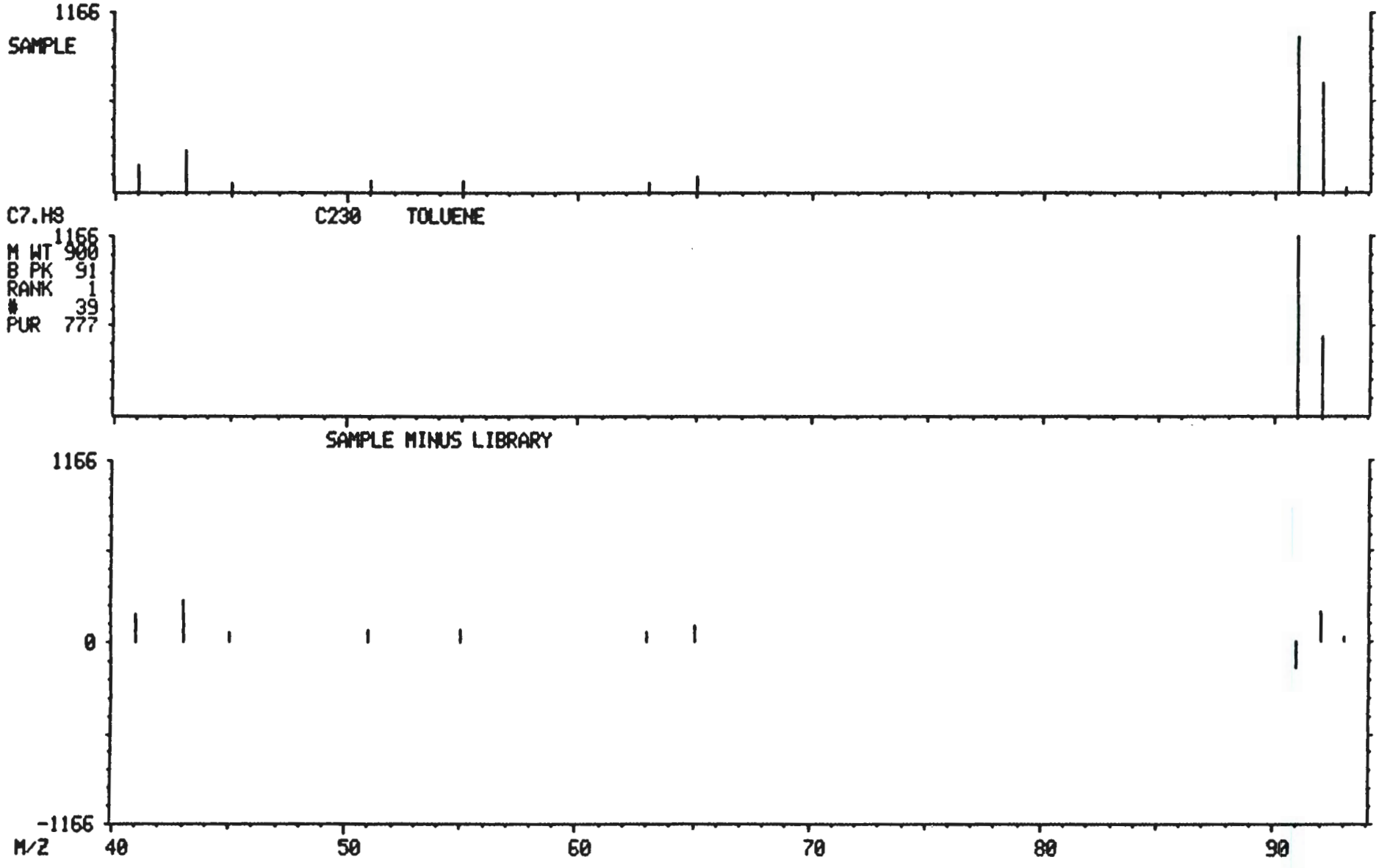

01 1992 1654

00080

LIBRARY SEARCH
01/17/92 1:54:00 + 19:37
SAMPLE: CLP,01029,,B01CG0,L,S,A201029-04B,VOA,EPA
CONDS.: PACK,20116R07,2BFB0116A,20116R08,
ENHANCED (S 158 2N 0T)

DATA: 20116R23 # 471
CALI: 20116R23 # 3

BASE M/Z: 91
RIC: 2187.



9713528.0676

00083
EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

B01CG2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-01C

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R18

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/16/92

Column: (pack/cap) PACK Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 26 | B |
| 67-64-1 | Acetone | 19 | B |
| 75-15-0 | Carbon Disulfide | 3 | J |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 2 | J |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylene (Total) | 5 | U |

9213528.1677

00084

EPA SAMPLE NO.

B01CG2

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-01C

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R18

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/16/92

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

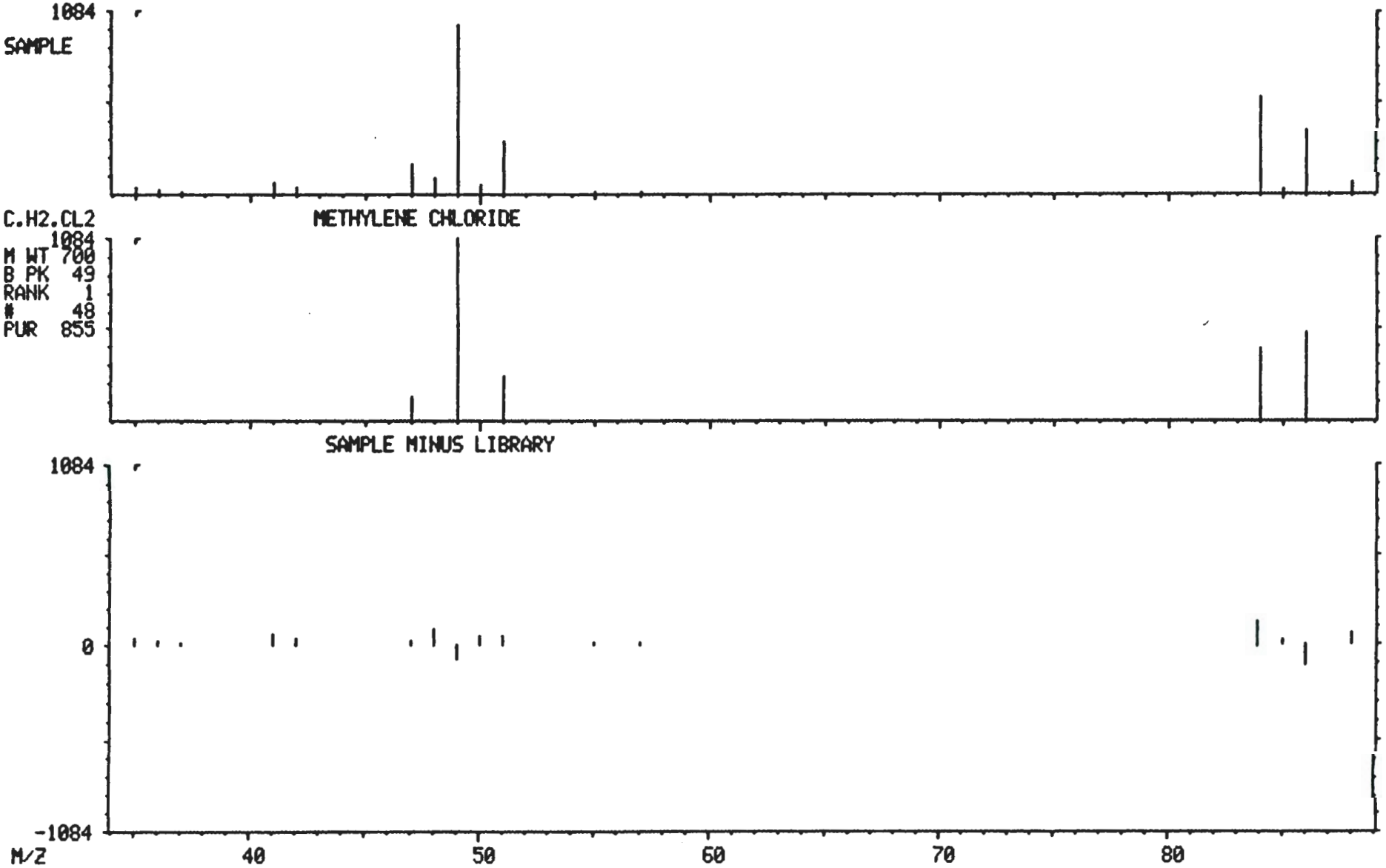
| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 75-69-4 | METHANE,TRICHLOROFLUORO- | 6.87 | 6.7 | J |
| 2. | UNKNOWN HYDROCARBON | 29.71 | 68 | J |

00092

LIBRARY SEARCH
01/16/92 22:40:00 + 4:55
SAMPLE: CLP,01029,,B01CG2,L,S,A201029-01C,VOA,EPA
CONDS.: PACK,20116R07,2BFB0116A,20116R08,
ENHANCED (S 15B 2N 0T)

DATA: 20116R18 # 118
CALI: 20116R18 # 3

BASE M/Z: 49
RIC: 12783.



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LIBRARY SEARCH
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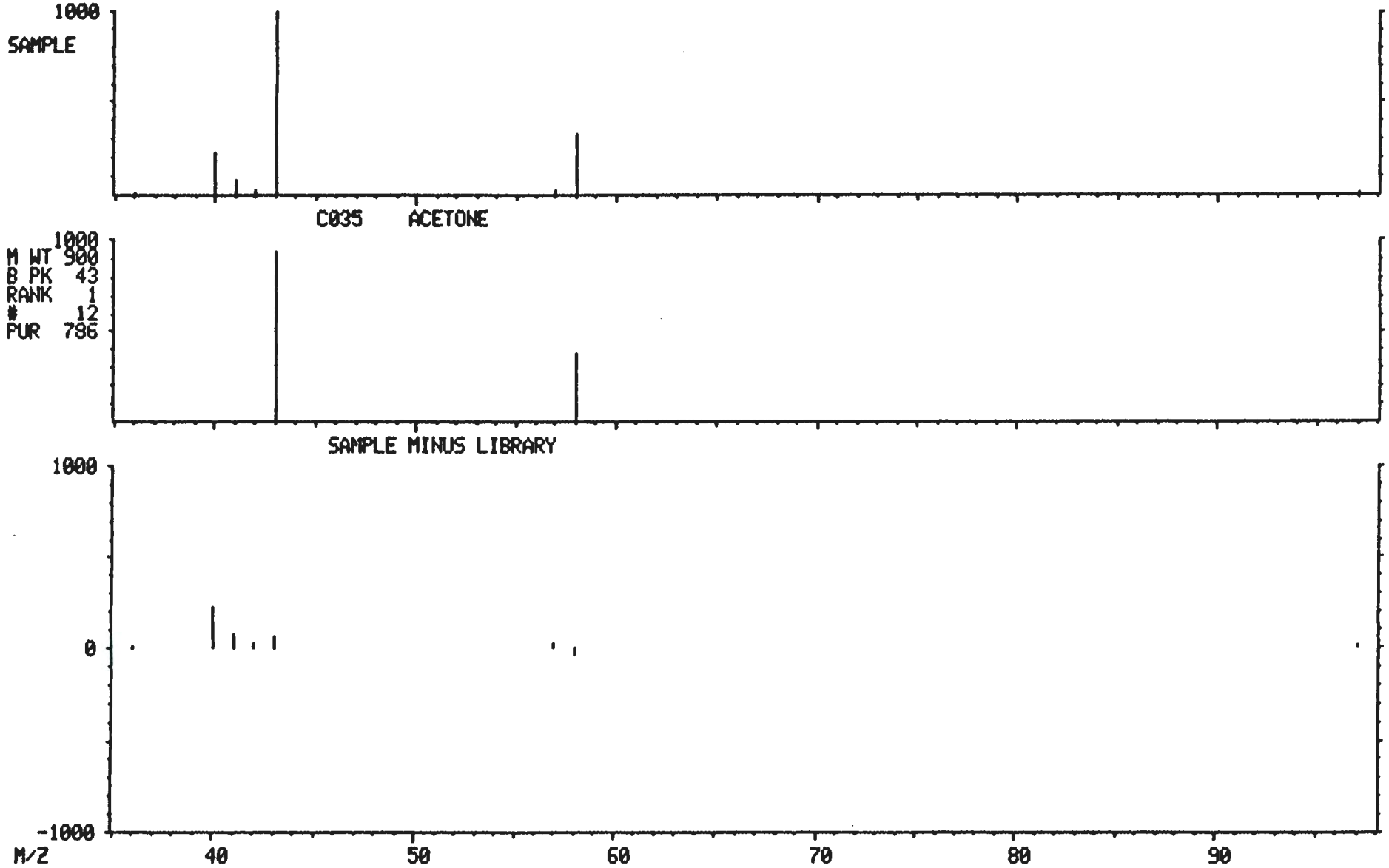
CONDS.: PACK,20116R07,2BFB0116A,20116R08,
ENHANCED (S 15B 2N 0T)

DATA: 20116R18 # 131
CALI: 20116R18 # 3

BASE M/Z: 43
RIC: 2347.



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LIBRARY SEARCH
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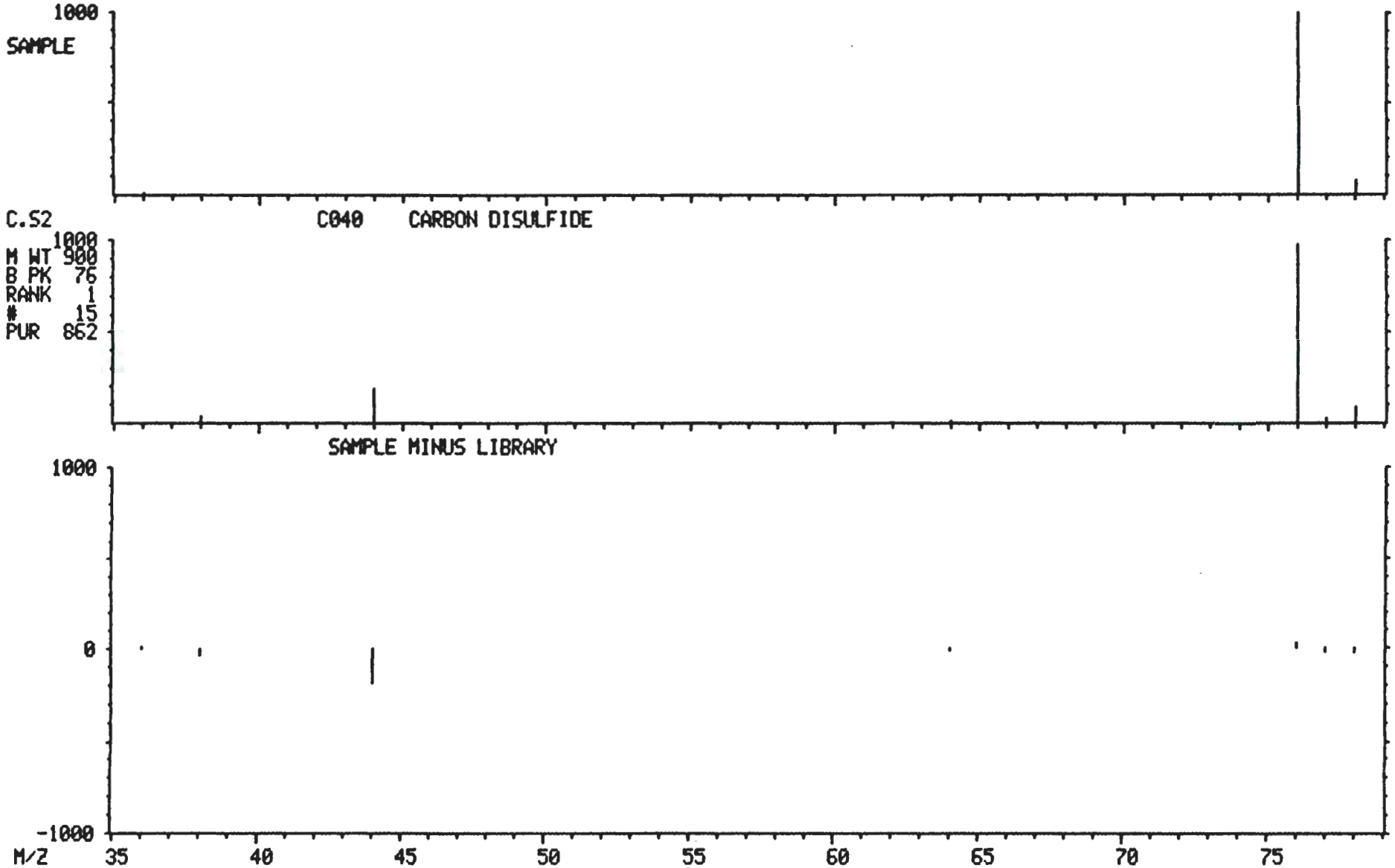
CONDS.: PACK,20116R07,2BFB0116A,20116R08,
ENHANCED (S 15B 2N 0T)

DATA: 20116R18 # 153
CALI: 20116R18 # 3

BASE M/Z: 76
RIC: 602.



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LIBRARY SEARCH
01/16/92 22:40:00 + 19:40
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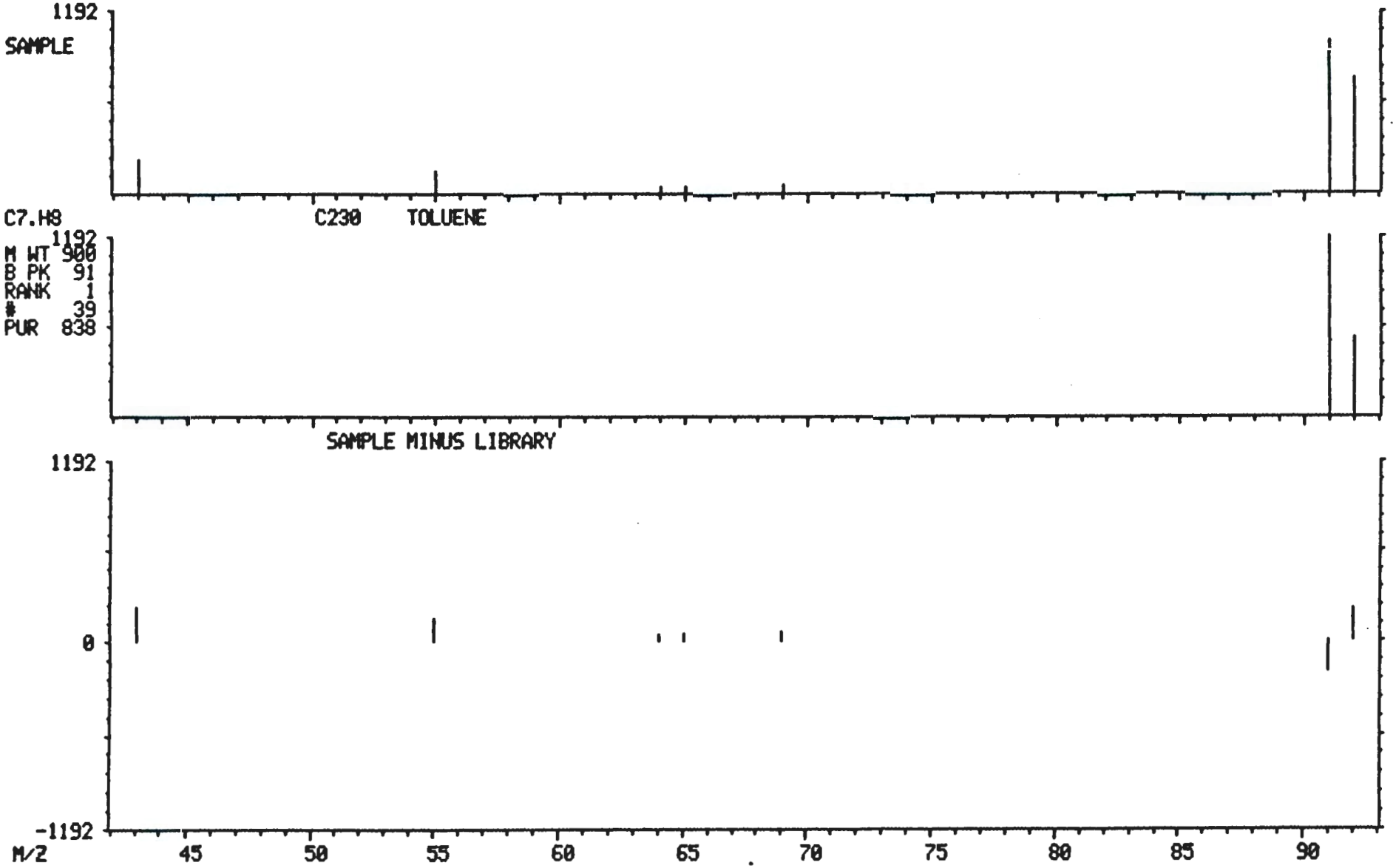
CONDS.: PACK,20116R07,2BFB0116A,20116R08,
ENHANCED (S 15B 2N 0T)

DATA: 20116R18 # 472
CALI: 20116R18 # 3

BASE M/Z: 91
RIC: 1203.



1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01CG3

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-02C

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R21

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/17/92

Column: (pack/cap) PACK Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10 | U |
| 75-09-2 | Methylene Chloride | 29 | B |
| 67-64-1 | Acetone | 22 | B |
| 75-15-0 | Carbon Disulfide | 5 | J |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5 | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5 | U |
| 56-23-5 | Carbon Tetrachloride | 5 | U |
| 108-05-4 | Vinyl Acetate | 10 | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5 | U |
| 79-01-6 | Trichloroethene | 5 | U |
| 124-48-1 | Dibromochloromethane | 5 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5 | U |
| 71-43-2 | Benzene | 5 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5 | U |
| 75-25-2 | Bromoform | 5 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 5 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5 | U |
| 108-88-3 | Toluene | 3 | J |
| 108-90-7 | Chlorobenzene | 5 | U |
| 100-41-4 | Ethylbenzene | 5 | U |
| 100-42-5 | Styrene | 5 | U |
| 1330-20-7 | Xylene (Total) | 5 | U |

EPA SAMPLE NO.

B01CG3

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-02C

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 20116R21

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 Date Analyzed: 01/17/92

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

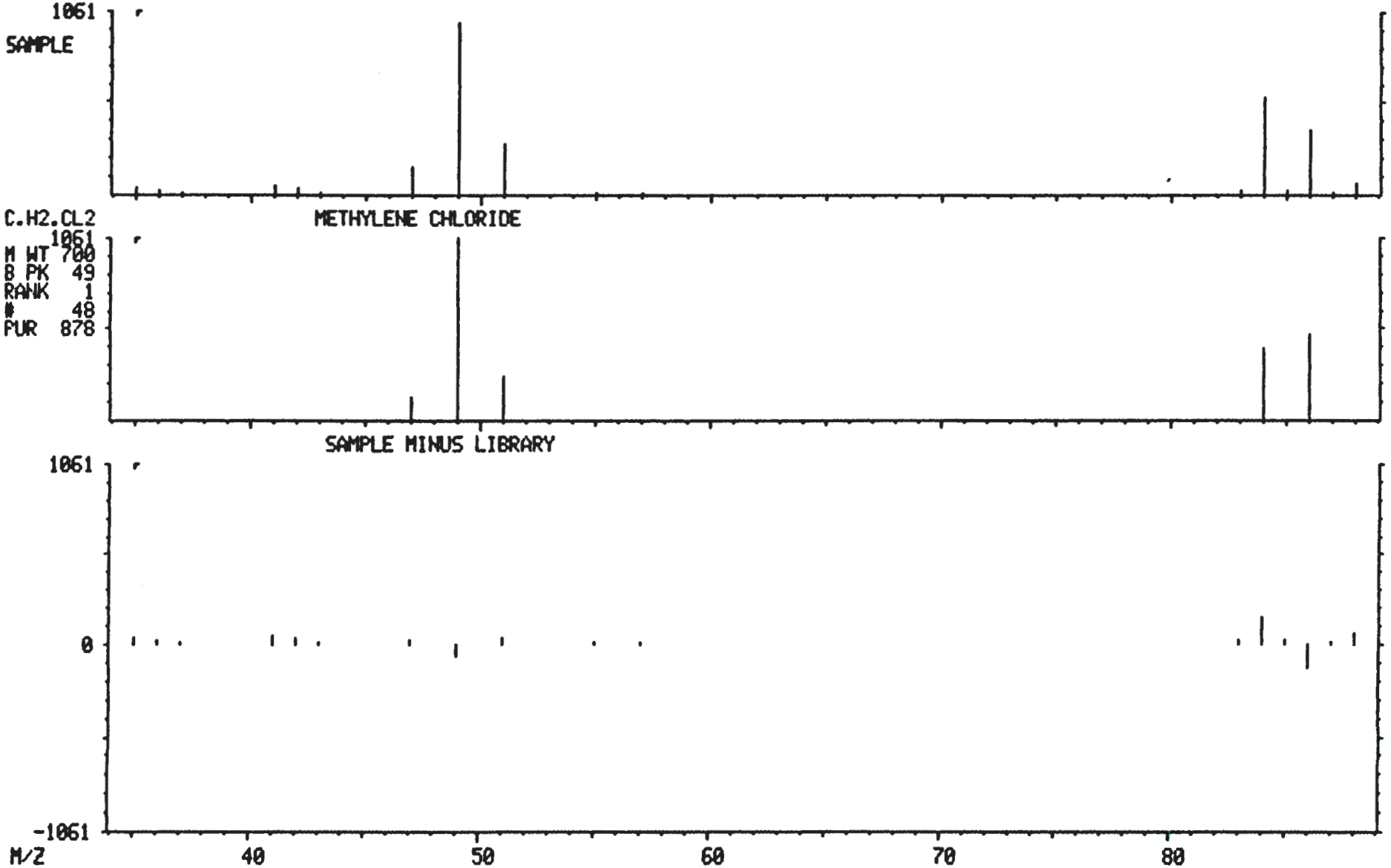
| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 75-69-4 | METHANE, TRICHLOROFLUORO- | 6.87 | 17 | J |
| 2. | UNKNOWN HYDROCARBON | 29.67 | 110 | J |

001116

LIBRARY SEARCH
01/17/92 0:36:00 + 4:52
SAMPLE: CLP,01029,,B01CG3,L,S,A201029-02C,VOA,EPA
CONDS.: PACK,20116R07,2BFB0116A,20116R08,
ENHANCED (S 15B 2N 0T)

DATA: 20116R21 # 117
CALI: 20116R21 # 3

BASE M/Z: 49
RIC: 12991.



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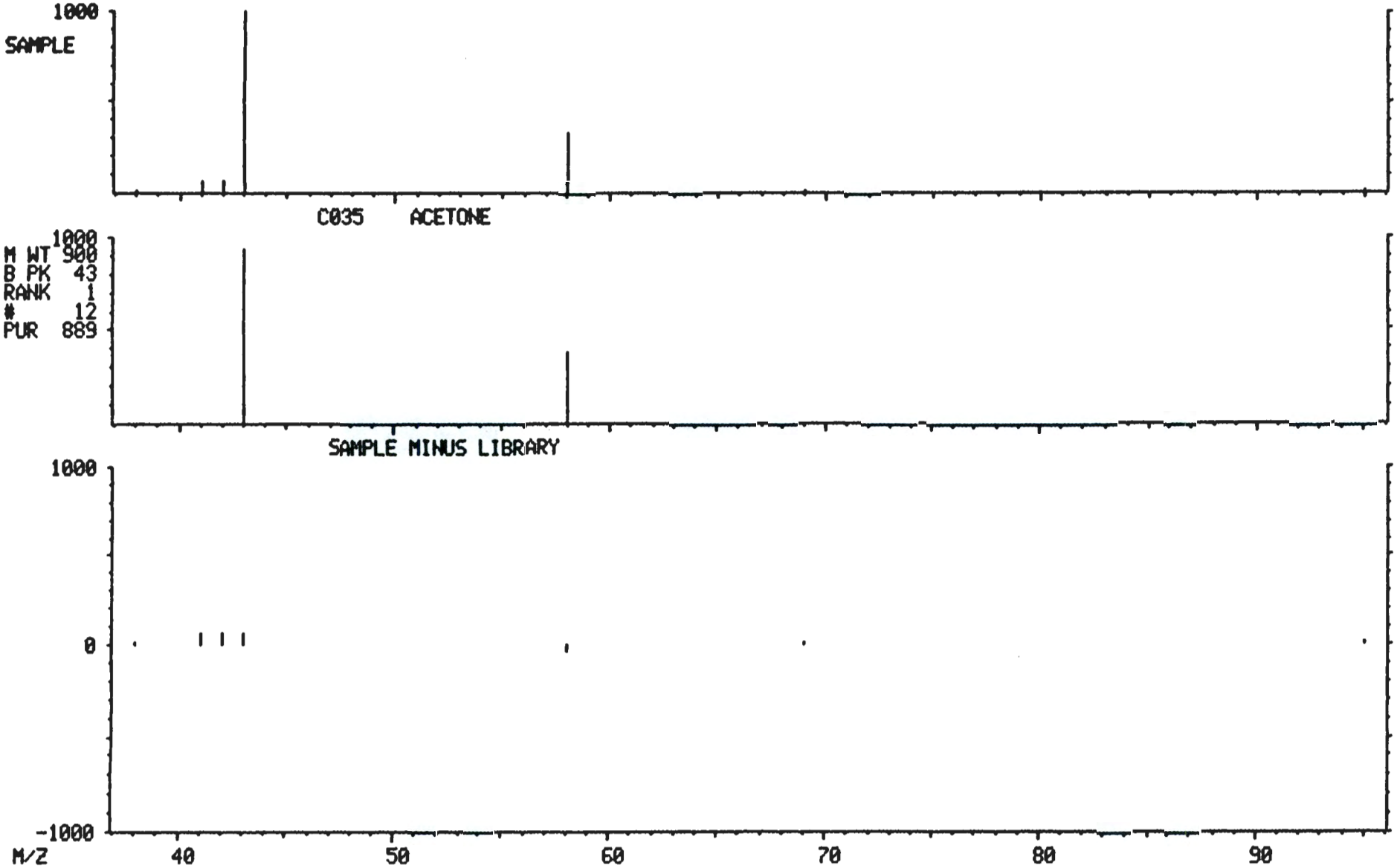
CONDS.: PACK,20116R07,2BFB0116A,20116R08,
ENHANCED (S 15B 2N 0T)

DATA: 20116R21 # 131
CALI: 20116R21 # 3

BASE M/Z: 43
RIC: 1903.



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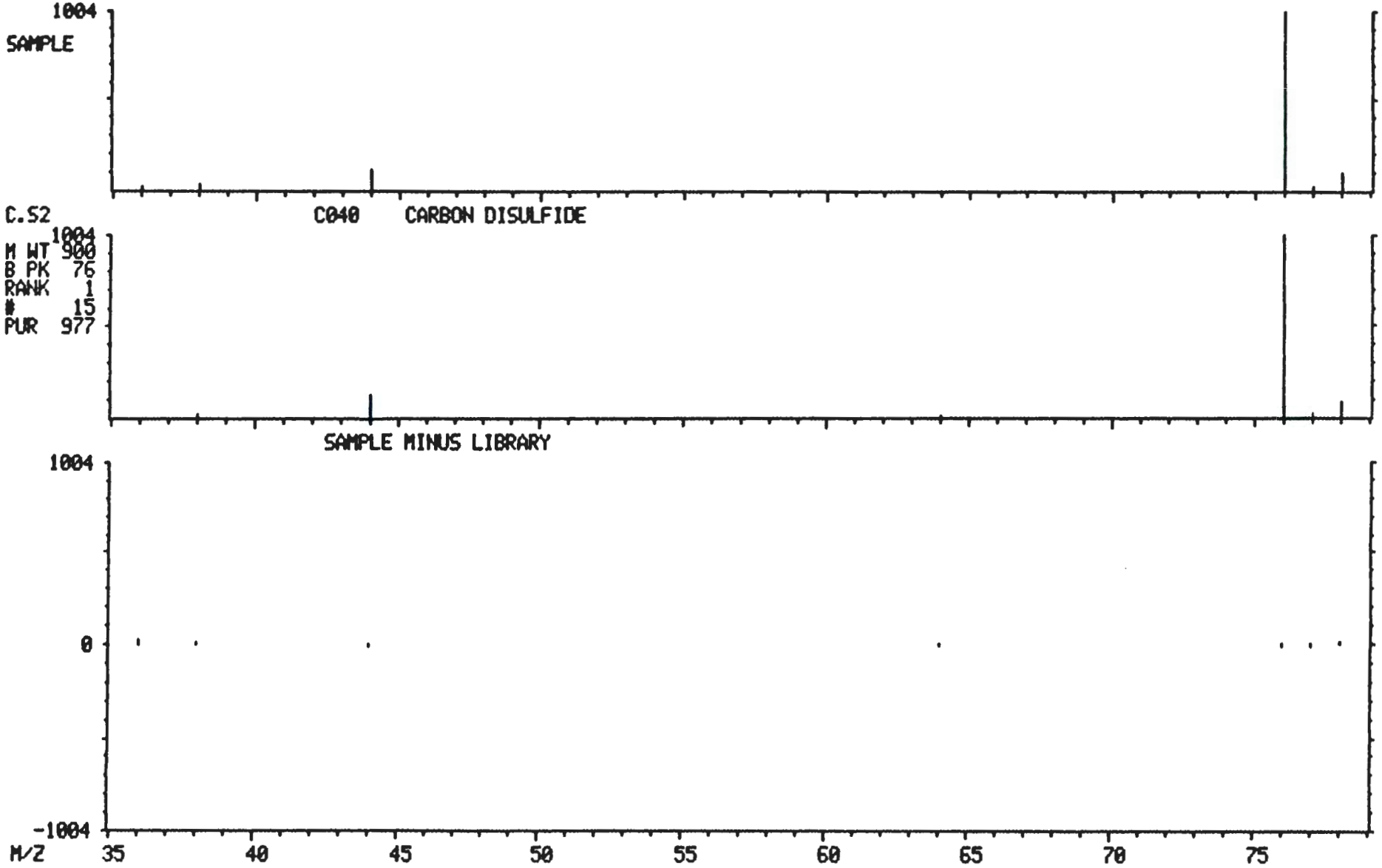
ENHANCED (S 15B 2N 0T)

DATA: 20116R21 # 153
CALI: 20116R21 # 3

BASE M/Z: 76
RIC: 1353.



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CONDS.: PACK,20116R07,2BFB0116A,20116R08,
ENHANCED (S 15B 2N 0T)

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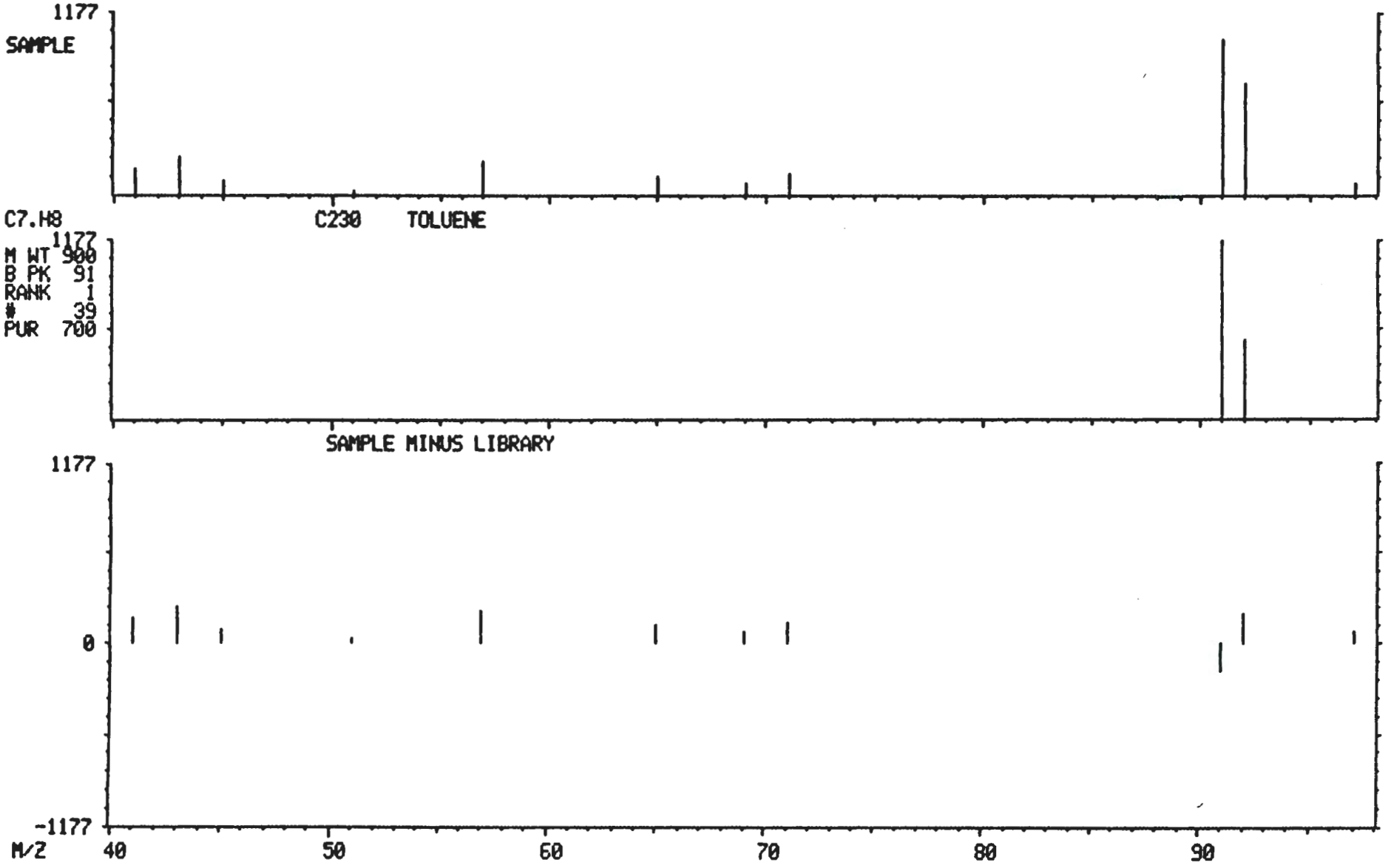
CALI: 20116R21 # 3

BASE M/Z: 91
RIC: 1835.



9713528.0688

300-FF-1 OPERABLE UNIT DATA VALIDATION
WESTINGHOUSE HANFORD COMPANY
DISTRIBUTION & FILE RECORD FORM

Task E-92-15/2978-40
2/3/92
Rev. 0

Document Title: Rest/PCB A201029 (App.H Rpt. 5)
Document Number:

Date: 10/20/92
Originator: CMR

HCS - WHC/E - 92 15/T/ - 0666

| DISTRIBUTION | | | | | |
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| D. Mantooth (Ebasco) | | R. Moses (HC-RL) | | | |

| PROJECT FILES | | |
|---|---|---|
| MANAGEMENT | | Comments |
| M-1 Correspondence | | |
| M-2 Meeting Minutes | | |
| M-3 Telecons | | |
| M-4 Statements of Work, Task Orders | | |
| M-5 Purchase Requisitions and Receipt documentation | | |
| M-6 Other Management Documents Generated | | |
| M-7 Financial Data | | |
| SOURCE DATA | | |
| S-1 Original Data Packages | | |
| S-2 Memos Transmitting Original Source Packages to WHC | | |
| S-3 Other Original Data Documentation | | |
| TASK TECHNICAL | | |
| T-1 Validation Calculations and Notated Packages | X | |
| T-2 Progress Memos | | |
| T-3 Completeness Checklists | | |
| T-4 Draft Summary Report(s) | | |
| T-5 Final Summary Report(s) | | |
| T-6 Draft Summary Report Review Comments | | |
| T-7 Other Technical Documentation | | |

FORM

# PESTICIDE/PCB DATA VALIDATION CHECKLIST - FORM A-3

| | | |
|---|---|---|
| PROJECT: | REVIEWER: SS | DATE: 5-18-92 |
| LABORATORY: TMA/ARL | CASE: 01-026 | SDG: |
| SAMPLES/MATRIX: B01C60 (Soil) | | |
| B01C62 ( " ) | | |
| B01C63 ( " ) | | |
| B01C64 ( " ) | | |
| | | |

## 1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for resubmittal.

| Data Package Item | Present?: Yes | No | N/A |
|---|---|---|---|
| Case Narrative | ✓ | | |
| Data Summary | ✓ | | |
| Chain-of-Custody | ✓ | | |
| QC Summary | | | |
| Surrogate report | ✓ | | |
| MS/MSD report | ✓ | | |
| Blank summary report | ✓ | | |
| Sample Data | | | |
| Sample reports | ✓ | | |
| Chromatograms | ✓ | | |
| GC integration reports | ✓ SS | | |
| Worksheets | | ✓ | |
| UV traces from GPC | | ✓ | |
| GC/MS confirmation spectra | | ✓ | |
| Standards Data | | | |
| Pesticides Evaluation Standards Summary | ✓ | | |
| Pesticides/PCB Standards Summary | ✓ | | |
| Pesticides/PCB identification | ✓ | | |
| Pesticides standard chromatograms | ✓ | | |
| Raw QC Data | | | |
| Blank analysis report forms and chromatograms | ✓ | | |
| MS/MSD report forms and chromatograms | ✓ | | |

| Data Package Item | Present?: Yes | No | N/A |
|---|---|---|---|
| Additional Data | | | |
| Moisture/% solids data sheets | ___ | ✓ | ___ |
| Reduction formulae | ___ | ✓ | ___ |
| Instrument time logs | ___ | ✓ | ___ |
| Chemist notebook pages | ___ | ✓ | ___ |
| Sample preparation sheets | ___ | ✓ | ___ |

## 2. HOLDING TIMES

Were all samples extracted within holding time? Yes No N/A

Were all samples analyzed within holding time? Yes No N/A

ACTION: If any holding times were exceeded, but not by greater than a factor of two, qualify associated samples as estimated (J for detects or UJ for nondetects), otherwise reject all nondetects (R) and qualify all associated detects as estimated (J).

## 3. INSTRUMENT PERFORMANCE AND CALIBRATIONS

### 3.1 INSTRUMENT PERFORMANCE (2/88 SOW)

Are DDT retention times greater than 12 minutes? Yes No N/A

ACTION: If DDT retention time is $\leq$12 minutes and resolution is <25% qualify associated data as unusable (R).

Is resolution between DDT peaks acceptable? Yes No N/A

ACTION: If resolution between DDT peaks is unacceptable qualify associated data as unusable (R).

Do all pesticide standards elute within the established retention time windows? Yes No N/A

ACTION: If the standards do not meet the retention time criteria and peaks are not present near or within the retention time windows no sample qualification is necessary. If peaks are near or within the retention time windows and the standards and matrix spikes do not fall within the expanded retention time windows calculated according to the validation requirements, qualify all associated sample results from the last in-control point as unusable (R).

Are DDT breakdowns $\leq$20%? Yes No N/A

ACTION: If the DDT percent breakdown exceeds 20%, qualify all detected results for DDT as estimated (J) and all nondetects as unusable (R) if DDD and DDE are detected. In addition qualify all results for DDD or DDE as presumptive and estimated (NJ).

Are endrin breakdowns $\leq$20%? Yes No N/A

ACTION: If the endrin breakdown exceeds 20%, qualify all detected results for endrin as estimated (J) and all nondetects as unusable (R) if endrin aldehyde or endrin ketone are detected. In addition, qualify all results for endrin ketone as presumptive and estimated (NJ).

| | | | |
|---|---|---|---|
| Are DBC retention time differences within specification? | Yes | No | N/A |

ACTION: If DBC %D values are outside the limits and the shift is ocurring repeatedly in samples and standards, qualify affected sample results as unusable (R).

3.2 CALIBRATIONS (2/88 SOW)

| | | | |
|---|---|---|---|
| Are RSD values for aldrin, endrin, DDT and DBC ≤ 10%? | Yes | No | N/A |
| Have all standards been analyzed within 72 h of any sample? | Yes | No | N/A |
| Has a 3-point calibration been conducted for DDT or toxaphene? | Yes | No | N/A |
| Have all standards been analyzed at the start of each 72-h sequence? | Yes | No | N/A |
| Have evaluation standards A, B, and C been analyzed within 72 h of any sample? | Yes | No | N/A |
| Has the confirmation standard mix been analyzed after every five samples? | Yes | No | N/A |
| Has evaluation standard B analyzed every 10 samples? | Yes | No | N/A |
| Are %D values for initial and subsequent standards ≤ 15% for quantitation standards and ≤20% for confirmation standards? | Yes | No | N/A |

ACTION: If the RSD criteria were exceeded or three point calibrations not conducted qualify associated detects as estimated (J). If all standards were not analyzed at the beginning of each 72-h sequence qualify associated data as unusable (R). If the confirmation standards were not analyzed properly qualify associated detects as estimated (J). If the continuing calibration criteria were not met qualify associated quantitation data as estimated (J).

3.3 INSTRUMENT PERFORMANCE AND INITIAL CALIBRATION (3/90 SOW)

Is peak resolution acceptable? Yes No N/A

ACTION: If the resolution criteria are not met, reject positive sample results generated after initial calibration (R).

Are DDT and endrin breakdowns ≤20.0% Yes No N/A

ACTION: If the breakdown criteria are not met qualify sample results as described in Section 5.3.1 of the validation requirements.

Are single component target compounds in the PEMs, INDA, INDB and the calibration standards within the retention time windows? Yes No N/A

ACTION: If the retention time criteria are not met and no peaks are present in the samples within two times the retention time windows (±0.04, ±0.05 for methoxychlor), no qualification is necessary. If peaks are present in samples within the retention time window a review is made of the raw data to determine expanded retention time windows (see Section 5.3.1 of the validation requirements). If all standards and matrix spikes fall within the expanded windows then no qualification of sample results is necessary. If all standards and matrix spikes do not fall within the expanded windows then all affected sample results are qualified as unusable (R).

Are the RPDs acceptable for the PEMs? Yes No N/A

ACTION: If the RPD criteria are not met qualify associated positive sample results as estimated (J).

Are the RSDs for the calibration factors < 10.0% (< 15.0% for the BHC series, DDT, endrin, and methoxychlor)? Yes No N/A

ACTION: If the RSD criteria are not met qualify associated positive sample results as estimated (J).

3.4 CALIBRATION VERIFICATION (3/90 SOW)

Have the analytical sequence requirements been met for the analysis of instrument blanks, PEMs, INDA and INDB mixes? Yes No N/A

ACTION: If the analytical sequence requirements are not followed and any of the resolution or retention time criteria listed below are exceeded, reject associated positive results (R).

Is peak resolution acceptable for PEMs, INDA and INDB mixes? Yes No N/A

ACTION: If the resolution criteria are not met reject positive sample results generated after a noncompliant standard analysis (R).

Are single component target compounds in the PEMs, INDA and INDB mixes within the retention time windows? Yes No N/A

ACTION: If the retention time criteria are not met and no peaks are present in the samples analyzed after the noncompliant standard within two times the retention time windows (±0.04, ±0.05 for methoxychlor), no qualification is necessary. If peaks are present in samples within the expanded windows rejected associated positive and nondetect results (R).

Are RPDs between the calculated and true amounts in the PEMs, INDA and INDB mixes ≤25.0%? Yes No N/A

ACTION: If the RPD criteria are not met qualify associated positive sample results as estimated (J).

Are DDT and endrin breakdowns in the PEMs ≤20.0% (≤30.0% total combined)? Yes No N/A

ACTION: If the breakdown criteria are not met qualify associated positive sample results in accordance with the criteria specified in Section 5.3.1.

## 4. BLANKS

### 4.1 LABORATORY BLANKS

Has the laboratory analyzed the method blanks at the required frequency? Yes No N/A

Has the laboratory analyzed a sulfur clean-up blank if required? Yes No N/A

Has the laboratory analyzed instrument blanks at the required frequency? Yes No N/A

Are target compounds present in the blanks? Yes No N/A

ACTION: Qualify all associated positive results as nondetects (U) that are <5 times the highest concentration in any acceptable blank.

### 4.2 FIELD BLANKS

Are target compounds present in the field blanks? Yes No N/A

ACTION: If target compounds are present in the field blanks qualify all positive sample results <5 times the highest valid field blank concentrations as nondetects (U) and note the results in the validation narrative.

## 5. ACCURACY

### 5.1 SURROGATE RECOVERY

| | | | |
|---|---|---|---|
| Are any surrogate recoveries out of specification? | Yes | No | N/A |
| Do any samples show nondetects for surrogates? | Yes | No | N/A |
| Are any method blank surrogates out of specification? | Yes | No | N/A |

ACTION: Qualify all associated sample results as estimated (J for detects and UJ for nondetects) for surrogates out of specification. If the surrogate was not detected (0% recovery) in the sample qualify associated nondetects as unusable (R). If method blank surrogates are out of specification and sample surrogates are acceptable, no qualification is required however, the laboratory should be contacted for an explanation.

### 5.2 MATRIX SPIKE RECOVERY

| | | | |
|---|---|---|---|
| Has the laboratory analyzed a MS/MSD per matrix for the the sample group? | Yes | No | N/A |
| Are MS/MSD recoveries within specification? | Yes | No | N/A |
| Are there any calculation or transcription errors? | Yes | No | N/A |

ACTION: If MS/MSD analyses have not been conducted contact the laboratory for clarification. Review the MS/MSD recoveries in conjunction with other QC data such as surrogate recoveries and note the results in the validation narrative. If MS/MSD recoveries are out of specification and sample concentration is >5 times the spike concentration, no qualification is required, otherwise qualify results as follows: Qualify positive results as estimated (J) in all samples if associated surrogates are also out of specification. The qualification shall only be done on samples of similar matrix as the MS/MSD samples. If it is determined from the review that only the spiked samples are affected by the low recoveries, qualify only the results for the spiked sample as described above. If it is determined from the review that out of specification MS/MSD recoveries are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

### 5.3 PERFORMANCE AUDIT SAMPLES

| | | | |
|---|---|---|---|
| Are performance audit sample results within the acceptance limits? | Yes | No | N/A |

ACTION: Note the results of the performance audit samples in the validation narrative.

## 6. PRECISION

### 6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES

Are the RPD values within specification? Yes No N/A

ACTION: Review the MS/MSD results in conjunction with other QC data such as field duplicates and note the results in the validation narrative. If MS/MSD RPD values are out of specification and sample results are > 5xCRQL qualify positive results as estimated (J). If it is determined from the review that out of specification MS/MSD results are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

### 6.2 FIELD DUPLICATE SAMPLES

Are field duplicate RPD values acceptable? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

### 6.3 FIELD SPLIT SAMPLES

Are field split RPD values acceptable? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

## 7. COMPOUND IDENTIFICATION AND QUANTITATION

### 7.1 COMPOUND IDENTIFICATION

Do positive results meet the retention time window criteria? Yes No N/A

Were positive results analyzed on disimilar columns? Yes No N/A

If dieldrin and DDE were reported was a 3% OV-1 column used for confirmation (2/88 SOW data only)? Yes No N/A

Do retention times and relative peak height ratios match the expected patterns for multipeak compounds (PCB, toxaphene or chlordane)? Yes No N/A

Has GC/MS confirmation been conducted on sample extract concentrations > 10 ppm? Yes No N/A

ACTION: If positive results do not meet the retention time criteria qualify all detected results as nondetects as follows: If the misidentified peak is outside the retention time windows and no interferences are noted report the CRQL and if the misidentified peak interferes with a target peak then the report value is qualified as estimated and nondetected (UJ). If positive results were not confirmed on disimilar columns, reject affected results (R). If a 3% OV-1 was used to confirm dieldrin and DDE, reject the affected data (R). If PCB, chlordane or toxaphene identification is questionable qualify the results as presumptive and estimated (NJ). If GC/MS confirmation was not conducted contact the laboratory for explanation and note in the validation narrative.

## 7.2 REPORTED RESULTS AND QUANTITATION LIMITS

| | | | |
|---|---|---|---|
| Are results and quantitation limits calculated properly? | Yes | No | N/A |
| Has the laboratory reported the sample quantitation limits within 5xCRQL values? | Yes | No | N/A |

ACTION: If results and quantitation limits are in error contact the laboratory for clarification and note in the validation narrative.

## 8. OVERALL ASSESSMENT AND SUMMARY

| | | | |
|---|---|---|---|
| Has the laboratory conducted the analysis in accordance with the analytical SOW? | Yes | No | N/A |
| Were project specific data quality objectives met for this analysis? | Yes | No | N/A |

ACTION: Summarize all the data qualifications and complete the data validation narrative as specified in Section 10.0 of the data validation requirements.

COMMENTS (attach additional sheets as necessary):

PESTICIDE/PCB DATA VALIDATION CHECKLIST - FORM A-3

| | | |
|---|---|---|
| PROJECT: | REVIEWER: SS | DATE: 5-18-92 |
| LABORATORY: TMA/ABLI | CASE: 61-029 | SDG: |
| SAMPLES/MATRIX: B01C60 (Soil) | | |
| B01C62 ( " ) | | |
| B01C63 ( " ) | | |
| B01C59 ( " ) | | |
| | | |

## 1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for resubmittal.

| Data Package Item | Present?: Yes | No | N/A |
|---|---|---|---|
| Case Narrative | ✓ | | |
| Data Summary | ✓ | | |
| Chain-of-Custody | ✓ | | |
| QC Summary | | | |
| Surrogate report | ✓ | | |
| MS/MSD report | ✓ | | |
| Blank summary report | ✓ | | |
| Sample Data | | | |
| Sample reports | ✓ | | |
| Chromatograms | ✓ | | |
| GC integration reports | ✓ | ~~✓~~ MS | |
| Worksheets | | ✓ | |
| UV traces from GPC | | ✓ | |
| GC/MS confirmation spectra | | ✓ | |
| Standards Data | | | |
| Pesticides Evaluation Standards Summary | ✓ | | |
| Pesticides/PCB Standards Summary | ✓ | | |
| Pesticides/PCB identification | ✓ | | |
| Pesticides standard chromatograms | ✓ | | |
| Raw QC Data | | | |
| Blank analysis report forms and chromatograms | ✓ | | |
| MS/MSD report forms and chromatograms | ✓ | | |

| Data Package Item | Present?: Yes | No | N/A |
|---|---|---|---|
| Additional Data | | | |
| Moisture/% solids data sheets | | ✓ | |
| Reduction formulae | | ✓ | |
| Instrument time logs | | ✓ | |
| Chemist notebook pages | | ✓ | |
| Sample preparation sheets | | ✓ | |

## 2. HOLDING TIMES

Were all samples extracted within holding time? **Yes** No N/A

Were all samples analyzed within holding time? **Yes** No N/A

ACTION: If any holding times were exceeded, but not by greater than a factor of two, qualify associated samples as estimated (J for detects or UJ for nondetects), otherwise reject all nondetects (R) and qualify all associated detects as estimated (J).

## 3. INSTRUMENT PERFORMANCE AND CALIBRATIONS

### 3.1 INSTRUMENT PERFORMANCE (2/88 SOW)

Are DDT retention times greater than 12 minutes? **Yes** No N/A

ACTION: If DDT retention time is $\leq$12 minutes and resolution is <25% qualify associated data as unusable (R).

Is resolution between DDT peaks acceptable? **Yes** No N/A

ACTION: If resolution between DDT peaks is unacceptable qualify associated data as unusable (R).

Do all pesticide standards elute within the established retention time windows? **Yes** No N/A

ACTION: If the standards do not meet the retention time criteria and peaks are not present near or within the retention time windows no sample qualification is necessary. If peaks are near or within the retention time windows and the standards and matrix spikes do not fall within the expanded retention time windows calculated according to the validation requirements, qualify all associated sample results from the last in-control point as unusable (R).

Are DDT breakdowns $\leq$20%? **Yes** No N/A

ACTION: If the DDT percent breakdown exceeds 20%, qualify all detected results for DDT as estimated (J) and all nondetects as unusable (R) if DDD and DDE are detected. In addition qualify all results for DDD or DDE as presumptive and estimated (NJ).

Are endrin breakdowns $\leq$20%? **Yes** No N/A

ACTION: If the endrin breakdown exceeds 20%, qualify all detected results for endrin as estimated (J) and all nondetects as unusable (R) if endrin aldehyde or endrin ketone are detected. In addition, qualify all results for endrin ketone as presumptive and estimated (NJ).

Are DBC retention time differences within specification? Yes No N/A

ACTION: If DBC %D values are outside the limits and the shift is ocurring repeatedly in samples and standards, qualify affected sample results as unusable (R).

## 3.2 CALIBRATIONS (2/88 SOW)

Are RSD values for aldrin, endrin, DDT and DBC ≤10%? Yes No N/A

Have all standards been analyzed within 72 h of any sample? Yes No N/A

Has a 3-point calibration been conducted for DDT or toxaphene? ~~Yes~~ ~~No~~ N/A Non-detect

Have all standards been analyzed at the start of each 72-h sequence? Yes No N/A

Have evaluation standards A, B, and C been analyzed within 72 h of any sample? Yes No N/A

Has the confirmation decachlorobiphenyl standard mix been analyzed after every five samples? Yes No N/A

Has evaluation standard B analyzed every 10 samples? Yes No N/A

Are %D values for initial and subsequent standards ≤15% for quantitation ~~standards~~ column and ≤20% for confirmation ~~standards~~ column? Yes No N/A

ACTION: If the RSD criteria were exceeded or three point calibrations not conducted qualify associated detects as estimated (J). If all standards were not analyzed at the beginning of each 72-h sequence qualify associated data as unusable (R). If the confirmation standards were not analyzed properly qualify associated detects as estimated (J). If the continuing calibration criteria were not met qualify associated quantitation data as estimated (J).

## 3.3 INSTRUMENT PERFORMANCE AND INITIAL CALIBRATION (3/90 SOW)

Is peak resolution acceptable? Yes No N/A

ACTION: If the resolution criteria are not met, reject positive sample results generated after initial calibration (R).

Are DDT and endrin breakdowns ≤20.0% Yes No N/A

ACTION: If the breakdown criteria are not met qualify sample results as described in Section 5.3.1 of the validation requirements.

Are single component target compounds in the PEMs, INDA, INDB and the calibration standards within the retention time windows? Yes No N/A

ACTION: If the retention time criteria are not met and no peaks are present in the samples within two times the retention time windows (±0.04, ±0.05 for methoxychlor), no qualification is necessary. If peaks are present in samples within the retention time window a review is made of the raw data to determine expanded retention time windows (see Section 5.3.1 of the validation requirements). If all standards and matrix spikes fall within the expanded windows then no qualification of sample results is necessary. If all standards and matrix spikes do not fall within the expanded windows then all affected sample results are qualified as unusable (R).

Are the RPDs acceptable for the PEMs? Yes No N/A

ACTION: If the RPD criteria are not met qualify associated positive sample results as estimated (J).

Are the RSDs for the calibration factors < 10.0% (< 15.0% for the BHC series, DDT, endrin, and methoxychlor)? Yes No N/A

ACTION: If the RSD criteria are not met qualify associated positive sample results as estimated (J).

## 3.4 CALIBRATION VERIFICATION (3/90 SOW)

Have the analytical sequence requirements been met for the analysis of instrument blanks, PEMs, INDA and INDB mixes? Yes No N/A

ACTION: If the analytical sequence requirements are not followed and any of the resolution or retention time criteria listed below are exceeded, reject associated positive results (R).

Is peak resolution acceptable for PEMs, INDA and INDB mixes? Yes No N/A

ACTION: If the resolution criteria are not met reject positive sample results generated after a noncompliant standard analysis (R).

Are single component target compounds in the PEMs, INDA and INDB mixes within the retention time windows? Yes No N/A

ACTION: If the retention time criteria are not met and no peaks are present in the samples analyzed after the noncompliant standard within two times the retention time windows (±0.04, ±0.05 for methoxychlor), no qualification is necessary. If peaks are present in samples within the expanded windows rejected associated positive and nondetect results (R).

Are RPDs between the calculated and true amounts in the PEMs, INDA and INDB mixes ≤25.0%? Yes No N/A

ACTION: If the RPD criteria are not met qualify associated positive sample results as estimated (J).

Are DDT and endrin breakdowns in the PEMs ≤20.0% (≤30.0% total combined)? Yes No N/A

ACTION: If the breakdown criteria are not met qualify associated positive sample results in accordance with the criteria specified in Section 5.3.1.

## 4. BLANKS

### 4.1 LABORATORY BLANKS

Has the laboratory analyzed the method blanks at the required frequency? Yes No N/A

Has the laboratory analyzed a sulfur clean-up blank if required? Yes No N/A

Has the laboratory analyzed instrument blanks at the required frequency? Yes No N/A

Are target compounds present in the blanks? Yes No N/A

ACTION: Qualify all associated positive results as nondetects (U) that are <5 times the highest concentration in any acceptable blank.

### 4.2 FIELD BLANKS

Are target compounds present in the field blanks? Yes No N/A

ACTION: If target compounds are present in the field blanks qualify all positive sample results <5 times the highest valid field blank concentrations as nondetects (U) and note the results in the validation narrative.

## 5. ACCURACY

### 5.1 SURROGATE RECOVERY

| | | | |
|---|---|---|---|
| Are any surrogate recoveries out of specification? | Yes | No | N/A |
| Do any samples show nondetects for surrogates? | Yes | No | N/A |
| Are any method blank surrogates out of specification? | Yes | No | N/A |

ACTION: Qualify all associated sample results as estimated (J for detects and UJ for nondetects) for surrogates out of specification. If the surrogate was not detected (0% recovery) in the sample qualify associated nondetects as unusable (R). If method blank surrogates are out of specification and sample surrogates are acceptable, no qualification is required however, the laboratory should be contacted for an explanation.

### 5.2 MATRIX SPIKE RECOVERY

| | | | |
|---|---|---|---|
| Has the laboratory analyzed a MS/MSD per matrix for the the sample group? | Yes | No | N/A |
| Are MS/MSD recoveries within specification? | Yes | No | N/A |
| Are there any calculation or transcription errors? | Yes | No | N/A |

ACTION: If MS/MSD analyses have not been conducted contact the laboratory for clarification. Review the MS/MSD recoveries in conjunction with other QC data such as surrogate recoveries and note the results in the validation narrative. If MS/MSD recoveries are out of specification and sample concentration is >5 times the spike concentration, no qualification is required, otherwise qualify results as follows: Qualify positive results as estimated (J) in all samples if associated surrogates are also out of specification. The qualification shall only be done on samples of similar matrix as the MS/MSD samples. If it is determined from the review that only the spiked samples are affected by the low recoveries, qualify only the results for the spiked sample as described above. If it is determined from the review that out of specification MS/MSD recoveries are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

### 5.3 PERFORMANCE AUDIT SAMPLES

| | | | |
|---|---|---|---|
| Are performance audit sample results within the acceptance limits? | Yes | No | N/A |

ACTION: Note the results of the performance audit samples in the validation narrative.

## 6. PRECISION

### 6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES

Are the RPD values within specification? Yes No N/A

ACTION: Review the MS/MSD results in conjunction with other QC data such as field duplicates and note the results in the validation narrative. If MS/MSD RPD values are out of specification and sample results are >5xCRQL qualify positive results as estimated (J). If it is determined from the review that out of specification MS/MSD results are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

### 6.2 FIELD DUPLICATE SAMPLES

Are field duplicate RPD values acceptable? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

### 6.3 FIELD SPLIT SAMPLES

Are field split RPD values acceptable? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

## 7. COMPOUND IDENTIFICATION AND QUANTITATION

### 7.1 COMPOUND IDENTIFICATION

Do positive results meet the retention time window criteria? Yes No N/A

Were positive results analyzed on disimilar columns? Yes No N/A

If dieldrin and DDE were reported was a 3% OV-1 column used for confirmation (2/88 SOW data only)? Yes No N/A

Do retention times and relative peak height ratios match the expected patterns for multipeak compounds (PCB, toxaphene or chlordane)? Yes No N/A

Has GC/MS confirmation been conducted on sample extract concentrations > 10 ppm? Yes No N/A

ACTION: If positive results do not meet the retention time criteria qualify all detected results as nondetects as follows: If the misidentified peak is outside the retention time windows and no interferences are noted report the CRQL and if the misidentified peak interferes with a target peak then the report value is qualified as estimated and nondetected (UJ). If positive results were not confirmed on disimilar columns, reject affected results (R). If a 3% OV-1 was used to confirm dieldrin and DDE, reject the affected data (R). If PCB, chlordane or toxaphene identification is questionable qualify the results as presumptive and estimated (NJ). If GC/MS confirmation was not conducted contact the laboratory for explanation and note in the validation narrative.

## 7.2 REPORTED RESULTS AND QUANTITATION LIMITS

| | | | |
|---|---|---|---|
| Are results and quantitation limits calculated properly? | Yes | No | N/A |
| Has the laboratory reported the sample quantitation limits within 5xCRQL values? | Yes | No | N/A |

ACTION: If results and quantitation limits are in error contact the laboratory for clarification and note in the validation narrative.

## 8. OVERALL ASSESSMENT AND SUMMARY

| | | | |
|---|---|---|---|
| Has the laboratory conducted the analysis in accordance with the analytical SOW? | Yes | No | N/A |
| Were project specific data quality objectives met for this analysis? | Yes | No | N/A |

ACTION: Summarize all the data qualifications and complete the data validation narrative as specified in Section 10.0 of the data validation requirements.

COMMENTS (attach additional sheets as necessary):

HOLDING TIME SUMMARY - FORM B-1

| SDG: 01-029 | REVIEWER: KAITH GOSTFRESSER | DATE: 6/9/92 | PAGE 1 OF 1 |
|---|---|---|---|
| COMMENTS: LEVEL 4 | | | |

| FIELD SAMPLE ID | ANALYSIS TYPE | DATE SAMPLED | DATE PREPARED | DATE ANALYZED | PREP. HOLDING TIME, DAYS | ANALYSIS HOLDING TIME, DAYS | QUALIFIER |
|---|---|---|---|---|---|---|---|
| SOIL B01CG0 | PCB/PEST | 1/3/92 | 1/15/92 | 2/4/92 | 12 | 20 | none |
| B01CG2 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| B01CG3 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| B01CF9 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
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✓ KS 6/14/92

CALIBRATION DATA SUMMARY - FORM B-2

| SDG: 01-029 | REVIEWER: KAITH GODTFREDSEN | DATE: 6/9/92 | | PAGE 1 OF 1 | |
|---|---|---|---|---|---|
| COMMENTS: Level 4 | | | | | |
| CALIB. TYPE: | INITIAL CONTINUING | INSTRUMENT: HP5890A | 1°-DB1701 | 2°-DB608 | |
| CALIB. DATE | COMPOUND | RF | RSD/%D/%R | SAMPLES AFFECTED | QUALIFIER |
| | | | | | |
| All calibration criteria were met. | | | | | None |
| | KG | | | | |
| | AG 6/19/92 | | | | |





9713528.0210

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

| SDG: 01-029 | REVIEWER: KATHY GOODFREUDSEN | DATE: 6/9/92 | PAGE 1 OF 1 |
|---|---|---|---|
| COMMENTS: LEVEL 4 | | | |

| SAMPLE ID | COMPOUND | RESULT | Q | RT | UNITS | 5X RESULT | 10X RESULT | SAMPLES AFFECTED | QUALIFIER |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| THERE WERE NO TCL COMPOUNDS DETECTED | | | | | | | | | NONE |
| | IN THE BLANK. | | | | | | | | |
| | KG | | | | | | | | |
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9713528.0711

ACCURACY DATA SUMMARY - FORM B-4

| SDG: 01-029 | REVIEWER: K GODFREDSEN | DATE: 6/9/92 | PAGE 1 OF 1 | |
|---|---|---|---|---|
| COMMENTS: LEVEL 4 | | | | |
| SAMPLE ID | COMPOUND | % RECOVERY | SAMPLE(S) AFFECTED | QUALIFIER REQUIRED |
| (1) SURROGATES → | ALL SURROGATES WERE ACCEPTABLE | | | NONE |
| | AND RANGED FROM ~~[illegible]~~ | 95-106%. | | |
| | | KG | | |
| | | | | |
| (2) MULTIPLE SPIKE (B01(G3)) → | ALL POSITIVE % | | | NONE |
| | RECOVERIES WERE ACCEPTABLE AND | | | |
| | RANGED FROM 93-109%. | | | |
| | | KG | | |
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| | | AS | | |
| | | 6/19/92 | | |
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9713528.DWHC-SD-EN-SPP-002, Rev. 1

PRECISION DATA SUMMARY - FORM B-5

| SDG: 01-029 | REVIEWER (C GOTTFREDSEN) | DATE: 6/9/92 | PAGE 1 OF 1 |
|---|---|---|---|
| COMMENTS: Level 4 | | | |

| COMPOUND | SAMPLE ID: | SAMPLE ID: | RPD RANGE | SAMPLES AFFECTED | QUALIFIER |
|---|---|---|---|---|---|
| ① MATRIX SPIKE DUPLICATE - ALL | | | | M.S. | |
| COMPOUNDS | B01CG3 MS | B01CG3 MSD | ~~31-50%~~ 2-9% | ALL | NONE |
| | | | | | |
| | | | | | |
| ② FIELD DUP. | B01CG2 | B01CG3 | | | |
| Aroclor-1254 | 110 | 93 | 16.7 | — | — |
| Aroclor-1260 | 50 | 47 | 6.2 | — | — |
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CALCULATION SUMMARY - FORM B-6

| SDG: 01-029 | REVIEWER: KATHY GODSTAFERSON | DATE: 6/9/92 | PAGE 1 OF 1 |
|---|---|---|---|

COMMENTS:

① 2/5 1:51

DDT BREAKDOWN $= \left(\frac{7686 + 21405}{7686 + 418593 + 21405}\right) 100 = 6.5\%$

② RT EVAL C & EVAL A : $\left(\frac{23.66 - 23.64}{23.66}\right) 100 = .08 \cong 0.1$

③ DBC % RSD $= \frac{\sigma}{\bar{x}} \times 100 = 1.5\%$.

④ SAMPLE CONC $= \left(\frac{918884}{1420000}\right) \frac{20,000}{(4)(.96)(30.7)} = 109.8$ (1254) 801CG2

6/9/92

TELEPHONE CONTACT SUMMARY - FORM B-8

| | | | |
|---|---|---|---|
| REVIEWER: Kathy Gottfredsen | DATE: 6/9/92 | TIME: 1:00pm | PAGE 1 OF 1 |
| COMPANY: EBASCO ENVIRONMENTAL | | | |
| ADDRESS: 10900 NE 8th St, Suite 500, Bellevue WA 98004 | | | |
| | | | |
| PERSON CONTACTED: | | | |
| TELEPHONE: | | FAX: | |
| PROJECT/CASE/SDG: | | | |
| REMARKS: | | | |
| There was no telephone contact with the lab. | | | |

ACTION:

9713528.0716



# APPENDIX H
# DATA VALIDATION DOCUMENTATION

*Thermo Analytical Laboratories*

*Data Package A201029*

*Pesticide and PCB Analyses*

9713528.0717

THIS APPENDIX CONSISTS OF FIVE ATTACHMENTS

*Attachment 1 - Glossary of Data Qualifiers*

This attachment provides a glossary explaining all data qualifiers applied as a result of the validation.

*Attachment 2 - As Received Laboratory Sample Concentration Reports*

This attachment provides a copy of the as-received sample concentration reports. This may be a tabular summary similar to that provided in Attachment 4, or may be a copy of the laboratory reports (e.g., Form I).

*Attachment 3 - Summary of Data Qualifications (Form B-7)*

This attachment provides a complete summary of all qualifications applied as a result of the validation.

*Attachment 4 - As Qualified Data Summary*

This attachment provides a tabular data summary of all data qualified from the validation.

*Attachment 5 - Data Review Supporting Documentation*

This attachment provides copies of the data validation checklists, data summary forms, telephone contact memoranda and other documentation completed as a result of the data validation.

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# ATTACHMENT 1

## *Glossary of Data Qualifiers*

***U*** - Indicates the compound or analyte was analyzed for and not detected. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

***UJ*** - Indicates the compound or analyte was analyzed for and not detected. Due to quality control deficiencies identified during data validation the value reported may not accurately reflect the sample quantitation limit.

***J*** - Indicates the compound or analyte was analyzed for and detected. The associated value is estimated but the data are useable for decision making processes.

***R*** - Indicates the compound or analyte was analyzed for and due to an identified quality control deficiency the data are unusable.

***NJ*** - Indicates the presumptive evidence of a compound at an estimated value.

***N*** - Indicates presumptive evidence of a compound.

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# ATTACHMENT 2

*As Received Laboratory Sample Concentration Reports*

9715528.0720

00207

EPA SAMPLE NO.

B01CG2

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-01A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 dec. __ Date Extracted: 01/15/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/04/92

GPC Cleanup: (Y/N) N pH: 8.9 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 8.1 | U |
| 319-85-7 | beta-BHC | 8.1 | U |
| 319-86-8 | delta-BHC | 8.1 | U |
| 58-89-9 | gamma-BHC (Lindane) | 8.1 | U |
| 76-44-8 | Heptachlor | 8.1 | U |
| 309-00-2 | Aldrin | 8.1 | U |
| 1024-57-3 | Heptachlor epoxide | 8.1 | U |
| 959-98-8 | Endosulfan I | 8.1 | U |
| 60-57-1 | Dieldrin | 16 | U |
| 72-55-9 | 4,4'-DDE | 16 | U |
| 72-20-8 | Endrin | 16 | U |
| 33213-65-9 | Endosulfan II | 16 | U |
| 72-54-8 | 4,4'-DDD | 16 | U |
| 1031-07-8 | Endosulfan sulfate | 16 | U |
| 50-29-3 | 4,4'-DDT | 16 | U |
| 72-43-5 | Methoxychlor | 81 | U |
| 53494-70-5 | Endrin ketone | 16 | U |
| 5103-71-9 | alpha-Chlordane | 81 | U |
| 5103-74-2 | gamma-Chlordane | 81 | U |
| 8001-35-2 | Toxaphene | 160 | U |
| 12674-11-2 | Aroclor-1016 | 81 | U |
| 11104-28-2 | Aroclor-1221 | 81 | U |
| 11141-16-5 | Aroclor-1232 | 81 | U |
| 53469-21-9 | Aroclor-1242 | 81 | U |
| 12672-29-6 | Aroclor-1248 | 81 | U |
| 11097-69-1 | Aroclor-1254 | 110 | J |
| 11096-82-5 | Aroclor-1260 | 50 | J |

KG

9213528.0721

1D

# PESTICIDE ORGANICS ANALYSIS DATA SHEET

00202

EPA SAMPLE NO.

B01CG0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-04A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 dec. __ Date Extracted: 01/15/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/04/92

GPC Cleanup: (Y/N) N pH: 8.8 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 8.2 | U |
| 319-85-7 | beta-BHC | 8.2 | U |
| 319-86-8 | delta-BHC | 8.2 | U |
| 58-89-9 | gamma-BHC (Lindane) | 8.2 | U |
| 76-44-8 | Heptachlor | 8.2 | U |
| 309-00-2 | Aldrin | 8.2 | U |
| 1024-57-3 | Heptachlor epoxide | 8.2 | U |
| 959-98-8 | Endosulfan I | 8.2 | U |
| 60-57-1 | Dieldrin | 16 | U |
| 72-55-9 | 4,4'-DDE | 16 | U |
| 72-20-8 | Endrin | 16 | U |
| 33213-65-9 | Endosulfan II | 16 | U |
| 72-54-8 | 4,4'-DDD | 16 | U |
| 1031-07-8 | Endosulfan sulfate | 16 | U |
| 50-29-3 | 4,4'-DDT | 16 | U |
| 72-43-5 | Methoxychlor | 82 | U |
| 53494-70-5 | Endrin ketone | 16 | U |
| 5103-71-9 | alpha-Chlordane | 82 | U |
| 5103-74-2 | gamma-Chlordane | 82 | U |
| 8001-35-2 | Toxaphene | 160 | U |
| 12674-11-2 | Aroclor-1016 | 82 | U |
| 11104-28-2 | Aroclor-1221 | 82 | U |
| 11141-16-5 | Aroclor-1232 | 82 | U |
| 53469-21-9 | Aroclor-1242 | 82 | U |
| 12672-29-6 | Aroclor-1248 | 82 | U |
| 11097-69-1 | Aroclor-1254 | 160 | U |
| 11096-82-5 | Aroclor-1260 | 160 | U |

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00197

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01CF9

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-03B

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 5 dec. __ Date Extracted: 01/15/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/04/92

GPC Cleanup: (Y/N) N pH: 9.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 8.4 | U |
| 319-85-7 | beta-BHC | 8.4 | U |
| 319-86-8 | delta-BHC | 8.4 | U |
| 58-89-9 | gamma-BHC (Lindane) | 8.4 | U |
| 76-44-8 | Heptachlor | 8.4 | U |
| 309-00-2 | Aldrin | 8.4 | U |
| 1024-57-3 | Heptachlor epoxide | 8.4 | U |
| 959-98-8 | Endosulfan I | 8.4 | U |
| 60-57-1 | Dieldrin | 17 | U |
| 72-55-9 | 4,4'-DDE | 17 | U |
| 72-20-8 | Endrin | 17 | U |
| 33213-65-9 | Endosulfan II | 17 | U |
| 72-54-8 | 4,4'-DDD | 17 | U |
| 1031-07-8 | Endosulfan sulfate | 17 | U |
| 50-29-3 | 4,4'-DDT | 17 | U |
| 72-43-5 | Methoxychlor | 84 | U |
| 53494-70-5 | Endrin ketone | 17 | U |
| 5103-71-9 | alpha-Chlordane | 84 | U |
| 5103-74-2 | gamma-Chlordane | 84 | U |
| 8001-35-2 | Toxaphene | 170 | U |
| 12674-11-2 | Aroclor-1016 | 84 | U |
| 11104-28-2 | Aroclor-1221 | 84 | U |
| 11141-16-5 | Aroclor-1232 | 84 | U |
| 53469-21-9 | Aroclor-1242 | 84 | U |
| 12672-29-6 | Aroclor-1248 | 84 | U |
| 11097-69-1 | Aroclor-1254 | 170 | U |
| 11096-82-5 | Aroclor-1260 | 170 | U |

9318S.D2A

00212
EPA SAMPLE NO.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

B01CG3

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-02A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 dec. __ Date Extracted: 01/15/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/04/92

GPC Cleanup: (Y/N) N pH: 9.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 8.2 | U |
| 319-85-7 | beta-BHC | 8.2 | U |
| 319-86-8 | delta-BHC | 8.2 | U |
| 58-89-9 | gamma-BHC (Lindane) | 8.2 | U |
| 76-44-8 | Heptachlor | 8.2 | U |
| 309-00-2 | Aldrin | 8.2 | U |
| 1024-57-3 | Heptachlor epoxide | 8.2 | U |
| 959-98-8 | Endosulfan I | 8.2 | U |
| 60-57-1 | Dieldrin | 16 | U |
| 72-55-9 | 4,4'-DDE | 16 | U |
| 72-20-8 | Endrin | 16 | U |
| 33213-65-9 | Endosulfan II | 16 | U |
| 72-54-8 | 4,4'-DDD | 16 | U |
| 1031-07-8 | Endosulfan sulfate | 16 | U |
| 50-29-3 | 4,4'-DDT | 16 | U |
| 72-43-5 | Methoxychlor | 82 | U |
| 53494-70-5 | Endrin ketone | 16 | U |
| 5103-71-9 | alpha-Chlordane | 82 | U |
| 5103-74-2 | gamma-Chlordane | 82 | U |
| 8001-35-2 | Toxaphene | 160 | U |
| 12674-11-2 | Aroclor-1016 | 82 | U |
| 11104-28-2 | Aroclor-1221 | 82 | U |
| 11141-16-5 | Aroclor-1232 | 82 | U |
| 53469-21-9 | Aroclor-1242 | 82 | U |
| 12672-29-6 | Aroclor-1248 | 82 | U |
| 11097-69-1 | Aroclor-1254 | 93 | J |
| 11096-82-5 | Aroclor-1260 | 47 | J |

KG

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# ATTACHMENT 3

*Summary of Data Qualifications*

DATA QUALIFICATION SUMMARY - FORM B-7

| SDG: 01-029 | REVIEWER: KG | DATE: 6/9/92 | PAGE 1 OF 1 |
|---|---|---|---|
| COMMENTS: Level 4 | | | |
| COMPOUND | QUALIFIER | SAMPLES AFFECTED | REASON |
| | | | |
| THERE WERE NO DATA QUALIFIERS | | | |
| ASSIGNED DURING DATA VALIDATION. | | | |
| | | KG | |
| | | | |
| | | | |
| Aroclor-1254 | J | B01CG2, B01CG3 | below CRQL |
| Aroclor-1260 | J | B01CG2, B01CG3 | " |
| | | | |
| | | | |
| | | KG 6/9/92 | |
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# ATTACHMENT 4

*As Qualified Data Summary*

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1D

# PESTICIDE ORGANICS ANALYSIS DATA SHEET

00207
EPA SAMPLE NO.

B01CG2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-01A

Sample wt/vol: 30.7 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 dec. Date Extracted: 01/15/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/04/92

GPC Cleanup: (Y/N) N pH: 8.9 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q | |
|---|---|---|---|---|
| 319-84-6 | alpha-BHC | 8.1 | U | |
| 319-85-7 | beta-BHC | 8.1 | U | |
| 319-86-8 | delta-BHC | 8.1 | U | |
| 58-89-9 | gamma-BHC (Lindane) | 8.1 | U | |
| 76-44-8 | Heptachlor | 8.1 | U | |
| 309-00-2 | Aldrin | 8.1 | U | |
| 1024-57-3 | Heptachlor epoxide | 8.1 | U | |
| 959-98-8 | Endosulfan I | 8.1 | U | |
| 60-57-1 | Dieldrin | 16 | U | |
| 72-55-9 | 4,4'-DDE | 16 | U | |
| 72-20-8 | Endrin | 16 | U | |
| 33213-65-9 | Endosulfan II | 16 | U | |
| 72-54-8 | 4,4'-DDD | 16 | U | |
| 1031-07-8 | Endosulfan sulfate | 16 | U | |
| 50-29-3 | 4,4'-DDT | 16 | U | |
| 72-43-5 | Methoxychlor | 81 | U | |
| 53494-70-5 | Endrin ketone | 16 | U | |
| 5103-71-9 | alpha-Chlordane | 81 | U | |
| 5103-74-2 | gamma-Chlordane | 81 | U | |
| 8001-35-2 | Toxaphene | 160 | U | |
| 12674-11-2 | Aroclor-1016 | 81 | U | |
| 11104-28-2 | Aroclor-1221 | 81 | U | |
| 11141-16-5 | Aroclor-1232 | 81 | U | |
| 53469-21-9 | Aroclor-1242 | 81 | U | |
| 12672-29-6 | Aroclor-1248 | 81 | U | |
| 11097-69-1 | Aroclor-1254 | 110 | J | ) < CRQ |
| 11096-82-5 | Aroclor-1260 | 50 | J | ) < CRQ |

KG

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6/19/92

FORM I PEST 1/87 Rev.

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00202

EPA SAMPLE NO.

B01CG0

1D

# PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-04A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 dec. __ Date Extracted: 01/15/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/04/92

GPC Cleanup: (Y/N) N pH: 8.8 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 8.2 | U |
| 319-85-7 | beta-BHC | 8.2 | U |
| 319-86-8 | delta-BHC | 8.2 | U |
| 58-89-9 | gamma-BHC (Lindane) | 8.2 | U |
| 76-44-8 | Heptachlor | 8.2 | U |
| 309-00-2 | Aldrin | 8.2 | U |
| 1024-57-3 | Heptachlor epoxide | 8.2 | U |
| 959-98-8 | Endosulfan I | 8.2 | U |
| 60-57-1 | Dieldrin | 16 | U |
| 72-55-9 | 4,4'-DDE | 16 | U |
| 72-20-8 | Endrin | 16 | U |
| 33213-65-9 | Endosulfan II | 16 | U |
| 72-54-8 | 4,4'-DDD | 16 | U |
| 1031-07-8 | Endosulfan sulfate | 16 | U |
| 50-29-3 | 4,4'-DDT | 16 | U |
| 72-43-5 | Methoxychlor | 82 | U |
| 53494-70-5 | Endrin ketone | 16 | U |
| 5103-71-9 | alpha-Chlordane | 82 | U |
| 5103-74-2 | gamma-Chlordane | 82 | U |
| 8001-35-2 | Toxaphene | 160 | U |
| 12674-11-2 | Aroclor-1016 | 82 | U |
| 11104-28-2 | Aroclor-1221 | 82 | U |
| 11141-16-5 | Aroclor-1232 | 82 | U |
| 53469-21-9 | Aroclor-1242 | 82 | U |
| 12672-29-6 | Aroclor-1248 | 82 | U |
| 11097-69-1 | Aroclor-1254 | 160 | U |
| 11096-82-5 | Aroclor-1260 | 160 | U |

HS 6/26/92

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00197

1D

EPA SAMPLE NO.

# PESTICIDE ORGANICS ANALYSIS DATA SHEET

B01CF9

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-03B

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 5 dec. __ Date Extracted: 01/15/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/04/92

GPC Cleanup: (Y/N) N pH: 9.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 8.4 | U |
| 319-85-7 | beta-BHC | 8.4 | U |
| 319-86-8 | delta-BHC | 8.4 | U |
| 58-89-9 | gamma-BHC (Lindane) | 8.4 | U |
| 76-44-8 | Heptachlor | 8.4 | U |
| 309-00-2 | Aldrin | 8.4 | U |
| 1024-57-3 | Heptachlor epoxide | 8.4 | U |
| 959-98-8 | Endosulfan I | 8.4 | U |
| 60-57-1 | Dieldrin | 17 | U |
| 72-55-9 | 4,4'-DDE | 17 | U |
| 72-20-8 | Endrin | 17 | U |
| 33213-65-9 | Endosulfan II | 17 | U |
| 72-54-8 | 4,4'-DDD | 17 | U |
| 1031-07-8 | Endosulfan sulfate | 17 | U |
| 50-29-3 | 4,4'-DDT | 17 | U |
| 72-43-5 | Methoxychlor | 84 | U |
| 53494-70-5 | Endrin ketone | 17 | U |
| 5103-71-9 | alpha-Chlordane | 84 | U |
| 5103-74-2 | gamma-Chlordane | 84 | U |
| 8001-35-2 | Toxaphene | 170 | U |
| 12674-11-2 | Aroclor-1016 | 84 | U |
| 11104-28-2 | Aroclor-1221 | 84 | U |
| 11141-16-5 | Aroclor-1232 | 84 | U |
| 53469-21-9 | Aroclor-1242 | 84 | U |
| 12672-29-6 | Aroclor-1248 | 84 | U |
| 11097-69-1 | Aroclor-1254 | 170 | U |
| 11096-82-5 | Aroclor-1260 | 170 | U |

AS 1/26/92

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00212
EPA SAMPLE NO.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

B01CG3

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-02A

Sample wt/vol: 30.3 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 dec. Date Extracted: 01/15/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/04/92

GPC Cleanup: (Y/N) N pH: 9.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 8.2 | U |
| 319-85-7 | beta-BHC | 8.2 | U |
| 319-86-8 | delta-BHC | 8.2 | U |
| 58-89-9 | gamma-BHC (Lindane) | 8.2 | U |
| 76-44-8 | Heptachlor | 8.2 | U |
| 309-00-2 | Aldrin | 8.2 | U |
| 1024-57-3 | Heptachlor epoxide | 8.2 | U |
| 959-98-8 | Endosulfan I | 8.2 | U |
| 60-57-1 | Dieldrin | 16 | U |
| 72-55-9 | 4,4'-DDE | 16 | U |
| 72-20-8 | Endrin | 16 | U |
| 33213-65-9 | Endosulfan II | 16 | U |
| 72-54-8 | 4,4'-DDD | 16 | U |
| 1031-07-8 | Endosulfan sulfate | 16 | U |
| 50-29-3 | 4,4'-DDT | 16 | U |
| 72-43-5 | Methoxychlor | 82 | U |
| 53494-70-5 | Endrin ketone | 16 | U |
| 5103-71-9 | alpha-Chlordane | 82 | U |
| 5103-74-2 | gamma-Chlordane | 82 | U |
| 8001-35-2 | Toxaphene | 160 | U |
| 12674-11-2 | Aroclor-1016 | 82 | U |
| 11104-28-2 | Aroclor-1221 | 82 | U |
| 11141-16-5 | Aroclor-1232 | 82 | U |
| 53469-21-9 | Aroclor-1242 | 82 | U |
| 12672-29-6 | Aroclor-1248 | 82 | U |
| 11097-69-1 | Aroclor-1254 | 93 | ~~J~~ ) <CRQL |
| 11096-82-5 | Aroclor-1260 | 47 | ~~J~~ ) <CRQL |

KG

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6/19/92

FORM I PEST 1/87 Rev.

9713528.0751

# ATTACHMENT 5

*Data Review Supporting Documentation*

8D
PESTICIDE EVALUATION STANDARDS SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890A GC Column ID: DB1701

Dates of Analyses: 02/03/92 to 02/05/92

Evaluation Check for Linearity

| PESTICIDE | CALIBRATION FACTOR EVAL MIX A | CALIBRATION FACTOR EVAL MIX B | CALIBRATION FACTOR EVAL MIX C | %RSD (</= 10.0%) |
|---|---|---|---|---|
| Aldrin | 7970000 | 8160000 | 7700000 | 2.9 |
| Endrin | 6600000 | 6670000 | 6480000 | 1.5 |
| 4,4'-DDT | 4890000 | 5020000 | 5000000 | 1.4 (1) |
| DBC | 5370000 | 5320000 | 5480000 | 1.5 |

(1) If > 10.0% RSD, plot a standard curve and determine the ng for each sample in that set from the curve.

Evaluation Check for 4,4'-DDT/Endrin Breakdown
(percent breakdown expressed as total degradation)

| | | DATE ANALYZED | TIME ANALYZED | ENDRIN | 4,4'-DDT | COMBINED (2) |
|---|---|---|---|---|---|---|
| | INITIAL EVAL MIX B | 02/03/92 | 1109 | 0.0 | 5.1 | |
| 01 | EVAL MIX B | 02/03/92 | 2126 | 0.0 | 5.3 | |
| 02 | EVAL MIX B | 02/03/92 | 0959 | 0.0 | 1.2 | |
| 03 | EVAL MIX B | 02/04/92 | 1738 | 0.0 | 4.9 | |
| 04 | EVAL MIX B | 02/04/92 | 0151 | 0.0 | 6.5 | |
| 05 | EVAL MIX B | 02/05/92 | 0921 | 0.0 | 6.0 | |
| 06 | | | | | | |

(2) See Form instructions.

9713528.0733

00218

8E

# PESTICIDE EVALUATION STANDARDS SUMMARY
## Evaluation of Retention Time Shift for Dibutylchlorendate

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890A GC Column ID: DB1701

Dates of Analyses: 02/03/92 to 02/05/92

| | EPA SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED | TIME ANALYZED | % D | * | |
|---|---|---|---|---|---|---|---|
| 01 | EVALA | B2031 | 02/03/92 | 1031 | 0.0 | | 23.66 |
| 02 | EVALB | B2032 | 02/03/92 | 1109 | 0.1 | | 23.64 |
| 03 | EVALC | B2033 | 02/03/92 | 1147 | 0.1 | | 23.64 |
| 04 | INDA | B2034 | 02/03/92 | 1228 | 0.0 | | |
| 05 | INDB | B2035 | 02/03/92 | 1311 | -0.1 | | |
| 06 | TOXAPH | B2036 | 02/03/92 | 1352 | -0.3 | | |
| 07 | AR1660 | B2037 | 02/03/92 | 1430 | -0.3 | | |
| 08 | AR1221 | B2038 | 02/03/92 | 1508 | -0.3 | | |
| 09 | AR1232 | B2039 | 02/03/92 | 1547 | -0.4 | | |
| 10 | AR1242 | B20310 | 02/03/92 | 1624 | -0.5 | | |
| 11 | AR1248 | B20311 | 02/03/92 | 1702 | -0.6 | | |
| 12 | AR1254 | B20312 | 02/03/92 | 1740 | -0.7 | | |
| 13 | ZZZZZ | A201050-BLK | 02/03/92 | 1818 | -0.8 | | |
| 14 | ZZZZZ | A201050-01C | 02/03/92 | 1856 | -0.8 | | |
| 15 | ZZZZZ | A201050-01D | 02/03/92 | 1934 | -0.8 | | |
| 16 | ZZZZZ | A201050-01E | 02/03/92 | 2012 | -0.8 | | |
| 17 | ZZZZZ | A201050-02D | 02/03/92 | 2050 | -0.8 | | |
| 18 | EVALB | B20318 | 02/03/92 | 2126 | -0.8 | | |
| 19 | ZZZZZ | A201050-03B | 02/03/92 | 2204 | -0.8 | | |
| 20 | ZZZZZ | A201050-04B | 02/03/92 | 2242 | -0.8 | | |
| 21 | ZZZZZ | A201050-05B | 02/03/92 | 2320 | -0.7 | | |
| 22 | ZZZZZ | A201050-06B | 02/03/92 | 2358 | -0.8 | | |
| 23 | ZZZZZ | A201050-07B | 02/04/92 | 0036 | -0.8 | | |
| 24 | INDA | B20324 | 02/04/92 | 0114 | -0.7 | | |
| 25 | ZZZZZ | A201050-08BB | 02/04/92 | 0152 | -0.7 | | |
| 26 | ZZZZZ | A201050-09BB | 02/04/92 | 0230 | -0.7 | | |
| 27 | ZZZZZ | A201050-10BB | 02/04/92 | 0308 | -0.6 | | |
| 28 | ZZZZZ | A201050-11BB | 02/04/92 | 0346 | -0.5 | | |
| 29 | ZZZZZ | A201050-12BB | 02/04/92 | 0424 | -0.5 | | |
| 30 | EVALB | B20336 | 02/04/92 | 0959 | -0.6 | | |
| 31 | ZZZZZ | A201050-08B | 02/04/92 | 1038 | -0.5 | | |
| 32 | ZZZZZ | A201050-09B | 02/04/92 | 1117 | -0.5 | | |
| 33 | ZZZZZ | A201050-10B | 02/04/92 | 1155 | -0.5 | | |
| 34 | ZZZZZ | A201050-11B | 02/04/92 | 1233 | -0.5 | | |
| 35 | ZZZZZ | A201050-12B | 02/04/92 | 1311 | -0.5 | | |
| 36 | INDB | B20342 | 02/04/92 | 1350 | -0.7 | | |
| 37 | ZZZZZ | A201050-13B | 02/04/92 | 1428 | -0.8 | | |
| 38 | ZZZZZ | A201050-14B | 02/04/92 | 1506 | -0.8 | | |

* Values outside of QC limits (2.0% for packed columns, 0.3% for capillary columns)

VCG



FORM VIII PEST-2 1/87 Rev.

9713528.0734



8E

PESTICIDE EVALUATION STANDARDS SUMMARY

Evaluation of Retention Time Shift for Dibutylchlorendate

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890A GC Column ID: DB1701

Dates of Analyses: 02/03/92 to 02/05/92

| | EPA SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED | TIME ANALYZED | % D | * |
|---|---|---|---|---|---|---|
| 01 | PBLK0115S | A201029-BLK | 02/04/92 | 1544 | -0.8 | |
| 02 | B01CF9 | A201029-03B | 02/04/92 | 1622 | -1.0 | |
| 03 | B01CG0 | A201029-04A | 02/04/92 | 1700 | -1.1 | |
| 04 | EVALB | B20348 | 02/04/92 | 1738 | -1.2 | |
| 05 | B01CG2 | A201029-01A | 02/04/92 | 1816 | -1.2 | |
| 06 | B01CG3 | A201029-02A | 02/04/92 | 1854 | -1.2 | |
| 07 | B01CG3MS | A201029-02D | 02/04/92 | 1931 | -1.3 | |
| 08 | B01CG3MSD | A201029-02E | 02/04/92 | 2009 | -1.3 | |
| 09 | ZZZZZ | A201056-BLK | 02/04/92 | 2047 | -1.3 | |
| 10 | INDA | B20354 | 02/04/92 | 2125 | -1.3 | |
| 11 | INDB | B20355 | 02/04/92 | 2203 | -1.3 | |
| 12 | ZZZZZ | A201056-01A | 02/04/92 | 2241 | -1.3 | |
| 13 | ZZZZZ | A201056-02A | 02/04/92 | 2319 | -1.2 | |
| 14 | ZZZZZ | A201056-02C | 02/04/92 | 2357 | -1.1 | |
| 15 | ZZZZZ | A201056-02D | 02/05/92 | 0035 | -1.1 | |
| 16 | ZZZZZ | A201056-03A | 02/05/92 | 0113 | -1.1 | |
| 17 | EVALB | B20361 | 02/05/92 | 0151 | -1.1 | |
| 18 | ZZZZZ | A201056-04A | 02/05/92 | 0228 | -1.0 | |
| 19 | ZZZZZ | A201062-BLK | 02/05/92 | 0305 | -0.9 | |
| 20 | ZZZZZ | A201062-01B | 02/05/92 | 0342 | -0.9 | |
| 21 | ZZZZZ | A201062-02B | 02/05/92 | 0420 | -0.8 | |
| 22 | ZZZZZ | A201062-03B | 02/05/92 | 0457 | -0.8 | |
| 23 | INDB | B20367 | 02/05/92 | 0535 | -0.8 | |
| 24 | ZZZZZ | A201062-05A | 02/05/92 | 0612 | -0.8 | |
| 25 | ZZZZZ | A201062-05B | 02/05/92 | 0649 | -0.9 | |
| 26 | ZZZZZ | A201062-05C | 02/05/92 | 0727 | -0.8 | |
| 27 | ZZZZZ | A201064-BLK | 02/05/92 | 0805 | -0.8 | |
| 28 | ZZZZZ | A201064-01C | 02/05/92 | 0844 | -0.8 | |
| 29 | EVALB | B20373 | 02/05/92 | 0921 | -0.8 | |
| 30 | ZZZZZ | A201064-01D | 02/05/92 | 0958 | -0.8 | |
| 31 | ZZZZZ | A201064-01E | 02/05/92 | 1036 | -0.7 | |
| 32 | ZZZZZ | A201064-02D | 02/05/92 | 1114 | -0.7 | |
| 33 | INDA | B20377 | 02/05/92 | 1154 | -0.7 | |
| 34 | INDB | B20378 | 02/05/92 | 1234 | -0.7 | |

* Values outside of QC limits (2.0% for packed columns, 0.3% for capillary columns)



FORM VIII PEST-2 1/87 Rev.

9713528.0735



00223

# PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890A GC Column ID: DB1701

DATE(S) OF ANALYSIS FROM: 02/03/92 TO: 02/03/92
TIME(S) OF ANALYSIS FROM: 1228 TO: 1740

DATE OF ANALYSIS 02/04/92
TIME OF ANALYSIS 0114
EPA SAMPLE NO. (STANDARD) INDA

| COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | RT | CALIBRATION FACTOR | QNT Y/N | %D |
|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 7.43 | 7.31 | 7.55 | 7440000 | | | | |
| beta-BHC | 11.15 | 10.99 | 11.31 | 4180000 | | | | |
| delta-BHC | 11.95 | 11.78 | 12.12 | 5840000 | | | | |
| gamma-BHC | 8.68 | 8.49 | 8.87 | 7700000 | 8.73 | 7990000 | Y | -3.8 |
| Heptachlor | 9.31 | 9.13 | 9.49 | 8940000 | 9.38 | 9340000 | Y | -4.5 |
| Aldrin | 10.20 | 10.03 | 10.37 | 8220000 | 10.27 | 8570000 | Y | -4.3 |
| Hept. epoxide | 12.45 | 12.26 | 12.64 | 7680000 | 12.52 | 8000000 | Y | -4.2 |
| Endosulfan I | 13.36 | 13.17 | 13.55 | 3980000 | 13.42 | 4140000 | Y | -4.0 |
| Dieldrin | 14.63 | 14.42 | 14.84 | 6710000 | 14.69 | 6870000 | Y | -2.4 |
| 4,4'-DDE | 14.11 | 13.93 | 14.29 | 7080000 | | | | |
| Endrin | 15.39 | 15.15 | 15.63 | 6730000 | | | | |
| Endosulfan II | 17.70 | 17.37 | 18.03 | 2340000 | 17.80 | 2390000 | Y | -2.1 |
| 4,4'-DDD | 17.53 | 17.26 | 17.80 | 4020000 | | | | |
| Endo. sulfate | 22.57 | 22.16 | 22.98 | 7720000 | | | | |
| 4,4'-DDT | 18.42 | 18.07 | 18.77 | 5290000 | 18.53 | 5450000 | Y | -3.0 |
| Methoxychlor | 23.08 | 22.56 | 23.60 | 3370000 | 23.24 | 3520000 | Y | -4.5 |
| Endrin ketone | 26.05 | 25.46 | 26.64 | 7300000 | | | | |
| a. Chlordane | 13.74 | 13.55 | 13.93 | 7700000 | | | | |
| g. Chlordane | 13.56 | 13.39 | 13.73 | 7850000 | | | | |
| Toxaphene | 17.33 | 17.09 | 17.57 | 1630000 | | | | |
| Aroclor-1016 | 7.64 | 7.50 | 7.78 | 1660000 | | | | |
| Aroclor-1221 | 6.53 | 6.41 | 6.65 | 368000 | | | | |
| Aroclor-1232 | 9.10 | 8.93 | 9.27 | 610000 | | | | |
| Aroclor-1242 | 9.50 | 9.36 | 9.64 | 1230000 | | | | |
| Aroclor-1248 | 9.85 | 9.71 | 9.99 | 1300000 | | | | |
| Aroclor-1254 | 12.91 | 12.73 | 13.09 | 1420000 | | | | |
| Aroclor-1260 | 19.79 | 19.53 | 20.05 | 2210000 | | | | |

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

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# PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890A GC Column ID: DB1701

DATE(S) OF ANALYSIS FROM: 02/03/92 TO: 02/03/92
TIME(S) OF ANALYSIS FROM: 1228 TO: 1740

DATE OF ANALYSIS 02/04/92
TIME OF ANALYSIS 1350
EPA SAMPLE NO. (STANDARD) INDB

| COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | RT | CALIBRATION FACTOR | QNT Y/N | %D |
|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 7.43 | 7.31 | 7.55 | 7440000 | 7.48 | 7570000 | Y | -1.7 |
| beta-BHC | 11.15 | 10.99 | 11.31 | 4180000 | 11.20 | 3970000 | Y | 5.0 |
| delta-BHC | 11.95 | 11.78 | 12.12 | 5840000 | 12.00 | 6220000 | Y | -6.5 |
| gamma-BHC | 8.68 | 8.49 | 8.87 | 7700000 | | | | |
| Heptachlor | 9.31 | 9.13 | 9.49 | 8940000 | | | | |
| Aldrin | 10.20 | 10.03 | 10.37 | 8220000 | 10.25 | 8500000 | Y | -3.4 |
| Hept. epoxide | 12.45 | 12.26 | 12.64 | 7680000 | | | | |
| Endosulfan I | 13.36 | 13.17 | 13.55 | 3980000 | | | | |
| Dieldrin | 14.63 | 14.42 | 14.84 | 6710000 | | | | |
| 4,4'-DDE | 14.11 | 13.93 | 14.29 | 7080000 | 14.16 | 7210000 | Y | -1.8 |
| Endrin | 15.39 | 15.15 | 15.63 | 6730000 | 15.46 | 7230000 | Y | -7.4 |
| Endosulfan II | 17.70 | 17.37 | 18.03 | 2340000 | | | | |
| 4,4'-DDD | 17.53 | 17.26 | 17.80 | 4020000 | 17.61 | 4320000 | Y | -7.5 |
| Endo. sulfate | 22.57 | 22.16 | 22.98 | 7720000 | 22.69 | 7980000 | Y | -3.4 |
| 4,4'-DDT | 18.42 | 18.07 | 18.77 | 5290000 | | | | |
| Methoxychlor | 23.08 | 22.56 | 23.60 | 3370000 | | | | |
| Endrin ketone | 26.05 | 25.46 | 26.64 | 7300000 | 26.21 | 7610000 | Y | -4.2 |
| a. Chlordane | 13.74 | 13.55 | 13.93 | 7700000 | 13.79 | 7900000 | Y | -2.6 |
| g. Chlordane | 13.56 | 13.39 | 13.73 | 7850000 | 13.61 | 8000000 | Y | -1.9 |
| Toxaphene | 17.33 | 17.09 | 17.57 | 1630000 | | | | |
| Aroclor-1016 | 7.64 | 7.50 | 7.78 | 1660000 | | | | |
| Aroclor-1221 | 6.53 | 6.41 | 6.65 | 368000 | | | | |
| Aroclor-1232 | 9.10 | 8.93 | 9.27 | 610000 | | | | |
| Aroclor-1242 | 9.50 | 9.36 | 9.64 | 1230000 | | | | |
| Aroclor-1248 | 9.85 | 9.71 | 9.99 | 1300000 | | | | |
| Aroclor-1254 | 12.91 | 12.73 | 13.09 | 1420000 | | | | |
| Aroclor-1260 | 19.79 | 19.53 | 20.05 | 2210000 | | | | |

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

# PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890A GC Column ID: DB1701

DATE(S) OF ANALYSIS FROM: 02/03/92 TO: 02/03/92
TIME(S) OF ANALYSIS FROM: 1228 TO: 1740

DATE OF ANALYSIS 02/04/92
TIME OF ANALYSIS 2125
EPA SAMPLE NO. (STANDARD) INDA

| COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | RT | CALIBRATION FACTOR | QNT Y/N | %D |
|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 7.43 | 7.31 | 7.55 | 7440000 | | | | |
| beta-BHC | 11.15 | 10.99 | 11.31 | 4180000 | | | | |
| delta-BHC | 11.95 | 11.78 | 12.12 | 5840000 | | | | |
| gamma-BHC | 8.68 | 8.49 | 8.87 | 7700000 | 8.78 | 7680000 | Y | 0.3 |
| Heptachlor | 9.31 | 9.13 | 9.49 | 8940000 | 9.41 | 9220000 | Y | -3.1 |
| Aldrin | 10.20 | 10.03 | 10.37 | 8220000 | 10.30 | 8350000 | Y | -1.6 |
| Hept. epoxide | 12.45 | 12.26 | 12.64 | 7680000 | 12.57 | 7570000 | Y | 1.4 |
| Endosulfan I | 13.36 | 13.17 | 13.55 | 3980000 | 13.47 | 3900000 | Y | 2.0 |
| Dieldrin | 14.63 | 14.42 | 14.84 | 6710000 | 14.74 | 6700000 | Y | 0.15 |
| 4,4'-DDE | 14.11 | 13.93 | 14.29 | 7080000 | | | | |
| Endrin | 15.39 | 15.15 | 15.63 | 6730000 | | | | |
| Endosulfan II | 17.70 | 17.37 | 18.03 | 2340000 | 17.88 | 2080000 | Y | 11.1 |
| 4,4'-DDD | 17.53 | 17.26 | 17.80 | 4020000 | | | | |
| Endo. sulfate | 22.57 | 22.16 | 22.98 | 7720000 | | | | |
| 4,4'-DDT | 18.42 | 18.07 | 18.77 | 5290000 | 18.62 | 4890000 | Y | 7.6 |
| Methoxychlor | 23.08 | 22.56 | 23.60 | 3370000 | 23.36 | 3400000 | Y | -0.9 |
| Endrin ketone | 26.05 | 25.46 | 26.64 | 7300000 | | | | |
| a. Chlordane | 13.74 | 13.55 | 13.93 | 7700000 | | | | |
| g. Chlordane | 13.56 | 13.39 | 13.73 | 7850000 | | | | |
| Toxaphene | 17.33 | 17.09 | 17.57 | 1630000 | | | | |
| Aroclor-1016 | 7.64 | 7.50 | 7.78 | 1660000 | | | | |
| Aroclor-1221 | 6.53 | 6.41 | 6.65 | 368000 | | | | |
| Aroclor-1232 | 9.10 | 8.93 | 9.27 | 610000 | | | | |
| Aroclor-1242 | 9.50 | 9.36 | 9.64 | 1230000 | | | | |
| Aroclor-1248 | 9.85 | 9.71 | 9.99 | 1300000 | | | | |
| Aroclor-1254 | 12.91 | 12.73 | 13.09 | 1420000 | | | | |
| Aroclor-1260 | 19.79 | 19.53 | 20.05 | 2210000 | | | | |

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

# PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890A GC Column ID: DB1701

DATE(S) OF ANALYSIS FROM: 02/03/92 TO: 02/03/92
TIME(S) OF ANALYSIS FROM: 1228 TO: 1740

DATE OF ANALYSIS 02/04/92
TIME OF ANALYSIS 2203
EPA SAMPLE NO. (STANDARD) INDB

| COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | RT | CALIBRATION FACTOR | QNT Y/N | %D |
|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 7.43 | 7.31 | 7.55 | 7440000 | 7.53 | 7440000 | N | 0.0 |
| beta-BHC | 11.15 | 10.99 | 11.31 | 4180000 | 11.25 | 3660000 | N | 12.4 |
| delta-BHC | 11.95 | 11.78 | 12.12 | 5840000 | 12.05 | 6090000 | N | -4.3 |
| gamma-BHC | 8.68 | 8.49 | 8.87 | 7700000 | | | | |
| Heptachlor | 9.31 | 9.13 | 9.49 | 8940000 | | | | |
| Aldrin | 10.20 | 10.03 | 10.37 | 8220000 | 10.30 | 8180000 | N | 0.5 |
| Hept. epoxide | 12.45 | 12.26 | 12.64 | 7680000 | | | | |
| Endosulfan I | 13.36 | 13.17 | 13.55 | 3980000 | | | | |
| Dieldrin | 14.63 | 14.42 | 14.84 | 6710000 | | | | |
| 4,4'-DDE | 14.11 | 13.93 | 14.29 | 7080000 | 14.22 | 6680000 | N | 5.6 |
| Endrin | 15.39 | 15.15 | 15.63 | 6730000 | 15.53 | 6740000 | N | -0.1 |
| Endosulfan II | 17.70 | 17.37 | 18.03 | 2340000 | | | | |
| 4,4'-DDD | 17.53 | 17.26 | 17.80 | 4020000 | 17.70 | 3930000 | N | 2.2 |
| Endo. sulfate | 22.57 | 22.16 | 22.98 | 7720000 | 22.82 | 7240000 | N | 6.2 |
| 4,4'-DDT | 18.42 | 18.07 | 18.77 | 5290000 | | | | |
| Methoxychlor | 23.08 | 22.56 | 23.60 | 3370000 | | | | |
| Endrin ketone | 26.05 | 25.46 | 26.64 | 7300000 | 26.38 | 7360000 | N | -0.8 |
| a. Chlordane | 13.74 | 13.55 | 13.93 | 7700000 | 13.86 | 7170000 | N | 6.9 |
| g. Chlordane | 13.56 | 13.39 | 13.73 | 7850000 | 13.67 | 7400000 | N | 5.7 |
| Toxaphene | 17.33 | 17.09 | 17.57 | 1630000 | | | | |
| Aroclor-1016 | 7.64 | 7.50 | 7.78 | 1660000 | | | | |
| Aroclor-1221 | 6.53 | 6.41 | 6.65 | 368000 | | | | |
| Aroclor-1232 | 9.10 | 8.93 | 9.27 | 610000 | | | | |
| Aroclor-1242 | 9.50 | 9.36 | 9.64 | 1230000 | | | | |
| Aroclor-1248 | 9.85 | 9.71 | 9.99 | 1300000 | | | | |
| Aroclor-1254 | 12.91 | 12.73 | 13.09 | 1420000 | | | | |
| Aroclor-1260 | 19.79 | 19.53 | 20.05 | 2210000 | | | | |

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

9

# PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890A GC Column ID: DB1701

DATE(S) OF ANALYSIS FROM: 02/03/92 TO: 02/03/92
TIME(S) OF ANALYSIS FROM: 1228 TO: 1740

DATE OF ANALYSIS 02/05/92
TIME OF ANALYSIS 0535
EPA SAMPLE NO. (STANDARD) INDB

| COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | RT | CALIBRATION FACTOR | QNT Y/N | %D |
|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 7.43 | 7.31 | 7.55 | 7440000 | 7.49 | 8200000 | Y | -10.2 |
| beta-BHC | 11.15 | 10.99 | 11.31 | 4180000 | 11.22 | 4150000 | Y | 0.7 |
| delta-BHC | 11.95 | 11.78 | 12.12 | 5840000 | 12.00 | 6440000 | Y | -10.3 |
| gamma-BHC | 8.68 | 8.49 | 8.87 | 7700000 | | | | |
| Heptachlor | 9.31 | 9.13 | 9.49 | 8940000 | | | | |
| Aldrin | 10.20 | 10.03 | 10.37 | 8220000 | 10.27 | 8820000 | Y | -7.3 |
| Hept. epoxide | 12.45 | 12.26 | 12.64 | 7680000 | | | | |
| Endosulfan I | 13.36 | 13.17 | 13.55 | 3980000 | | | | |
| Dieldrin | 14.63 | 14.42 | 14.84 | 6710000 | | | | |
| 4,4'-DDE | 14.11 | 13.93 | 14.29 | 7080000 | 14.17 | 7460000 | Y | -5.4 |
| Endrin | 15.39 | 15.15 | 15.63 | 6730000 | 15.48 | 7230000 | Y | -7.4 |
| Endosulfan II | 17.70 | 17.37 | 18.03 | 2340000 | | | | |
| 4,4'-DDD | 17.53 | 17.26 | 17.80 | 4020000 | 17.63 | 4280000 | Y | -6.5 |
| Endo. sulfate | 22.57 | 22.16 | 22.98 | 7720000 | 22.72 | 8110000 | Y | -5.1 |
| 4,4'-DDT | 18.42 | 18.07 | 18.77 | 5290000 | | | | |
| Methoxychlor | 23.08 | 22.56 | 23.60 | 3370000 | | | | |
| Endrin ketone | 26.05 | 25.46 | 26.64 | 7300000 | 26.25 | 7760000 | Y | -6.3 |
| a. Chlordane | 13.74 | 13.55 | 13.93 | 7700000 | 13.81 | 8060000 | Y | -4.7 |
| g. Chlordane | 13.56 | 13.39 | 13.73 | 7850000 | 13.62 | 8230000 | Y | -4.8 |
| Toxaphene | 17.33 | 17.09 | 17.57 | 1630000 | | | | |
| Aroclor-1016 | 7.64 | 7.50 | 7.78 | 1660000 | | | | |
| Aroclor-1221 | 6.53 | 6.41 | 6.65 | 368000 | | | | |
| Aroclor-1232 | 9.10 | 8.93 | 9.27 | 610000 | | | | |
| Aroclor-1242 | 9.50 | 9.36 | 9.64 | 1230000 | | | | |
| Aroclor-1248 | 9.85 | 9.71 | 9.99 | 1300000 | | | | |
| Aroclor-1254 | 12.91 | 12.73 | 13.09 | 1420000 | | | | |
| Aroclor-1260 | 19.79 | 19.53 | 20.05 | 2210000 | | | | |

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

9

# PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890A GC Column ID: DB1701

DATE(S) OF ANALYSIS FROM: 02/03/92 TO: 02/03/92
TIME(S) OF ANALYSIS FROM: 1228 TO: 1740

DATE OF ANALYSIS 02/05/92
TIME OF ANALYSIS 1154
EPA SAMPLE NO. (STANDARD) INDA

| COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | RT | CALIBRATION FACTOR | QNT Y/N | %D | |
|---|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 7.43 | 7.31 | 7.55 | 7440000 | | | | | |
| beta-BHC | 11.15 | 10.99 | 11.31 | 4180000 | | | | | |
| delta-BHC | 11.95 | 11.78 | 12.12 | 5840000 | | | | | |
| gamma-BHC | 8.68 | 8.49 | 8.87 | 7700000 | 8.73 | 8570000 | Y | -11.3 | ✓ |
| Heptachlor | 9.31 | 9.13 | 9.49 | 8940000 | 9.36 | 9500000 | Y | -6.3 | ✓ |
| Aldrin | 10.20 | 10.03 | 10.37 | 8220000 | 10.25 | 8810000 | Y | -7.2 | ✓ |
| Hept. epoxide | 12.45 | 12.26 | 12.64 | 7680000 | 12.52 | 8010000 | Y | -4.3 | ✓ |
| Endosulfan I | 13.36 | 13.17 | 13.55 | 3980000 | 13.41 | 4160000 | Y | -4.5 | ✓ |
| Dieldrin | 14.63 | 14.42 | 14.84 | 6710000 | 14.69 | 6860000 | Y | -2.2 | ✓ |
| 4,4'-DDE | 14.11 | 13.93 | 14.29 | 7080000 | | | | | |
| Endrin | 15.39 | 15.15 | 15.63 | 6730000 | | | | | |
| Endosulfan II | 17.70 | 17.37 | 18.03 | 2340000 | 17.80 | 2430000 | Y | -3.8 | ✓ |
| 4,4'-DDD | 17.53 | 17.26 | 17.80 | 4020000 | | | | | |
| Endo. sulfate | 22.57 | 22.16 | 22.98 | 7720000 | | | | | |
| 4,4'-DDT | 18.42 | 18.07 | 18.77 | 5290000 | 18.52 | 5490000 | Y | -3.8 | ✓ |
| Methoxychlor | 23.08 | 22.56 | 23.60 | 3370000 | 23.23 | 3490000 | Y | -3.6 | ✓ |
| Endrin ketone | 26.05 | 25.46 | 26.64 | 7300000 | | | | | |
| a. Chlordane | 13.74 | 13.55 | 13.93 | 7700000 | | | | | |
| g. Chlordane | 13.56 | 13.39 | 13.73 | 7850000 | | | | | |
| Toxaphene | 17.33 | 17.09 | 17.57 | 1630000 | | | | | |
| Aroclor-1016 | 7.64 | 7.50 | 7.78 | 1660000 | | | | | |
| Aroclor-1221 | 6.53 | 6.41 | 6.65 | 368000 | | | | | |
| Aroclor-1232 | 9.10 | 8.93 | 9.27 | 610000 | | | | | |
| Aroclor-1242 | 9.50 | 9.36 | 9.64 | 1230000 | | | | | |
| Aroclor-1248 | 9.85 | 9.71 | 9.99 | 1300000 | | | | | |
| Aroclor-1254 | 12.91 | 12.73 | 13.09 | 1420000 | | | | | |
| Aroclor-1260 | 19.79 | 19.53 | 20.05 | 2210000 | | | | | |

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

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00229

# PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890A GC Column ID: DB1701

| DATE(S) OF ANALYSIS | FROM: 02/03/92 | DATE OF ANALYSIS 02/05/92 |
|---|---|---|
| | TO: 02/03/92 | TIME OF ANALYSIS 1234 |
| TIME(S) OF ANALYSIS | FROM: 1228 | EPA SAMPLE NO. |
| | TO: 1740 | (STANDARD) INDB |

| COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | RT | CALIBRATION FACTOR | QNT Y/N | %D |
|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 7.43 | 7.31 | 7.55 | 7440000 | 7.48 | 7960000 | Y | -7.0 |
| beta-BHC | 11.15 | 10.99 | 11.31 | 4180000 | 11.20 | 4030000 | Y | 3.6 |
| delta-BHC | 11.95 | 11.78 | 12.12 | 5840000 | 12.00 | 6140000 | Y | -5.1 |
| gamma-BHC | 8.68 | 8.49 | 8.87 | 7700000 | | | | |
| Heptachlor | 9.31 | 9.13 | 9.49 | 8940000 | | | | |
| Aldrin | 10.20 | 10.03 | 10.37 | 8220000 | 10.27 | 8560000 | Y | -4.1 |
| Hept. epoxide | 12.45 | 12.26 | 12.64 | 7680000 | | | | |
| Endosulfan I | 13.36 | 13.17 | 13.55 | 3980000 | | | | |
| Dieldrin | 14.63 | 14.42 | 14.84 | 6710000 | | | | |
| 4,4'-DDE | 14.11 | 13.93 | 14.29 | 7080000 | 14.17 | 7570000 | Y | -6.9 |
| Endrin | 15.39 | 15.15 | 15.63 | 6730000 | 15.48 | 7030000 | Y | -4.5 |
| Endosulfan II | 17.70 | 17.37 | 18.03 | 2340000 | | | | |
| 4,4'-DDD | 17.53 | 17.26 | 17.80 | 4020000 | 17.63 | 4270000 | Y | -6.2 |
| Endo. sulfate | 22.57 | 22.16 | 22.98 | 7720000 | 22.71 | 7820000 | Y | -1.3 |
| 4,4'-DDT | 18.42 | 18.07 | 18.77 | 5290000 | | | | |
| Methoxychlor | 23.08 | 22.56 | 23.60 | 3370000 | | | | |
| Endrin ketone | 26.05 | 25.46 | 26.64 | 7300000 | 26.23 | 7450000 | Y | -2.1 |
| a. Chlordane | 13.74 | 13.55 | 13.93 | 7700000 | 13.81 | 8010000 | Y | -4.0 |
| g. Chlordane | 13.56 | 13.39 | 13.73 | 7850000 | 13.62 | 8160000 | Y | -3.9 |
| Toxaphene | 17.33 | 17.09 | 17.57 | 1630000 | | | | |
| Aroclor-1016 | 7.64 | 7.50 | 7.78 | 1660000 | | | | |
| Aroclor-1221 | 6.53 | 6.41 | 6.65 | 368000 | | | | |
| Aroclor-1232 | 9.10 | 8.93 | 9.27 | 610000 | | | | |
| Aroclor-1242 | 9.50 | 9.36 | 9.64 | 1230000 | | | | |
| Aroclor-1248 | 9.85 | 9.71 | 9.99 | 1300000 | | | | |
| Aroclor-1254 | 12.91 | 12.73 | 13.09 | 1420000 | | | | |
| Aroclor-1260 | 19.79 | 19.53 | 20.05 | 2210000 | | | | |

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

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00239

# ***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 15:52:22 Version 4.1 **********

* Sample Name: CLP/EVALA,I  Data File: A:B2031 *
* Date: 02-03-1992 10:31:04 Method: A:BCLP088 02-03-1992 16:08:34 # 320*
* Interface: 2 Cycle#: 1 Operator CP Channel#: 1 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890A  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

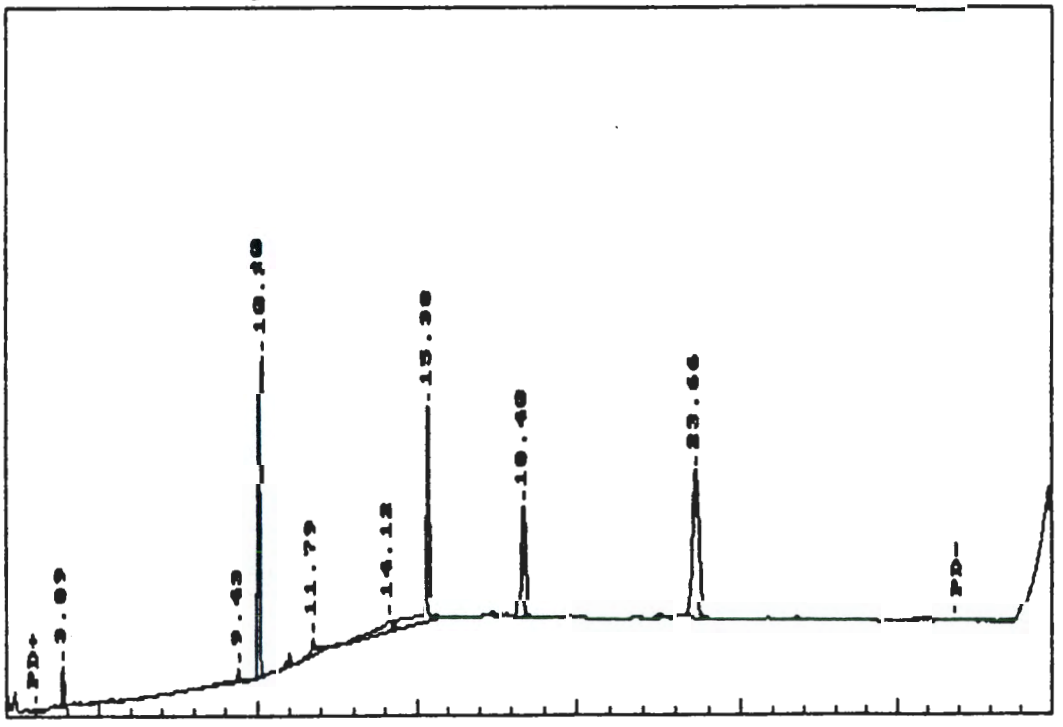
Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 10000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

1 of 3

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 3.89 | | 1.6607 | 26.1863% | 16607 | 4087 | 4.1 | 2 | | | 1.0000E-04 |
| 14 | 9.43 | | 2.8747 | 45.3287% | 28747 | 1577 | 18.2 | 3 | | | 1.0000E-04 |
| 16 | 10.20 | Aldrin 0.02 | 0.0047 | 0.0741% | 159305 | 33609 | 4.7 | 2 | 0 | 0 | 2.9517E-08 |
| 20 | 11.79 | | 1.7786 | 28.0453% | 17786 | 1805 | 9.9 | 3 | | | 1.0000E-04 |
| 23 | 14.12 | 4,4'-DDE | 0.0015(289) | 0.0237% | ~~42636~~ | 1170 | 36.4 | 2 | 0 | 0 | 3.5290E-08 |
| 24 | 15.38 | Endrin 0.02 | 0.0071(3/922) | 0.1116% | ~~190552~~ | 22383 | 8.5 | 3 | 0 | -.0864 | 3.7142E-08 |
| 27 | 18.40 | 4,4'-DDT 0.02 | 0.0046 | 0.0730% | 97859 | 11248 | 8.7 | 1 | 0 | -.1118 | 4.7288E-08 |
| 29 | 23.66 | DBC 0.04 | 0.0100 | 0.1573% | 214721 | 15259 | 14.1 | 1 | 0 | 0 | 4.6457E-08 |
| | | TOTAL AMOUNT = | 6.3420 | | | | | | | | |

cy 2-6-92

Data File = A:B2031.PTS Printed on 02-04-1992 at 15:52:30
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 41502 uv High Value: 78561 uv Scale factor: 0.5



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00245

1 of 2

# ***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 15:54:14 Version 4.1 **********

* Sample Name: CLP/EVALC,I  Data File: A:B2033 *
* Date: 02-03-1992 11:47:43 Method: A:BCLP088 02-03-1992 16:08:34 W 320*
* Interface: 2 Cycle#: 3 Operator CP Channel#: 1 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

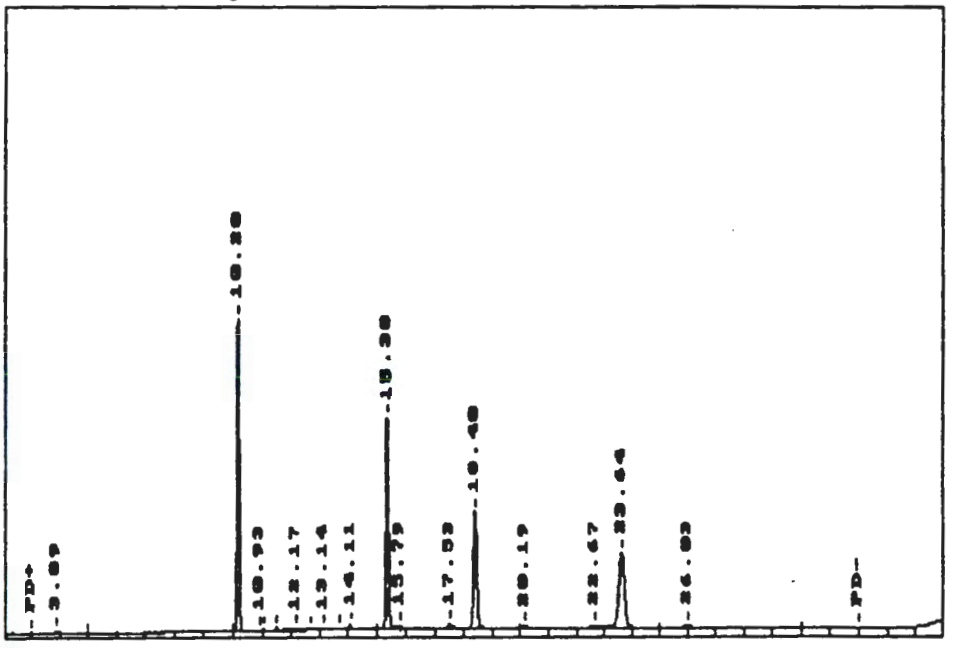
* Instrument Type: HP5890A  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 10000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 3.89 | | 1.8226 | 13.5152% | 18226 | 4707 | 3.9 | 2 | | | 1.0000E-04 |
| 23 | 10.20 | Aldrin 0.4 | 0.0909 | 0.6739% | 3079149 | 639054 | 4.8 | 2 | 0 | 0 | 2.9517E-08 |
| 24 | 10.93 | | 1.2367 | 9.1706% | 12367 | 1621 | 7.6 | 2 | | | 1.0000E-04 |
| 25 | 11.05 | ~~beta-BHC~~ | 0.0012 | 0.0088% | 19811 | 2696 | 7.3 | 2 | 0 | -.8843 | 5.9877E-08 |
| 26 | 11.50 | | 3.0219 | 22.4083% | 30219 | 5808 | 5.2 | 2 | | | 1.0000E-04 |
| 29 | 12.17 | | 2.2082 | 16.3740% | 22082 | 1489 | 14.8 | 2 | | | 1.0000E-04 |
| 30 | 12.69 | | 1.4580 | 10.8116% | 14580 | 506 | 28.8 | 2 | | | 1.0000E-04 |
| 31 | 13.14 | | 1.4051 | 10.4190% | 14051 | 645 | 21.8 | 2 | | | 1.0000E-04 |
| 32 | 13.69 | ~~a-chlordane~~ | 0.0007 | 0.0050% | 20899 | 877 | 23.8 | 2 | 0 | -.3639 | 3.2455E-08 |
| 33 | 14.11 | 4,4'-DDE | 0.00283245 | 0.0209% | ~~79699~~ | 7469 | 10.7 | 3 | 0 | 0 | 3.5290E-08 |
| 36 | 15.38 | Endrin 0.4 | 0.0962 | 0.7136% | 2591064 | 429728 | 6.0 | 2 | 0 | -.0864 | 3.7142E-08 |
| 37 | 15.79 | | 1.9349 | 14.3474% | 19349 | 2586 | 7.5 | 2 | | | 1.0000E-04 |
| 39 | 17.53 | 4,4'-DDD | 0.00445449 | 0.0328% | ~~71159~~ | 6797 | 10.5 | 2 | 0 | 0 | 6.2251E-08 |
| 40 | 18.40 | 4,4'-DDT 0.4 | 0.0946 | 0.7017% | 2001108 | 239373 | 8.4 | 2 | 0 | -.1118 | 4.7288E-08 |
| 41 | 20.19 | Endrin Aldehyde | 0.0013 | 0.0097% | 31745 | 2412 | 13.2 | 2 | 0 | 0 | 4.1017E-08 |
| 44 | 22.67 | ~~Endo. sulfate~~ | 0.0025 | 0.0188% | 78313 | 4758 | 16.5 | 2 | 0 | .4634 | 3.2364E-08 |
| 45 | 23.64 | DBC 0.4 | 0.1018 | 0.7551% | 2192070 | 152559 | 14.4 | 2 | 0 | -.0710 | 4.6457E-08 |
| 46 | 26.03 | Endrin ketone | 0.0018 | 0.0135% | 53068 | 3588 | 14.8 | 1 | 0 | 0 | 3.4229E-08 |

TOTAL AMOUNT = 13.4858  CY 2-6-92

Data File = A:B2033.PTS Printed on 02-04-1992 at 15:54:28
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 39509 uv High Value: 682480 uv Scale factor: 0.5



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00247

1 of 2

# ***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 15:55:01 Version 4.1 **********

* Sample Name: CLP/INDA,I 1 Data File: A:B2034 *
* Date: 02-03-1992 12:28:43 Method: A:BCLP088 02-03-1992 16:08:34 # 320*
* Interface: 2 Cycle#: 4 Operator CP Channel#: 1 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

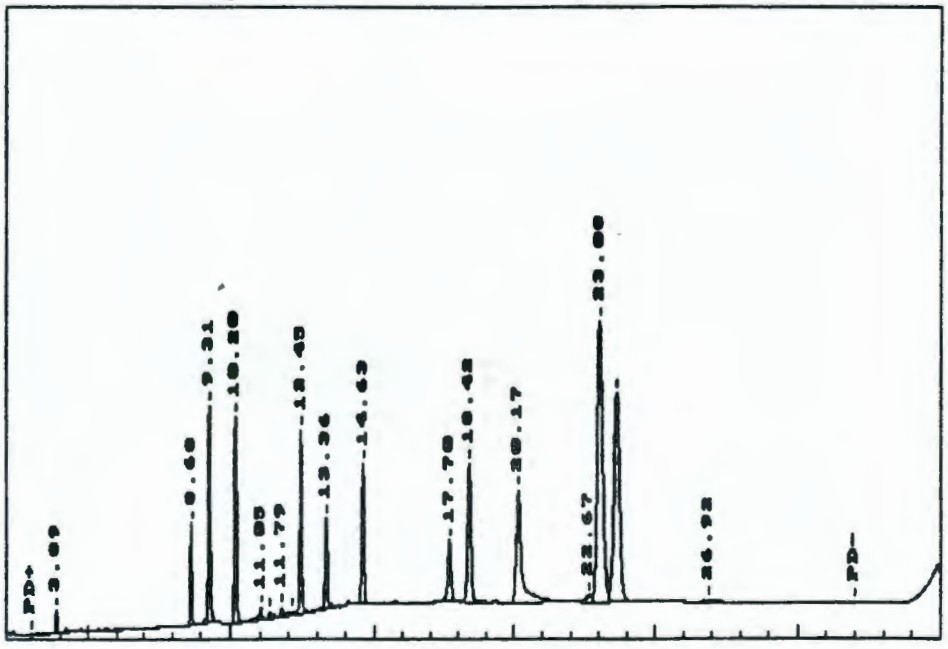
* Instrument Type: HP5890A Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

Starting Delay: 2.00 Ending retention time: 35.00
Area reject: 10000 One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00 Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 3.89 | | 3.1500 | 27.7174% | 31501 | 7578 | 4.2 | 2 | | | 1.0000E-04 |
| 17 | 8.68 | gamma-BHC 0.02 | 0.0050 | 0.0440% | 153979 | 36239 | 4.2 | 1 | 0 | 0 | 3.2472E-08 |
| 19 | 9.31 | Heptachlor 0.04 | 0.0100 | 0.0880% | 357619 | 77457 | 4.6 | 2 | 0 | -.0579 | 2.7963E-08 |
| 21 | 10.20 | Aldrin 0.04 | 0.0100 | 0.0880% | 338791 | 73657 | 4.6 | 3 | 0 | 0 | 2.9517E-08 |
| 24 | 11.05 | ~~beta-BHC 0.~~ | 0.0015 | 0.0131% | 24860 | 3929 | 6.3 | 2 | 0 | -.8843 | 5.9877E-08 |
| 25 | 11.37 | | 2.4742 | 21.7706% | 24742 | 2569 | 9.6 | 2 | | | 1.0000E-04 |
| 26 | 11.79 | | 1.9009 | 16.7262% | 19009 | 3398 | 5.6 | 2 | | | 1.0000E-04 |
| 27 | 12.15 | | 2.0652 | 18.1715% | 20652 | 1133 | 18.2 | 2 | | | 1.0000E-04 |
| 28 | 12.45 | Hept. epoxide 0.04 | 0.0105 3017312 | 0.0923% | ~~329530~~ | 65888 | 4.9 | 2 | 0 | 0 | 3.2440E-08 |
| 30 | 13.36 | Endosulfan I 0.04 | 0.0105 5144 | 0.0926% | ~~167449~~ | 32680 | 5.1 | 2 | 0 | -.0299 | 6.2850E-08 |
| 35 | 14.63 | Dieldrin 0.04 | 0.0100 | 0.0880% | 268240 | 50354 | 5.3 | 2 | 0 | 0 | 3.7280E-08 |
| 42 | 17.70 | Endosulfan II 0.08 | 0.0200 | 0.1760% | 187271 | 22052 | 8.5 | 2 | 0 | 0 | 1.0680E-07 |
| 43 | 18.42 | 4,4'-DDT 0.08 | 0.0200 | 0.1760% | 422941 | 49993 | 8.5 | 3 | 0 | 0 | 4.7288E-08 |
| 45 | 20.17 | Endrin Aldehyde 0.1 | 0.0250 5/15/55 | 0.2200% | ~~609509~~ | 41057 | 14.8 | 3 | 0 | 0 | 4.1017E-08 |
| 47 | 22.67 | ~~Endo. sulfate 0.~~ | 0.0010 | 0.0086% | 30292 | 2413 | 12.6 | 2 | 0 | .4634 | 3.2364E-08 |
| 48 | 23.08 | Methoxychlor 0.4 | 0.1000 | 0.8799% | 1347723 | 100878 | 13.4 | 2 | 0 | 0 | 7.4199E-08 |
| 49 | 23.66 | DDC 0.2 | 0.0500 | 0.4400% | 1076268 | 75084 | 14.3 | 2 | 0 | 0 | 4.6457E-08 |
| 50 | 26.92 | | 1.5010 | 13.2078% | 15010 | 711 | 21.1 | 1 | | | 1.0000E-04 |

TOTAL AMOUNT = 11.3649 CY 2-6-92

Data File = A:B2034.PTS Printed on 02-04-1992 at 15:55:13
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 38212 uv High Value: 150558 uv Scale factor: 0.5



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00249

1 of 2

# ***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 15:55:48 Version 4.1 **********

* Sample Name: CLP/INDE.1 Data File: A:B2035 *
* Date: 02-03-1992 13:11:02 Method: A:BCLP088 02-03-1992 16:08:34 # 320*
* Interface: 2 Cycle#: 5 Operator CP Channel#: 1 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

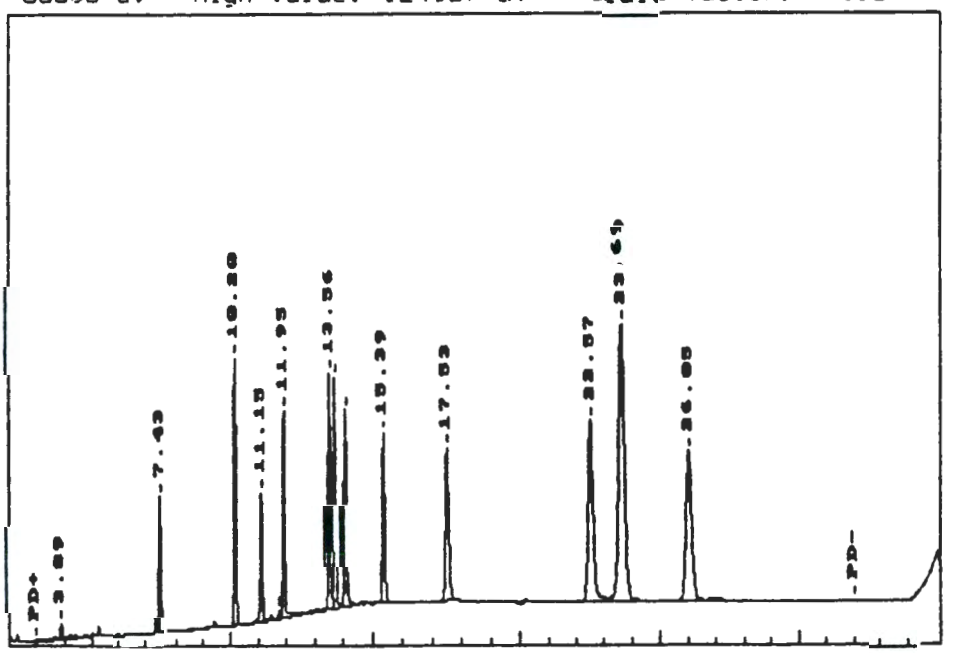
* Instrument Type: HP5890A Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

Starting Delay: 2.00 Ending retention time: 35.00
Area reject: 10000 One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00 Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | total ug | | | | | | | | | |
| 3 | 3.89 | | 1.9989 | 59.7879% | 19989 | 4381 | 4.6 | 2 | | | 1.0000E-04 |
| 14 | 7.43 | alpha-BHC 0.02 | 0.0050 | 0.1496% | 148837 | 37060 | 4.0 | 1 | 0 | 0 | 3.3594E-08 |
| 21 | 10.20 | Aldrin 0.04 | 0.0097 | 0.2904% | 328910 | 73372 | 4.5 | 1 | 0 | 0 | 2.9517E-08 |
| 23 | 11.15 | beta-BHC 0.04 | 0.0100 | 0.2991% | 167008 | 35320 | 4.7 | 3 | 0 | 0 | 5.9877E-08 |
| 26 | 11.79 | | 1.1584 | 34.6498% | 11584 | 2389 | 4.8 | 2 | | | 1.0000E-04 |
| 27 | 11.95 | delta-BHC 0.04 | 0.0113233557 | 0.3392% | ~~266956~~ | 56449 | 4.7 | 3 | 0 | 0 | 4.2484E-08 |
| 31 | 13.56 | g. chlordane 0.04 | 0.0100 | 0.2991% | 314160 | 64468 | 4.9 | 2 | 0 | 0 | 3.1831E-08 |
| 32 | 13.74 | a. chlordane 0.04 | 0.0100 | 0.2991% | 308122 | 62850 | 4.9 | 2 | 0 | 0 | 3.2455E-08 |
| 33 | 14.11 | 4,4'-DDE 0.04 | 0.0100 | 0.2991% | 283363 | 53423 | 5.3 | 2 | 0 | 0 | 3.5290E-08 |
| 36 | 15.39 | Endrin 0.04 | 0.0100 | 0.2991% | 269234 | 46116 | 5.8 | 2 | 0 | 0 | 3.7142E-08 |
| 40 | 17.53 | 4,4'-DDD 0.08 | 0.0200 | 0.5982% | 321280 | 41586 | 7.7 | 2 | 0 | 0 | 6.2251E-08 |
| 44 | 22.57 | Endo. sulfate 0.08 | 0.0200 | 0.5982% | 617962 | 49403 | 12.5 | 2 | 0 | 0 | 3.2364E-08 |
| 45 | 23.69 | DBC 0.2 | 0.0499 | 1.4930% | 1074430 | 75609 | 14.2 | 2 | 0 | .1407 | 4.6457E-08 |
| 46 | 26.05 | Endrin ketone 0.08 | 0.0200 | 0.5982% | 584298 | 40848 | 14.3 | 2 | 0 | 0 | 3.4229E-08 |
| | | TOTAL AMOUNT = | 3.3433 | | | | | | | | |

CY ~~6-2-92~~ 2-6-92

Data File = A:B2035.PTS Printed on 02-04-1992 at 15:55:59
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 38303 uv High Value: 124987 uv Scale factor: 0.5



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***** EXTERNAL STANDARD TABLE *****

********** 02-06-1992 11:51:07 Version 4.1 **********

* Sample Name: CLP/TOXAPH.I Data File: A:B2036 *

* Date: 02-03-1992 13:52:52 Method: A:BCLP088 02-03-1992 16:08:34 # 320 *

* Interface: 2 Cycle#: 6 Operator CP Channel#: 1 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890A Column Type: DB-608,DB-1701 *

* Solvent Description: *

* Conditions: 160D,5D/M,230D,15M(35M RUN) *

* Detector 0: ECD Detector 1: ECD *

* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

Starting Delay: 2.00 Ending retention time: 35.00

Area reject: 10000 One sample per 1.002 sec.

Amount injected: ~~1.00~~ 4.00 Dilution factor: 1.00

Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 3.90 | | 1.8392 | 0.3168% | 18392 | 4467 | 4.1 | 1 | | | 1.0000E-04 |
| 13 | 6.51 | | 1.2094 | 0.2083% | 12094 | 553 | 21.9 | 2 | | | 1.0000E-04 |
| 16 | 7.44 | ~~alpha-BHC~~ | 0.0004 | 0.0001% | 13301 | 2790 | 4.8 | 3 | 0 | .1911 | 3.3594E-08 |
| 32 | 10.85 | | 1.9478 | 0.3355% | 19478 | 2984 | 6.5 | 2 | | | 1.0000E-04 |
| 33 | 10.97 | | 1.0052 | 0.1732% | 10052 | 1828 | 5.5 | 2 | | | 1.0000E-04 |
| 34 | 11.08 | ~~beta-BHC~~ | 0.0027 | 0.0005% | 45333 | 4837 | 9.4 | 3 | 0 | -.5847 | 5.9877E-08 |
| 36 | 11.80 | | 5.3655 | 0.9242% | 53655 | 7627 | 7.0 | 2 | | | 1.0000E-04 |
| 37 | 12.02 | ~~delta-BHC~~ | 0.0007 | 0.0001% | 15595 | 2355 | 6.6 | 2 | 0 | .5857 | 4.2484E-08 |
| 38 | 12.17 | | 2.5007 | 0.4307% | 25007 | 2694 | 9.3 | 2 | | | 1.0000E-04 |
| 40 | 12.49 | ~~Hepta-epoxide~~ | 0.0007 | 0.0001% | 21180 | 2948 | 7.2 | 2 | 0 | .3020 | 3.2440E-08 |
| 41 | 12.67 | | 3.3123 | 0.5705% | 33123 | 4684 | 7.1 | 2 | | | 1.0000E-04 |
| 42 | 12.97 | | 5.1344 | 0.8844% | 51344 | 4868 | 10.5 | 2 | | | 1.0000E-04 |
| 43 | 13.23 | | 1.0370 | 0.1786% | 10370 | 2140 | 4.8 | 2 | | | 1.0000E-04 |
| 44 | 13.39 | ~~Endosulfan I~~ | 0.0007 | 0.0001% | 11257 | 2447 | 4.6 | 2 | 0 | .2200 | 6.2850E-08 |
| 47 | 13.77 | ~~a-chlordane~~ | 0.0019 | 0.0003% | 59592 | 9193 | 6.5 | 2 | 0 | .2438 | 3.2455E-08 |
| 48 | 13.96 | | 5.6217 | 0.9683% | 56217 | 5944 | 9.5 | 2 | | | 1.0000E-04 |
| 49 | 14.12 | ~~4,4'-DDE~~ | 0.0017 | 0.0003% | 48306 | 6974 | 6.9 | 2 | 0 | 0 | 3.5290E-08 |
| 50 | 14.26 | | 4.5760 | 0.7882% | 45760 | 6812 | 6.7 | 2 | | | 1.0000E-04 |
| 51 | 14.39 | | 8.0104 | 1.3798% | 80104 | 8949 | 9.0 | 2 | | | 1.0000E-04 |
| 52 | 14.58 | ~~Dieldrin~~ | 0.0008 | 0.0001% | 21499 | 3832 | 5.6 | 2 | 0 | -.3752 | 3.7280E-08 |
| 53 | 14.73 | | 12.3149 | 2.1213% | 123149 | 15327 | 8.0 | 2 | | | 1.0000E-04 |
| 54 | 15.13 | | 33.6366 | 5.7939% | 336366 | 21566 | 15.6 | 2 | | | 1.0000E-04 |
| 55 | 15.24 | | 11.7337 | 2.0211% | 117337 | 16381 | 7.2 | 2 | | | 1.0000E-04 |
| 56 | 15.43 | ~~Endrin~~ | 0.0092 | 0.0016% | 248010 | 16524 | 15.0 | 2 | 0 | .2391 | 3.7142E-08 |
| 57 | 15.81 | | 21.2518 | 3.6606% | 212518 | 16596 | 12.8 | 2 | | | 1.0000E-04 |
| 58 | 16.19 | | 24.5491 | 4.2286% | 245491 | 21054 | 11.7 | 2 | | | 1.0000E-04 |
| 59 | 16.35 | | 14.3589 | 2.4733% | 143589 | 19534 | 7.4 | 2 | | | 1.0000E-04 |
| 60 | 16.45 | | 23.0754 | 3.9747% | 230754 | 21646 | 10.7 | 2 | | | 1.0000E-04 |
| 61 | 16.75 | | 13.7642 | 2.3709% | 137642 | 12833 | 10.7 | 2 | | | 1.0000E-04 |
| 62 | 16.90 | | 16.4715 | 2.8372% | 164715 | 16247 | 10.1 | 2 | | | 1.0000E-04 |
| 63 | 17.06 | | 6.7550 | 1.1636% | 67550 | 7711 | 8.8 | 2 | | | 1.0000E-04 |
| 64 | 17.33 | Toxaphene | 18.9774 | 3.2689% | 189774 | 16776 | 11.3 | 2 | | | 1.0000E-04 |
| 65 | 17.53 | ~~4,4'-DDD~~ Toxaphene | 0.0173 | 0.0030% | 277501 | 20879 | 13.3 | 2 | 0 | 0 | 6.2251E-08 |
| 66 | 17.85 | ~~Endosulfan II~~ Toxaphene | 0.0347 | 0.0060% | 325139 | 26701 | 12.2 | 2 | 0 | .8378 | 1.0680E-07 |
| 67 | 18.17 | | 11.9087 | 2.0513% | 119087 | 13576 | 8.8 | 2 | | | 1.0000E-04 |
| 68 | 18.30 | ~~4,4'-DDT~~ | 0.0137 | 0.0024% | 290702 | 19675 | 14.8 | 2 | 0 | -.6558 | 4.7288E-08 |
| 69 | 18.95 | | 64.8660 | 11.1732% | 648660 | 25775 | 25.2 | 2 | | | 1.0000E-04 |
| 70 | 19.38 | | 33.1852 | 5.7162% | 331852 | 28515 | 11.6 | 2 | | | 1.0000E-04 |
| 71 | 19.53 | | 30.1132 | 5.1870% | 301132 | 21832 | 13.8 | 2 | | | 1.0000E-04 |

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***** EXTERNAL STANDARD TABLE *****

********** 02-06-1992 11:52:43 Version 4.1 **********

* Sample Name: CLP/AP1660,I  Data File: A:B2037 *

* Date: 02-03-1992 ~~14:38:06~~ 16:30 Method: A:BCLP088 02-03-1992 16:08:34 # 320 *

* Interface: 2  Cycle#: 7  Operator CP  Channel#: 1  Vial#: N.A. *

* Starting Peak Width: 10  Threshold: 1  Area Threshold: 100 *

**********

* Instrument Type: HP5890A  Column Type: DB-608,DB-1701 *

* Solvent Description: *

* Conditions: 160D,5D/M,230D,15M(35M RUN) *

* Detector 0: ECD  Detector 1: ECD *

* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

**********

Starting Delay: 2.00  Ending retention time: 35.00

Area reject: 10000  One sample per 1.002 sec.

Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00

Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 3.90 | | 1.5224 | 0.5826% | 15224 | 3892 | 3.9 | 2 | | | 1.0000E-04 |
| 13 | 6.51 | | 2.7282 | 1.0441% | 27282 | 6256 | 4.4 | 2 | | | 1.0000E-04 |
| 15 | 7.6 | Aroclor-1016 | 5.0848 | 1.9459% | 50848 | 11298 | 4.5 | 2 | | | 1.0000E-04 |
| 19 | 8.25 | | 1.6299 | 0.6237% | 16299 | 3644 | 4.5 | 2 | | | 1.0000E-04 |
| 20 | 8.40 | | 2.1780 | 0.8335% | 21780 | 4506 | 4.8 | 2 | | | 1.0000E-04 |
| 21 | 8.81 | | 1.6593 | 0.6350% | 16593 | 3142 | 5.3 | 2 | | | 1.0000E-04 |
| 22 | 9.08 | Aroclor-1016 | 11.7727 | 4.5053% | 117727 | 21964 | 5.4 | 2 | | | 1.0000E-04 |
| 23 | 9.48 | Aroclor-1016 | 6.6429 | 2.5422% | 66429 | 9199 | 7.2 | 2 | | | 1.0000E-04 |
| 24 | 9.83 | Aroclor-1016 | 3.5379 | 1.3539% | 35379 | 6925 | 5.1 | 2 | | | 1.0000E-04 |
| 25 | 10.20 | ~~Aldrin~~ Aroclor-1016 | 0.0018 | 0.0007% | 62024 | 7148 | 8.7 | 1 | 0 | 0 | 2.9517E-08 |
| 26 | 10.97 | | 4.9449 | 1.8924% | 49449 | 7396 | 6.7 | 2 | | | 1.0000E-04 |
| 27 | 11.27 | | 3.7455 | 1.4334% | 37455 | 5558 | 6.7 | 2 | | | 1.0000E-04 |
| 28 | 11.80 | | 1.1232 | 0.4298% | 11232 | 2192 | 5.1 | 2 | | | 1.0000E-04 |
| 30 | 12.24 | | 6.2211 | 2.3808% | 62211 | 8190 | 7.6 | 2 | | | 1.0000E-04 |
| 32 | 12.85 | | 4.8231 | 1.8458% | 48231 | 8649 | 5.6 | 3 | | | 1.0000E-04 |
| 35 | 14.01 | | 2.1212 | 0.8117% | 21212 | 2591 | 8.2 | 2 | | | 1.0000E-04 |
| 36 | 14.12 | ~~4,4'-DDE~~ | 0.0011 | 0.0004% | 30124 | 4272 | 7.1 | 2 | 0 | 0 | 3.5290E-08 |
| 37 | 14.37 | | 9.8652 | 3.7753% | 98652 | 15712 | 6.3 | 2 | | | 1.0000E-04 |
| 38 | 14.51 | | 2.2616 | 0.8655% | 22616 | 4045 | 5.6 | 2 | | | 1.0000E-04 |
| 39 | 14.59 | ~~Dieldrin~~ | 0.0014 | 0.0005% | 36499 | 4728 | 7.7 | 2 | 0 | -.2611 | 3.7280E-08 |
| 40 | 14.91 | | 13.8240 | 5.2903% | 138240 | 19621 | 7.0 | 2 | | | 1.0000E-04 |
| 41 | 15.31 | Endrin | 0.0014 | 0.0005% | 37900 | 3147 | 12.0 | 2 | 0 | -.5204 | 3.7142E-08 |
| 42 | 15.56 | | 4.8097 | 1.8406% | 48097 | 5836 | 8.2 | 2 | | | 1.0000E-04 |
| 43 | 15.84 | | 22.3300 | 8.5455% | 223300 | 29611 | 7.5 | 2 | | | 1.0000E-04 |

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***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 15:58:26 Version 4.1 **********

* Sample Name: CLP/AR1221,I  Data File: A:B2038 *

* Date: 02-03-1992 15:08:46 Method: A:BCLP088 02-03-1992 16:08:34 # 320*

* Interface: 2 Cycle#: 8 Operator CP Channel#: 1 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890A  Column Type: DB-608,DB-1701 *

* Solvent Description: *

* Conditions: 160D,5D/M,230D,15M(35M RUN) *

* Detector 0: ECD  Detector 1: ECD *

* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

Starting Delay: 2.00  Ending retention time: 35.00

Area reject: 10000  One sample per 1.002 sec.

Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00

Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.17 | | 2.0924 | 1.6491% | 20924 | 1446 | 14.5 | 2 | | | 1.0000E-04 |
| 2 | 3.65 | | 3.5942 | 2.8326% | 35942 | 1140 | 31.5 | 2 | | | 1.0000E-04 |
| 3 | 3.90 | | 2.4778 | 1.9527% | 24778 | 5385 | 4.6 | 2 | | | 1.0000E-04 |
| 4 | 3.99 | | 8.6929 | 6.8509% | 86929 | 17711 | 4.9 | 3 | | | 1.0000E-04 |
| 8 | 5.02 | | 2.0664 | 1.6286% | 20664 | 3595 | 5.7 | 2 | | | 1.0000E-04 |
| 9 | 5.34 | | 2.5730 | 2.0278% | 25730 | 5510 | 4.7 | 2 | | | 1.0000E-04 |
| 10 | 5.44 | | 3.5522 | 2.7995% | 35522 | 7236 | 4.9 | 3 | | | 1.0000E-04 |
| 12 | 5.89 | Aroclor-1221 | 14.5092 | 11.4347% | 145092 | 30828 | 4.7 | 3 | | | 1.0000E-04 |
| 14 | 6.34 | Aroclor-1221 | 10.4814 | 8.2604% | 104814 | 23745 | 4.4 | 2 | | | 1.0000E-04 |
| 15 | 6.53 | Aroclor-1221 | 34.8051 | 27.4298% | 348051 | 71902 | 4.8 | 2 | | | 1.0000E-04 |
| 18 | 7.64 | | 5.3018 | 4.1783% | 53018 | 9011 | 5.9 | 2 | | | 1.0000E-04 |
| 19 | 7.86 | | 1.3474 | 1.0619% | 13474 | 2340 | 5.8 | 2 | | | 1.0000E-04 |
| 21 | 8.11 | | 3.3220 | 2.6181% | 33220 | 6660 | 5.0 | 2 | | | 1.0000E-04 |
| 22 | 8.25 | | 1.5253 | 1.2021% | 15253 | 3056 | 5.0 | 2 | | | 1.0000E-04 |
| 23 | 8.40 | | 2.0382 | 1.6063% | 20382 | 4131 | 4.9 | 2 | | | 1.0000E-04 |
| 24 | 8.81 | | 1.8591 | 1.4651% | 18591 | 3520 | 5.3 | 2 | | | 1.0000E-04 |
| 25 | 9.08 | Aroclor-1221 | 8.0826 | 6.3699% | 80826 | 14910 | 5.4 | 2 | | | 1.0000E-04 |
| 26 | 9.50 | Aroclor-1221 | 5.6968 | 4.4896% | 56968 | 7222 | 7.9 | 2 | | | 1.0000E-04 |
| 27 | 9.83 | | 2.3437 | 1.8471% | 23437 | 4617 | 5.1 | 2 | | | 1.0000E-04 |
| 28 | 10.22 | ~~Aldrin~~ | 0.0005 | 0.0004% | 16892 | 2134 | 7.9 | 1 | 0 | .1607 | 2.9517E-08 |
| 29 | 10.97 | | 2.3699 | 1.8677% | 23699 | 3011 | 7.9 | 2 | | | 1.0000E-04 |
| 30 | 11.27 | | 1.1017 | 0.8682% | 11017 | 1836 | 6.0 | 2 | | | 1.0000E-04 |
| 35 | 12.27 | | 4.1785 | 3.2931% | 41785 | 3092 | 13.5 | 3 | | | 1.0000E-04 |
| 38 | 13.11 | | 1.4740 | 1.1617% | 14740 | 1296 | 11.4 | 2 | | | 1.0000E-04 |
| 39 | 13.72 | ~~α-chlordane~~ | 0.0003 | 0.0003% | 10476 | 670 | 15.6 | 2 | 0 | -.1208 | 3.2455E-08 |
| 40 | 14.02 | ~~4,4'-DDE~~ | 0.0005 | 0.0004% | 13857 | 1006 | 13.8 | 2 | 0 | -.6798 | 3.5290E-08 |

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# ***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 15:59:15 Version 4.1 **********

* Sample Name: CLP/AR1232,I Data File: A:B2039 *
* Date: 02-03-1992 15:47:55 Method: A:BCLP088 02-03-1992 16:08:34 # 320*
* Interface: 2 Cycle#: 9 Operator CP Channel#: 1 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890A Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

Starting Delay: 2.00 Ending retention time: 35.00
Area reject: 10000 One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00 Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 3.65 | | 1.4260 | 1.1966% | 14260 | 576 | 24.8 | 2 | | | 1.0000E-04 |
| 3 | 3.90 | | 4.1527 | 3.4848% | 41527 | 5168 | 8.0 | 2 | | | 1.0000E-04 |
| 11 | 5.89 | | 2.9248 | 2.4544% | 29248 | 6588 | 4.4 | 1 | | | 1.0000E-04 |
| 12 | 6.34 | | 2.4476 | 2.0539% | 24476 | 5864 | 4.2 | 2 | | | 1.0000E-04 |
| 13 | 6.53 | | 10.0128 | 8.4023% | 100128 | 22509 | 4.4 | 2 | | | 1.0000E-04 |
| 16 | 7.66 | | 8.0610 | 6.7645% | 80610 | 17201 | 4.7 | 3 | | | 1.0000E-04 |
| 20 | 8.26 | | 2.6806 | 2.2495% | 26806 | 5604 | 4.8 | 2 | | | 1.0000E-04 |
| 21 | 8.40 | | 3.3980 | 2.8515% | 33980 | 7228 | 4.7 | 2 | | | 1.0000E-04 |
| 22 | 8.81 | | 2.5505 | 2.1403% | 25505 | 4885 | 5.2 | 2 | | | 1.0000E-04 |
| 23 | 9.10 | Aroclor-1232 | 17.5725 | 14.7462% | 175726 | 32477 | 5.4 | 2 | | | 1.0000E-04 |
| 24 | 9.50 | Aroclor-1232 | 9.0704 | 7.6115% | 90704 | 13476 | 6.7 | 2 | | | 1.0000E-04 |
| 25 | 9.83 | Aroclor-1232 | 5.6068 | 4.7050% | 56068 | 11312 | 5.0 | 2 | | | 1.0000E-04 |
| 26 | 10.22 | ~~Aldrin~~ | 0.0031 | 0.0026% | 103695 | 11379 | 9.1 | 1 | 0 | .1607 | 2.9517E-08 |
| 27 | 10.97 | Aroclor-1232 | 8.7686 | 7.3583% | 87686 | 13401 | 6.5 | 2 | | | 1.0000E-04 |
| 28 | 11.27 | Aroclor-1232 | 7.7903 | 6.5373% | 77903 | 10908 | 7.1 | 3 | | | 1.0000E-04 |
| 30 | 11.82 | | 2.1704 | 1.8213% | 21704 | 4178 | 5.2 | 2 | | | 1.0000E-04 |
| 31 | 11.94 | ~~delta-BHC~~ | 0.0017 | 0.0014% | 39368 | 6114 | 6.4 | 2 | 0 | -.1129 | 4.2484E-08 |
| 32 | 12.29 | | 15.1665 | 12.7271% | 151665 | 14174 | 10.7 | 3 | | | 1.0000E-04 |
| 34 | 12.87 | | 1.5933 | 1.3370% | 15933 | 3027 | 5.3 | 2 | | | 1.0000E-04 |
| 35 | 13.11 | | 7.9117 | 6.6392% | 79117 | 7933 | 10.0 | 2 | | | 1.0000E-04 |
| 37 | 13.72 | ~~a-chlordane~~ | 0.0004 | 0.0003% | 12136 | 1846 | 6.6 | 2 | 0 | -.1208 | 3.2455E-08 |
| 38 | 14.02 | ~~4,4'-DDE~~ | 0.0008 | 0.0007% | 22643 | 2520 | 9.0 | 2 | 0 | -.6798 | 3.5290E-08 |
| 39 | 14.37 | | 2.2580 | 1.8948% | 22580 | 4117 | 5.5 | 2 | | | 1.0000E-04 |
| 40 | 14.94 | | 1.1937 | 1.0017% | 11937 | 1923 | 6.2 | 1 | | | 1.0000E-04 |
| 41 | 15.33 | ~~Endrin~~ | 0.0006 | 0.0005% | 16089 | 2549 | 6.3 | 2 | 0 | -.4119 | 3.7142E-08 |
| 46 | 16.83 | | 1.2235 | 1.0267% | 12235 | 1453 | 8.4 | 2 | | | 1.0000E-04 |
| 48 | 17.50 | ~~4,4'-DDD~~ | 0.0008 | 0.0007% | 13297 | 1165 | 11.4 | 2 | 0 | -.1848 | 6.2251E-08 |

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# ***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 16:00:02 Version 4.1 **********

* Sample Name: CLP/AR1242,I Data File: A:B20310 *
* Date: 02-03-1992 16:24:29 Method: A:BCLP088 02-03-1992 16:08:34 # 320*
* Interface: 2 Cycle#: 10 Operator CP Channel#: 1 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890A Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

Starting Delay: 2.00 Ending retention time: 35.00
Area reject: 10000 One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00 Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.17 | | 1.1080 | 2.1075% | 11080 | 1215 | 9.1 | 1 | | | 1.0000E-04 |
| 2 | 3.67 | | 3.9052 | 7.4281% | 39052 | 1299 | 30.1 | 2 | | | 1.0000E-04 |
| 3 | 3.92 | | 2.9950 | 5.6967% | 29950 | 4548 | 6.6 | 2 | | | 1.0000E-04 |
| 13 | 6.53 | | 2.4773 | 4.7120% | 24773 | 5800 | 4.3 | 2 | | | 1.0000E-04 |
| 15 | 7.66 | | 3.9341 | 7.4831% | 39341 | 8846 | 4.4 | 2 | | | 1.0000E-04 |
| 19 | 8.26 | | 1.2436 | 2.3655% | 12436 | 2761 | 4.5 | 2 | | | 1.0000E-04 |
| 20 | 8.41 | | 1.6720 | 3.1802% | 16720 | 3504 | 4.8 | 2 | | | 1.0000E-04 |
| 21 | 8.83 | | 1.3291 | 2.5281% | 13291 | 2460 | 5.4 | 2 | | | 1.0000E-04 |
| 22 | 9.10 | Aroclor-1242 | 9.1582 | 17.4196% | 91582 | 17263 | 5.3 | 2 | | | 1.0000E-04 |
| 23 | 9.50 | Aroclor-1242 | 5.0007 | 9.5118% | 50007 | 6993 | 7.2 | 2 | | | 1.0000E-04 |
| 24 | 9.83 | Aroclor-1242 | 2.8421 | 5.4058% | 28421 | 5510 | 5.2 | 2 | | | 1.0000E-04 |
| 25 | 10.22 | ~~Mirex~~ | 0.0014 | 0.0026% | 46452 | 5313 | 8.7 | 1 | 0 | .1607 | 2.9517E-08 |
| 26 | 10.98 | Aroclor-1242 | 4.2111 | 8.0099% | 42111 | 7057 | 6.0 | 2 | | | 1.0000E-04 |
| 27 | 11.27 | Aroclor-1242 | 3.4130 | 6.4917% | 34130 | 4886 | 7.0 | 3 | | | 1.0000E-04 |
| 30 | 11.82 | | 1.7955 | 3.4151% | 17955 | 3519 | 5.1 | 2 | | | 1.0000E-04 |
| 31 | 11.95 | ~~delta-BHC~~ | 0.0009 | 0.0018% | 21739 | 3139 | 6.9 | 2 | 0 | 0 | 4.2484E-08 |
| 32 | 12.34 | ~~Hept. epoxide~~ | 0.0026 | 0.0049% | 79718 | 6975 | 11.4 | 3 | 0 | -.9052 | 3.2440E-08 |
| 35 | 13.14 | | 5.1466 | 9.7893% | 51466 | 4574 | 11.3 | 2 | | | 1.0000E-04 |
| 36 | 13.74 | ~~a-chlordane~~ | 0.0004 | 0.0007% | 10845 | 1003 | 10.8 | 2 | 0 | 0 | 3.2455E-08 |
| 37 | 14.04 | ~~4,4'-DDE~~ | 0.0006 | 0.0012% | 17137 | 1297 | 13.2 | 2 | 0 | -.5616 | 3.5290E-08 |
| 38 | 14.39 | | 1.1702 | 2.2258% | 11702 | 1700 | 6.9 | 2 | | | 1.0000E-04 |
| 43 | 16.83 | | 1.1174 | 2.1254% | 11174 | 973 | 11.5 | 2 | | | 1.0000E-04 |
| 48 | 22.79 | ~~Endo. sulfate~~ | 0.0009 | 0.0018% | 28960 | 2141 | 13.5 | 1 | 0 | .9813 | 3.2364E-08 |
| 49 | 23.78 | DBC | 0.0481 | 0.0914% | 1034870 | 73123 | 14.2 | 1 | 0 | .4936 | 4.6457E-08 |

1 of 2

# ***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 16:00:49 Version 4.1 **********

* Sample Name: CLP/AR1248,I  Data File: A:B20311 *
* Date: 02-03-1992 17:02:22 Method: A:BCLP088 02-03-1992 16:08:34 # 320*
* Interface: 2 Cycle#: 11 Operator CP Channel#: 1 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

**********

* Instrument Type: HP5890A  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

**********

Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 10000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 3.92 | | 2.0764 | 4.7146% | 20764 | 4859 | 4.3 | 2 | | | 1.0000E-04 |
| 13 | 7.68 | | 2.0910 | 4.7476% | 20910 | 4615 | 4.5 | 2 | | | 1.0000E-04 |
| 18 | 9.11 | Aroclor-1248 | 7.9526 | 18.0567% | 79526 | 14641 | 5.4 | 2 | | | 1.0000E-04 |
| 19 | 9.52 | Aroclor-1248 | 4.2590 | 9.6702% | 42590 | 5205 | 8.2 | 2 | | | 1.0000E-04 |
| 20 | 9.85 | Aroclor-1248 | 2.0186 | 4.5834% | 20186 | 3992 | 5.1 | 2 | | | 1.0000E-04 |
| 21 | 10.23 | ~~Aldrin~~ | 0.0023 | 0.0053% | 78833 | 8788 | 9.0 | 1 | 0 | .3245 | 2.9517E-08 |
| 22 | 10.98 | Aroclor-1248 | 6.1817 | 14.0357% | 61817 | 9345 | 6.6 | 2 | | | 1.0000E-04 |
| 23 | 11.29 | Aroclor-1248 | 5.5523 | 12.6066% | 55523 | 8799 | 6.3 | 3 | | | 1.0000E-04 |
| 25 | 11.84 | | 1.3424 | 3.0481% | 13424 | 2524 | 5.3 | 2 | | | 1.0000E-04 |
| 26 | 11.97 | ~~delta-BHC~~ | 0.0017 | 0.0038% | 39556 | 6160 | 6.4 | 2 | 0 | .1665 | 4.2484E-08 |
| 27 | 12.35 | ~~Hept. epoxide~~ | 0.0045 | 0.0102% | 138622 | 12795 | 10.8 | 3 | 0 | -.7710 | 3.2440E-08 |
| 29 | 12.89 | | 1.4319 | 3.2512% | 14319 | 2441 | 5.9 | 2 | | | 1.0000E-04 |
| 30 | 13.12 | | 7.3904 | 16.7801% | 73904 | 6762 | 10.9 | 2 | | | 1.0000E-04 |
| 31 | 13.74 | ~~a-chlordane~~ | 0.0005 | 0.0011% | 15344 | 1769 | 8.7 | 2 | 0 | 0 | 3.2455E-08 |
| 32 | 14.04 | ~~4,4'-DDE~~ | 0.0009 | 0.0020% | 24592 | 2283 | 10.8 | 2 | 0 | -.5616 | 3.5290E-08 |
| 33 | 14.41 | | 2.2743 | 5.1639% | 22743 | 3770 | 6.0 | 2 | | | 1.0000E-04 |
| 35 | 15.34 | ~~Endrin~~ | 0.0007 | 0.0016% | 18867 | 2913 | 6.5 | 1 | 0 | -.3034 | 3.7142E-08 |
| 40 | 16.85 | | 1.4088 | 3.1987% | 14088 | 1723 | 8.2 | 2 | | | 1.0000E-04 |
| 48 | 22.82 | ~~Methoxychlor~~ | 0.0029 | 0.0066% | 39407 | 2370 | 16.6 | 2 | 0 | -1.105 | 7.4199E-08 |
| 49 | 23.81 | DBC | 0.0497 | 0.1127% | 1068860 | 75151 | 14.2 | 3 | 0 | .6348 | 4.6457E-08 |

1 of 2

# ***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 16:01:35 Version 4.1 **********

* Sample Name: CLP/AP1254,I  Data File: A:B20312 *
* Date: 02-03-1992 ~~17:46:12~~ 17:40 Method: A:BCLP088 02-03-1992 16:08:34 # 320*
* Interface: 2 Cycle#: 12 Operator CP Channel#: 1 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

**********

* Instrument Type: HP5890A  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

**********

Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 10000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ng/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.19 | | 1.0942 | 0.7932% | 10942 | 1365 | 8.0 | 1 | | | 1.0000E-04 |
| 2 | 3.67 | | 4.6540 | 3.3740% | 46540 | 1530 | 30.4 | 2 | | | 1.0000E-04 |
| 3 | 3.92 | | 4.3854 | 3.1793% | 43854 | 5226 | 8.4 | 3 | | | 1.0000E-04 |
| 20 | 10.17 | ~~Aldrin~~ | 0.0016 | 0.0012% | 54774 | 9246 | 5.9 | 2 | 0 | -.3303 | 2.9517E-08 |
| 21 | 11.00 | Aroch.-1254 | 4.3570 | 3.1587% | 43570 | 7073 | 6.2 | 2 | | | 1.0000E-04 |
| 24 | 11.97 | ~~delta-BHC~~ | 0.0006 | 0.0004% | 13393 | 1747 | 7.7 | 2 | 0 | .1665 | 4.2484E-08 |
| 25 | 12.29 | Aroclor-1254 | 14.2363 | 10.3208% | 142363 | 20125 | 7.1 | 2 | | | 1.0000E-04 |
| 26 | 12.70 | | 2.3547 | 1.7071% | 23547 | 4264 | 5.5 | 2 | | | 1.0000E-04 |
| 27 | 12.91 | Aroclor-1254 | 14.0969 | 10.2198% | 140970 | 18754 | 7.5 | 2 | | | 1.0000E-04 |
| 28 | 13.16 | Aroclor-1254 | 4.9846 | 3.6136% | 49846 | 8376 | 6.0 | 2 | | | 1.0000E-04 |
| 30 | 13.76 | ~~a-chlordane~~ | 0.0016 | 0.0012% | 49675 | 7891 | 6.3 | 2 | 0 | .1222 | 3.2455E-08 |
| 31 | 14.04 | ~~4,4'-DDE~~ | 0.0041 | 0.0030% | 115416 | 13761 | 8.4 | 2 | 0 | -.5616 | 3.5290E-08 |
| 32 | 14.41 | Aroclor-1254 | 18.9671 | 13.7505% | 189671 | 28735 | 6.6 | 3 | | | 1.0000E-04 |
| 33 | 14.63 | ~~Dieldrin~~ | 0.0010 | 0.0008% | 27799 | 2747 | 10.1 | 4 | 0 | 0 | 3.7280E-08 |
| 34 | 14.94 | | 9.3904 | 6.8077% | 93904 | 12006 | 7.8 | 2 | | | 1.0000E-04 |
| 35 | 15.13 | | 2.1731 | 1.5754% | 21731 | 2822 | 7.7 | 2 | | | 1.0000E-04 |
| 36 | 15.36 | ~~Endrin~~ | 0.0058 | 0.0042% | 155154 | 19790 | 7.8 | 2 | 0 | -.1949 | 3.7142E-08 |
| 37 | 15.59 | | 4.1944 | 3.0408% | 41944 | 4490 | 9.3 | 2 | | | 1.0000E-04 |
| 38 | 15.88 | | 12.9470 | 9.3861% | 129470 | 15411 | 8.4 | 2 | | | 1.0000E-04 |
| 39 | 16.43 | | 6.1621 | 4.4673% | 61621 | 6745 | 9.1 | 2 | | | 1.0000E-04 |
| 40 | 16.68 | | 3.4023 | 2.4665% | 34023 | 4320 | 7.9 | 2 | | | 1.0000E-04 |
| 41 | 16.86 | | 8.0298 | 5.8214% | 80298 | 8527 | 9.4 | 2 | | | 1.0000E-04 |
| 42 | 17.21 | | 2.2304 | 1.6170% | 22304 | 2415 | 9.2 | 2 | | | 1.0000E-04 |
| 43 | 17.53 | ~~4,4'-DDD~~ | 0.0140 | 0.0101% | 224319 | 18177 | 12.3 | 2 | 0 | 0 | 6.2251E-08 |
| 44 | 18.00 | | 2.5435 | 1.8440% | 25435 | 2393 | 10.6 | 2 | | | 1.0000E-04 |
| 47 | 19.55 | | 5.1988 | 3.7690% | 51988 | 5039 | 10.3 | 2 | | | 1.0000E-04 |
| 48 | 19.85 | | 1.1347 | 0.8226% | 11347 | 1014 | 11.2 | 2 | | | 1.0000E-04 |
| 50 | 21.05 | | 3.1548 | 2.2872% | 31548 | 2612 | 12.1 | 2 | | | 1.0000E-04 |
| 51 | 21.59 | | 4.6847 | 3.3963% | 46847 | 3919 | 12.0 | 2 | | | 1.0000E-04 |

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# ***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 16:06:56 Version 4.1 **********

* Sample Name: CLP/EVAL B  Data File: A:B20318 *
* Date: ~~02-04-1992 08:11:44~~ 02-03-1992 21:26 Method: A:BCLP088 02-03-1992 16:08:34 # 320*
* Interface: 2 Cycle#: 18 Operator CP Channel#: 1 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

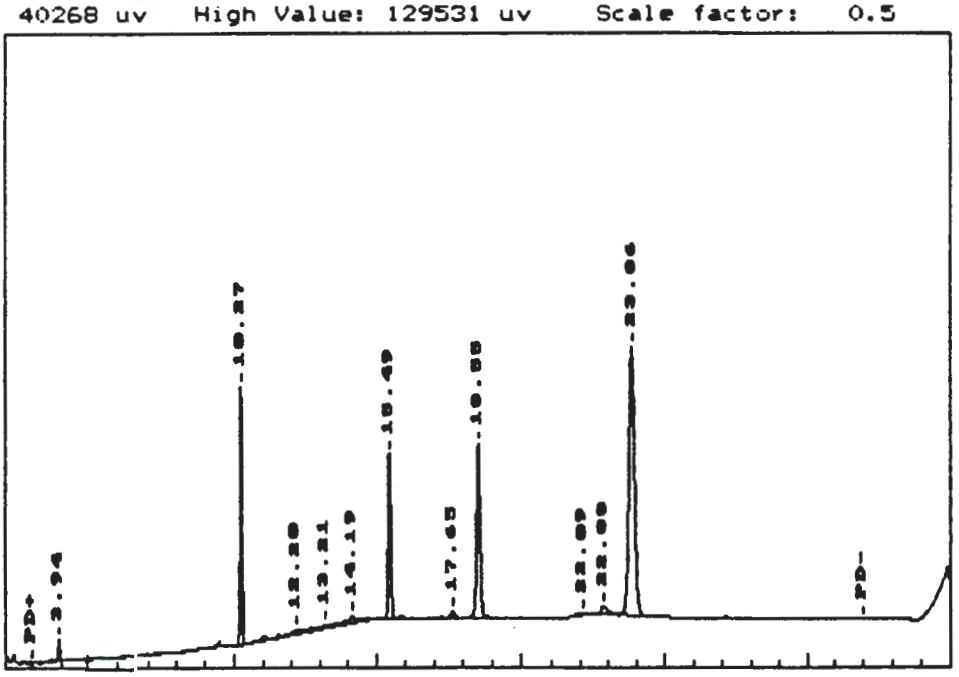
* Instrument Type: HP5890A Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

Starting Delay: 2.00 Ending retention time: 35.00
Area reject: 10000 One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00 Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 3.94 | | 2.3849 | 25.0920% | 23849 | 5811 | 4.1 | 2 | | | 1.0000E-04 |
| 22 | 10.27 | Aldrin 0.04 | 0.0097 | 0.1020% | 328340 | 73100 | 4.5 | 2 | 0 | .6519 | 2.9517E-08 |
| 26 | 12.20 | | 2.2196 | 23.3529% | 22196 | 1236 | 18.0 | 2 | | | 1.0000E-04 |
| 28 | 13.21 | | 3.2557 | 34.2542% | 32557 | 879 | 37.0 | 2 | | | 1.0000E-04 |
| 29 | 14.19 | 4,4'-DDE | 0.0023 701 | 0.0242% | ~~65127~~ | 2056 | 31.7 | 3 | 0 | .5028 | 3.5290E-08 |
| 31 | 15.49 | Endrin 0.04 | 0.0102 | 0.1069% | 273578 | 46454 | 5.9 | 2 | 0 | .6731 | 3.7142E-08 |
| 34 | 17.65 | ~~Endosulfan II~~ 4,4'-DDD | 0.0018 | 0.0185% | 16429 | 1796 | 9.1 | 1 | 0 | -.2943 | 1.0680E-07 |
| 35 | 18.55 | 4,4'-DDT 0.08 | 0.0199 | 0.2096% | 421200 | 49018 | 8.6 | 1 | 0 | .7041 | 4.7288E-08 |
| 37 | 22.09 | | 1.5479 | 16.2859% | 15479 | 500 | 31.0 | 1 | | | 1.0000E-04 |
| 38 | 22.88 | ~~Methoxychlor~~ | 0.0031 | 0.0325% | 41615 | 2326 | 17.9 | 2 | 0 | -.8882 | 7.4199E-08 |
| 39 | 23.86 | DDC 0.2 | 0.0495 | 0.5213% | 1066554 | 76069 | 14.0 | 2 | 0 | .8465 | 4.6457E-08 |
| | | TOTAL AMOUNT = | 9.5045 | | | | | | | | |

CY 2-6-92

Data File = A:B20318.PTS Printed on 02-04-1992 at 16:07:06
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 40268 uv High Value: 129531 uv Scale factor: 0.5



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# ***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 16:12:05 Version 4.1 **********

* Sample Name: CLP/INDA  Data File: A:B20324 *
* Date: 02-04-1992 ~~08:32:20~~ Method: A:BCLP088 02-03-1992 16:08:34 # 320*
* Interface: 2 Cycle#: 24 Operator CP Channel#: 1 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

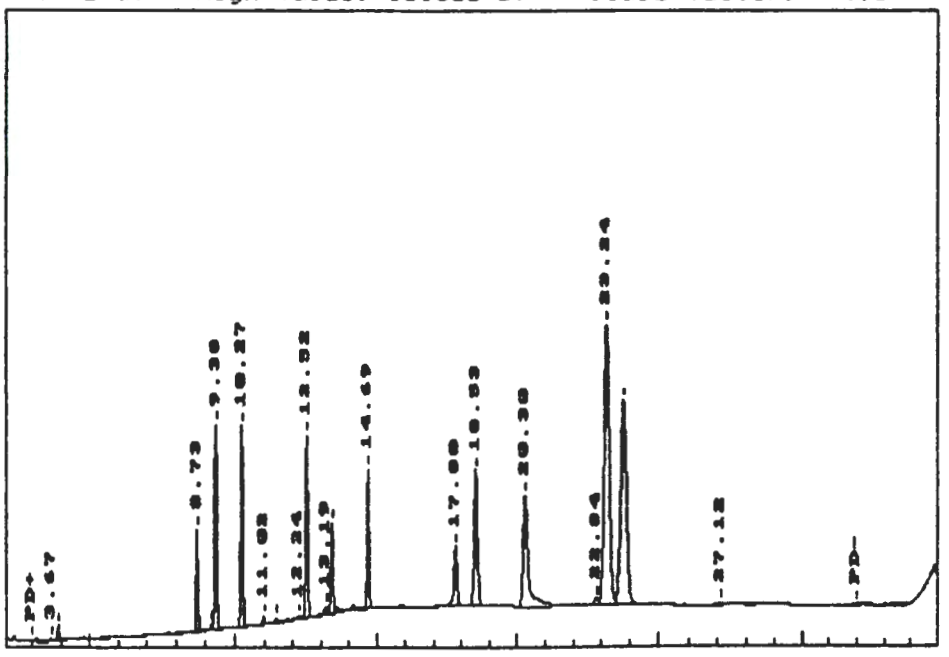
* Instrument Type: HP5890A  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 10000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 400  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | total ng | | | | | | | | |
| 2 | 3.67 | | 2.0771 | 11.2976% | 20771 | 909 | 25.7 | 2 | | | 1.0000E-04 |
| 3 | 3.92 | | 3.5139 | 19.1129% | 35139 | 5676 | 6.2 | 3 | | | 1.0000E-04 |
| 13 | 8.73 | gamma-BHC | 0.0052 | 0.0282% | 159780 | 38901 | 4.1 | 2 | 0 | .5771 | 3.2472E-08 |
| 14 | 9.21 | | 1.0070 | 5.4775% | 10070 | 1768 | 5.7 | 2 | | | 1.0000E-04 |
| 15 | 9.38 | Heptachlor | 0.0104 | 0.0568% | 373582 | 78040 | 4.8 | 3 | 0 | .6587 | 2.7963E-08 |
| 19 | 10.27 | Aldrin | 0.0101 | 0.0550% | 342604 | 76959 | 4.5 | 2 | 0 | .6519 | 2.9517E-08 |
| 20 | 11.02 | | 3.1809 | 17.3016% | 31809 | 3100 | 10.3 | 2 | | | 1.0000E-04 |
| 21 | 11.44 | | 1.3669 | 7.4346% | 13669 | 2162 | 6.3 | 2 | | | 1.0000E-04 |
| 24 | 12.24 | | 1.2196 | 6.6334% | 12196 | 794 | 15.4 | 2 | | | 1.0000E-04 |
| 25 | 12.52 | Hept. epoxide | 0.0106 ~~320137~~ | 0.0577% | ~~326759~~ | 69107 | 4.7 | 2 | 0 | .5702 | 3.2440E-08 |
| 26 | 13.19 | | 1.3816 | 7.5150% | 13816 | 2684 | 5.1 | 2 | | | 1.0000E-04 |
| 27 | 13.42 | Endosulfan I | 0.0107 ~~163555~~ | 0.0582% | ~~170133~~ | 34550 | 4.9 | 2 | 0 | .4700 | 6.2850E-08 |
| 32 | 14.69 | Dieldrin | 0.0106 ~~274268~~ | 0.0574% | ~~283059~~ | 52879 | 5.4 | 1 | 0 | .4237 | 3.7280E-08 |
| 37 | 17.80 | Endosulfan II | 0.0204 | 0.1109% | 190986 | 22843 | 8.4 | 2 | 0 | .5547 | 1.0680E-07 |
| 38 | 18.53 | 4,4'-DDT | 0.0206 | 0.1121% | 435677 | 51717 | 8.4 | 3 | 0 | .6134 | 4.7288E-08 |
| 40 | 20.30 | Endrin Aldehyde | 0.0247 ~~542294~~ | 0.1344% | ~~602269~~ | 42942 | 14.0 | 3 | 0 | .6603 | 4.1017E-08 |
| 42 | 22.84 | | 3.2375 | 17.6095% | 32375 | 2516 | 12.9 | 2 | | | 1.0000E-04 |
| 43 | 23.24 | Methoxychlor | 0.1043 | 0.5675% | 1406197 | 107277 | 13.1 | 2 | 0 | .7036 | 7.4199E-08 |
| 44 | 23.83 | DBC | 0.0517 | 0.2811% | 1112622 | 78088 | 14.2 | 2 | 0 | .7054 | 4.6457E-08 |
| 45 | 27.12 | | 1.1212 | 6.0986% | 11212 | 650 | 17.2 | 1 | | | 1.0000E-04 |

TOTAL AMOUNT = 18.3851  CY 2-6-92

Data File = A:B20324.PTS Printed on 02-04-1992 at 16:12:16
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 40492 uv High Value: 161853 uv Scale factor: 0.5



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# ***** EXTERNAL STANDARD TABLE *****

********** 02-05-1992 10:19:02 Version 4.1 **********

* Sample Name: CLP/EVALB  Data File: A:B20336 *
* Date: 02-04-1992 09:59:42 Method: A:BCLP088 02-03-1992 16:08:34 # 320*
* Interface: 2 Cycle#: 36 Operator CP Channel#: 1 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

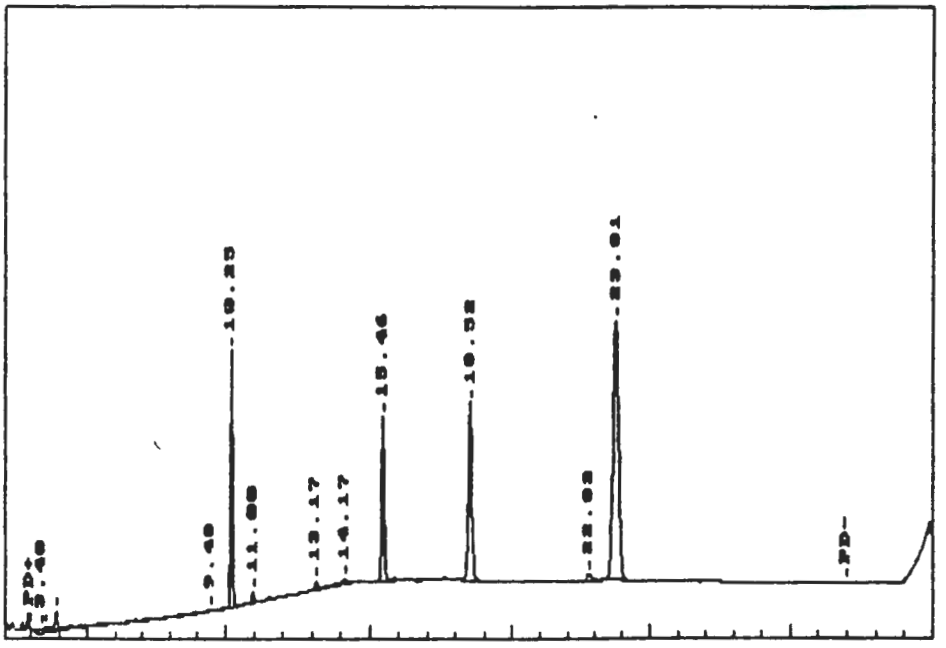
* Instrument Type: HP5890A  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 10000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total mg) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 3.40 | | 1.2635 | 10.2357% | 12635 | 1232 | 10.3 | 2 | | | 1.0000E-04 |
| 3 | 3.55 | | 1.1448 | 9.2735% | 11448 | 1258 | 9.1 | 2 | | | 1.0000E-04 |
| 6 | 3.92 | | 3.6449 | 29.5267% | 36449 | 5258 | 6.9 | 3 | | | 1.0000E-04 |
| 17 | 9.48 | | 1.8423 | 14.9241% | 18423 | 312 | 59.1 | 1 | | | 1.0000E-04 |
| 19 | 10.25 | Aldrin 0.04 | 0.0102 | 0.0823% | 344272 | 76279 | 4.5 | 2 | 0 | .4882 | 2.9517E-08 |
| 20 | 11.00 | | 2.6966 | 21.8452% | 26966 | 3287 | 8.2 | 2 | | | 1.0000E-04 |
| 23 | 13.17 | | 1.6569 | 13.4222% | 16569 | 2508 | 6.6 | 2 | | | 1.0000E-04 |
| 24 | 14.17 | 4,4'-DDE | 0.0013 5320 | 0.0105% | ~~36707~~ | 1536 | 23.9 | 3 | 0 | .3845 | 3.5290E-08 |
| 26 | 15.46 | Endrin 0.04 | 0.0106 | 0.0862% | 286540 | 48497 | 5.9 | 1 | 0 | .4561 | 3.7142E-08 |
| 30 | 18.52 | 4,4'-DDT 0.08 | 0.0208 | 0.1684% | 439569 | 52642 | 8.4 | 1 | 0 | .5228 | 4.7288E-08 |
| 33 | 22.82 | ~~Methoxychlor~~ | 0.0021 | 0.0170% | 28304 | 2108 | 13.4 | 1 | 0 | -1.105 | 7.4199E-08 |
| 34 | 23.81 | DBC 0.2 | 0.0504 | 0.4082% | 1084533 | 77020 | 14.1 | 1 | 0 | .6348 | 4.6457E-08 |
| | | TOTAL AMOUNT = | 12.3443 | | | | | | | | |

4 2-6-92

Data File = A:B20336.PTS Printed on 02-05-1992 at 10:19:11
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 42488 uv High Value: 135232 uv Scale factor: 0.5



1 of 2

***** EXTERNAL STANDARD TABLE *****

********** 02-05-1992 10:24:16 Version 4.1 **********

* Sample Name: CLP/INDB Data File: A:B20342 *
* Date: 02-04-1992 13:50:07 Method: A:BCLP088 02-03-1992 16:08:34 # 32 *
* Interface: 2 Cycle#: 42 Operator CP Channel#: 1 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

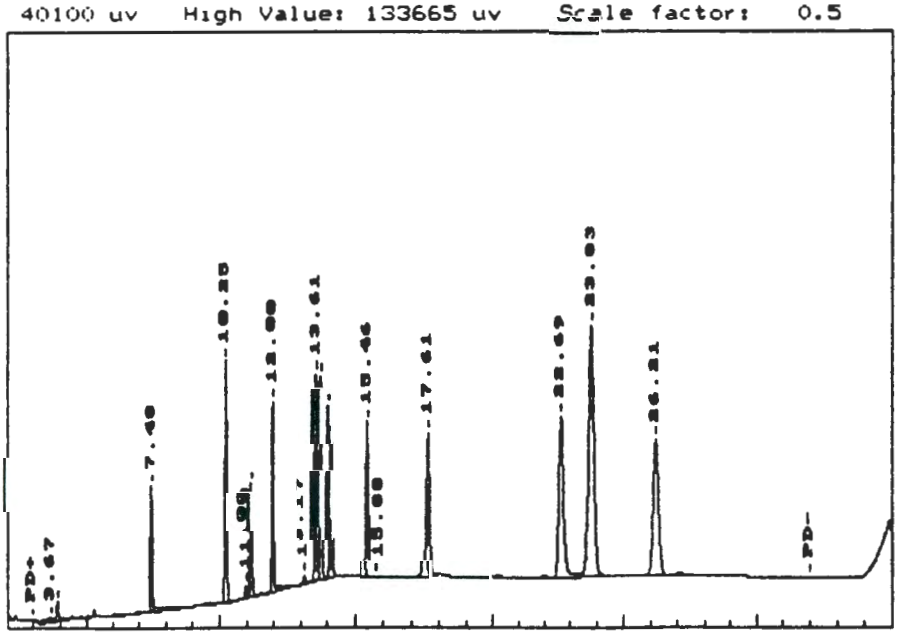
* Instrument Type: HP5890A Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

Starting Delay: 2.00 Ending retention time: 35.00
Area reject: 10000 One sample per 1.002 sec.
Amount injected: ~~1.00 4~~ Dc Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 3.67 | | 1.9332 | 18.5720% | 19332 | 1185 | 16.3 | 2 | | | 1.0000E-04 |
| 4 | 3.92 | | 3.4012 | 32.6748% | 34012 | 5851 | 5.8 | 3 | | | 1.0000E-04 |
| 16 | 7.48 | alpha-BHC 0.02 | 0.0051 | 0.0489% | 151458 | 39778 | 3.8 | 3 | 0 | .6406 | 3.3594E-08 |
| 23 | 10.25 | Aldrin 0.04 | 0.0100 | 0.0964% | 339914 | 76175 | 4.5 | 2 | 0 | .4882 | 2.9517E-08 |
| 24 | 11.00 | | 2.1982 | 21.1180% | 21982 | 3721 | 5.9 | 2 | | | 1.0000E-04 |
| 25 | 11.20 | beta-BHC 0.04 | 0.0095 | 0.0912% | 158602 | 35991 | 4.4 | 2 | 0 | .4636 | 5.9877E-08 |
| 28 | 12.00 | delta-BHC 0.04 | 0.0118 ~~2464~~ | 0.1132% | ~~277947~~ | 60257 | 4.6 | 3 | 0 | .4460 | 4.2484E-08 |
| 32 | 13.17 | | 1.4298 | 13.7353% | 14298 | 2681 | 5.3 | 1 | | | 1.0000E-04 |
| 33 | 13.61 | g. chlordane 0.04 | 0.0102 | 0.0978% | 319817 | 65537 | 4.9 | 2 | 0 | .3429 | 3.1831E-08 |
| 34 | 13.79 | a. chlordane 0.04 | 0.0102 | 0.0985% | 315819 | 64442 | 4.9 | 2 | 0 | .3653 | 3.2455E-08 |
| 35 | 14.16 | 4,4'-DDE 0.04 | 0.0102 | 0.0978% | 288576 | 54688 | 5.3 | 2 | 0 | .2662 | 3.5290E-08 |
| 38 | 15.46 | Endrin 0.04 | 0.0107 | 0.1032% | 289154 | 48913 | 5.9 | 2 | 0 | .4561 | 3.7142E-08 |
| 39 | 15.88 | | 1.2544 | 12.0511% | 12544 | 484 | 25.9 | 2 | | | 1.0000E-04 |
| 43 | 17.61 | 4,4'-DDD 0.08 | 0.0215 | 0.2069% | 345900 | 45056 | 7.7 | 2 | 0 | .4820 | 6.2251E-08 |
| 48 | 22.69 | Endo. sulfate 0.08 | 0.0207 | 0.1985% | 638361 | 50708 | 12.6 | 2 | 0 | .5374 | 3.2364E-08 |
| 49 | 23.83 | DBC 0.2 | 0.0517 | 0.4963% | 1112032 | 78632 | 14.1 | 2 | 0 | .7054 | 4.6457E-08 |
| 50 | 26.21 | Endrin ketone 0.08 | 0.0208 | 0.2001% | 608630 | 43268 | 14.1 | 1 | 0 | .6333 | 3.4229E-08 |
| | | TOTAL AMOUNT = | 10.4093 | | | | | | | | |

CY 2-6-92

Data File = A:B20342.PTS Printed on 02-05-1992 at 10:24:28
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 40100 uv High Value: 133665 uv Scale factor: 0.5



1 of 2

# ***** EXTERNAL STANDARD TABLE *****

********** 02-05-1992 11:02:11 Version 4.1 **********

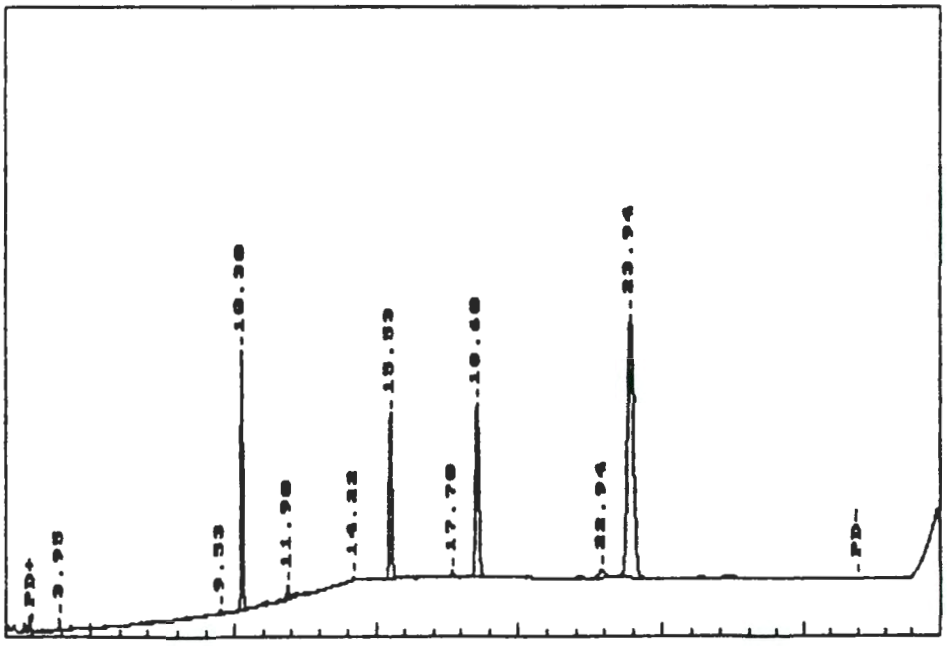
* Sample Name: CLP/EVALB  Data File: A:B20348 *
* Date: 02-04-1992 ~~17:40:32~~ 17:38 Method: A:BCLP088 02-03-1992 16:08:34 # 220*
* Interface: 2  Cycle#: 48  Operator CP  Channel#: 1  Vial#: N.A. *
* Starting Peak Width: 10  Threshold: 1  Area Threshold: 100 *

* Instrument Type: HP5890A  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 10000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ~~Std ng~~ | | | | | | | | | |
| 4 | 3.95 | | 1.9221 | 50.2371% | 19221 | 3503 | 5.5 | 2 | | | 1.0000E-04 |
| 15 | 9.53 | | 1.8133 | 47.3920% | 18133 | 1092 | 16.6 | 2 | | | 1.0000E-04 |
| 17 | 10.30 | Aldrin 0.04 | 0.0094 | 0.2463% | 319262 | 72155 | 4.4 | 2 | 0 | .9794 | 2.9517E-08 |
| 21 | 11.90 | ~~delta-BHC~~ | 0.0007 | 0.0187% | 16855 | 3557 | 4.7 | 2 | 0 | -.3924 | 4.2484E-08 |
| 24 | 14.22 | 4,4'-DDE | 0.0004543 | 0.0106% | ~~11627~~ | 1087 | 10.6 | 1 | 0 | .7393 | 3.5290E-08 |
| 25 | 15.53 | Endrin 0.04 | 0.0101 | 0.2642% | 272206 | 45773 | 5.9 | 2 | 0 | .8901 | 3.7142E-08 |
| 29 | 17.70 | ~~Endosulfan II~~ 4,4'-DDD | 0.0016 | 0.0424% | 15204 | 1793 | 8.5 | 1 | 0 | 0 | 1.0680E-07 |
| 30 | 18.60 | 4,4'-DDT 0.08 | 0.0188 | 0.4925% | 398461 | 48150 | 8.3 | 2 | 0 | .9761 | 4.7288E-08 |
| 33 | 22.94 | ~~Methoxychlor~~ | 0.0021 | 0.0543% | 28018 | 2049 | 13.7 | 1 | 0 | -.5987 | 7.4199E-08 |
| 34 | 23.94 | DBC 0.2 | 0.0475 | 1.2417% | 1022650 | 72911 | 14.0 | 1 | 0 | 1.199 | 4.6457E-08 |
| | | TOTAL AMOUNT = | 3.8261 | 64 | 2692 | | | | | | |

Data File = A:B20348.PTS  Printed on 02-05-1992 at 11:02:21
Start time: 2.00 min.  Stop time: 35.02 min.  Offset: 0 mv.
Low Value: 39692 uv  High Value: 127923 uv  Scale factor: 0.5



1 of 3

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*****   EXTERNAL STANDARD TABLE   *****
******************** 02-05-1992 11:08:00 Version 4.1 ********************
* Sample Name: CLP/INDA                          Data File: A:B20354      *
* Date: 02-04-1992 ~~21:00:22~~ 4:25 Method: A:BCLP088  02-03-1992 16:08:34  #  31 *
* Interface: 2   Cycle#:  54   Operator CP  Channel#: 1    Vial#: N.A.    *
* Starting Peak Width:  10   Threshold: 1  Area Threshold: 100            *
*************************************************************************
* Instrument Type: HP5890A                Column Type: DB-608,DB-1701    *
*            Solvent Description:                                        *
* Conditions: 160D,5D/M,230D,15M(35M RUN)                                *
*            Detector 0: ECD              Detector 1: ECD                *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL                        *
*************************************************************************
Starting Delay:    2.00                    Ending retention time:    35.00
Area reject:     10000                     One sample per    1.002 sec.
Amount injected:        ~~1.00~~ 4.60      Dilution factor:        1.00
Sample Weight:          1.000000
```

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 3.70 | | 3.5934 | 0.7052% | 35934 | 1282 | 28.0 | 2 | | | 1.0000E-04 |
| 3 | 3.95 | | 4.4565 | 0.8746% | 44565 | 5591 | 8.0 | 3 | | | 1.0000E-04 |
| 13 | 8.78 | gamma-BHC 0.02 | 15.3594 | 3.0145% | 153594 | 37669 | 4.1 | 1 | | | 1.0000E-04 |
| 15 | 9.41 | Heptachlor 0.04 | 36.8853 | 7.2392% | 368853 | 79303 | 4.7 | 3 | | | 1.0000E-04 |
| 18 | 10.30 | Aldrin 0.04 | 0.0099 | 0.0019% | 333962 | 72854 | 4.6 | 2 | 0 | .9794 | 2.9517E-08 |
| 19 | 11.05 | ~~beta-BHC~~ | 0.0010 | 0.0002% | 16931 | 2062 | 8.2 | 3 | 0 | -.8843 | 5.9877E-08 |
| 21 | 11.49 | | 1.0252 | 0.2012% | 10252 | 1472 | 7.0 | 2 | | | 1.0000E-04 |
| 22 | 11.64 | | 1.6166 | 0.3173% | 16166 | 1816 | 8.9 | 2 | | | 1.0000E-04 |
| 23 | 11.90 | ~~delta-BHC~~ | 0.0020 | 0.0004% | 47300 | 3443 | 13.7 | 2 | 0 | -.3924 | 4.2484E-08 |
| 24 | 12.10 | | 3.3188 | 0.6514% | 33188 | 3196 | 10.4 | 2 | | | 1.0000E-04 |
| 25 | 12.29 | | 3.6395 | 0.7143% | 36395 | 3499 | 10.4 | 2 | | | 1.0000E-04 |
| 26 | 12.57 | Hept. epoxide 0.04 | 0.0134 362412 | 0.0026% | ~~411774~~ | 68782 | 6.0 | 3 | 0 | .9726 | 3.2440E-08 |
| 27 | 13.24 | | 22.2918 0.04 | 4.3750% | 222918 | 9253 | 24.1 | 4 | | | 1.0000E-04 |
| 28 | 13.47 | ~~g-chlordane~~ Endosulfan I | 0.0093 156018 | 0.0018% | ~~292980~~ | 39850 | 7.4 | 2 | 0 | -.6423 | 3.1831E-08 |
| 29 | 13.67 | ~~a-chlordane~~ | 0.0033 | 0.0006% | 101330 | 10012 | 10.1 | 2 | 0 | -.4854 | 3.2455E-08 |
| 30 | 14.22 | ~~4,4'-DDE~~ | 0.0146 | 0.0029% | 413040 | 11592 | 35.6 | 2 | 0 | .7393 | 3.5290E-08 |
| 31 | 14.74 | Dieldrin 0.04 | 0.0335 248066 | 0.0066% | ~~898436~~ | 59509 | 15.1 | 3 | 0 | .7662 | 3.7280E-08 |
| 32 | 15.51 | ~~Endrin~~ | 0.0043 | 0.0009% | 116744 | 5151 | 22.7 | 4 | 0 | .7816 | 3.7142E-08 |
| 33 | 15.94 | | 36.0131 | 7.0680% | 360131 | 6702 | 53.7 | 4 | | | 1.0000E-04 |
| 34 | 17.38 | ~~4,4'-DDD~~ | 0.0156 | 0.0031% | 250747 | 6352 | 39.5 | 4 | 0 | -.8516 | 6.2251E-08 |
| 35 | 17.88 | Endosulfan II 0.08 | 56.6441 166272 | 11.1171% | ~~566441~~ | 28206 | 20.1 | 2 | | | 1.0000E-04 |

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# ***** EXTERNAL STANDARD TABLE *****

********** 02-05-1992 11:08:51 Version 4.1 **********

* Sample Name: CLP/INDB Data File: A:B20355 *
* Date: 02-04-1992 ~~[illegible]~~ 22:16 Method: A:RCLP088 02-03-1992 16:08:34 # 320*
* Interface: 2 Cycle#: 55 Operator CP Channel#: 1 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890A Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD Detector 1: ECD *
* Misc. Information: 02-03-92, B, Col 0.53mm, 4UL *

Starting Delay: 2.00 Ending retention time: 35.00
Area reject: 10000 One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00 Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 3.75 | | 2.9214 | 1.6902% | 29214 | 942 | 31.0 | 2 | | | 1.0000E-04 |
| 3 | 3.95 | | 4.4858 | 2.5953% | 44858 | 7798 | 5.8 | 3 | | | 1.0000E-04 |
| 8 | 5.32 | | 1.1760 | 0.6804% | 11760 | 2479 | 4.7 | 3 | | | 1.0000E-04 |
| 14 | 7.53 | alpha-BHC 0.02 | 14.8867 | 8.6129% | 148867 | 38839 | 3.8 | 2 | | | 1.0000E-04 |
| 16 | 9.53 | | 1.2134 | 0.7020% | 12134 | 798 | 15.2 | 2 | | | 1.0000E-04 |
| 18 | 10.30 | Aldrin 0.04 | 0.0097 | 0.0056% | 327144 | 72018 | 4.5 | 2 | 0 | .9794 | 2.9517E-08 |
| 19 | 11.05 | ~~beta-BHC~~ | 0.0026 | 0.0015% | 43441 | 4179 | 10.4 | 2 | 0 | -.8843 | 5.9877E-08 |
| 20 | 11.25 | beta-BHC 0.04 | 17.5585 146576 | 10.1587% | ~~175585~~ | 35969 | 4.9 | 3 | | | 1.0000E-04 |
| 21 | 11.62 | | 2.6813 | 1.5513% | 26813 | 2380 | 11.3 | 4 | | | 1.0000E-04 |
| 22 | 11.90 | ~~delta-BHC~~ | 0.0016 | 0.0009% | 36719 | 2938 | 12.5 | 2 | 0 | -.3924 | 4.2484E-08 |
| 23 | 12.05 | delta-BHC 0.04 | 37.16432436 72 | 21.5018% | ~~371643~~ | 61639 | 6.0 | 3 | | | 1.0000E-04 |
| 25 | 13.24 | ~~Endosulfan I~~ | 0.0130 | 0.0075% | 206763 | 8026 | 25.8 | 4 | 0 | -.9049 | 6.2850E-08 |
| 26 | 13.67 | g. chlordane 0.04 | 0.015529 5904 | 0.0090% | ~~479058~~ | 67433 | 7.1 | 2 | 0 | -.4854 | 3.2455E-08 |
| 27 | 13.86 | α-Chlordane 0.04 | 40.8396 2 6701 | 23.6282% | ~~408396~~ | 66566 | 6.1 | 2 | | | 1.0000E-04 |
| 28 | 14.22 | 4,4'-DDE 0.04 | 0.0203 261373 | 0.0117% | ~~572969~~ | 61078 | 9.4 | 3 | 0 | .7393 | 3.5290E-08 |
| 29 | 14.78 | ~~Dieldrin~~ | 0.0089 | 0.0052% | 239711 | 6577 | 36.4 | 4 | 0 | .9945 | 3.7280E-08 |
| 30 | 15.34 | ~~Endrin~~ | 0.0010 | 0.0006% | 26678 | 3396 | 7.9 | 2 | 0 | -.3034 | 3.7142E-08 |
| 31 | 15.53 | Endrin 0.04 | 34.9709 269690 | 20.2328% | ~~349709~~ | 48213 | 7.3 | 3 | | | 1.0000E-04 |

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***** EXTERNAL STANDARD TABLE *****

********** 02-05-1992 11:14:27 Version 4.1 **********

* Sample Name: CLP/EVALB Data File: A:B20361 *
* Date: 02-05-1992 01:51:01 Method: A:BCLP088 02-03-1992 16:08:34 # 310*
* Interface: 2 Cycle#: 61 Operator CP Channel#: 1 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

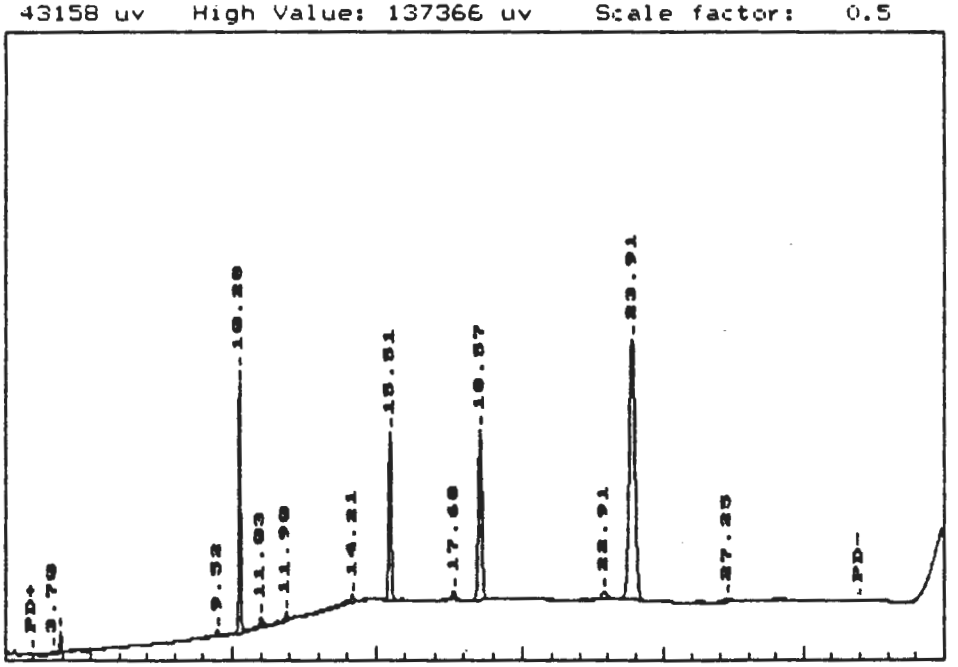
* Instrument Type: HP5890A Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

Starting Delay: 2.00 Ending retention time: 35.00
Area reject: 10000 One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00 Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | total ng | | | | | | | | | |
| 2 | 3.70 | | 1.7513 | 18.3619% | 17513 | 692 | 25.3 | 2 | | | 1.0000E-04 |
| 4 | 3.94 | | 3.0465 | 31.9418% | 30465 | 6411 | 4.8 | 2 | | | 1.0000E-04 |
| 12 | 9.52 | | 1.3511 | 14.1658% | 13511 | 1585 | 8.5 | 2 | | | 1.0000E-04 |
| 15 | 10.28 | Aldrin 0.04 | 0.0104 | 0.1092% | 352787 | 78263 | 4.5 | 2 | 0 | .8156 | 2.9517E-08 |
| 16 | 11.03 | | 2.0766 | 21.7730% | 20766 | 2689 | 7.7 | 2 | | | 1.0000E-04 |
| 18 | 11.90 | ~~delta-BHC~~ | 0.0005 | 0.0057% | 12861 | 2306 | 5.6 | 1 | 0 | -.3924 | 4.2484E-08 |
| 22 | 14.21 | 4,4'-DDE | 0.0010 756 | 0.0106% | ~~20648~~ | 1806 | 15.9 | 2 | 0 | .6211 | 3.5290E-08 |
| 23 | 15.51 | Endrin 0.04 | 0.0107 | 0.1124% | 288713 | 49757 | 5.8 | 2 | 0 | .7816 | 3.7142E-08 |
| 27 | 17.68 | ~~Endosulfan II 4,4'-DDD~~ | 0.0023 | 0.0240% | 21405 | 2520 | 8.5 | 1 | 0 | -.1056 | 1.0680E-07 |
| 28 | 18.57 | 4,4'-DDT 0.08 | 0.0198 | 0.2075% | 418593 | 50368 | 8.3 | 1 | 0 | .7947 | 4.7288E-08 |
| 31 | 22.91 | ~~Methoxychlor~~ | 0.0021 | 0.0218% | 28058 | 2163 | 13.0 | 1 | 0 | -.7435 | 7.4199E-08 |
| 32 | 23.91 | DBC 0.2 | 0.0502 | 0.5263% | 1080501 | 77211 | 14.0 | 1 | 0 | 1.058 | 4.6457E-08 |
| 34 | 27.25 | | 1.2151 | 12.7399% | 12151 | 628 | 19.4 | 1 | | | 1.0000E-04 |
| | | TOTAL AMOUNT = | 9.5376 | | | | | | | | |

CY 2-7-92

Data File = A:B20361.FTS Printed on 02-05-1992 at 11:14:37
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 43158 uv High Value: 137366 uv Scale factor: 0.5



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# ***** EXTERNAL STANDARD TABLE *****

********** 02-05-1992 11:19:41 Version 4.1 **********

* Sample Name: CLP/INDR  Data File: A:B20367 *
* Date: 02-05-1992 ~~05:37:12~~ 05:35 Method: A:BCLP088 02-03-1992 16:08:34 # 320*
* Interface: 2  Cycle#: 67  Operator CP  Channel#: 1  Vial#: N.A. *
* Starting Peak Width: 10  Threshold: 1  Area Threshold: 100 *

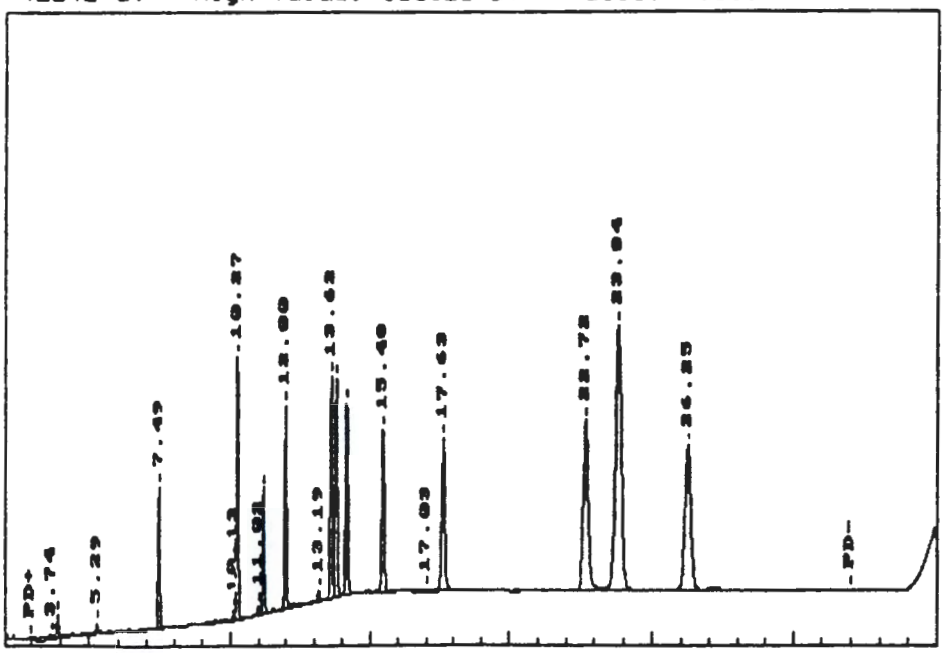
* Instrument Type: HP5890A  Column Type: DB-608,DB-1701 *
*  Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
*  Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, F, Col 0.53mm, 4UL *

Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 10000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 3.74 | | 3.1607 | 22.4896% | 31607 | 993 | 31.8 | 2 | | | 1.0000E-04 |
| 3 | 3.94 | | 3.8566 | 27.4412% | 38566 | 7057 | 5.5 | 3 | | | 1.0000E-04 |
| 8 | 5.29 | | 1.2767 | 9.0842% | 12767 | 2975 | 4.3 | 2 | | | 1.0000E-04 |
| 16 | 7.49 | alpha-BHC 0.02 | 0.0055 | 0.0392% | 164085 | 42557 | 3.9 | 1 | 0 | .8654 | 3.3594E-08 |
| 23 | 10.13 | | 1.0623 | 7.5584% | 10623 | 2714 | 3.9 | 2 | | | 1.0000E-04 |
| 24 | 10.27 | Aldrin 0.04 | 0.0104 | 0.0741% | 352972 | 79257 | 4.5 | 2 | 0 | .6519 | 2.9517E-08 |
| 25 | 11.02 | | 1.6019 | 11.3984% | 16019 | 2718 | 5.9 | 2 | | | 1.0000E-04 |
| 26 | 11.22 | beta-BHC 0.04 | 0.0099 | 0.0707% | 165848 | 38191 | 4.3 | 2 | 0 | .6134 | 5.9877E-08 |
| 29 | 12.00 | delta-BHC 0.04 | 0.0120 25744 | 0.0854% | ~~202466~~ | 61890 | 4.6 | 3 | 0 | .4460 | 4.2484E-08 |
| 32 | 13.19 | | 1.7954 | 12.7747% | 17954 | 3008 | 6.0 | 2 | | | 1.0000E-04 |
| 33 | 13.62 | g. chlordane 0.04 | 0.0105 | 0.0746% | 329177 | 67202 | 4.9 | 2 | 0 | .4660 | 3.1831E-08 |
| 34 | 13.81 | a. chlordane 0.04 | 0.0105 | 0.0744% | 322278 | 66292 | 4.9 | 2 | 0 | .4868 | 3.2455E-08 |
| 35 | 14.17 | 4,4'-DDE 0.04 | 0.0105 | 0.0749% | 298405 | 57929 | 5.2 | 2 | 0 | .3845 | 3.5290E-08 |
| 39 | 15.48 | Endrin 0.04 | 0.0109 29077 | 0.0775% | ~~298233~~ | 49221 | 6.0 | 2 | 0 | .5646 | 3.7142E-08 |
| 42 | 17.03 | | 1.0862 | 7.7290% | 10862 | 413 | 26.3 | 2 | | | 1.0000E-04 |
| 43 | 17.63 | ~~Endosulfan II~~ 4,4'-DDD 0.08 | 0.0395 342403 | 0.2812% | ~~370001~~ | 46262 | 8.0 | 2 | 0 | -.3887 | 1.0680E-07 |
| 46 | 22.72 | Endo. sulfate 0.08 | 0.0210 | 0.1495% | 649020 | 51842 | 12.5 | 2 | 0 | .6854 | 3.2364E-08 |
| 47 | 23.84 | DBC 0.2 | 0.0523 | 0.3718% | 1124894 | 80021 | 14.1 | 2 | 0 | .7759 | 4.6457E-08 |
| 48 | 26.25 | Endrin ketone 0.08 | 0.0213 | 0.1512% | 620978 | 43779 | 14.2 | 2 | 0 | .7616 | 3.4229E-08 |

TOTAL AMOUNT = 14.0540  CY 2-7-92

Data File = A:B20367.PTS Printed on 02-05-1992 at 11:19:53
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 42642 uv High Value: 138126 uv Scale factor: 0.5



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***** EXTERNAL STANDARD TABLE *****

********** 02-05-1992 13:35:50 Version 4.1 **********

* Sample Name: CLP/EVALR Data File: A:B20373 *
* Date: 02-05-1992 09:21:00 Method: A:BCLP088 02-03-1992 16:08:34 # 32 *
* Interface: 2 Cycle#: 73 Operator CP Channel#: 1 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890A Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

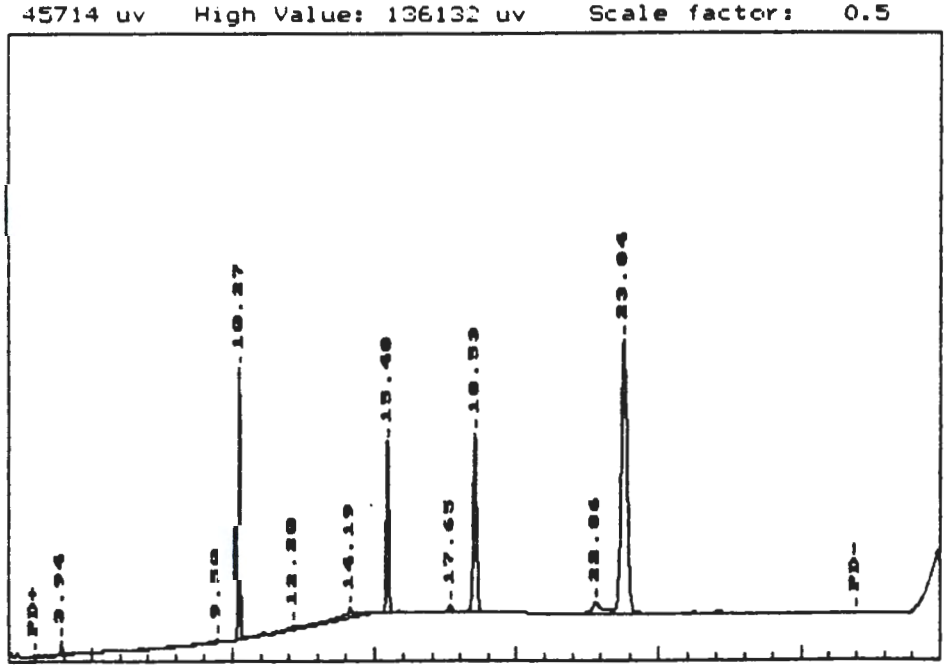
Starting Delay: 2.00 Ending retention time: 35.00
Area reject: 10000 One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00 Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 3.94 | | 1.8817 | 32.0682% | 18817 | 3701 | 5.1 | 2 | | | 1.0000E-04 |
| 16 | 9.50 | | 1.9204 | 32.7271% | 19204 | 965 | 19.9 | 2 | | | 1.0000E-04 |
| 18 | 10.27 | Aldrin 0.04 | 0.0104 | 0.1766% | 351141 | 77706 | 4.5 | 2 | 0 | .6519 | 2.9517E-08 |
| 22 | 12.20 | | 1.9620 | 33.4358% | 19620 | 1153 | 17.0 | 2 | | | 1.0000E-04 |
| 23 | 14.19 | 4,4'-DDE | 0.0033 ppb | 0.0559% | ~~92993~~ | 2664 | 34.9 | 3 | 0 | .5028 | 3.5290E-08 |
| 25 | 15.48 | Endrin 0.04 | 0.0108 | 0.1837% | 290260 | 49215 | 5.9 | 2 | 0 | .5646 | 3.7142E-08 |
| 29 | 17.65 | ~~Endosulfan II~~ 4,4'-DDD | 0.0021 | 0.0355% | 19494 | 2253 | 8.7 | 1 | 0 | -.2943 | 1.0680E-07 |
| 31 | 18.53 | 4,4'-DDT 0.08 | 0.0204 | 0.3470% | 430608 | 51402 | 8.4 | 1 | 0 | .6134 | 4.7288E-08 |
| 34 | 22.86 | ~~Methoxychlor~~ | 0.0054 | 0.0927% | 73278 | 3144 | 23.3 | 2 | 0 | -.9605 | 7.4199E-08 |
| 35 | 23.84 | DBC 0.2 | 0.0515 | 0.6775% | 1108367 | 78177 | 14.2 | 2 | 0 | .7759 | 4.6457E-08 |
| | | TOTAL AMOUNT = | 5.8679 | | | | | | | | |

total ng

CY 2-7-92

Data File = A:B20373.FIS Printed on 02-05-1992 at 13:35:59
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 45714 uv High Value: 136132 uv Scale factor: 0.5



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00287

~~1 of 2~~

1 of 3 AKH

***** EXTERNAL STANDARD TABLE *****

********** 02-05-1992 16:00:23 Version 4.1 **********

* Sample Name: CLP/INDA Data File: A:B20377 *

* Date: 02-05-1992 11:54:24 Method: A:BCLP088 02-03-1992 16:08:34 # 320*

* Interface: 2 Cycle#: 77 Operator CP Channel#: 1 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890A Column Type: DB-608,DB-1701 *

* Solvent Description: *

* Conditions: 160D,5D/M,230D,15M(35M RUN) *

* Detector 0: ECD Detector 1: ECD *

* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

Starting Delay: 2.00 Ending retention time: 35.00

Area reject: 10000 One sample per 1.002 sec.

Amount injected: ~~1.00~~ 4.00 Dilution factor: 1.00

Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 3.19 | | 1.1502 | 3.4405% | 11502 | 1490 | 7.7 | 2 | | | 1.0000E-04 |
| 3 | 3.67 | | 4.2758 | 12.7902% | 42758 | 1626 | 26.3 | 2 | | | 1.0000E-04 |
| 4 | 3.79 | | 1.0371 | 3.1023% | 10371 | 1511 | 6.9 | 2 | | | 1.0000E-04 |
| 5 | 3.92 | | 8.4814 | 25.3704% | 84814 | 7263 | 11.7 | 3 | | | 1.0000E-04 |
| 22 | 8.73 | gamma-BHC 0.02 | 0.0056 | 0.0167% | 171463 | 41126 | 4.2 | 2 | 0 | .5771 | 3.2472E-08 |
| 23 | 9.21 | | 1.1555 | 3.4564% | 11555 | 1784 | 6.5 | 2 | | | 1.0000E-04 |
| 24 | 9.36 | Heptachlor 0.04 | 0.0106 | 0.0318% | 380197 | 83140 | 4.6 | 3 | 0 | .4795 | 2.7963E-08 |
| 28 | 10.25 | Aldrin 0.04 | 0.0104 | 0.0311% | 352324 | 76238 | 4.6 | 2 | 0 | .4882 | 2.9517E-08 |
| 29 | 11.00 | | 2.5803 | 7.7184% | 25803 | 2748 | 9.4 | 2 | | | 1.0000E-04 |
| 31 | 11.44 | | 1.0152 | 3.0367% | 10152 | 1421 | 7.1 | 2 | | | 1.0000E-04 |
| 32 | 11.57 | | 1.0071 | 3.0125% | 10071 | 1084 | 9.3 | 2 | | | 1.0000E-04 |
| 33 | 11.85 | ~~delta-BHC~~ | 0.0006 | 0.0018% | 14404 | 1622 | 8.9 | 2 | 0 | -.8117 | 4.2484E-08 |
| 34 | 12.24 | | 2.5758 | 7.7049% | 25758 | 1451 | 17.8 | 2 | | | 1.0000E-04 |
| 35 | 12.52 | Hept. epoxide 0.04 | 0.0113 32 0.047 | 0.0338% | ~~240360~~ | 68421 | 5.1 | 2 | 0 | .5702 | 3.2440E-08 |
| 36 | 13.19 | | 3.8711 | 11.5795% | 38711 | 3352 | 11.5 | 2 | | | 1.0000E-04 |
| 37 | 13.41 | Endosulfan I 0.04 | 0.0124/66550 | 0.0372% | ~~197836~~ | 35114 | 5.6 | 3 | 0 | .3450 | 6.2850E-08 |
| 38 | 13.62 | ~~g-chlordane~~ | 0.0004 | 0.0011% | 11570 | 1918 | 6.0 | 4 | 0 | .4660 | 3.1831E-08 |
| 40 | 13.94 | | 1.1971 | 3.5810% | 11971 | 1486 | 8.1 | 4 | | | 1.0000E-04 |
| 41 | 14.17 | ~~4,4'-DDE~~ | 0.0011 | 0.0033% | 31154 | 2727 | 11.4 | 2 | 0 | .3845 | 3.5290E-09 |

# ***** EXTERNAL STANDARD TABLE *****

********** 02-07-1992 11:35:37 Version 4.1 **********

* Sample Name: CLP/INDB  Data File: A:B20378 *
* Date: 02-05-1992 12:34:31 Method: A:BCLP088 02-03-1992 16:08:34 # 320*
* Interface: 2  Cycle#: 78  Operator CP  Channel#: 1  Vial#: N.A. *
* Starting Peak Width: 10  Threshold: 1  Area Threshold: 100 *

* Instrument Type: HP5890A  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

1 of 2

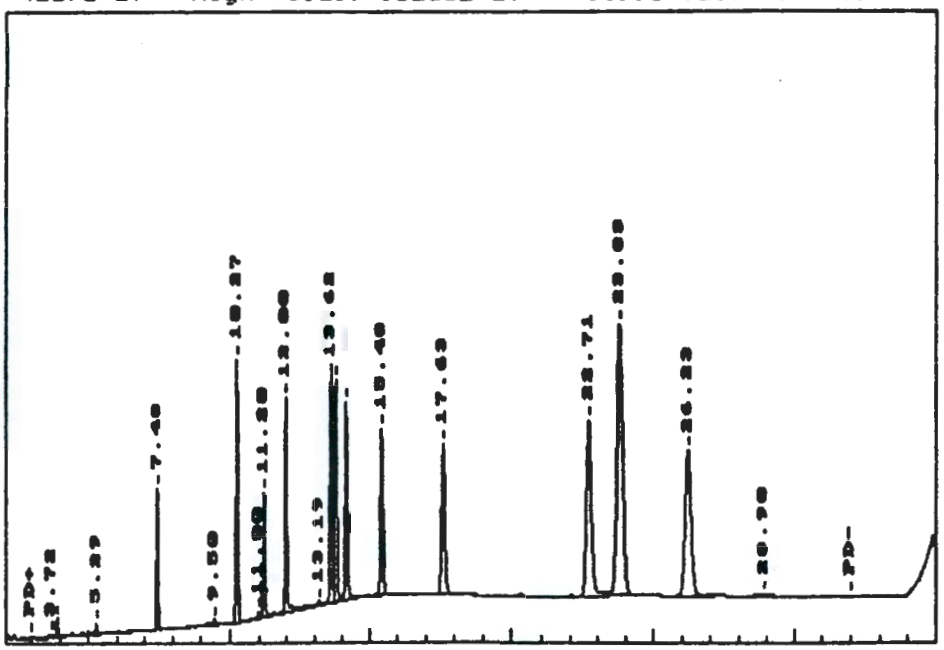
Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 10000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 3.72 | | 1.9083 | 15.7552% | 19083 | 694 | 27.5 | 2 | | | 1.0000E-04 |
| 3 | 3.92 | | 2.7921 | 23.0515% | 27921 | 5352 | 5.2 | 3 | | | 1.0000E-04 |
| 8 | 5.29 | | 1.6653 | 13.7490% | 16653 | 3027 | 5.5 | 3 | | | 1.0000E-04 |
| 15 | 7.48 | alpha-BHC 0.02 | 0.0053 | 0.0442% | 159211 | 40084 | 4.0 | 3 | 0 | .6406 | 3.3594E-08 |
| 21 | 9.50 | | 1.4169 | 11.6976% | 14169 | 1554 | 9.1 | 2 | | | 1.0000E-04 |
| 24 | 10.27 | Aldrin 0.04 | 0.0101 | 0.0835% | 342477 | 75163 | 4.6 | 2 | 0 | .6519 | 2.9517E-08 |
| 25 | 11.00 | | 1.2075 | 9.9692% | 12075 | 1699 | 7.1 | 2 | | | 1.0000E-04 |
| 26 | 11.20 | beta-BHC 0.04 | 0.0097 | 0.0797% | 161195 | 35444 | 4.5 | 2 | 0 | .4636 | 5.9877E-08 |
| 29 | 12.00 | delta-BHC 0.04 | 0.0120 24.5679 | 0.0989% | ~~292094~~ | 61728 | 4.6 | 3 | 0 | .4460 | 4.2484E-08 |
| 32 | 13.19 | | 1.7096 | 14.1147% | 17096 | 1048 | 16.3 | 2 | | | 1.0000E-04 |
| 33 | 13.62 | g. chlordane 0.04 | 0.0104 | 0.0857% | 326286 | 64938 | 5.0 | 2 | 0 | .4660 | 3.1831E-08 |
| 34 | 13.81 | a. chlordane 0.04 | 0.0104 | 0.0858% | 320322 | 63899 | 5.0 | 2 | 0 | .4868 | 3.2455E-08 |
| 35 | 14.17 | 4,4'-DDE 0.04 | 0.0107 | 0.0883% | 302968 | 56807 | 5.3 | 3 | 0 | .3845 | 3.5290E-08 |
| 39 | 15.48 | Endrin 0.04 | 0.0104 | 0.0862% | 281262 | 48220 | 5.8 | 2 | 0 | .5646 | 3.7142E-08 |
| 41 | 17.63 | ~~Endosulfan II 4,4'-DDD~~ 0.08 | 0.0364 | 0.3009% | 341267 | 43610 | 7.8 | 2 | 0 | -.3887 | 1.0680E-07 |
| 44 | 22.71 | Endo. sulfate 0.08 | 0.0202 | 0.1671% | 625405 | 50641 | 12.3 | 2 | 0 | .6114 | 3.2364E-08 |
| 45 | 23.83 | DDC 0.2 | 0.0506 | 0.4174% | 1088131 | 77451 | 14.0 | 2 | 0 | .7054 | 4.6457E-08 |
| 46 | 26.23 | Endrin ketone 0.08 | 0.0204 | 0.1684% | 595960 | 41681 | 14.3 | 1 | 0 | .6975 | 3.4229E-08 |
| 48 | 28.90 | | 1.2060 | 9.9568% | 12060 | 395 | 30.6 | 1 | | | 1.0000E-04 |

TOTAL AMOUNT = 12.1124

CY 2-7-92

Data File = A:B20378.PTS Printed on 02-07-1992 at 11:35:48
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 42875 uv High Value: 132582 uv Scale factor: 0.5



8D
PESTICIDE EVALUATION STANDARDS SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890B GC Column ID: DB608

Dates of Analyses: 02/03/92 to 02/05/92

Evaluation Check for Linearity

| PESTICIDE | CALIBRATION FACTOR EVAL MIX A | CALIBRATION FACTOR EVAL MIX B | CALIBRATION FACTOR EVAL MIX C | %RSD (</= 10.0%) | |
|---|---|---|---|---|---|
| Aldrin | 1730000 | 1690000 | 1880000 | 5.7 | |
| Endrin | 1520000 | 1490000 | 1530000 | 1.4 | |
| 4,4'-DDT | 1180000 | 1150000 | 1200000 | 2.1 | (1) |
| DBC | 1380000 | 1310000 | 1380000 | 3.0 | |

KG.

(1) If > 10.0% RSD, plot a standard curve and determine the ng for each sample in that set from the curve.

Evaluation Check for 4,4'-DDT/Endrin Breakdown
(percent breakdown expressed as total degradation)

| | | DATE ANALYZED | TIME ANALYZED | ENDRIN | 4,4'-DDT | COMBINED (2) |
|---|---|---|---|---|---|---|
| | INITIAL | | | | | |
| 01 | EVAL MIX B | 02/03/92 | 1109 | 0.0 | 0.0 | |
| 02 | EVAL MIX B | 02/03/92 | 2126 | 0.0 | 0.0 | |
| 03 | EVAL MIX B | 02/04/92 | 0959 | 0.0 | 0.0 | |
| 04 | EVAL MIX B | 02/04/92 | 1738 | 0.0 | 0.0 | |
| 05 | EVAL MIX B | 02/05/92 | 0151 | 0.0 | 5.2 | |
| 06 | EVAL MIX B | 02/05/92 | 0921 | 0.0 | 0.0 | |

KG KG.

(2) See Form instructions.

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00221

8E

PESTICIDE EVALUATION STANDARDS SUMMARY

Evaluation of Retention Time Shift for Dibutylchlorendate

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890B GC Column ID: DB608

Dates of Analyses: 02/03/92 to 02/05/92

| | EPA SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED | TIME ANALYZED | % D | * |
|---|---|---|---|---|---|---|
| 01 | EVALA | A2031 | 02/03/92 | 1031 | 0.0 | |
| 02 | EVALB | A2032 | 02/03/92 | 1109 | 0.0 | |
| 03 | EVALC | A2033 | 02/03/92 | 1147 | 0.0 | |
| 04 | INDA | A2034 | 02/03/92 | 1228 | 0.0 | |
| 05 | INDB | A2035 | 02/03/92 | 1311 | -0.1 | |
| 06 | TOXAPH | A2036 | 02/03/92 | 1352 | -0.2 | |
| 07 | AR1660 | A2037 | 02/03/92 | 1430 | -0.3 | |
| 08 | AR1221 | A2038 | 02/03/92 | 1508 | -0.4 | |
| 09 | AR1232 | A2039 | 02/03/92 | 1547 | -0.4 | |
| 10 | AR1242 | A20310 | 02/03/92 | 1624 | -0.6 | |
| 11 | AR1248 | A20311 | 02/03/92 | 1702 | -0.7 | |
| 12 | AR1254 | A20312 | 02/03/92 | 1740 | -0.7 | |
| 13 | ZZZZZ | A201050-BLK | 02/03/92 | 1818 | -0.8 | |
| 14 | ZZZZZ | A201050-01C | 02/03/92 | 1856 | -0.8 | |
| 15 | ZZZZZ | A201050-01D | 02/03/92 | 1934 | -0.9 | |
| 16 | ZZZZZ | A201050-01E | 02/03/92 | 2012 | -0.9 | |
| 17 | ZZZZZ | A201050-02D | 02/03/92 | 2050 | -0.9 | |
| 18 | EVALB | A20318 | 02/03/92 | 2126 | -1.0 | |
| 19 | ZZZZZ | A201050-03B | 02/03/92 | 2204 | -1.0 | |
| 20 | ZZZZZ | A201050-04B | 02/03/92 | 2242 | -0.9 | |
| 21 | ZZZZZ | A201050-05B | 02/03/92 | 2320 | -0.8 | |
| 22 | ZZZZZ | A201050-06B | 02/03/92 | 2358 | -0.8 | |
| 23 | ZZZZZ | A201050-07B | 02/04/92 | 0036 | -0.8 | |
| 24 | INDA | A20324 | 02/04/92 | 0114 | -0.8 | |
| 25 | ZZZZZ | A201050-08BB | 02/04/92 | 0152 | -0.8 | |
| 26 | ZZZZZ | A201050-09BB | 02/04/92 | 0230 | -0.7 | |
| 27 | ZZZZZ | A201050-10BB | 02/04/92 | 0308 | -0.7 | |
| 28 | ZZZZZ | A201050-11BB | 02/04/92 | 0346 | -0.7 | |
| 29 | ZZZZZ | A201050-12BB | 02/04/92 | 0424 | -0.6 | |
| 30 | EVALB | A20336 | 02/04/92 | 0959 | -0.7 | |
| 31 | ZZZZZ | A201050-08B | 02/04/92 | 1038 | -0.5 | |
| 32 | ZZZZZ | A201050-09B | 02/04/92 | 1117 | -0.5 | |
| 33 | ZZZZZ | A201050-10B | 02/04/92 | 1155 | -0.5 | |
| 34 | ZZZZZ | A201050-11B | 02/04/92 | 1233 | -0.5 | |
| 35 | ZZZZZ | A201050-12B | 02/04/92 | 1311 | -0.6 | |
| 36 | INDB | A20342 | 02/04/92 | 1350 | -0.7 | |
| 37 | ZZZZZ | A201050-13B | 02/04/92 | 1428 | -0.8 | |
| 38 | ZZZZZ | A201050-14B | 02/04/92 | 1506 | -0.9 | |

* Values outside of QC limits (2.0% for packed columns, 0.3% for capillary columns)



FORM VIII PEST-2 1/87 Rev.

8E
PESTICIDE EVALUATION STANDARDS SUMMARY
Evaluation of Retention Time Shift for Dibutylchlorendate

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890B GC Column ID: DB608

Dates of Analyses: 02/03/92 to 02/05/92

| | EPA SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED | TIME ANALYZED | % D | * |
|---|---|---|---|---|---|---|
| 01 | PBLK0115S | A201029-BLK | 02/04/92 | 1544 | -0.9 | |
| 02 | B01CF9 | A201029-03B | 02/04/92 | 1622 | -1.0 | |
| 03 | B01CG0 | A201029-04A | 02/04/92 | 1700 | -1.2 | |
| 04 | EVALB | A20348 | 02/04/92 | 1738 | -1.2 | |
| 05 | B01CG2 | A201029-01A | 02/04/92 | 1816 | -1.2 | |
| 06 | B01CG3 | A201029-02A | 02/04/92 | 1854 | -1.3 | |
| 07 | B01CG3MS | A201029-02D | 02/04/92 | 1931 | -1.3 | |
| 08 | B01CG3MSD | A201029-02E | 02/04/92 | 2009 | -1.4 | |
| 09 | ZZZZZ | A201056-BLK | 02/04/92 | 2047 | -1.4 | |
| 10 | INDA | A20354 | 02/04/92 | 2125 | -1.4 | |
| 11 | INDB | A20355 | 02/04/92 | 2203 | -1.3 | |
| 12 | ZZZZZ | A201056-01A | 02/04/92 | 2241 | -1.3 | |
| 13 | ZZZZZ | A201056-02A | 02/04/92 | 2319 | -1.3 | |
| 14 | ZZZZZ | A201056-02C | 02/04/92 | 2357 | -1.2 | |
| 15 | ZZZZZ | A201056-02D | 02/05/92 | 0035 | -1.2 | |
| 16 | ZZZZZ | A201056-03A | 02/05/92 | 0113 | -1.2 | |
| 17 | EVALB | A20361 | 02/05/92 | 0151 | -1.1 | |
| 18 | ZZZZZ | A201056-04A | 02/05/92 | 0228 | -1.0 | |
| 19 | ZZZZZ | A201062-BLK | 02/05/92 | 0305 | -1.0 | |
| 20 | ZZZZZ | A201062-01B | 02/05/92 | 0342 | -1.0 | |
| 21 | ZZZZZ | A201062-02B | 02/05/92 | 0420 | -1.0 | |
| 22 | ZZZZZ | A201062-03B | 02/05/92 | 0457 | -0.9 | |
| 23 | INDB | A20367 | 02/05/92 | 0535 | -0.8 | |
| 24 | ZZZZZ | A201062-05A | 02/05/92 | 0612 | -0.9 | |
| 25 | ZZZZZ | A201062-05B | 02/05/92 | 0649 | -1.0 | |
| 26 | ZZZZZ | A201062-05C | 02/05/92 | 0727 | -0.9 | |
| 27 | ZZZZZ | A201064-BLK | 02/05/92 | 0805 | -0.9 | |
| 28 | ZZZZZ | A201064-01C | 02/05/92 | 0844 | -0.8 | |
| 29 | EVALB | A20373 | 02/05/92 | 0921 | -0.8 | |
| 30 | ZZZZZ | A201064-01D | 02/05/92 | 0958 | -0.8 | |
| 31 | ZZZZZ | A201064-01E | 02/05/92 | 1036 | -0.8 | |
| 32 | ZZZZZ | A201064-02D | 02/05/92 | 1114 | -0.7 | |
| 33 | INDA | A20377 | 02/05/92 | 1154 | -0.7 | |
| 34 | INDB | A20378 | 02/05/92 | 1234 | -0.8 | |

* Values outside of QC limits (2.0% for packed columns, 0.3% for capillary columns)

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00230

# PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.:

Instrument ID: HP5890B GC Column ID: DB608

DATE(S) OF ANALYSIS FROM: 02/03/92 TO: 02/03/92
TIME(S) OF ANALYSIS FROM: 1228 TO: 1740

DATE OF ANALYSIS 02/04/92
TIME OF ANALYSIS 0114
EPA SAMPLE NO. (STANDARD) INDA

| COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | RT | CALIBRATION FACTOR | QNT Y/N | %D |
|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 7.70 | 7.54 | 7.86 | 1330000 | | | | |
| beta-BHC | 9.26 | 9.13 | 9.39 | 918000 | | | | |
| delta-BHC | 10.53 | 10.34 | 10.72 | 1120000 | | | | |
| gamma-BHC | 9.00 | 8.81 | 9.19 | 1420000 | 9.06 | 1380000 | N | 2.8 |
| Heptachlor | 10.10 | 9.93 | 10.27 | 1840000 | 10.15 | 1850000 | N | -0.5 |
| Aldrin | 11.24 | 11.04 | 11.44 | 1810000 | 11.30 | 1670000 | N | 7.7 |
| Hept. epoxide | 13.24 | 13.04 | 13.44 | 1810000 | 13.32 | 1770000 | N | 2.2 |
| Endosulfan I | 14.51 | 14.27 | 14.75 | 961000 | 14.58 | 935000 | N | 2.7 |
| Dieldrin | 15.76 | 15.46 | 16.06 | 1490000 | 15.86 | 1450000 | N | 2.7 |
| 4,4'-DDE | 15.54 | 15.30 | 15.78 | 1540000 | | | | |
| Endrin | 17.56 | 17.24 | 17.88 | 1510000 | | | | |
| Endosulfan II | 18.63 | 18.27 | 18.99 | 558000 | 18.77 | 559000 | N | -0.2 |
| 4,4'-DDD | 18.47 | 18.11 | 18.83 | 864000 | | | | |
| Endo. sulfate | 21.89 | 21.44 | 22.34 | 1740000 | | | | |
| 4,4'-DDT | 20.42 | 19.97 | 20.87 | 1170000 | 20.55 | 1160000 | N | 0.9 |
| Methoxychlor | 29.76 | 28.94 | 30.58 | 813000 | 29.99 | 831000 | N | -2.2 |
| Endrin ketone | 29.50 | 28.77 | 30.23 | 1780000 | | | | |
| a. Chlordane | 14.42 | 14.22 | 14.62 | 1780000 | | | | |
| g. Chlordane | 13.82 | 13.63 | 14.01 | 1850000 | | | | |
| Toxaphene | 20.39 | 20.11 | 20.67 | 450000 | | | | |
| Aroclor-1016 | 8.96 | 8.79 | 9.13 | 436000 | | | | |
| Aroclor-1221 | 7.58 | 7.44 | 7.72 | 97000 | | | | |
| Aroclor-1232 | 10.22 | 10.04 | 10.40 | 184000 | | | | |
| Aroclor-1242 | 13.39 | 13.22 | 13.56 | 337000 | | | | |
| Aroclor-1248 | 14.66 | 14.47 | 14.85 | 454000 | | | | |
| Aroclor-1254 | 16.90 | 16.67 | 17.13 | 349000 | | | | |
| Aroclor-1260 | 21.09 | 20.76 | 21.42 | 510000 | | | | |

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

9

# PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890B GC Column ID: DB608

DATE(S) OF ANALYSIS FROM: 02/03/92 TO: 02/03/92
TIME(S) OF ANALYSIS FROM: 1228 TO: 1740

DATE OF ANALYSIS 02/04/92
TIME OF ANALYSIS 1350
EPA SAMPLE NO. (STANDARD) INDB

| COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | RT | CALIBRATION FACTOR | QNT Y/N | %D |
|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 7.70 | 7.54 | 7.86 | 1330000 | 7.73 | 1330000 | N | 0.0 |
| beta-BHC | 9.26 | 9.13 | 9.39 | 918000 | 9.32 | 917000 | N | 0.1 |
| delta-BHC | 10.53 | 10.34 | 10.72 | 1120000 | 10.58 | 1210000 | N | -8.0 |
| gamma-BHC | 9.00 | 8.81 | 9.19 | 1420000 | | | | |
| Heptachlor | 10.10 | 9.93 | 10.27 | 1840000 | | | | |
| Aldrin | 11.24 | 11.04 | 11.44 | 1810000 | 11.28 | 1730000 | N | 4.4 |
| Hept. epoxide | 13.24 | 13.04 | 13.44 | 1810000 | | | | |
| Endosulfan I | 14.51 | 14.27 | 14.75 | 961000 | | | | |
| Dieldrin | 15.76 | 15.46 | 16.06 | 1490000 | | | | |
| 4,4'-DDE | 15.54 | 15.30 | 15.78 | 1540000 | 15.61 | 1550000 | N | -0.6 |
| Endrin | 17.56 | 17.24 | 17.88 | 1510000 | 17.65 | 1550000 | N | -2.6 |
| Endosulfan II | 18.63 | 18.27 | 18.99 | 558000 | | | | |
| 4,4'-DDD | 18.47 | 18.11 | 18.83 | 864000 | 18.55 | 903000 | N | -4.5 |
| Endo. sulfate | 21.89 | 21.44 | 22.34 | 1740000 | 22.02 | 1760000 | N | -1.1 |
| 4,4'-DDT | 20.42 | 19.97 | 20.87 | 1170000 | | | | |
| Methoxychlor | 29.76 | 28.94 | 30.58 | 813000 | | | | |
| Endrin ketone | 29.50 | 28.77 | 30.23 | 1780000 | 29.70 | 1800000 | N | -1.1 |
| a. Chlordane | 14.42 | 14.22 | 14.62 | 1780000 | 14.48 | 1810000 | N | -1.7 |
| g. Chlordane | 13.82 | 13.63 | 14.01 | 1850000 | 13.87 | 1970000 | N | -6.5 |
| Toxaphene | 20.39 | 20.11 | 20.67 | 450000 | | | | |
| Aroclor-1016 | 8.96 | 8.79 | 9.13 | 436000 | | | | |
| Aroclor-1221 | 7.58 | 7.44 | 7.72 | 97000 | | | | |
| Aroclor-1232 | 10.22 | 10.04 | 10.40 | 184000 | | | | |
| Aroclor-1242 | 13.39 | 13.22 | 13.56 | 337000 | | | | |
| Aroclor-1248 | 14.66 | 14.47 | 14.85 | 454000 | | | | |
| Aroclor-1254 | 16.90 | 16.67 | 17.13 | 349000 | | | | |
| Aroclor-1260 | 21.09 | 20.76 | 21.42 | 510000 | | | | |

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

9

# PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890B GC Column ID: DB608

DATE(S) OF ANALYSIS FROM: 02/03/92 TO: 02/03/92
TIME(S) OF ANALYSIS FROM: 1228 TO: 1740

DATE OF ANALYSIS 02/04/92
TIME OF ANALYSIS 2125
EPA SAMPLE NO. (STANDARD) INDA

| COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | RT | CALIBRATION FACTOR | QNT Y/N | %D |
|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 7.70 | 7.54 | 7.86 | 1330000 | | | | |
| beta-BHC | 9.26 | 9.13 | 9.39 | 918000 | | | | |
| delta-BHC | 10.53 | 10.34 | 10.72 | 1120000 | | | | |
| gamma-BHC | 9.00 | 8.81 | 9.19 | 1420000 | 9.10 | 1430000 | N | -0.7 |
| Heptachlor | 10.10 | 9.93 | 10.27 | 1840000 | 10.20 | 1860000 | N | -1.1 |
| Aldrin | 11.24 | 11.04 | 11.44 | 1810000 | 11.34 | 1700000 | N | 6.1 |
| Hept. epoxide | 13.24 | 13.04 | 13.44 | 1810000 | 13.36 | 1800000 | N | 0.6 |
| Endosulfan I | 14.51 | 14.27 | 14.75 | 961000 | 14.62 | 909000 | N | 5.4 |
| Dieldrin | 15.76 | 15.46 | 16.06 | 1490000 | 15.93 | 1440000 | N | 3.4 |
| 4,4'-DDE | 15.54 | 15.30 | 15.78 | 1540000 | | | | |
| Endrin | 17.56 | 17.24 | 17.88 | 1510000 | | | | |
| Endosulfan II | 18.63 | 18.27 | 18.99 | 558000 | 18.85 | 568000 | N | -1.8 |
| 4,4'-DDD | 18.47 | 18.11 | 18.83 | 864000 | | | | |
| Endo. sulfate | 21.89 | 21.44 | 22.34 | 1740000 | | | | |
| 4,4'-DDT | 20.42 | 19.97 | 20.87 | 1170000 | 20.65 | 1180000 | N | -0.9 |
| Methoxychlor | 29.76 | 28.94 | 30.58 | 813000 | 30.16 | 850000 | N | -4.6 |
| Endrin ketone | 29.50 | 28.77 | 30.23 | 1780000 | | | | |
| a. Chlordane | 14.42 | 14.22 | 14.62 | 1780000 | | | | |
| g. Chlordane | 13.82 | 13.63 | 14.01 | 1850000 | | | | |
| Toxaphene | 20.39 | 20.11 | 20.67 | 450000 | | | | |
| Aroclor-1016 | 8.96 | 8.79 | 9.13 | 436000 | | | | |
| Aroclor-1221 | 7.58 | 7.44 | 7.72 | 97000 | | | | |
| Aroclor-1232 | 10.22 | 10.04 | 10.40 | 184000 | | | | |
| Aroclor-1242 | 13.39 | 13.22 | 13.56 | 337000 | | | | |
| Aroclor-1248 | 14.66 | 14.47 | 14.85 | 454000 | | | | |
| Aroclor-1254 | 16.90 | 16.67 | 17.13 | 349000 | | | | |
| Aroclor-1260 | 21.09 | 20.76 | 21.42 | 510000 | | | | |

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

# PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890B GC Column ID: DB608

DATE(S) OF ANALYSIS FROM: 02/03/92 TO: 02/03/92
TIME(S) OF ANALYSIS FROM: 1228 TO: 1740

DATE OF ANALYSIS 02/04/92
TIME OF ANALYSIS 2203
EPA SAMPLE NO. (STANDARD) INDB

| COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | RT | CALIBRATION FACTOR | QNT Y/N | %D |
|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 7.70 | 7.54 | 7.86 | 1330000 | 7.78 | 1330000 | N | 0.0 |
| beta-BHC | 9.26 | 9.13 | 9.39 | 918000 | 9.36 | 901000 | N | 1.9 |
| delta-BHC | 10.53 | 10.34 | 10.72 | 1120000 | 10.63 | 1150000 | N | -2.7 |
| gamma-BHC | 9.00 | 8.81 | 9.19 | 1420000 | | | | |
| Heptachlor | 10.10 | 9.93 | 10.27 | 1840000 | | | | |
| Aldrin | 11.24 | 11.04 | 11.44 | 1810000 | 11.34 | 1710000 | N | 5.5 |
| Hept. epoxide | 13.24 | 13.04 | 13.44 | 1810000 | | | | |
| Endosulfan I | 14.51 | 14.27 | 14.75 | 961000 | | | | |
| Dieldrin | 15.76 | 15.46 | 16.06 | 1490000 | | | | |
| 4,4'-DDE | 15.54 | 15.30 | 15.78 | 1540000 | 15.68 | 1540000 | N | 0.0 |
| Endrin | 17.56 | 17.24 | 17.88 | 1510000 | 17.75 | 1520000 | N | -0.7 |
| Endosulfan II | 18.63 | 18.27 | 18.99 | 558000 | | | | |
| 4,4'-DDD | 18.47 | 18.11 | 18.83 | 864000 | 18.63 | 851000 | N | 1.5 |
| Endo. sulfate | 21.89 | 21.44 | 22.34 | 1740000 | 22.14 | 1690000 | N | 2.9 |
| 4,4'-DDT | 20.42 | 19.97 | 20.87 | 1170000 | | | | |
| Methoxychlor | 29.76 | 28.94 | 30.58 | 813000 | | | | |
| Endrin ketone | 29.50 | 28.77 | 30.23 | 1780000 | 29.91 | 1700000 | N | 4.5 |
| a. Chlordane | 14.42 | 14.22 | 14.62 | 1780000 | 14.54 | 1670000 | N | 6.2 |
| g. Chlordane | 13.82 | 13.63 | 14.01 | 1850000 | 13.94 | 1720000 | N | 7.0 |
| Toxaphene | 20.39 | 20.11 | 20.67 | 450000 | | | | |
| Aroclor-1016 | 8.96 | 8.79 | 9.13 | 436000 | | | | |
| Aroclor-1221 | 7.58 | 7.44 | 7.72 | 97000 | | | | |
| Aroclor-1232 | 10.22 | 10.04 | 10.40 | 184000 | | | | |
| Aroclor-1242 | 13.39 | 13.22 | 13.56 | 337000 | | | | |
| Aroclor-1248 | 14.66 | 14.47 | 14.85 | 454000 | | | | |
| Aroclor-1254 | 16.90 | 16.67 | 17.13 | 349000 | | | | |
| Aroclor-1260 | 21.09 | 20.76 | 21.42 | 510000 | | | | |

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

9

# PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890B GC Column ID: DB608

DATE(S) OF ANALYSIS FROM: 02/03/92 TO: 02/03/92
TIME(S) OF ANALYSIS FROM: 1228 TO: 1740

DATE OF ANALYSIS 02/05/92
TIME OF ANALYSIS 0535
EPA SAMPLE NO. (STANDARD) INDB

| COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | RT | CALIBRATION FACTOR | QNT Y/N | %D |
|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 7.70 | 7.54 | 7.86 | 1330000 | 7.74 | 1340000 | N | -0.8 |
| beta-BHC | 9.26 | 9.13 | 9.39 | 918000 | 9.33 | 933000 | N | -1.6 |
| delta-BHC | 10.53 | 10.34 | 10.72 | 1120000 | 10.60 | 1160000 | N | -3.6 |
| gamma-BHC | 9.00 | 8.81 | 9.19 | 1420000 | | | | |
| Heptachlor | 10.10 | 9.93 | 10.27 | 1840000 | | | | |
| Aldrin | 11.24 | 11.04 | 11.44 | 1810000 | 11.30 | 1690000 | N | 6.6 |
| Hept. epoxide | 13.24 | 13.04 | 13.44 | 1810000 | | | | |
| Endosulfan I | 14.51 | 14.27 | 14.75 | 961000 | | | | |
| Dieldrin | 15.76 | 15.46 | 16.06 | 1490000 | | | | |
| 4,4'-DDE | 15.54 | 15.30 | 15.78 | 1540000 | 15.63 | 1530000 | N | 0.6 |
| Endrin | 17.56 | 17.24 | 17.88 | 1510000 | 17.68 | 1510000 | N | 0.0 |
| Endosulfan II | 18.63 | 18.27 | 18.99 | 558000 | | | | |
| 4,4'-DDD | 18.47 | 18.11 | 18.83 | 864000 | 18.57 | 840000 | N | 2.8 |
| Endo. sulfate | 21.89 | 21.44 | 22.34 | 1740000 | 22.06 | 1700000 | N | 2.3 |
| 4,4'-DDT | 20.42 | 19.97 | 20.87 | 1170000 | | | | |
| Methoxychlor | 29.76 | 28.94 | 30.58 | 813000 | | | | |
| Endrin ketone | 29.50 | 28.77 | 30.23 | 1780000 | 29.76 | 1740000 | N | 2.2 |
| a. Chlordane | 14.42 | 14.22 | 14.62 | 1780000 | 14.49 | 1690000 | N | 5.1 |
| g. Chlordane | 13.82 | 13.63 | 14.01 | 1850000 | 13.89 | 1760000 | N | 4.9 |
| Toxaphene | 20.39 | 20.11 | 20.67 | 450000 | | | | |
| Aroclor-1016 | 8.96 | 8.79 | 9.13 | 436000 | | | | |
| Aroclor-1221 | 7.58 | 7.44 | 7.72 | 97000 | | | | |
| Aroclor-1232 | 10.22 | 10.04 | 10.40 | 184000 | | | | |
| Aroclor-1242 | 13.39 | 13.22 | 13.56 | 337000 | | | | |
| Aroclor-1248 | 14.66 | 14.47 | 14.85 | 454000 | | | | |
| Aroclor-1254 | 16.90 | 16.67 | 17.13 | 349000 | | | | |
| Aroclor-1260 | 21.09 | 20.76 | 21.42 | 510000 | | | | |

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

9

# PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890B GC Column ID: DB608

| DATE(S) OF ANALYSIS | FROM: 02/03/92 TO: 02/03/92 | DATE OF ANALYSIS 02/05/92 |
|---|---|---|
| TIME(S) OF ANALYSIS | FROM: 1228 TO: 1740 | TIME OF ANALYSIS 1154 |
| | | EPA SAMPLE NO. (STANDARD) INDA |

| COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | RT | CALIBRATION FACTOR | QNT Y/N | %D |
|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 7.70 | 7.54 | 7.86 | 1330000 | | | | |
| beta-BHC | 9.26 | 9.13 | 9.39 | 918000 | | | | |
| delta-BHC | 10.53 | 10.34 | 10.72 | 1120000 | | | | |
| gamma-BHC | 9.00 | 8.81 | 9.19 | 1420000 | 9.05 | 1450000 | N | -2.1 |
| Heptachlor | 10.10 | 9.93 | 10.27 | 1840000 | 10.15 | 1850000 | N | -0.5 |
| Aldrin | 11.24 | 11.04 | 11.44 | 1810000 | 11.28 | 1740000 | N | 3.9 |
| Hept. epoxide | 13.24 | 13.04 | 13.44 | 1810000 | 13.31 | 1790000 | N | 1.1 |
| Endosulfan I | 14.51 | 14.27 | 14.75 | 961000 | 14.58 | 959000 | N | 0.2 |
| Dieldrin | 15.76 | 15.46 | 16.06 | 1490000 | 15.84 | 1470000 | N | 1.3 |
| 4,4'-DDE | 15.54 | 15.30 | 15.78 | 1540000 | | | | |
| Endrin | 17.56 | 17.24 | 17.88 | 1510000 | | | | |
| Endosulfan II | 18.63 | 18.27 | 18.99 | 558000 | 18.75 | 554000 | N | 0.7 |
| 4,4'-DDD | 18.47 | 18.11 | 18.83 | 864000 | | | | |
| Endo. sulfate | 21.89 | 21.44 | 22.34 | 1740000 | | | | |
| 4,4'-DDT | 20.42 | 19.97 | 20.87 | 1170000 | 20.54 | 1180000 | N | -0.9 |
| Methoxychlor | 29.76 | 28.94 | 30.58 | 813000 | 29.97 | 854000 | N | -5.0 |
| Endrin ketone | 29.50 | 28.77 | 30.23 | 1780000 | | | | |
| a. Chlordane | 14.42 | 14.22 | 14.62 | 1780000 | | | | |
| g. Chlordane | 13.82 | 13.63 | 14.01 | 1850000 | | | | |
| Toxaphene | 20.39 | 20.11 | 20.67 | 450000 | | | | |
| Aroclor-1016 | 8.96 | 8.79 | 9.13 | 436000 | | | | |
| Aroclor-1221 | 7.58 | 7.44 | 7.72 | 97000 | | | | |
| Aroclor-1232 | 10.22 | 10.04 | 10.40 | 184000 | | | | |
| Aroclor-1242 | 13.39 | 13.22 | 13.56 | 337000 | | | | |
| Aroclor-1248 | 14.66 | 14.47 | 14.85 | 454000 | | | | |
| Aroclor-1254 | 16.90 | 16.67 | 17.13 | 349000 | | | | |
| Aroclor-1260 | 21.09 | 20.76 | 21.42 | 510000 | | | | |

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

9713528.0774



00236

# PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Instrument ID: HP5890B GC Column ID: DB608

DATE(S) OF ANALYSIS FROM: 02/03/92 TO: 02/03/92
TIME(S) OF ANALYSIS FROM: 1228 TO: 1740

DATE OF ANALYSIS 02/05/92
TIME OF ANALYSIS 1234
EPA SAMPLE NO. (STANDARD) INDB

| COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALIBRATION FACTOR | RT | CALIBRATION FACTOR | QNT Y/N | %D |
|---|---|---|---|---|---|---|---|---|
| alpha-BHC | 7.70 | 7.54 | 7.86 | 1330000 | 7.74 | 1360000 | N | -2.3 |
| beta-BHC | 9.26 | 9.13 | 9.39 | 918000 | 9.32 | 914000 | N | 0.4 |
| delta-BHC | 10.53 | 10.34 | 10.72 | 1120000 | 10.58 | 1140000 | N | -1.8 |
| gamma-BHC | 9.00 | 8.81 | 9.19 | 1420000 | | | | |
| Heptachlor | 10.10 | 9.93 | 10.27 | 1840000 | | | | |
| Aldrin | 11.24 | 11.04 | 11.44 | 1810000 | 11.30 | 1740000 | N | 3.9 |
| Hept. epoxide | 13.24 | 13.04 | 13.44 | 1810000 | | | | |
| Endosulfan I | 14.51 | 14.27 | 14.75 | 961000 | | | | |
| Dieldrin | 15.76 | 15.46 | 16.06 | 1490000 | | | | |
| 4,4'-DDE | 15.54 | 15.30 | 15.78 | 1540000 | 15.63 | 1560000 | N | -1.3 |
| Endrin | 17.56 | 17.24 | 17.88 | 1510000 | 17.66 | 1530000 | N | -1.3 |
| Endosulfan II | 18.63 | 18.27 | 18.99 | 558000 | | | | |
| 4,4'-DDD | 18.47 | 18.11 | 18.83 | 864000 | 18.57 | 886000 | N | -2.5 |
| Endo. sulfate | 21.89 | 21.44 | 22.34 | 1740000 | 22.02 | 1690000 | N | 2.9 |
| 4,4'-DDT | 20.42 | 19.97 | 20.87 | 1170000 | | | | |
| Methoxychlor | 29.76 | 28.94 | 30.58 | 813000 | | | | |
| Endrin ketone | 29.50 | 28.77 | 30.23 | 1780000 | 29.74 | 1770000 | N | 0.6 |
| a. Chlordane | 14.42 | 14.22 | 14.62 | 1780000 | 14.49 | 1780000 | N | 0.0 |
| g. Chlordane | 13.82 | 13.63 | 14.01 | 1850000 | 13.89 | 1890000 | N | -2.2 |
| Toxaphene | 20.39 | 20.11 | 20.67 | 450000 | | | | |
| Aroclor-1016 | 8.96 | 8.79 | 9.13 | 436000 | | | | |
| Aroclor-1221 | 7.58 | 7.44 | 7.72 | 97000 | | | | |
| Aroclor-1232 | 10.22 | 10.04 | 10.40 | 184000 | | | | |
| Aroclor-1242 | 13.39 | 13.22 | 13.56 | 337000 | | | | |
| Aroclor-1248 | 14.66 | 14.47 | 14.85 | 454000 | | | | |
| Aroclor-1254 | 16.90 | 16.67 | 17.13 | 349000 | | | | |
| Aroclor-1260 | 21.09 | 20.76 | 21.42 | 510000 | | | | |

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.



FORM IX PEST 8/87 Rev.

9715628.0775

00292

# ***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 16:18:12 Version 4.1 **********

* Sample Name: CLP/EVALA, I  Data File: A:A2031 *
* Date: 02-03-1992 10:31:04 Method: A:ACLP088 02-03-1992 15:59:35 # 301*
* Interface: 2 Cycle#: 1 Operator CP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890A Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

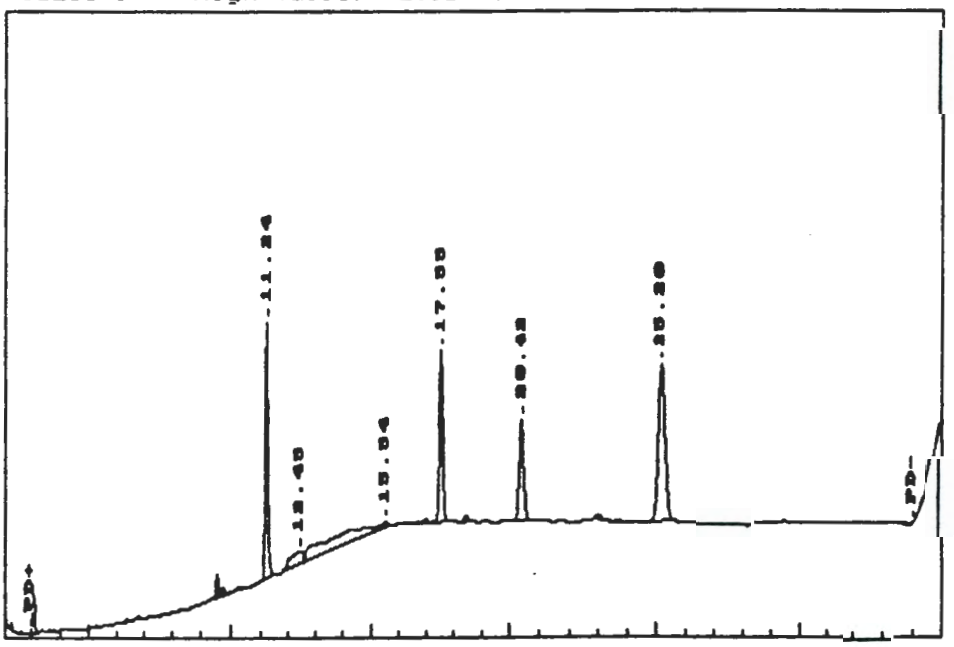
Starting Delay: 2.00 Ending retention time: 35.00
Area reject: 5000 One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00 Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (Total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 11.24 | Aldrin | 0.02 | 0.0046 | 0.4749% | 34684 | 5685 | 6.1 1 | 0 | -.0436 | 1.3354E-07 |
| 6 | 12.45 | | | 0.9443 | 96.8213% | 9443 | 284 | 33.3 2 | | | 1.0000E-04 |
| 7 | 15.54 | ~~4,4'-DDE~~ | | 0.0059 | 0.6037% | 36191 | 109 | 330.7 2 | 0 | .0238 | 1.6270E-07 |
| 9 | 17.55 | Endrin | 0.02 | 0.0050 | 0.5157% | 30445 | 3768 | 8.1 1 | 0 | 0 | 1.6521E-07 |
| 11 | 20.42 | 4,4'-DDT | 0.02 | 0.0050 | 0.5152% | 23538 | 2230 | 10.6 1 | 0 | 0 | 2.1349E-07 |
| 13 | 25.20 | DBC | 0.04 | 0.0104 | 1.0692% | 55033 | 3437 | 16.0 1 | 0 | 0 | 1.8948E-07 |
| | | TOTAL AMOUNT = | | 0.9753 | | | | | | | |

1 of 1

cy 2-6-92

Data File = A:A2031.PTS Printed on 02-04-1992 at 16:18:20
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 13299 uv High Value: 20185 uv Scale factor: 0.5



9713523.0776

00293

***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 16:18:52 Version 4.1 **********

* Sample Name: CLP/EVALB,I  Data File: A:A2032 *
* Date: 02-03-1992 11:09:47 Method: A:ACLP088 02-03-1992 15:59:35 # 301*
* Interface: 2 Cycle#: 2 Operator CP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890~~A~~ B  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, ~~A~~ C, Col 0.53mm, 4UL *

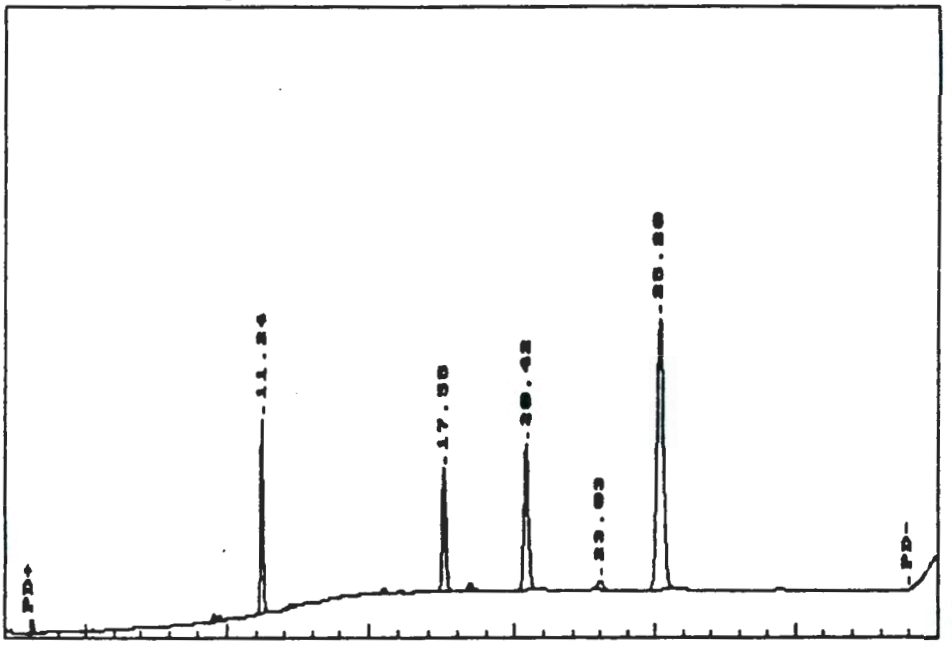
Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 5000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 11.24 | Aldrin | 6.04 | 0.0090 | 1.1049% | 67653 | 11763 | 5.8 | 1 | 0 | -.0436 | 1.3354E-07 |
| 9 | 17.55 | Endrin | 0.04 | 0.0098 | 1.2039% | 59581 | 7414 | 8.0 | 1 | 0 | 0 | 1.6521E-07 |
| 11 | 20.42 | 4,4'-DDT | 0.08 | 0.0197 | 2.4062% | 92149 | 8880 | 10.4 | 1 | 0 | 0 | 2.1349E-07 |
| 12 | 23.03 | | | 0.7293 | 89.1991% | 7293 | 538 | 13.6 | 1 | | | 1.0000E-04 |
| 13 | 25.20 | DBC | 0.2 | 0.0498 | 6.0858% | 262604 | 16501 | 15.9 | 1 | 0 | 0 | 1.8948E-07 |
| | | TOTAL AMOUNT = | | 0.8176 | | | | | | | | |

CY 2-6-92

Data File = A:A2032.PTS Printed on 02-04-1992 at 16:18:59
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 13016 uv High Value: 32144 uv Scale factor: 0.5

1 of 1



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00294

# ***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 16:19:32 Version 4.1 **********

* Sample Name: CLP/EVALC,I  Data File: A:A2033 *
* Date: 02-03-1992 11:47:43 Method: A:ACLP088 02-03-1992 15:59:35 # 301*
* Interface: 2 Cycle#: 3 Operator CP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890 A B  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD C  Detector 1: ECD *
* Misc. Information: 02-03-92, F, Col 0.53mm, 4UL *

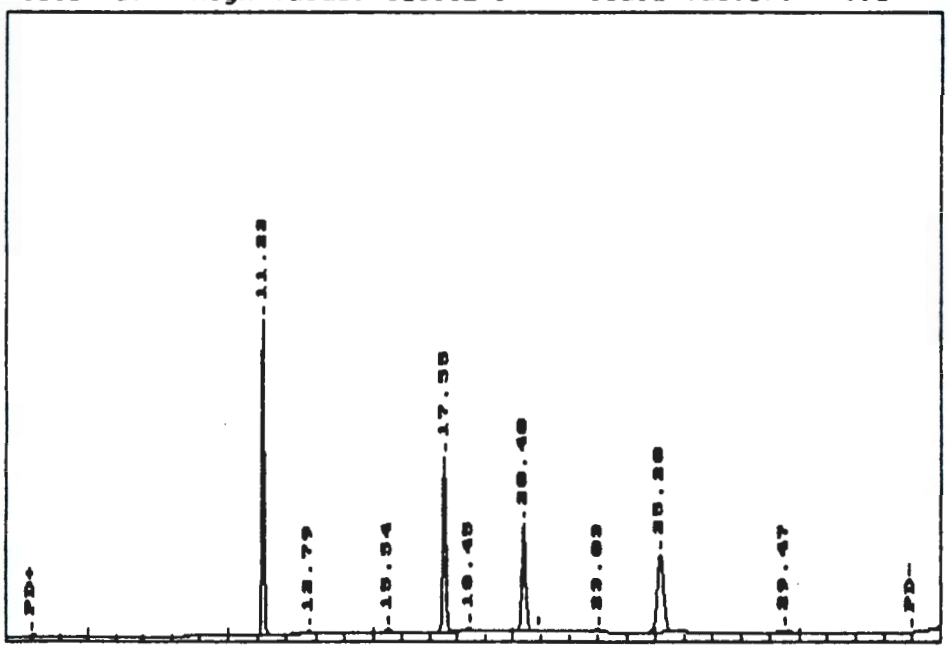
Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 5000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 11.22 | Aldrin 0.4 | 0.1004 | 4.0412% | 752185 | 144882 | 5.2 | 1 | 0 | -.1921 | 1.3354E-07 |
| 11 | 12.79 | | 0.5716 | 22.9989% | 5716 | 998 | 5.7 | 2 | | | 1.0000E-04 |
| 12 | 15.54 | 4,4'-DDE | 0.0014 7857 | 0.0570% | ~~8714~~ | 1225 | 7.1 | 1 | 0 | .0238 | 1.6270E-07 |
| 13 | 17.55 | Endrin 0.4 | 0.1014 | 4.0794% | 613735 | 80222 | 7.7 | 2 | 0 | 0 | 1.6521E-07 |
| 14 | 18.45 | 4,4'-DDD | 0.0053 | 0.2129% | 18285 | 1668 | 11.0 | 2 | 0 | -.1109 | 2.8944E-07 |
| 16 | 20.40 | 4,4'-DDT 0.4 | 0.1024 | 4.1185% | 479478 | 49140 | 9.8 | 3 | 0 | 0 | 2.1349E-07 |
| 17 | 20.92 | Endrin Aldehyde | 0.0017 | 0.0694% | 8564 | 740 | 11.6 | 4 | 0 | 0 | 2.0144E-07 |
| 18 | 23.03 | | 1.4943 | 60.1196% | 14943 | 1103 | 13.6 | 1 | | | 1.0000E-04 |
| 19 | 25.20 | DBC 0.4 | 0.1049 | 4.2213% | 553723 | 35548 | 15.6 | 1 | 0 | 0 | 1.8948E-07 |
| 20 | 29.47 | Endrin ketone | 0.0020 | 0.0818% | 14461 | 822 | 17.6 | 1 | 0 | -.1304 | 1.4055E-07 |
| | | TOTAL AMOUNT = | 2.4855 | | | | | | | | |

CY 2692

Data File = A:A2033.PTS Printed on 02-04-1992 at 16:19:42
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 13134 uv High Value: 159192 uv Scale factor: 0.5

1 of 2



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# ****** EXTERNAL STANDARD TABLE

00296

********** 02-04-1992 16:20:14 Version 4.1 **********

* Sample Name: CLP/INDA,I  Data File: A:A2034 *
* Date: 02-03-1992 12:28:43 Method: A:ACLP088 02-03-1992 15:59:35 # 301*
* Interface: 2 Cycle#: 4 Operator CP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890A B  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, P,C Col 0.53mm, 4UL *

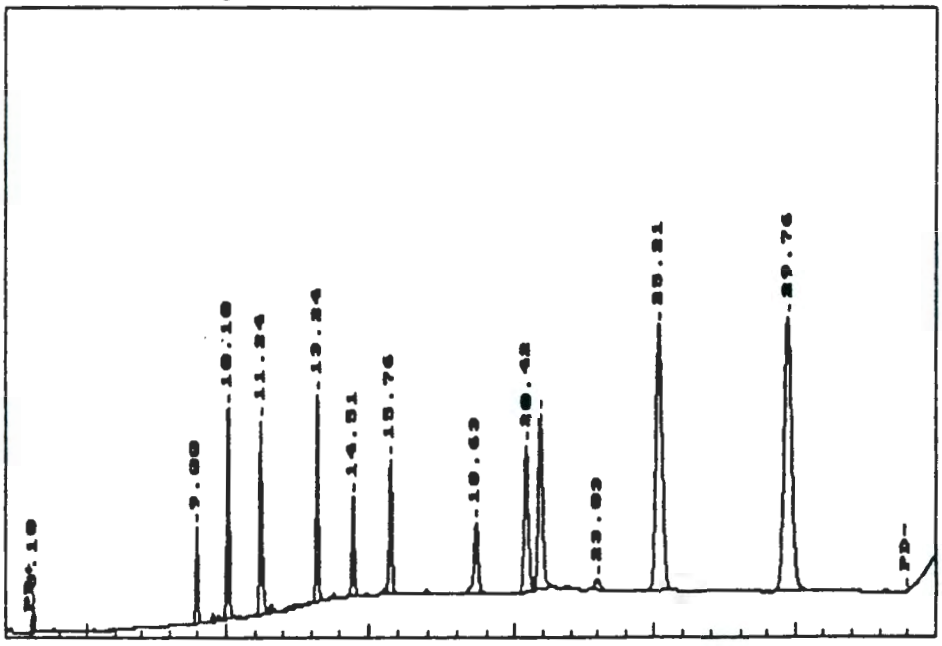
Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 5000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | total mg | | | | | | | | | |
| 1 | 3.10 | | 0.7682 | 39.4929% | 7682 | 1573 | 4.9 | 1 | | | 1.0000E-04 |
| 6 | 9.00 | gamma-BHC 0.02 | 0.0050 | 0.2570% | 28472 | 6100 | 4.7 | 1 | 0 | 0 | 1.7561E-07 |
| 9 | 10.10 | Heptachlor 0.04 | 0.0100 | 0.5141% | 73577 | 13376 | 5.5 | 1 | 0 | 0 | 1.3591E-07 |
| 10 | 11.24 | Aldrin 0.04 | 0.0100 | 0.5141% | 74886 | 12349 | 6.1 | 2 | 0 | -.0436 | 1.3354E-07 |
| 14 | 13.24 | Hept. epoxide 0.04 | 0.0100 | 0.5141% | 72236 | 13217 | 5.5 | 2 | 0 | 0 | 1.3844E-07 |
| 16 | 14.51 | Endosulfan I 0.04 | 0.0100 | 0.5141% | 38444 | 6360 | 6.0 | 1 | 0 | 0 | 2.6012E-07 |
| 18 | 15.76 | Dieldrin 0.04 | 0.0100 | 0.5141% | 59670 | 8670 | 6.9 | 2 | 0 | 0 | 1.6759E-07 |
| 20 | 18.63 | Endosulfan II 0.08 | 0.0200 | 1.0282% | 44664 | 4538 | 9.8 | 1 | 0 | 0 | 4.4779E-07 |
| 21 | 20.42 | 4,4'-DDT 0.08 | 0.0200 | 1.0282% | 93680 | 9291 | 10.1 | 2 | 0 | 0 | 2.1349E-07 |
| 22 | 20.92 | Endrin Aldehyde 0.1 | 0.0250 | 1.2852% | 124108 | 11157 | 11.1 | 2 | 0 | 0 | 2.0144E-07 |
| 24 | 23.03 | | 0.9070 | 46.6271% | 9070 | 628 | 14.4 | 1 | | | 1.0000E-04 |
| 25 | 25.21 | DBC 0.2 | 0.0500 | 2.5704% | 263877 | 16926 | 15.6 | 1 | 0 | 0 | 1.8948E-07 |
| 26 | 29.76 | Methoxychlor 0.4 | 0.1000 | 5.1407% | 325398 | 17468 | 18.6 | 1 | 0 | 0 | 3.0732E-07 |
| | | TOTAL AMOUNT = | 1.9452 | | | | | | | | |

CY 2-6-92

Data File = A:A2034.PTS Printed on 02-04-1992 at 16:20:24
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 12913 uv High Value: 33039 uv Scale factor: 0.5

1 of 1



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00298

1 of 2

# ***** EXTERNAL STANDARD TABLE *****

********** 02-06-1992 12:21:04 Version 4.1 **********

* Sample Name: CLP/TOXAPH,I  Data File: A:A2036 *
* Date: 02-03-1992 13:52:52 Method: A:ACLP088 02-03-1992 15:59:35 # 301 *
* Interface: 2  Cycle#: 6  Operator CP  Channel#: 0  Vial#: N.A. *
* Starting Peak Width: 10  Threshold: 1  Area Threshold: 100 *

* Instrument Type: HP5890~~A~~B  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, ~~A~~C, Col 0.53mm, 4UL *

Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 5000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 11.35 | ~~Aldrin~~ | 0.0013 | 0.0010% | 9759 | 1215 | 8.0 | 2 | 0 | .9964 | 1.3354E-07 |
| 19 | 12.29 | | 0.9582 | 0.7387% | 9582 | 1498 | 6.4 | 2 | | | 1.0000E-04 |
| 23 | 13.34 | ~~Hept. epoxide~~ | 0.0007 | 0.0005% | 5106 | 580 | 8.8 | 1 | 0 | .7499 | 1.3844E-07 |
| 25 | 13.91 | ~~g. chlordane~~ | 0.0023 | 0.0018% | 16783 | 1916 | 8.8 | 2 | 0 | .6302 | 1.3550E-07 |
| 26 | 14.24 | | 1.5221 | 1.1736% | 15221 | 1977 | 7.7 | 2 | | | 1.0000E-04 |
| 27 | 14.42 | ~~a. chlordane~~ | 0.0030 | 0.0023% | 21595 | 1304 | 16.6 | 2 | 0 | 0 | 1.4069E-07 |
| 28 | 14.93 | | 3.1730 | 2.4463% | 31730 | 2295 | 13.8 | 2 | | | 1.0000E-04 |
| 29 | 15.29 | | 2.9248 | 2.2550% | 29248 | 2204 | 13.3 | 2 | | | 1.0000E-04 |
| 30 | 15.56 | ~~4,4' DDE~~ | 0.0041 | 0.0032% | 25232 | 2619 | 9.6 | 2 | 0 | .1312 | 1.6270E-07 |
| 31 | 15.71 | ~~Dieldrin~~ | 0.0068 | 0.0052% | 40493 | 3097 | 13.1 | 2 | 0 | -.3128 | 1.6759E-07 |
| 32 | 15.93 | | 2.2901 | 1.7656% | 22901 | 2657 | 8.6 | 2 | | | 1.0000E-04 |
| 33 | 16.09 | | 1.2745 | 0.9826% | 12745 | 1661 | 7.7 | 2 | | | 1.0000E-04 |
| 34 | 16.23 | | 2.0415 | 1.5740% | 20415 | 2295 | 8.9 | 2 | | | 1.0000E-04 |
| 35 | 16.43 | Toxaphene | 6.5270 | 5.0322% | 65270 | 4976 | 13.1 | 2 | | | 1.0000E-04 |
| 36 | 16.85 | Toxaphene | 6.8379 | 5.2720% | 68379 | 5555 | 12.3 | 2 | | | 1.0000E-04 |
| 37 | 17.15 | | 2.9963 | 2.3101% | 29963 | 2305 | 13.0 | 2 | | | 1.0000E-04 |
| 38 | 17.28 | | 2.3017 | 1.7746% | 23017 | 2315 | 9.9 | 2 | | | 1.0000E-04 |
| 39 | 17.45 | ~~Endrin~~ | 0.0034 | 0.0026% | 20413 | 2005 | 10.2 | 2 | 0 | -.6406 | 1.6521E-07 |
| 40 | 17.68 | | 4.8203 | 3.7164% | 48203 | 4165 | 11.6 | 2 | | | 1.0000E-04 |
| 41 | 17.88 | | 3.7053 | 2.8568% | 37053 | 3120 | 11.9 | 2 | | | 1.0000E-04 |
| 42 | 18.17 | | 8.5788 | 6.6142% | 85788 | 4387 | 19.6 | 2 | | | 1.0000E-04 |
| 43 | 18.90 | | 12.5319 | 9.6620% | 125319 | 6625 | 18.9 | 2 | | | 1.0000E-04 |
| 44 | 19.20 | | 2.9845 | 2.3010% | 29845 | 2167 | 13.8 | 2 | | | 1.0000E-04 |
| 45 | 19.70 | | 6.7709 | 5.2203% | 67709 | 3330 | 20.3 | 2 | | | 1.0000E-04 |
| 46 | 20.39 | ~~4,4' DDT~~ Toxaphene | 0.0214 | 0.0165% | 100435 | 5660 | 17.7 | 2 | 0 | -.1630 | 2.1349E-07 |
| 47 | 20.87 | ~~Endrin Aldehyde~~ Toxaphene | 0.0132 | 0.0102% | 65675 | 4788 | 13.7 | 2 | 0 | -.2342 | 2.0144E-07 |
| 48 | 21.12 | Toxaphene | 6.0003 | 4.6262% | 60003 | 4103 | 14.6 | 2 | | | 1.0000E-04 |
| 49 | 21.42 | | 3.5089 | 2.7054% | 35089 | 2375 | 14.8 | 2 | | | 1.0000E-04 |
| 50 | 21.91 | ~~Endo. sulfate~~ | 0.0163 | 0.0125% | 113418 | 4998 | 22.7 | 2 | 0 | 0 | 1.4332E-07 |
| 51 | 22.56 | | 3.5238 | 2.7168% | 35238 | 2310 | 15.3 | 2 | | | 1.0000E-04 |
| 52 | 22.91 | | 5.4609 | 4.2103% | 54609 | 2132 | 25.6 | 2 | | | 1.0000E-04 |
| 53 | 23.33 | | 4.5856 | 3.5354% | 45856 | 2171 | 21.1 | 2 | | | 1.0000E-04 |
| 54 | 23.84 | | 3.7392 | 2.8829% | 37392 | 2410 | 15.5 | 2 | | | 1.0000E-04 |
| 55 | 24.16 | | 2.9760 | 2.2945% | 29760 | 1635 | 18.2 | 2 | | | 1.0000E-04 |
| 56 | 24.56 | | 2.4916 | 1.9210% | 24916 | 1634 | 15.2 | 2 | | | 1.0000E-04 |
| 57 | 24.85 | | 4.0428 | 3.1169% | 40428 | 2528 | 16.0 | 2 | | | 1.0000E-04 |
| 58 | 25.26 | DBC | 0.0734 | 0.0566% | 387372 | 23009 | 16.8 | 3 | 0 | .2106 | 1.8948E-07 |
| 59 | 25.78 | | 6.1153 | 4.7149% | 61153 | 4122 | 14.8 | 4 | | | 1.0000E-04 |
| 60 | 26.10 | | 6.5909 | 5.0815% | 65909 | 2586 | 25.5 | 4 | | | 1.0000E-04 |
| 61 | 27.10 | | 2.3717 | 1.8286% | 23717 | 1321 | 18.0 | 2 | | | 1.0000E-04 |

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# ***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 16:22:37 Version 4.1 **********

* Sample Name: CLP/AP1660,I  Data File: A:A2037 *
* Date: 02-03-1992 ~~14:38:46~~ Method: A:ACLP088 02-03-1992 15:59:35 # 301*
* Interface: 2 Cycle#: 307 Operator CP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890 ~~A~~B  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, ~~P~~, Col 0.53mm, 4UL *

Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 5000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 7.58 | | 0.7486 | 1.4111% | 7486 | 1579 | 4.7 | 1 | | | 1.0000E-04 |
| 9 | 8.96 | ~~gamma-BHC~~ Aroclor-1016 | 0.0030 | 0.0056% | 16817 | 3026 | 5.6 | 2 | 0 | -.4011 | 1.7561E-07 |
| 13 | 9.97 | | 0.5864 | 1.1053% | 5864 | 1103 | 5.3 | 1 | | | 1.0000E-04 |
| 14 | 10.20 | ~~Heptachlor~~ Aroclor-1016 | 0.0042 | 0.0080% | 31046 | 4169 | 7.4 | 1 | 0 | .9871 | 1.3591E-07 |
| 15 | 10.77 | Aroclor-1016 | 1.2001 | 2.2621% | 12001 | 1949 | 6.2 | 3 | | | 1.0000E-04 |
| 17 | 11.32 | ~~Aldrin~~ | 0.0018 | 0.0034% | 13534 | 1554 | 8.7 | 2 | 0 | .6992 | 1.3354E-07 |
| 18 | 11.49 | | 0.5504 | 1.0374% | 5504 | 932 | 5.9 | 2 | | | 1.0000E-04 |
| 20 | 12.47 | Aroclor-1016 | 1.5480 | 2.9177% | 15480 | 2009 | 7.7 | 2 | | | 1.0000E-04 |
| 21 | 12.60 | | 0.5784 | 1.0902% | 5784 | 849 | 6.8 | 2 | | | 1.0000E-04 |
| 22 | 12.91 | Aroclor-1016 | 1.1940 | 2.2504% | 11940 | 1222 | 9.8 | 2 | | | 1.0000E-04 |
| 23 | 13.09 | | 0.7187 | 1.3546% | 7187 | 648 | 11.1 | 2 | | | 1.0000E-04 |
| 25 | 13.61 | | 0.5056 | 0.9530% | 5056 | 617 | 8.2 | 2 | | | 1.0000E-04 |
| 26 | 13.89 | ~~g-chlordane~~ | 0.0023 | 0.0043% | 16999 | 2432 | 7.0 | 2 | 0 | .5094 | 1.3550E-07 |
| 27 | 14.11 | | 1.7488 | 3.2962% | 17488 | 2743 | 6.4 | 2 | | | 1.0000E-04 |
| 31 | 16.23 | | 2.5252 | 4.7595% | 25252 | 3247 | 7.8 | 2 | | | 1.0000E-04 |
| 32 | 16.65 | | 2.1892 | 4.1263% | 21892 | 1197 | 18.3 | 2 | | | 1.0000E-04 |
| 33 | 17.15 | | 4.8106 | 9.0672% | 48106 | 5147 | 9.3 | 2 | | | 1.0000E-04 |
| 34 | 17.60 | ~~Endrin~~ | 0.0101 | 0.0190% | 61123 | 6877 | 8.9 | 3 | 0 | .2152 | 1.6521E-07 |
| 36 | 18.78 | ~~Endosulfan~~ II | 0.0091 | 0.0171% | 20214 | 2161 | 9.4 | 1 | 0 | .8239 | 4.4779E-07 |
| 37 | 19.64 | | 3.3490 | 6.3123% | 33490 | 2856 | 11.7 | 2 | | | 1.0000E-04 |
| 38 | 19.95 | | 2.5851 | 4.8724% | 25851 | 2280 | 11.3 | 2 | | | 1.0000E-04 |
| 39 | 20.34 | ~~4,4'-DDT~~ | 0.0110 | 0.0208% | 51691 | 4118 | 12.6 | 2 | 0 | -.4084 | 2.1349E-07 |
| 40 | 20.60 | | 5.1798 | 9.7630% | 51798 | 4361 | 11.9 | 2 | | | 1.0000E-04 |
| 41 | 21.09 | ~~Endrin Aldehyde~~ Aroclor-1260 | 0.0058 | 0.0109% | 28588 | 2130 | 13.4 | 2 | 0 | .8035 | 2.0144E-07 |
| 42 | 22.14 | ~~Endo. sulfate~~ Aroclor-1260 | 0.0009 | 0.0018% | 6522 | 551 | 11.8 | 1 | 0 | 1.142 | 1.4332E-07 |
| 43 | 23.11 | | 0.7150 | 1.3477% | 7150 | 466 | 15.3 | 2 | | | 1.0000E-04 |
| 44 | 23.58 | Aroclor-1260 | 3.1872 | 6.0073% | 31872 | 2457 | 13.0 | 2 | | | 1.0000E-04 |
| 45 | 24.34 | | 3.3892 | 6.3880% | 33892 | 1713 | 19.8 | 2 | | | 1.0000E-04 |
| 46 | 24.95 | Aroclor-1260 | 10.5280 | 19.8434% | 105280 | 7487 | 14.1 | 2 | | | 1.0000E-04 |
| 47 | 25.28 | DBC | 0.0544 | 0.1025% | 287135 | 17499 | 16.4 | 2 | 0 | .2768 | 1.8948E-07 |

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***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 16:23:26 Version 4.1 **********

* Sample Name: CLP/AR1221,1 Data File: A:A2038 *
* Date: 02-03-1992 15:08:46 Method: A:ACLP088 02-03-1992 15:59:35 # 301*
* Interface: 2 Cycle#: 8 Operator CP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

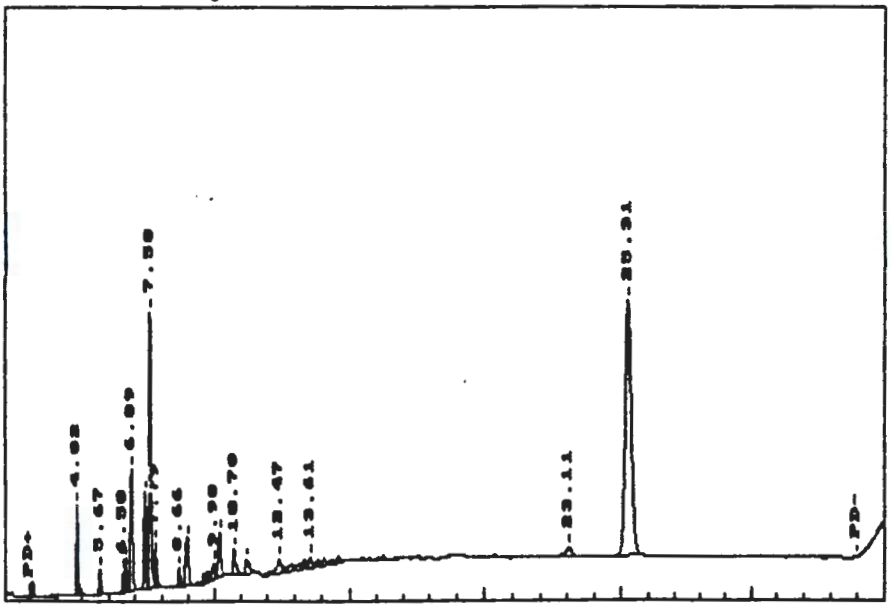
* Instrument Type: HP5890 A/B Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD Detector 1: ECD *
* Misc. Information: 02-03-92, ~~f~~ C, Col 0.53mm, 4UL *

Starting Delay: 2.00 Ending retention time: 35.00
Area reject: 5000 One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00 Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 4.82 | | 2.7546 | 9.1035% | 27546 | 5941 | 4.6 | 2 | | | 1.0000E-04 |
| 5 | 5.67 | | 0.8156 | 2.6955% | 8156 | 1608 | 5.1 | 1 | | | 1.0000E-04 |
| 6 | 6.58 | | 0.5916 | 1.9552% | 5916 | 1299 | 4.6 | 2 | | | 1.0000E-04 |
| 7 | 6.68 | | 1.1786 | 3.8951% | 11786 | 2169 | 5.4 | 2 | | | 1.0000E-04 |
| 8 | 6.89 | Aroclor-1221 | 3.9958 | 13.2056% | 39958 | 8088 | 4.9 | 2 | | | 1.0000E-04 |
| 9 | 7.38 | Aroclor-1221 | 3.0953 | 10.2294% | 30953 | 6390 | 4.8 | 2 | | | 1.0000E-04 |
| 10 | 7.58 | Aroclor-1221 | 9.1264 | 30.1613% | 91264 | 18347 | 5.0 | 2 | | | 1.0000E-04 |
| 11 | 7.79 | | 1.5648 | 5.1714% | 15648 | 2871 | 5.4 | 2 | | | 1.0000E-04 |
| 12 | 8.66 | Aroclor-1221 | 0.7147 | 2.3621% | 7147 | 1206 | 5.9 | 2 | | | 1.0000E-04 |
| 13 | 8.96 | ~~gamma-BHC~~ Aroclor-1221 | 0.0043 | 0.0143% | 24612 | 3189 | 7.7 | 2 | 0 | -.4011 | 1.7561E-07 |
| 18 | 9.98 | | 0.6571 | 2.1716% | 6571 | 1037 | 6.3 | 2 | | | 1.0000E-04 |
| 19 | 10.22 | | 2.0564 | 6.7961% | 20564 | 2925 | 7.0 | 1 | | | 1.0000E-04 |
| 20 | 10.78 | | 1.2040 | 3.9790% | 12040 | 1601 | 7.5 | 1 | | | 1.0000E-04 |
| 21 | 11.25 | ~~Aldrin~~ | 0.0011 | 0.0036% | 8127 | 890 | 9.1 | 2 | 0 | .1049 | 1.3354E-07 |
| 23 | 12.47 | | 1.0342 | 3.4178% | 10342 | 886 | 11.7 | 2 | | | 1.0000E-04 |
| 27 | 13.61 | | 0.5387 | 1.7804% | 5387 | 634 | 8.5 | 2 | | | 1.0000E-04 |
| 40 | 23.11 | | 0.8744 | 2.8897% | 8744 | 549 | 15.9 | 1 | | | 1.0000E-04 |
| 41 | 25.31 | DBC | 0.0509 | 0.1683% | 268812 | 16950 | 15.9 | 1 | 0 | .4093 | 1.8948E-07 |

TOTAL AMOUNT = 30.2587

Data File = A:A2038.PTS Printed on 02-04-1992 at 16:23:37
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 12821 uv High Value: 32403 uv Scale factor: 0.5



Total Area Aroclor-1221 = 193934 ! total ng = 2.0

CY 2-6-92

1 of 2

# ***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 16:24:09 Version 4.1 **********

* Sample Name: CLP/AR1232,I  Data File: A:A2039 *
* Date: 02-03-1992 15:47:55 Method: A:ACLP088 02-03-1992 15:59:35 # 301*
* Interface: 2 Cycle#: 9 Operator CP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890~~A~~B  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, ~~A~~, C Col 0.53mm, 4UL *

Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 5000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.12 | | 0.5260 | 1.7462% | 5260 | 1090 | 4.8 | 1 | | | 1.0000E-04 |
| 2 | 4.84 | | 0.7011 | 2.3276% | 7011 | 1502 | 4.7 | 1 | | | 1.0000E-04 |
| 6 | 6.89 | | 0.8806 | 2.9234% | 8806 | 1741 | 5.1 | 2 | | | 1.0000E-04 |
| 7 | 7.38 | | 0.7635 | 2.5345% | 7635 | 1573 | 4.9 | 2 | | | 1.0000E-04 |
| 8 | 7.59 | Aroclor-1232 | 2.7468 | 9.1188% | 27468 | 5531 | 5.0 | 2 | | | 1.0000E-04 |
| 11 | 8.98 | ~~gamma-BHC~~ Aroclor-1232 | 0.0048 | 0.0160% | 27423 | 4750 | 5.8 | 2 | 0 | -.2155 | 1.7561E-07 |
| 13 | 9.70 | | 0.8132 | 2.6995% | 8132 | 1412 | 5.8 | 2 | | | 1.0000E-04 |
| 14 | 9.80 | | 0.6600 | 2.1910% | 6600 | 1161 | 5.7 | 2 | | | 1.0000E-04 |
| 15 | 9.98 | | 1.2138 | 4.0296% | 12138 | 1960 | 6.2 | 2 | | | 1.0000E-04 |
| 16 | 10.22 | Aroclor-1232 | 4.8795 | 16.1988% | 48795 | 6538 | 7.5 | 2 | | | 1.0000E-04 |
| 17 | 10.78 | | 1.9356 | 6.4256% | 19356 | 3155 | 6.1 | 3 | | | 1.0000E-04 |
| 19 | 11.25 | ~~Aldrin~~ | 0.0013 | 0.0044% | 9866 | 2037 | 4.8 | 2 | 0 | .1049 | 1.3354E-07 |
| 20 | 11.34 | | 1.3678 | 4.5406% | 13678 | 2455 | 5.6 | 2 | | | 1.0000E-04 |
| 21 | 11.50 | | 0.9120 | 3.0277% | 9120 | 1564 | 5.8 | 2 | | | 1.0000E-04 |
| 23 | 12.47 | | 2.4542 | 8.1474% | 24542 | 3196 | 7.7 | 2 | | | 1.0000E-04 |
| 24 | 12.62 | | 0.9436 | 3.1324% | 9436 | 1424 | 6.6 | 2 | | | 1.0000E-04 |
| 25 | 12.92 | | 1.9014 | 6.3121% | 19014 | 2068 | 9.2 | 2 | | | 1.0000E-04 |
| 26 | 13.11 | | 0.5853 | 1.9431% | 5853 | 937 | 6.2 | 2 | | | 1.0000E-04 |
| 27 | 13.19 | ~~Hept. epoxide~~ | 0.0014 | 0.0048% | 10459 | 1676 | 6.2 | 2 | 0 | -.3852 | 1.3844E-07 |
| 28 | 13.39 | Aroclor-1232 | 1.9202 | 6.3746% | 19202 | 3100 | 6.2 | 2 | | | 1.0000E-04 |
| 29 | 13.61 | Aroclor-1232 | 2.4290 | 8.0638% | 24290 | 3482 | 7.0 | 2 | | | 1.0000E-04 |
| 30 | 13.91 | ~~g. chlordane~~ | 0.0011 | 0.0037% | 8138 | 1054 | 7.7 | 2 | 0 | .6302 | 1.3550E-07 |
| 31 | 14.12 | | 0.9369 | 3.1103% | 9369 | 1084 | 8.6 | 2 | | | 1.0000E-04 |
| 33 | 14.63 | ~~Endosulfan-I~~ | 0.0041 | 0.0136% | 15804 | 2372 | 6.7 | 2 | 0 | .7939 | 2.6012E-07 |

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***** EXTERNAL STANDARD TABLE ***** 00305

********************** 02-04-1992 16:24:56 Version 4.1 ************************

* Sample Name: CLP/AP1242,I Data File: A:A20310 *

* Date: 02-03-1992 16:24:29 Method: A:ACLP088 02-03-1992 15:59:35 # 301*

* Interface: 2 Cycle#: 10 Operator CP Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890 B Column Type: DB-608, DB-1701 *

* Solvent Description: *

* Conditions: 160D,5D/M,230D,15M(35M RUN) *

* Detector 0: ECD C Detector 1: ECD *

* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

Starting Delay: 2.00 Ending retention time: 35.00

Area reject: 5000 One sample per 1.002 sec.

Amount injected: ~~1.00~~ 4.00 Dilution factor: 1.00

Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 7.59 | Aroclor-1242 | 0.6909 | 6.0025% | 6909 | 1445 | 4.8 | 1 | | | 1.0000E-04 |
| 7 | 8.98 | ~~gamma-BHC~~ Aroclor-1242 | 0.0023 | 0.0201% | 13200 | 2360 | 5.6 | 2 | 0 | -.2155 | 1.7561E-07 |
| 10 | 9.80 | | 0.5205 | 4.5219% | 5205 | 867 | 6.0 | 2 | | | 1.0000E-04 |
| 11 | 9.98 | | 0.6169 | 5.3596% | 6169 | 982 | 6.3 | 2 | | | 1.0000E-04 |
| 12 | 10.22 | Aroclor-1242 | 2.4567 | 21.3427% | 24567 | 3330 | 7.4 | 2 | | | 1.0000E-04 |
| 13 | 10.78 | | 0.9687 | 8.4153% | 9687 | 1561 | 6.2 | 3 | | | 1.0000E-04 |
| 16 | 11.34 | ~~Aldrin~~ | 0.0008 | 0.0069% | 5957 | 1045 | 5.7 | 2 | 0 | .8478 | 1.3354E-07 |
| 19 | 12.49 | | 1.6327 | 14.1840% | 16327 | 1577 | 10.4 | 2 | | | 1.0000E-04 |
| 20 | 12.62 | | 0.5541 | 4.8135% | 5541 | 748 | 7.4 | 2 | | | 1.0000E-04 |
| 21 | 12.92 | | 0.9765 | 8.4838% | 9765 | 1051 | 9.3 | 2 | | | 1.0000E-04 |
| 22 | 13.21 | ~~Heptachlor epoxide~~ | 0.0012 | 0.0105% | 8727 | 888 | 9.8 | 2 | 0 | -.2590 | 1.3844E-07 |
| 23 | 13.39 | Aroclor-1242 | 0.9754 | 8.4743% | 9754 | 1478 | 6.6 | 2 | | | 1.0000E-04 |
| 24 | 13.62 | Aroclor-1242 | 1.3041 | 11.3295% | 13041 | 1738 | 7.5 | 2 | | | 1.0000E-04 |
| 28 | 14.64 | ~~Endosulfan-I~~ | 0.0019 | 0.0162% | 7172 | 1124 | 6.4 | 2 | 0 | .9090 | 2.6012E-07 |
| 38 | 23.14 | | 0.7570 | 6.5766% | 7570 | 556 | 13.6 | 1 | | | 1.0000E-04 |
| 39 | 25.35 | DBC | 0.0509 | 0.4424% | 268740 | 17165 | 15.7 | 1 | 0 | .5418 | 1.8948E-07 |

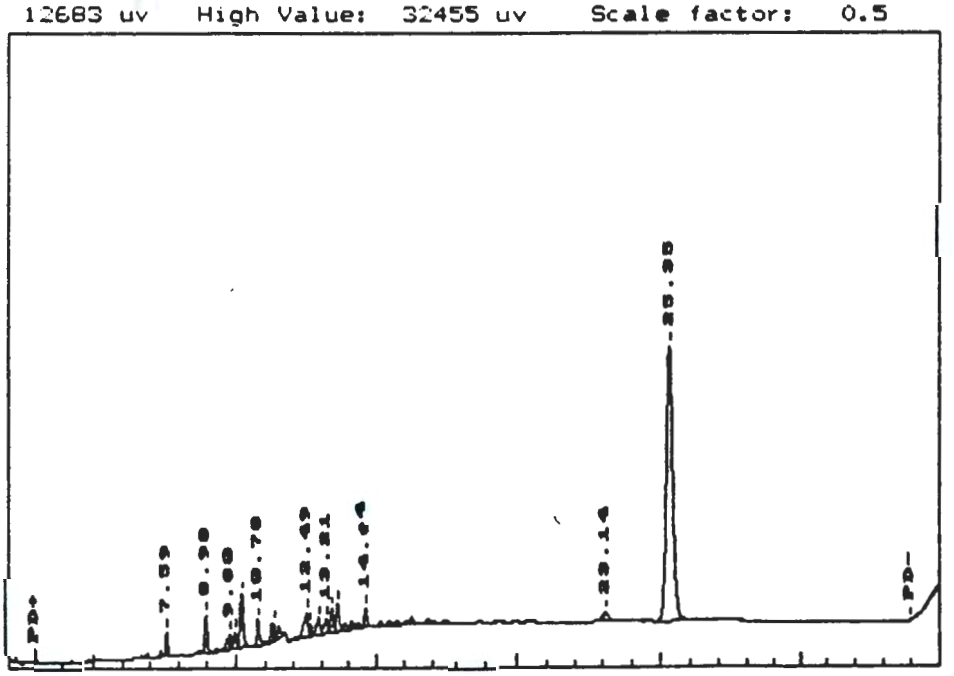
TOTAL AMOUNT = 11.5106

1 of 1

Data File = A:A20310.PTS Printed on 02-04-1992 at 16:25:07

Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.

Low Value: 12683 uv High Value: 32455 uv Scale factor: 0.5



Total Area Aroclor-1242 = 67471 . total ng = 0.2

CY 2-6-92

1 of 2

# ***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 16:26:20 Version 4.1 **********

* Sample Name: CLP/AR1254,I  Data File: A:A20312 *
* Date: 02-03-1992 ~~17:46:12~~ 17:40:12 Method: A:ACLP088 02-03-1992 15:59:35 # 301*
* Interface: 2  Cycle#: 12  Operator CP  Channel#: 0  Vial#: N.A. *
* Starting Peak Width: 10  Threshold: 1  Area Threshold: 100 *

**********

* Instrument Type: HP5890 ~~A~~ B  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, ~~A~~ C, Col 0.53mm, 4UL *

**********

Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 5000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 11.35 | ~~Aldrin~~ | 0.0024 | 0.0075% | 17616 | 2887 | 6.1 | 2 | 0 | .9964 | 1.3354E-07 |
| 9 | 12.39 | | 0.5418 | 1.7203% | 5418 | 784 | 6.9 | 2 | | | 1.0000E-04 |
| 10 | 12.50 | | 1.3288 | 4.2191% | 13288 | 1668 | 8.0 | 2 | | | 1.0000E-04 |
| 13 | 13.41 | | 1.3733 | 4.3604% | 13733 | 2131 | 6.4 | 2 | | | 1.0000E-04 |
| 14 | 13.64 | | 0.6870 | 2.1814% | 6870 | 757 | 9.1 | 2 | | | 1.0000E-04 |
| 15 | 13.92 | ~~g-chlordane~~ Aroclor-1254 | 0.0042 | 0.0135% | ~~21338~~ | 5024 | 6.2 | 2 | 0 | .7510 | 1.3550E-07 |
| 16 | 14.14 | Aroclor-1254 | 3.9588 | 12.5698% | 39588 | 5765 | 6.9 | 2 | | | 1.0000E-04 |
| 17 | 14.41 | ~~a-chlordane~~ Aroclor-1254 | 0.0022 | 0.0070% | 15609 | 2214 | 7.0 | 3 | 0 | -.1517 | 1.4069E-07 |
| 19 | 15.21 | Aroclor-1254 | 1.1467 | 3.6411% | 11467 | 1744 | 6.6 | 2 | | | 1.0000E-04 |
| 20 | 15.53 | ~~4,4'-DDE~~ | 0.0023 | 0.0072% | 13942 | 1819 | 7.7 | 2 | 0 | 0 | 1.6270E-07 |
| 21 | 15.81 | ~~Dieldrin~~ | 0.0037 | 0.0116% | 21853 | 3108 | 7.0 | 2 | 0 | .3229 | 1.6759E-07 |
| 22 | 16.11 | | 0.6445 | 2.0463% | 6445 | 920 | 7.0 | 2 | | | 1.0000E-04 |
| 23 | 16.31 | | 5.3381 | 16.9496% | 53381 | 6637 | 8.0 | 3 | | | 1.0000E-04 |
| 24 | 16.65 | | 0.9292 | 2.9503% | 9292 | 833 | 11.2 | 4 | | | 1.0000E-04 |
| 25 | 16.90 | Aroclor-1254 | 4.1523 | 13.1841% | 41523 | 4361 | 9.5 | 2 | | | 1.0000E-04 |
| 26 | 17.20 | | 2.8775 | 9.1366% | 28775 | 2741 | 10.5 | 2 | | | 1.0000E-04 |
| 27 | 17.66 | ~~Endrin~~ | 0.0061 | 0.0194% | 36987 | 3490 | 10.6 | 3 | 0 | .5956 | 1.6521E-07 |
| 29 | 18.85 | | 0.8313 | 2.6394% | 8313 | 884 | 9.4 | 1 | | | 1.0000E-04 |
| 30 | 19.37 | | 1.3028 | 4.1366% | 13028 | 1263 | 10.3 | 2 | | | 1.0000E-04 |
| 31 | 19.69 | | 1.7611 | 5.5918% | 17611 | 1578 | 11.2 | 2 | | | 1.0000E-04 |
| 32 | 20.04 | | 1.1725 | 3.7229% | 11725 | 1076 | 10.9 | 2 | | | 1.0000E-04 |
| 33 | 20.42 | ~~4,4'-DDT~~ | 0.0072 | 0.0228% | 33590 | 3138 | 10.7 | 1 | 0 | 0 | 2.1349E-07 |
| 36 | 23.19 | | 0.7225 | 2.2940% | 7225 | 541 | 13.3 | 2 | | | 1.0000E-04 |
| 38 | 23.98 | | 1.0387 | 3.2981% | 10387 | 743 | 14.0 | 2 | | | 1.0000E-04 |
| 39 | 24.31 | | 0.9971 | 3.1659% | 9971 | 515 | 19.4 | 2 | | | 1.0000E-04 |

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# ***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 16:31:00 Version 4.1 **********

* Sample Name: CLP/EVALB Data File: A:A20318 *
* Date: ~~02-04-1992 00:11:44~~ 02-03-1992 21:26 Method: A:ACLP088 02-03-1992 15:59:35 # 301*
* Interface: 2nd Cycle#: 18 Operator CP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890 Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD Detector 1: ECD *
* Misc. Information: 02-03-92, c, Col 0.53mm, 4UL *

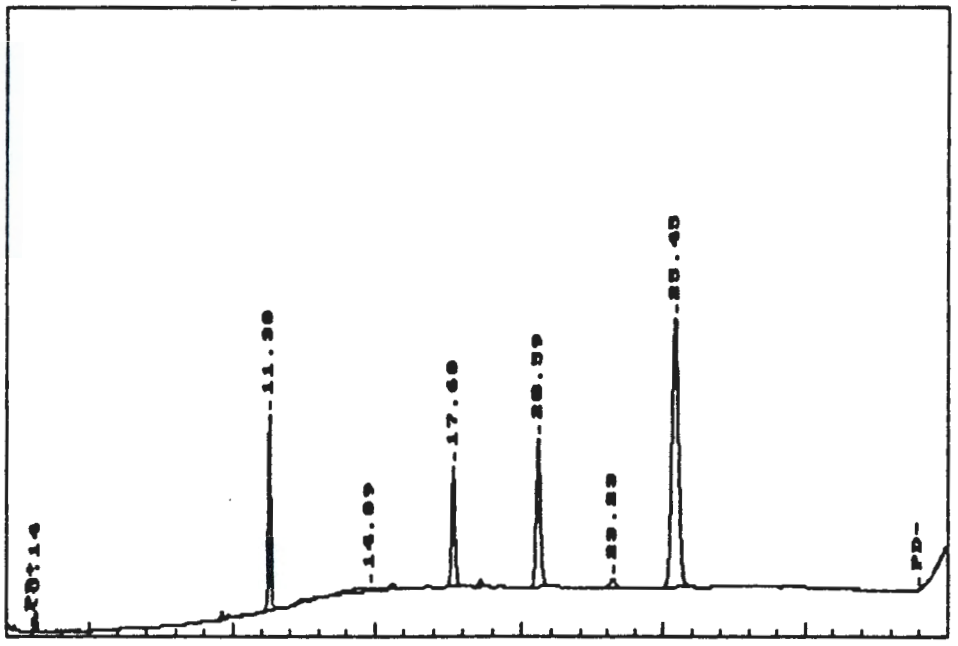
Starting Delay: 2.00 Ending retention time: 35.00
Area reject: 5000 One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00 Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.14 | | 0.6137 | 19.5688% | 6137 | 1228 | 5.0 | 1 | | | 1.0000E-04 |
| 7 | 11.30 | Aldrin 0.04 | 0.0091 | 0.2912% | 68380 | 12167 | 5.6 | 1 | 0 | .5507 | 1.3354E-07 |
| 10 | 14.89 | | 1.7324 | 55.2372% | 17324 | 221 | 78.5 | 2 | | | 1.0000E-04 |
| 12 | 17.68 | Endrin 0.04 | 0.0099 | 0.3165% | 60092 | 7519 | 8.0 | 1 | 0 | .6907 | 1.6521E-07 |
| 14 | 20.59 | 4,4'-DDT 0.08 | 0.0201 | 0.6394% | 93931 | 9171 | 10.2 | 1 | 0 | .8183 | 2.1349E-07 |
| 15 | 23.23 | | 0.7001 | 22.3244% | 7001 | 514 | 13.6 | 1 | | | 1.0000E-04 |
| 16 | 25.45 | DBC 0.2 | 0.0509 | 1.6226% | 268569 | 16918 | 15.9 | 1 | 0 | .9393 | 1.8948E-07 |

TOTAL AMOUNT = 3.1362

CY 2-6-92

Data File = A:A20318.PTS Printed on 02-04-1992 at 16:31:08
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 13648 uv High Value: 33382 uv Scale factor: 0.5



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00310

# ***** EXTERNAL STANDARD TABLE *****

********** 02-04-1992 16:35:23 Version 4.1 **********

* Sample Name: CLP/INDA  Data File: A:A20324 *
* Date: 02-04-1992 ~~08:32:20~~ 8:16 Method: A:ACLP088 02-03-1992 15:59:35 # 301 *
* Interface: 2 Cycle#: 24 Operator CP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890 A B  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, C, Col 0.53mm, 4UL *

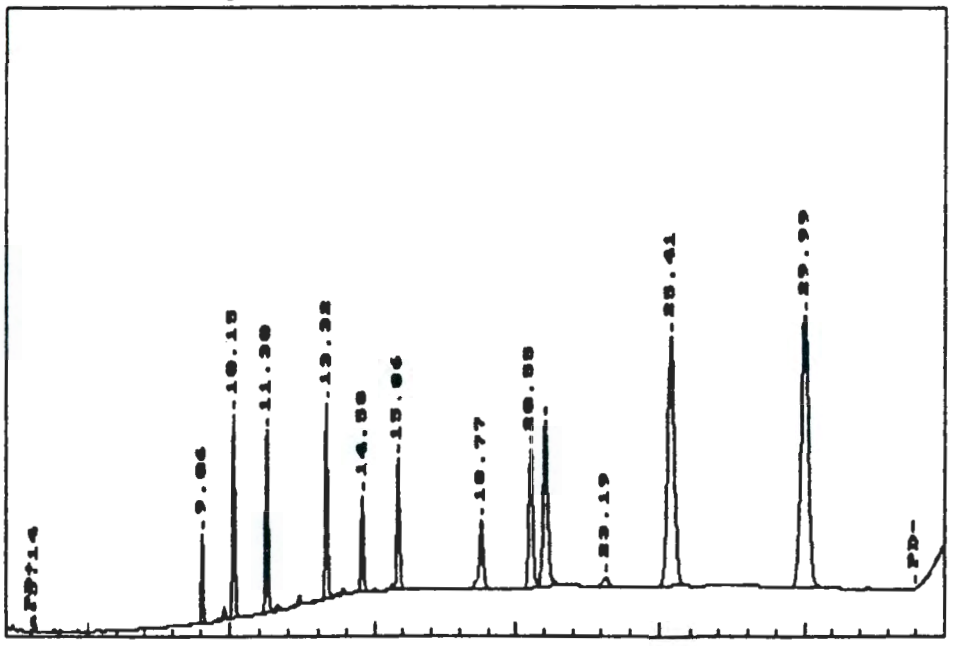
Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 5000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

1 of 1

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.14 | | 0.5182 | 31.7129% | 5182 | 1063 | 4.9 | 1 | | | 1.0000E-04 |
| 3 | 9.06 | gamma-BHC 0.02 | 0.0048 | 0.2967% | 27610 | 5896 | 4.7 | 1 | 0 | .7122 | 1.7561E-07 |
| 6 | 10.15 | Heptachlor 0.04 | 0.0100 | 0.6148% | 73927 | 13472 | 5.5 | 1 | 0 | .4910 | 1.3591E-07 |
| 7 | 11.30 | Aldrin 0.04 | 0.0089 | 0.5466% | 66887 | 12047 | 5.6 | 2 | 0 | .5507 | 1.3354E-07 |
| 10 | 13.32 | Hept. epoxide 0.04 | 0.0098 | 0.5999% | 70812 | 12907 | 5.5 | 2 | 0 | .6238 | 1.3844E-07 |
| 12 | 14.58 | Endosulfan I 0.04 | 0.0097 | 0.5953% | 37398 | 6337 | 5.9 | 1 | 0 | .4486 | 2.6012E-07 |
| 14 | 15.86 | Dieldrin 0.04 | 0.0097 | 0.5934% | 57858 | 8664 | 6.7 | 2 | 0 | .6408 | 1.6759E-07 |
| 15 | 18.77 | Endosulfan II 0.08 | 0.0200 | 1.2249% | 44703 | 4488 | 10.0 | 1 | 0 | .7343 | 4.4779E-07 |
| 16 | 20.55 | 4,4'-DDT 0.08 | 0.0198 | 1.2120% | 92769 | 9165 | 10.1 | 2 | 0 | .6547 | 2.1349E-07 |
| 17 | 21.05 | Endrin Aldehyde 0.1 | 0.0251 | 1.5386% | 124816 | 10999 | 11.3 | 2 | 0 | .6438 | 2.0144E-07 |
| 19 | 23.19 | | 0.8459 | 51.7665% | 8459 | 593 | 14.3 | 1 | | | 1.0000E-04 |
| 20 | 25.41 | DBC 0.2 | 0.0498 | 3.0486% | 262920 | 16617 | 15.8 | 1 | 0 | .8068 | 1.8948E-07 |
| 21 | 29.99 | Methoxychlor 0.4 | 0.1021 | 6.2497% | 332327 | 18101 | 18.4 | 1 | 0 | .7701 | 3.0732E-07 |
| | | TOTAL AMOUNT = | 1.6341 | | | | | | | | |

CY 2-6-92

Data File = A:A20324.PTS Printed on 02-04-1992 at 16:35:34
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 13734 uv High Value: 34770 uv Scale factor: 0.5



1 of 1

# ***** EXTERNAL STANDARD TABLE *****

********** 02-05-1992 09:49:31 Version 4.1 **********

* Sample Name: CLP/EVALB  Data File: A:A20336 *
* Date: 02-04-1992 09:59:42 Method: A:ACLP088 02-03-1992 15:59:35 # 301*
* Interface: 2 Cycle#: 36 Operator CP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

**********

* Instrument Type: HP5890 B  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD C  Detector 1: ECD *
* Misc. Information: 02-03-92, P, Col 0.53mm, 4UL *

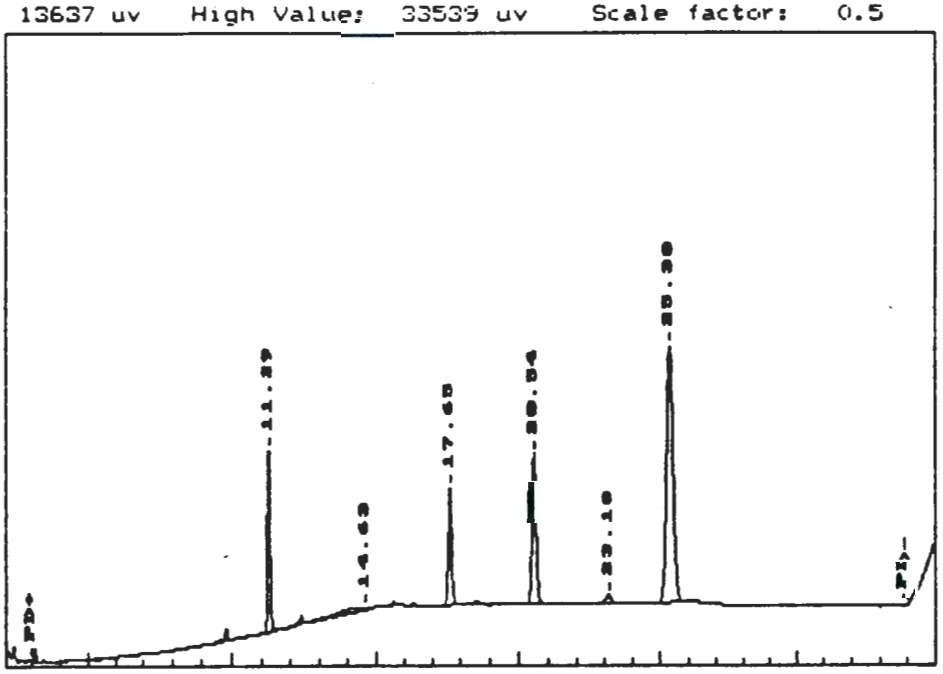
**********

Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 5000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 11.29 | Aldrin | 0.04 | 0.0086 | 1.1964% | 64268 | 11391 | 5.6 1 | 0 | .4021 | 1.3354E-07 |
| 9 | 14.63 | ~~Endosulfan I~~ | | 0.0036 | 0.4993% | 13770 | 108 | 127.3 2 | 0 | .7939 | 2.6012E-07 |
| 11 | 17.65 | Endrin | 0.04 | 0.0099 | 1.3796% | 59902 | 7369 | 8.1 1 | 0 | .5005 | 1.6521E-07 |
| 13 | 20.54 | 4,4'-DDT | 0.08 | 0.0204 | 2.8466% | 95648 | 9417 | 10.2 1 | 0 | .5729 | 2.1349E-07 |
| 14 | 23.18 | | | 0.6262 | 87.3012% | 6263 | 482 | 13.0 1 | | | 1.0000E-04 |
| 15 | 25.38 | DBC | 0.2 | 0.0486 | 6.7769% | 256560 | 16246 | 15.8 1 | 0 | .6743 | 1.8948E-07 |

TOTAL AMOUNT = 0.7173  CY 2-6-92

Data File = A:A20336.PTS Printed on 02-05-1992 at 09:49:39
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 13637 uv High Value: 33539 uv Scale factor: 0.5



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# ***** EXTERNAL STANDARD TABLE *00312

********** 02-05-1992 09:54:02 Version 4.1 **********

* Sample Name: CLP/INDB  Data File: A:A20342 *
* Date: 02-04-1992 13:50:07 Method: A:ACLP088 02-03-1992 15:59:35 # 301*
* Interface: 2  Cycle#: 42  Operator CP  Channel#: 0  Vial#: N.A. *
* Starting Peak Width: 10  Threshold: 1  Area Threshold: 100 *

1 of 1

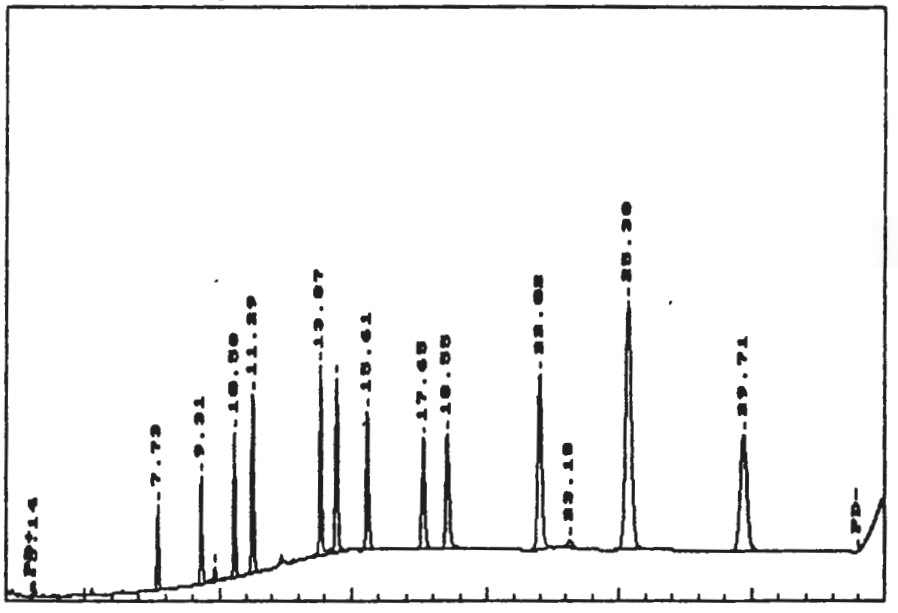
* Instrument Type: HP5890 A B  Column Type: DB-608, DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, F/C, Col 0.53mm, 4UL *

Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 5000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.14 | | 0.5139 | 26.0944% | 5139 | 1039 | 4.9 | 1 | | | 1.0000E-04 |
| 5 | 7.73 | alpha-BHC 0.02 | 0.0050 | 0.2548% | 26613 | 5881 | 4.5 | 1 | 0 | .2347 | 1.8854E-07 |
| 6 | 9.31 | beta-BHC 0.04 | 0.0100 | 0.5073% | 36698 | 7578 | 4.8 | 3 | 0 | .5896 | 2.7228E-07 |
| 8 | 9.83 | | 0.5644 | 28.6569% | 5644 | 996 | 5.7 | 2 | | | 1.0000E-04 |
| 9 | 10.58 | delta-BHC 0.04 | 0.0108 | 0.5465% | 48219 | 10259 | 4.7 | 2 | 0 | .5109 | 2.2321E-07 |
| 10 | 11.29 | Aldrin 0.04 | 0.0092 | 0.4689% | 69154 | 12577 | 5.5 | 1 | 0 | .4021 | 1.3354E-07 |
| 13 | 13.87 | g. chlordane 0.04 | 0.0107 | 0.5414% | 78690 | 13296 | 5.9 | 3 | 0 | .3885 | 1.3550E-07 |
| 15 | 14.47 | ~~Endosulfan I~~ a chlordane 0.04 | 0.0188 | 0.9544% | 72263 | 12236 | 5.9 | 2 | 0 | -.2419 | 2.6012E-07 |
| 16 | 15.61 | 4,4'-DDE 0.04 | 0.0101 | 0.5123% | 62021 | 9819 | 6.3 | 1 | 0 | .4536 | 1.6270E-07 |
| 17 | 17.65 | Endrin 0.04 | 0.0102 | 0.5198% | 61966 | 7755 | 8.0 | 1 | 0 | .5005 | 1.6521E-07 |
| 18 | 18.55 | 4,4'-DDD 0.08 | 0.0209 | 1.0612% | 72205 | 8130 | 8.9 | 1 | 0 | .4315 | 2.8944E-07 |
| 19 | 22.02 | Endo. sulfate 0.08 | 0.0202 | 1.0267% | 141092 | 12368 | 11.4 | 1 | 0 | .6089 | 1.4332E-07 |
| 20 | 23.18 | | 0.6690 | 33.9700% | 6690 | 507 | 13.2 | 1 | | | 1.0000E-04 |
| 21 | 25.38 | DBC 0.2 | 0.0521 | 2.6443% | 274852 | 17395 | 15.8 | 1 | 0 | .6743 | 1.8948E-07 |
| 22 | 29.71 | ~~Methoxychlor~~ Endrin ketone 0.08 | 0.0441 | 2.2411% | 143623 | 8287 | 17.3 | 1 | 0 | -.1838 | 3.0732E-07 |
| | | TOTAL AMOUNT = | 1.9695 | | | | | | | | |

Cy 2-6-92

Data File = A:A20342.PTS  Printed on 02-05-1992 at 09:54:13
Start time: 2.00 min.  Stop time: 35.02 min.  Offset: 0 mv.
Low Value: 13673 uv  High Value: 34390 uv  Scale factor: 0.5



9716528.0789

1 of 1

00313

***** EXTERNAL STANDARD TABLE *****

********** 02-05-1992 10:31:44 Version 4.1 **********

* Sample Name: CLP/EVALB  Data File: A:A20348 *

* Date: 02-04-1992 ~~17:10:32~~ 17:18 Method: A:ACLP088 02-03-1992 15:59:35 # 301*

* Interface: 2 Cycle#: 48 Operator CP Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890 B  Column Type: DB-608, DB-1701 *

* Solvent Description: *

* Conditions: 160D,5D/M,230D,15M(35M RUN) *

* Detector 0: ECD  Detector 1: ECD *

* Misc. Information: 02-03-92, P, C Col 0.53mm, 4UL *

Starting Delay: 2.00  Ending retention time: 35.00

Area reject: 5000  One sample per 1.002 sec.

Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00

Sample Weight: 1.000000

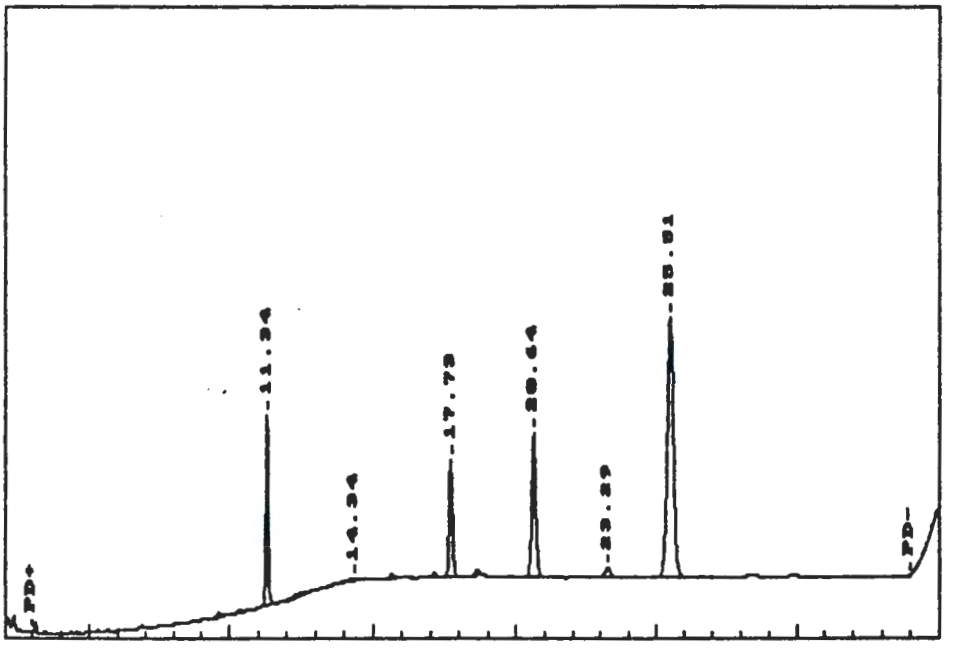
| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 11.34 | Aldrin | 0.04 | 0.0090 | 0.0883% | 67522 | 12208 | 5.5 | 1 0 | .8478 | 1.3354E-07 |
| 12 | 14.34 | ~~a-chlordane~~ | | 0.0008 | 0.0078% | 5632 | 106 | 53.2 | 1 0 | -.6147 | 1.4069E-07 |
| 15 | 17.73 | Endrin | 0.04 | 0.0099 | 0.0969% | 59930 | 7531 | 8.0 | 1 0 | .9760 | 1.6521E-07 |
| 17 | 20.64 | 4,4'-DDT | 0.08 | 9.4606 | 92.6188% | 94606 | 9292 | 10.2 | 1 | | 1.0000E-04 |
| 18 | 23.29 | | | 0.6844 | 6.6999% | 6844 | 514 | 13.3 | 1 | | 1.0000E-04 |
| 19 | 25.51 | DBC | 0.2 | 0.0499 | 0.4883% | 263255 | 16623 | 15.8 | 1 0 | 1.204 | 1.8948E-07 |

TOTAL AMOUNT = 10.2145  CY 2-6-92

Data File = A:A20348.PTS Printed on 02-05-1992 at 10:31:52

Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.

Low Value: 13273 uv High Value: 33596 uv Scale factor: 0.5



9713528.0790



1 of 1

# ***** EXTERNAL STANDARD TABLE *****

********** 02-05-1992 10:37:05 Version 4.1 **********

* Sample Name: CLP/INDA  Data File: A:A20354 *
* Date: 02-04-1992 ~~21:30:22~~ 21:24 Method: A:ACLP088 02-03-1992 15:59:35 # 301*
* Interface: 2 Cycle#: 54 Operator CP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

* Instrument Type: HP5890 A B  Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, ~~A~~ C, Col 0.53mm, 4UL *

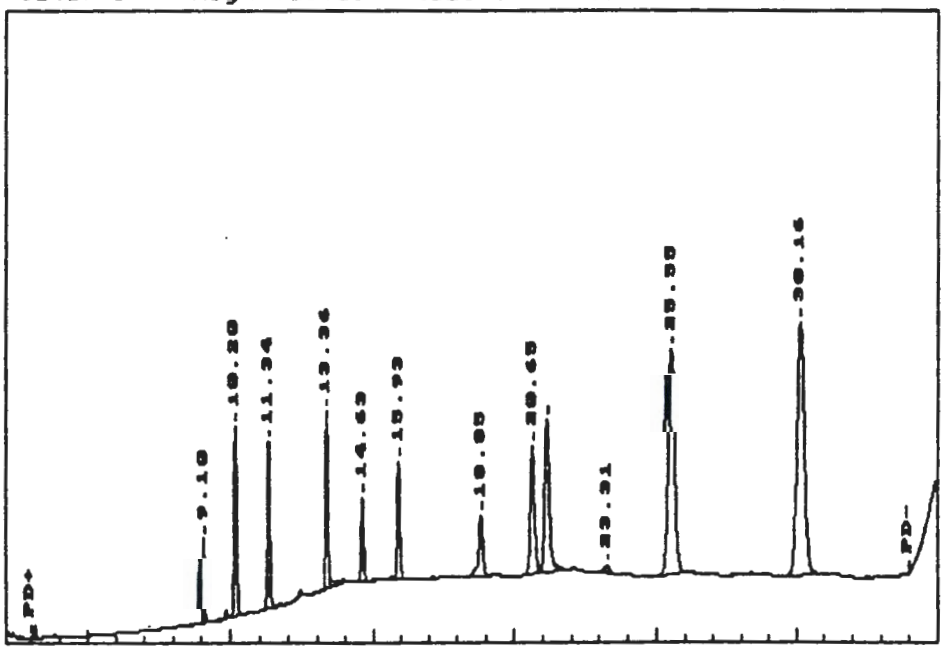
Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 5000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total mg) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 9.10 | gamma-BHC 0.02 | 2.8677 | 7.8575% | 28677 | 6215 | 4.6 | 1 | | | 1.0000E-04 |
| 7 | 10.20 | Heptachlor 0.04 | 0.0101 | 0.0278% | 74546 | 13849 | 5.4 | 1 | 0 | .9871 | 1.3591E-07 |
| 8 | 11.34 | Aldrin 0.04 | 0.0091 | 0.0249% | 68078 | 12166 | 5.6 | 2 | 0 | .8478 | 1.3354E-07 |
| 11 | 13.36 | Hept. epoxide 0.04 | 0.0100 | 0.0273% | 71934 | 12977 | 5.5 | 3 | 0 | .8761 | 1.3844E-07 |
| 13 | 14.63 | Endosulfan I 0.04 | 0.0095 | 0.0259% | 36371 | 6151 | 5.9 | 1 | 0 | .7939 | 2.6012E-07 |
| 16 | 15.93 | Dieldrin 0.04 | 5.7536 | 15.7648% | 57536 | 8649 | 6.7 | 2 | | | 1.0000E-04 |
| 17 | 18.85 | Endosulfan II 0.08 | 4.5435 | 12.4490% | 45435 | 4474 | 10.2 | 1 | | | 1.0000E-04 |
| 18 | 20.65 | 4,4'-DDT 0.08 | 9.4525 | 25.8996% | 94525 | 9372 | 10.1 | 2 | | | 1.0000E-04 |
| 19 | 21.17 | Endrin Aldehyde 0.1 | 13.0087 | 35.6435% | 130087 | 11124 | 11.7 | 2 | | | 1.0000E-04 |
| 20 | 23.31 | | 0.6780 | 1.8576% | 6780 | 519 | 13.1 | 1 | | | 1.0000E-04 |
| 21 | 25.55 | DBC 0.2 | 0.0495 | 0.1357% | 261336 | 16451 | 15.9 | 1 | 0 | 1.336 | 1.8948E-07 |
| 22 | 30.16 | Methoxychlor 0.4 | 0.1045 | 0.2864% | 340075 | 18488 | 18.4 | 1 | 0 | 1.331 | 3.0732E-07 |

TOTAL AMOUNT = 36.4966

CY 2-6-92

Data File = A:A20354.PTS Printed on 02-05-1992 at 10:37:14
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 13487 uv High Value: 36623 uv Scale factor: 0.5



# FINAL STANDARD TABLE

02-05-1992 10:37:47 Version 4.1

Sample Name: CLP/INDB  Data File: A:A20355

Date: 02-04-1992 ~~22:06:14~~ 22:03 Method: A:ACLP088 02-03-1992 15:59:35 # 301

Interface: 2 Cycle#: 55 Operator CP Channel#: 0 Vial#: N.A.

Starting Peak Width: 10 Threshold: 1 Area Threshold: 100

Instrument Type: HP5890Ø B  Column Type: DB-608,DB-1701

Solvent Description:

Conditions: 160D,5D/M,230D,15M(35M RUN)

Detector 0: ECD  Detector 1: ECD

Misc. Information: 02-03-92, Ø, C Col 0.53mm, 4UL

Starting Delay: 2.00  Ending retention time: 35.00

Area reject: 5000  One sample per 1.002 sec.

Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00

Sample Weight: 1.000000

1 of 2

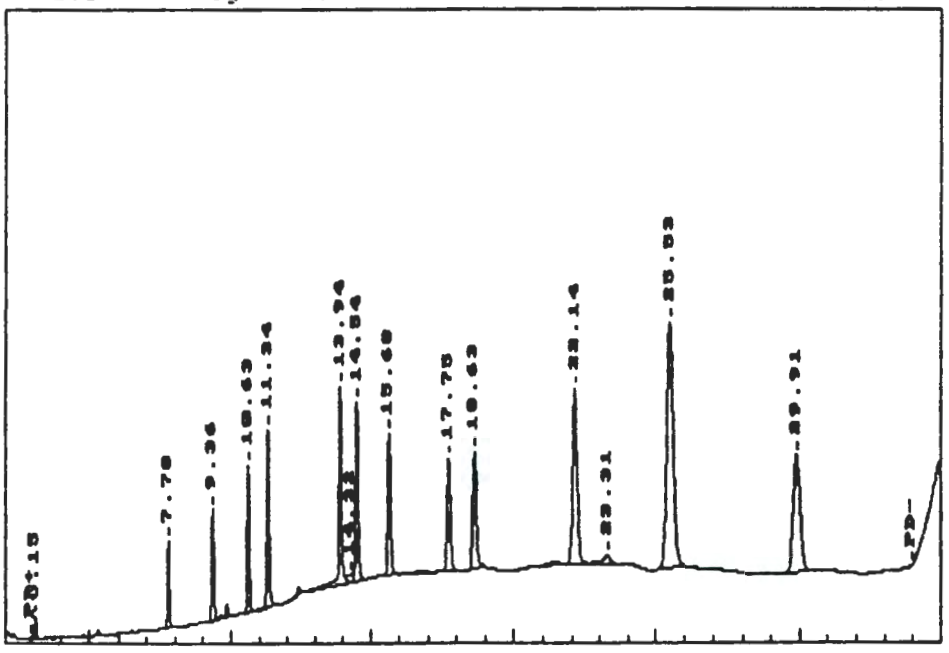
| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | HEIGHT BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.15 | | 0.6753 | 5.7301% | 6753 | 1427 | 4.7 | 1 | | | 1.0000E-04 |
| 5 | 7.78 | alpha-BHC 0.02 | 0.0050 | 0.0425% | 26559 | 5926 | 4.5 | 1 | 0 | .8845 | 1.8854E-07 |
| 6 | 9.36 | beta-BHC 0.04 | 3.6057 | 30.5928% | 36057 | 7604 | 4.7 | 2 | | | 1.0000E-04 |
| 9 | 10.63 | delta-BHC 0.04 | 0.0102 | 0.0869% | 45907 | 9987 | 4.6 | 1 | 0 | .9867 | 2.2321E-07 |
| 10 | 11.34 | Aldrin 0.04 | 0.0091 | 0.0774% | 68336 | 11964 | 5.7 | 1 | 0 | .8478 | 1.3354E-07 |
| 13 | 13.94 | g. chlordane 0.04 | 0.0118 LF625 | 0.0997% | ~~86734~~ | 13319 | 6.5 | 3 | 0 | .8719 | 1.3550E-07 |
| 14 | 14.32 | ~~a. chlordane~~ | 0.0007 | 0.0062% | 5152 | 494 | 10.4 | 4 | 0 | -.7304 | 1.4069E-07 |
| 15 | 14.54 | ~~Endosulfan I~~ a chlordane 0.04 | 0.0188 66636 | 0.1593% | ~~72176~~ | 12086 | 6.0 | 2 | 0 | .2184 | 2.6012E-07 |
| 16 | 15.68 | ~~Dieldrin~~ 4,4'-DDE 0.04 | 0.0103 | 0.0874% | 61497 | 9535 | 6.4 | 1 | 0 | -.5247 | 1.6759E-07 |
| 18 | 17.75 | Endrin 0.04 | 6.0707 | 51.5073% | 60707 | 7542 | 8.0 | 1 | | | 1.0000E-04 |
| 19 | 18.63 | ~~Endosulfan II~~ 4,4'-DDD 0.08 | 0.0305 | 0.2586% | 68053 | 7893 | 8.6 | 1 | 0 | 0 | 4.4779E-07 |
| 21 | 22.14 | Endo. sulfate 0.08 | 0.0194 | 0.1642% | 135065 | 11752 | 11.5 | 2 | 0 | 1.142 | 1.4332E-07 |
| 22 | 23.31 | | 1.2269 | 10.4096% | 12269 | 597 | 20.6 | 2 | | | 1.0000E-04 |
| 23 | 25.53 | DBC 0.2 | 0.0498 | 0.4224% | 262715 | 16555 | 15.9 | 1 | 0 | 1.270 | 1.8948E-07 |
| 24 | 29.91 | ~~Methoxychlor~~ Endrin Ketone 0.08 | 0.0419 | 0.3555% | 136346 | 7944 | 17.2 | 1 | 0 | .4895 | 3.0732E-07 |
| | | TOTAL AMOUNT = | 11.7860 | | | | | | | | |

CY 2-6-92

Data File = A:A20355.PTS Printed on 02-05-1992 at 10:37:58

Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.

Low Value: 13508 uv High Value: 34898 uv Scale factor: 0.5



1 of 1

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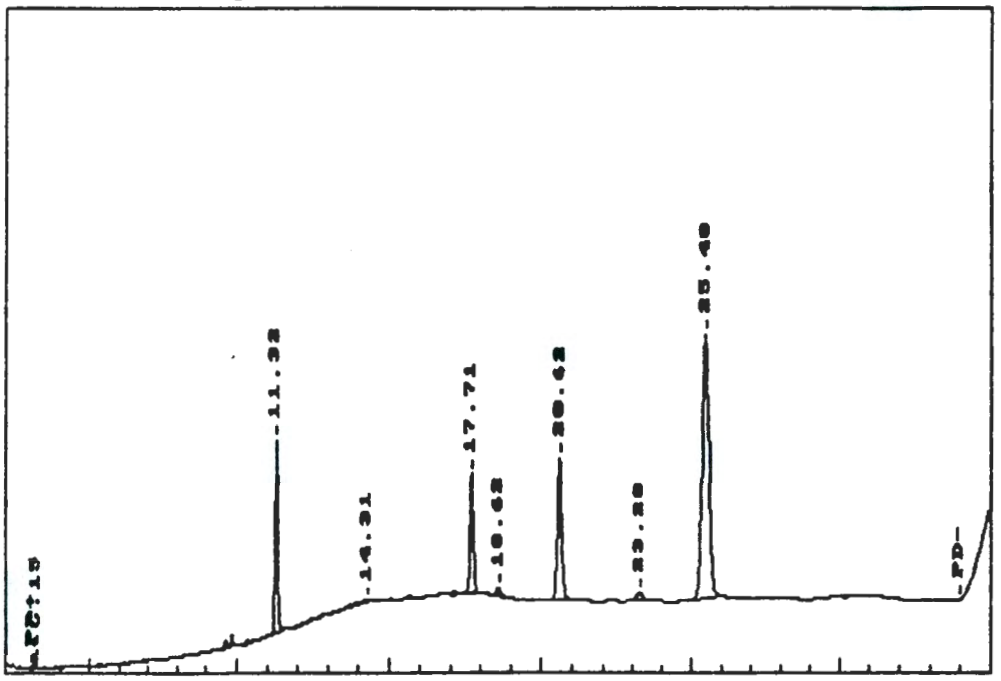
*****   EXTERNAL STANDARD TABLE   *****
******************** 02-05-1992 10:42:34 Version 4.1 **********************
* Sample Name: CLP/EVALB                          Data File: A:A20361      *
* Date: 02-05-1992 01:51:01 Method: A:ACLP088  02-03-1992 15:59:35  #  301*
* Interface: 2   Cycle#:  61   Operator CP  Channel#: 0    Vial#: N.A.    *
* Starting Peak Width:  10   Threshold: 1  Area Threshold: 100            *
*************************************************************************
* Instrument Type: HP5890A/B                Column Type: DB-608,DB-1701   *
*              Solvent Description:                                      *
* Conditions: 160D,5D/M,230D,15M(35M RUN)                                *
*            Detector 0: ECD                  Detector 1: ECD            *
* Misc. Information: 02-03-92, ~~B~~ C, Col 0.53mm, 4UL                  *
*************************************************************************
Starting Delay:    2.00                      Ending retention time:   35.00
Area reject:       5000                      One sample per    1.002 sec.
Amount injected:        ~~1.00~~ 4.00        Dilution factor:         1.00
Sample Weight:          1.000000
```

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.15 | | 0.5567 | 41.1018% | 5567 | 1158 | 4.8 | 1 | | | 1.0000E-04 |
| 7 | 11.32 | Aldrin 0.04 | 0.0091 | 0.6688% | 67839 | 12257 | 5.5 | 1 | 0 | .6992 | 1.3354E-07 |
| 9 | 14.31 | ~~a-chlordane~~ | 0.0008 | 0.0615% | 5923 | 104 | 57.1 | 1 | 0 | -.8461 | 1.4069E-07 |
| 12 | 17.71 | Endrin 0.04 | 0.0100 | 0.7370% | 60425 | 7612 | 7.9 | 1 | 0 | .8809 | 1.6521E-07 |
| 13 | 18.62 | ~~Endosulfan II~~ 4,4'-DDD | 0.0022 | 0.1659% | 5020 | 531 | 9.5 | 1 | 0 | 0 | 4.4779E-07 |
| 14 | 20.62 | 4,4'-DDT 0.08 | 0.0194 | 1.4288% | 90645 | 8965 | 10.1 | 1 | 0 | .9818 | 2.1349E-07 |
| 15 | 23.28 | | 0.7061 | 52.1318% | 7061 | 520 | 13.6 | 1 | | | 1.0000E-04 |
| 16 | 25.48 | DBC 0.2 | 0.0502 | 3.7043% | 264795 | 16712 | 15.8 | 1 | 0 | 1.071 | 1.8948E-07 |
| | | TOTAL AMOUNT = | 1.3545 | | | | | | | | |

CY 2-7-92

Data File = A:A20361.PTS  Printed on 02-05-1992 at 10:42:42
Start time:  2.00 min.  Stop time:  35.02 min.  Offset:  0 mv.
Low Value:  13845 uv  High Value:  34968 uv  Scale factor:  0.5



# ****** EXTERNAL STANDARD TABLE ******

********** 02-05-1992 10:47:04 Version 4.1 **********

* Sample Name: CLP/INDB  Data File: A:A20367 *
* Date: 02-05-1992 ~~05:37:02~~ 05:35 Method: A:ACLP088 02-03-1992 15:59:35 # 301*
* Interface: 2  Cycle#: 67  Operator CP  Channel#: 0  Vial#: N.A. *
* Starting Peak Width: 10  Threshold: 1  Area Threshold: 100 *

* Instrument Type: HP5890~~A~~B  Column Type: DB-608,DB-1701 *
*  Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
*  Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, ~~A~~, C Col 0.53mm, 4UL *

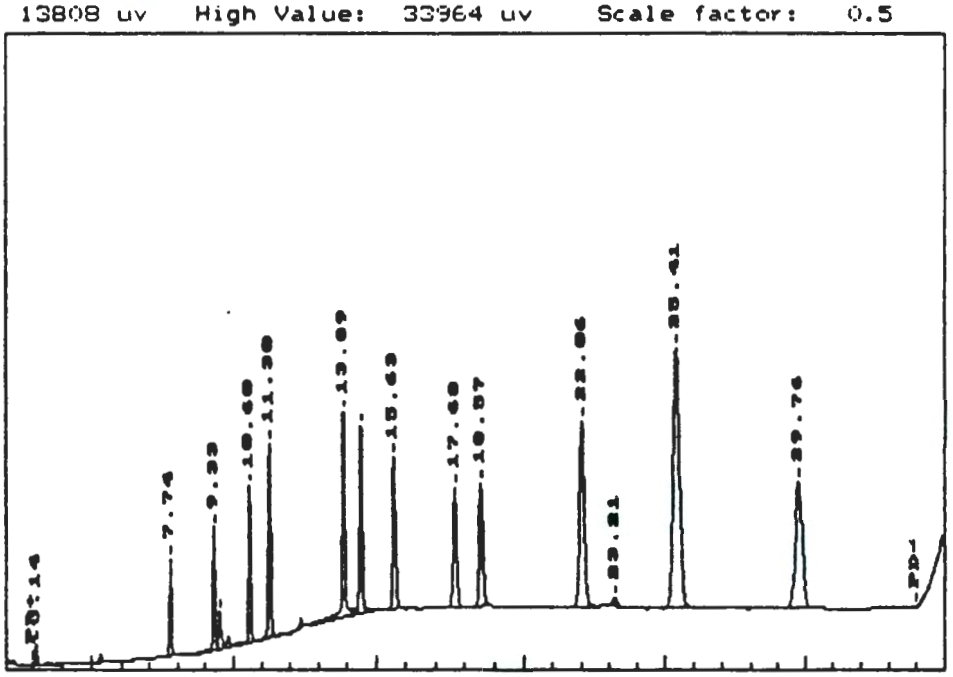
Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 5000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.14 | | 0.5734 | 20.0984% | 5734 | 1232 | 4.7 | 1 | | | 1.0000E-04 |
| 5 | 7.74 | alpha-BHC 0.02 | 0.0050 | 0.1769% | 26772 | 6025 | 4.4 | 1 | 0 | .4513 | 1.8854E-07 |
| 6 | 9.33 | beta-BHC 0.02 | 0.0102 | 0.3562% | 37329 | 7714 | 4.8 | 2 | 0 | .7699 | 2.7228E-07 |
| 7 | 9.53 | | 1.4202 | 49.7764% | 14202 | 2287 | 6.2 | 2 | | | 1.0000E-04 |
| 9 | 10.60 | delta-BHC 0.04 | 0.0104 | 0.3628% | 46374 | 9912 | 4.7 | 2 | 0 | .6695 | 2.2321E-07 |
| 10 | 11.30 | Aldrin 0.04 | 0.0090 | 0.3158% | 67485 | 12350 | 5.5 | 1 | 0 | .5507 | 1.3354E-07 |
| 13 | 13.89 | g. chlordane 0.04 | 0.0122 70561 | 0.4277% | ~~90061~~ | 13013 | 6.9 | 3 | 0 | .5094 | 1.3550E-07 |
| 15 | 14.49 | ~~Endosulfan I~~ a.chlordane 0.04 | 0.0195 67464 | 0.6821% | ~~74821~~ | 11917 | 6.3 | 3 | 0 | -.1268 | 2.6012E-07 |
| 17 | 15.63 | 4,4'-DDE 0.04 | 0.0099 | 0.3480% | 61021 | 9683 | 6.3 | 1 | 0 | .5611 | 1.6270E-07 |
| 18 | 17.68 | Endrin 0.04 | 0.0100 | 0.3499% | 60428 | 7635 | 7.9 | 1 | 0 | .6907 | 1.6521E-07 |
| 19 | 18.57 | ~~Endosulfan II~~ 4,4'-DDD 0.08 | 0.0301 | 1.0549% | 67215 | 7884 | 8.5 | 1 | 0 | -.3413 | 4.4779E-07 |
| 20 | 22.06 | Endo. sulfate 0.08 | 0.0194 | 0.6812% | 135603 | 11842 | 11.5 | 1 | 0 | .7615 | 1.4332E-07 |
| 21 | 23.21 | | 0.6317 | 22.1388% | 6317 | 489 | 12.9 | 1 | | | 1.0000E-04 |
| 22 | 25.41 | DBC 0.2 | 0.0494 | 1.7309% | 260640 | 16519 | 15.8 | 1 | 0 | .8068 | 1.8948E-07 |
| 23 | 29.76 | ~~Methoxychlor~~ Endrin ketone 0.08 | 0.0428 | 1.5000% | 139261 | 8130 | 17.1 | 1 | 0 | 0 | 3.0732E-07 |
| | | TOTAL AMOUNT = | 2.8532 | | | | | | | | |

1 of 2

CY 2-7-92

Data File = A:A20367.PTS  Printed on 02-05-1992 at 10:47:15
Start time: 2.00 min.  Stop time: 35.02 min.  Offset: 0 mv.
Low Value: 13808 uv  High Value: 33964 uv  Scale factor: 0.5



~~1 of 2~~

1 of 1

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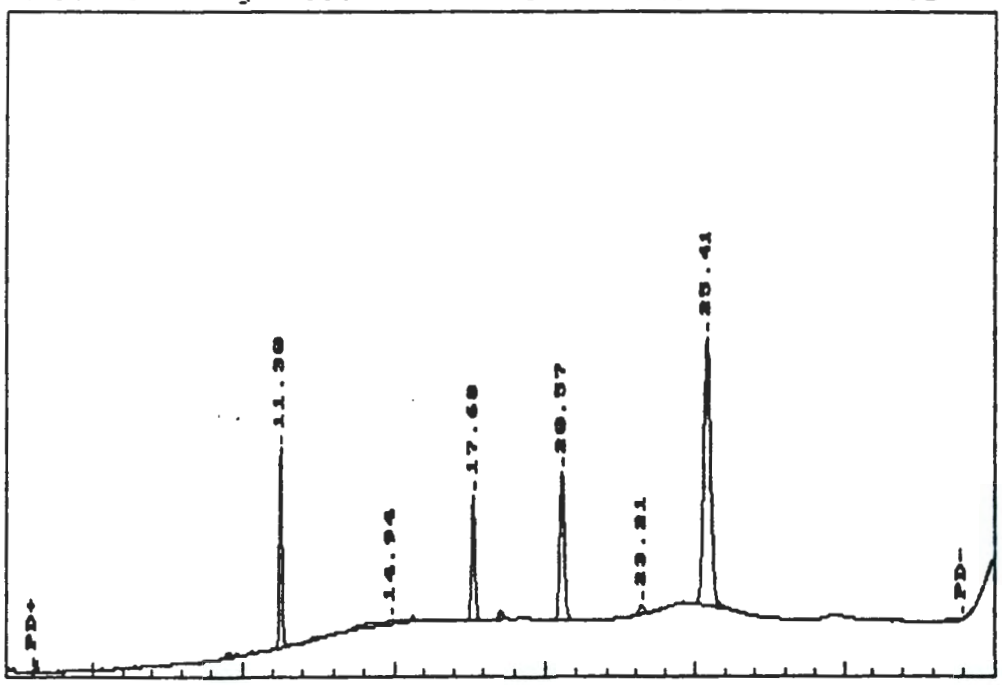
*****   EXTERNAL STANDARD TABLE   *****
******************** 02-05-1992 13:44:45 Version 4.1 **********************
* Sample Name: CLP/EVALB                          Data File: A:A20373      *
* Date: 02-05-1992 09:21:00 Method: A:ACLP088  02-03-1992 15:59:35  #  301*
* Interface: 2   Cycle#:  73   Operator CP  Channel#: 0    Vial#: N.A.     *
* Starting Peak Width:  10   Threshold: 1  Area Threshold: 100             *
*************************************************************************
* Instrument Type: HP5890 B                  Column Type: DB-608,DB-1701   *
*              Solvent Description:                                       *
* Conditions: 160D,5D/M,230D,15M(35M RUN)                                 *
*            Detector 0: ECD                  Detector 1: ECD             *
* Misc. Information: 02-03-92, C, Col 0.53mm, 4UL                         *
*************************************************************************
Starting Delay:   2.00                      Ending retention time:   35.00
Area reject:     5000                       One sample per   1.002 sec.
Amount injected:        ~~1.00~~ 4.00       Dilution factor:        1.00
Sample Weight:          1.000000
```

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 11.30 | Aldrin | 0.04 0.0090 | 0.3262% | 67554 | 12056 | 5.6 | 1 | 0 | .5507 | 1.3354E-07 |
| 9 | 14.94 | | 2.0493 | 74.1097% | 20493 | 222 | 92.2 | 2 | | | 1.0000E-04 |
| 11 | 17.68 | Endrin | 0.04 0.0099 | 0.3590% | 60081 | 7526 | 8.0 | 1 | 0 | .6907 | 1.6521E-07 |
| 13 | 20.57 | 4,4'-DDT | 0.08 0.0196 | 0.7092% | 91851 | 8914 | 10.3 | 1 | 0 | .7365 | 2.1349E-07 |
| 14 | 23.21 | | 0.6274 | 22.6877% | 6274 | 486 | 12.9 | 1 | | | 1.0000E-04 |
| 15 | 25.41 | DBC | 0.2 0.0500 | 1.8082% | 263882 | 16301 | 16.2 | 1 | 0 | .8068 | 1.8948E-07 |
| | | TOTAL AMOUNT = | 2.7652 | | | | | | | | |

CY 2-7-92

Data File = A:A20373.PTS  Printed on 02-05-1992 at 13:44:53
Start time:  2.00 min.  Stop time:  35.02 min.  Offset:  0 mv.
Low Value:  14296 uv  High Value:  34576 uv  Scale factor:  0.5



9216528.0795

00321

# ***** EXTERNAL STANDARD TABLE *****

********** 02-05-1992 15:58:11 Version 4.1 **********

* Sample Name: CLP/INDA  Data File: A:A20377 *
* Date: 02-05-1992 11:54:24 Method: A:ACLP088 02-03-1992 15:59:35 # 301*
* Interface: 2  Cycle#: 77  Operator CP  Channel#: 0  Vial#: N.A. *
* Starting Peak Width: 10  Threshold: 1  Area Threshold: 100 *

* Instrument Type: HP5890A B  Column Type: DB-608, DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD  Detector 1: ECD *
* Misc. Information: 02-03-92, ~~f~~ C, Col 0.53mm, 4UL *

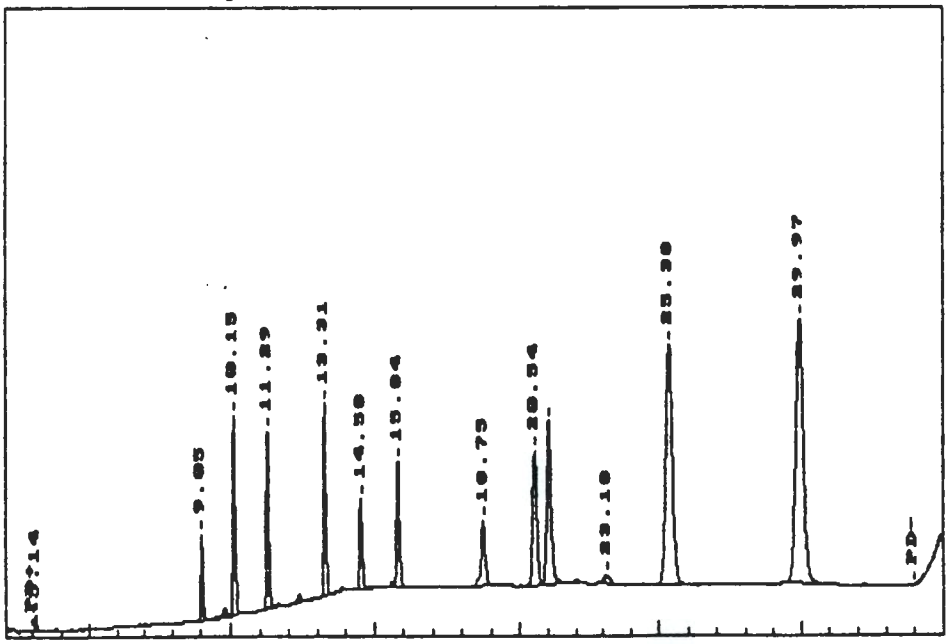
Starting Delay: 2.00  Ending retention time: 35.00
Area reject: 5000  One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00  Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.14 | | 0.5168 | 32.9059% | 5168 | 1090 | 4.7 | 1 | | | 1.0000E-04 |
| 5 | 9.05 | gamma-BHC 0.02 | 0.0051 | 0.3237% | 28950 | 6048 | 4.8 | 1 | 0 | .5266 | 1.7561E-07 |
| 8 | 10.15 | Heptachlor 0.04 | 0.0101 | 0.6415% | 74130 | 13840 | 5.4 | 1 | 0 | .4910 | 1.3591E-07 |
| 9 | 11.29 | Aldrin 0.04 | 0.0093 | 0.5930% | 69752 | 12416 | 5.6 | 2 | 0 | .4021 | 1.3354E-07 |
| 12 | 13.31 | Hept. epoxide 0.04 | 0.0099 | 0.6306% | 71548 | 13325 | 5.4 | 2 | 0 | .4977 | 1.3844E-07 |
| 14 | 14.58 | Endosulfan I 0.04 | 0.0100 | 0.6350% | 38342 | 6279 | 6.1 | 2 | 0 | .4486 | 2.6012E-07 |
| 17 | 15.84 | Dieldrin 0.04 | 0.0099 | 0.6287% | 58919 | 8681 | 6.8 | 2 | 0 | .5348 | 1.6759E-07 |
| 18 | 18.75 | Endosulfan II 0.08 | 0.0198 | 1.2626% | 44288 | 4477 | 9.9 | 1 | 0 | .6446 | 4.4779E-07 |
| 19 | 20.54 | 4,4'-DDT 0.08 | 0.0201 | 1.2789% | 94086 | 9354 | 10.1 | 2 | 0 | .5729 | 2.1349E-07 |
| 20 | 21.05 | Endrin Aldehyde 0.1 | 0.0253 | 1.6079% | 125370 | 11268 | 11.1 | 2 | 0 | .6438 | 2.0144E-07 |
| 22 | 23.18 | | 0.7799 | 49.6556% | 7799 | 572 | 13.6 | 1 | | | 1.0000E-04 |
| 23 | 25.38 | DBC 0.2 | 0.0495 | 3.1492% | 261040 | 16587 | 15.7 | 1 | 0 | .6743 | 1.8948E-07 |
| 24 | 29.97 | Methoxychlor 0.4 | 0.1050 | 6.6874% | 341779 | 18308 | 18.7 | 1 | 0 | .7140 | 3.0732E-07 |
| | | TOTAL AMOUNT = | 1.5706 | | | | | | | | |

1 of 1

CY 2-7-92

Data File = A:A20377.PTS Printed on 02-05-1992 at 15:58:22
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 13709 uv High Value: 35470 uv Scale factor: 0.5



971542B.D/9b

00322

1 of 1

***** EXTERNAL STANDARD TABLE *****

********** 02-05-1992 15:58:55 Version 4.1 **********

* Sample Name: CLP/INDB Data File: A:A20378 *
* Date: 02-05-1992 12:34:31 Method: A:ACLP088 02-03-1992 15:59:35 # 301*
* Interface: 2 Cycle#: 78 Operator CP Channel#: 0 Vial#: N.A. *
* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

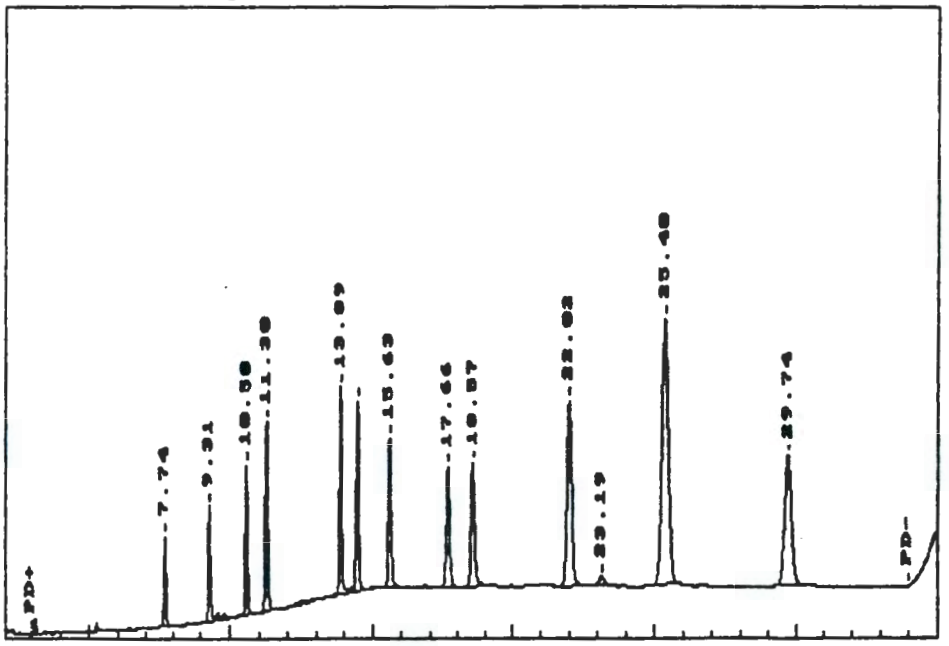
* Instrument Type: HP5890 A B Column Type: DB-608,DB-1701 *
* Solvent Description: *
* Conditions: 160D,5D/M,230D,15M(35M RUN) *
* Detector 0: ECD Detector 1: ECD *
* Misc. Information: 02-03-92, ~~A~~ C, Col 0.53mm, 4UL *

Starting Delay: 2.00 Ending retention time: 35.00
Area reject: 5000 One sample per 1.002 sec.
Amount injected: ~~1.00~~ 4.00 Dilution factor: 1.00
Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml (total ng) | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 7.74 | alpha-BHC | 0.02 | 0.0051 | 0.5626% | 27141 | 5889 | 4.6 1 | 0 | .4513 | 1.8854E-07 |
| 6 | 9.31 | beta-BHC | 0.04 | 0.0100 | 1.0943% | 36555 | 7456 | 4.9 2 | 0 | .5896 | 2.7228E-07 |
| 10 | 10.58 | delta-BHC | 0.04 | 0.0102 | 1.1223% | 45734 | 9698 | 4.7 1 | 0 | .5109 | 2.2321E-07 |
| 11 | 11.30 | Aldrin | 0.04 | 0.0093 | 1.0202% | 69490 | 12155 | 5.7 1 | 0 | .5507 | 1.3354E-07 |
| 14 | 13.89 | g. chlordane | 0.04 | 0.0102 | 1.1261% | 75593 | 13243 | 5.7 3 | 0 | .5094 | 1.3550E-07 |
| 16 | 14.49 | ~~Endosulfan I~~ a.chlordane | 0.04 | 0.0185 | 2.0320% | 71051 | 12159 | 5.8 2 | 0 | -.1268 | 2.6012E-07 |
| 17 | 15.63 | 4,4'-DDE | 0.04 | 0.0101 | 1.1130% | 62224 | 9527 | 6.5 1 | 0 | .5611 | 1.6270E-07 |
| 18 | 17.66 | Endrin | 0.04 | 0.0101 | 1.1140% | 61329 | 7654 | 8.0 1 | 0 | .5956 | 1.6521E-07 |
| 19 | 18.57 | ~~Endosulfan II~~ 4,4'-DDD | 0.08 | 0.0317 | 3.4900% | 70889 | 7845 | 9.0 1 | 0 | -.3413 | 4.4779E-07 |
| 20 | 22.02 | Endo. sulfate | 0.08 | 0.0194 | 2.1349% | 135489 | 11796 | 11.5 1 | 0 | .6089 | 1.4332E-07 |
| 21 | 23.19 | | | 0.6807 | 74.8401% | 6807 | 515 | 13.2 1 | | | 1.0000E-04 |
| 22 | 25.40 | DBC | 0.2 | 0.0506 | 5.5676% | 267256 | 16961 | 15.8 1 | 0 | .7405 | 1.8948E-07 |
| 23 | 29.74 | ~~Methoxychlor~~ Endrin ketone | 0.08 | 0.0435 | 4.7828% | 141554 | 8201 | 17.3 1 | 0 | 0 | 3.0732E-07 |
| | | TOTAL AMOUNT = | | 0.9096 | | | | | | | |

CY 2-7-92

Data File = A:A20378.PTS Printed on 02-05-1992 at 15:59:06
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 13687 uv High Value: 33931 uv Scale factor: 0.5



4C
PESTICIDE METHOD BLANK SUMMARY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Lab Sample ID: A201029-BLK Lab File ID:

Matrix:(soil/water) SOIL Level:(low/med) LOW

Date Extracted: 01/15/92 Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed (1): 02/04/92 Date Analyzed (2): 02/04/92

Time Analyzed (1): 1544 Time Analyzed (2): 1544

Instrument ID (1): HP5890A Instrument ID (2): HP5890B

GC Column ID (1): DB1701 GC Column ID (2): DB608

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED 1 | DATE ANALYZED 2 |
|---|---|---|---|---|
| 01 | B01CF9 | A201029-03B | 02/04/92 | 02/04/92 |
| 02 | B01CG0 | A201029-04A | 02/04/92 | 02/04/92 |
| 03 | B01CG2 | A201029-01A | 02/04/92 | 02/04/92 |
| 04 | B01CG3 | A201029-02A | 02/04/92 | 02/04/92 |
| 05 | B01CG3MS | A201029-02D | 02/04/92 | 02/04/92 |
| 06 | B01CG3MSD | A201029-02E | 02/04/92 | 02/04/92 |

COMMENTS:

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK0115S

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-BLK

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. __ dec. __ Date Extracted: 01/15/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/04/92

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 7.9 | U |
| 319-85-7 | beta-BHC | 7.9 | U |
| 319-86-8 | delta-BHC | 7.9 | U |
| 58-89-9 | gamma-BHC (Lindane) | 7.9 | U |
| 76-44-8 | Heptachlor | 7.9 | U |
| 309-00-2 | Aldrin | 7.9 | U |
| 1024-57-3 | Heptachlor epoxide | 7.9 | U |
| 959-98-8 | Endosulfan I | 7.9 | U |
| 60-57-1 | Dieldrin | 16 | U |
| 72-55-9 | 4,4'-DDE | 16 | U |
| 72-20-8 | Endrin | 16 | U |
| 33213-65-9 | Endosulfan II | 16 | U |
| 72-54-8 | 4,4'-DDD | 16 | U |
| 1031-07-8 | Endosulfan sulfate | 16 | U |
| 50-29-3 | 4,4'-DDT | 16 | U |
| 72-43-5 | Methoxychlor | 79 | U |
| 53494-70-5 | Endrin ketone | 16 | U |
| 5103-71-9 | alpha-Chlordane | 79 | U |
| 5103-74-2 | gamma-Chlordane | 79 | U |
| 8001-35-2 | Toxaphene | 160 | U |
| 12674-11-2 | Aroclor-1016 | 79 | U |
| 11104-28-2 | Aroclor-1221 | 79 | U |
| 11141-16-5 | Aroclor-1232 | 79 | U |
| 53469-21-9 | Aroclor-1242 | 79 | U |
| 12672-29-6 | Aroclor-1248 | 79 | U |
| 11097-69-1 | Aroclor-1254 | 160 | U |
| 11096-82-5 | Aroclor-1260 | 160 | U |

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: _____

Level:(low/med) LOW

| | EPA SAMPLE NO. | S1 (DBC)# | OTHER |
|---|---|---|---|
| 01 | PBLK0115S | 100 | 0 |
| 02 | B01CF9 | 100 | 0 |
| 03 | B01CG0 | 106 | 0 |
| 04 | B01CG2 | 106 | 0 |
| 05 | B01CG3 | 95 | 0 |
| 06 | B01CG3MS | 102 | 0 |
| 07 | B01CG3MSD | 96 | 0 |

VLG

ADVISORY QC LIMITS ( 20-150)

S1 (DBC) = Dibutylchlorendate

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

9713528.0800



3F

# SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix Spike - EPA Sample No.: B01CG3 Level:(low/med) LOW

| COMPOUND | SPIKE ADDED (ug/Kg) | SAMPLE CONCENTRATION (ug/Kg) | MS CONCENTRATION (ug/Kg) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| gamma-BHC (Lindane) | 27.6 | 0 | 27.7 | 100 | 46-127 |
| Heptachlor | 27.6 | 0 | 28.3 | 102 | 35-130 |
| Aldrin | 27.6 | 0 | 25.6 | 93 | 34-132 |
| Dieldrin | 69.0 | 0 | 74.5 | 108 | 31-134 |
| Endrin | 69.0 | 0 | 75.2 | 109 | 42-139 |
| 4,4'-DDT | 69.0 | 0 | 68.7 | 100 | 23-134 |

| COMPOUND | SPIKE ADDED (ug/Kg) | MSD CONCENTRATION (ug/Kg) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| gamma-BHC (Lindane) | 27.6 | 30.2 | 109 | -9 | 50 | 46-127 |
| Heptachlor | 27.6 | 30.1 | 109 | -7 | 31 | 35-130 |
| Aldrin | 27.6 | 28.1 | 102 | -9 | 43 | 34-132 |
| Dieldrin | 69.0 | 80.0 | 116 | -7 | 38 | 31-134 |
| Endrin | 69.0 | 78.0 | 113 | -4 | 45 | 42-139 |
| 4,4'-DDT | 69.0 | 70.3 | 102 | -2 | 50 | 23-134 |

# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 0 out of 12 outside limits

COMMENTS:

9713528.0801

0032

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B01CG3MS

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-02D

Sample wt/vol: 30.2 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 dec. Date Extracted: 01/15/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/04/92

GPC Cleanup: (Y/N) N pH: 9.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 8.3 | U |
| 319-85-7 | beta-BHC | 8.3 | U |
| 319-86-8 | delta-BHC | 8.3 | U |
| 58-89-9 | gamma-BHC (Lindane) | 8.3 | U |
| 76-44-8 | Heptachlor | 8.3 | U |
| 309-00-2 | Aldrin | 8.3 | U |
| 1024-57-3 | Heptachlor epoxide | 8.3 | U |
| 959-98-8 | Endosulfan I | 8.3 | U |
| 60-57-1 | Dieldrin | 17 | U |
| 72-55-9 | 4,4'-DDE | 17 | U |
| 72-20-8 | Endrin | 17 | U |
| 33213-65-9 | Endosulfan II | 17 | U |
| 72-54-8 | 4,4'-DDD | 17 | U |
| 1031-07-8 | Endosulfan sulfate | 17 | U |
| 50-29-3 | 4,4'-DDT | 17 | U |
| 72-43-5 | Methoxychlor | 83 | U |
| 53494-70-5 | Endrin ketone | 17 | U |
| 5103-71-9 | alpha-Chlordane | 83 | U |
| 5103-74-2 | gamma-Chlordane | 83 | U |
| 8001-35-2 | Toxaphene | 170 | U |
| 12674-11-2 | Aroclor-1016 | 83 | U |
| 11104-28-2 | Aroclor-1221 | 83 | U |
| 11141-16-5 | Aroclor-1232 | 83 | U |
| 53469-21-9 | Aroclor-1242 | 83 | U |
| 12672-29-6 | Aroclor-1248 | 83 | U |
| 11097-69-1 | Aroclor-1254 | 120 | J |
| 11096-82-5 | Aroclor-1260 | 59 | J |

9715528.0802

00207
EPA SAMPLE NO.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

B01CG2

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-01A

Sample wt/vol: 30.7 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 dec. Date Extracted: 01/15/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/04/92

GPC Cleanup: (Y/N) N pH: 8.9 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 8.1 | U |
| 319-85-7 | beta-BHC | 8.1 | U |
| 319-86-8 | delta-BHC | 8.1 | U |
| 58-89-9 | gamma-BHC (Lindane) | 8.1 | U |
| 76-44-8 | Heptachlor | 8.1 | U |
| 309-00-2 | Aldrin | 8.1 | U |
| 1024-57-3 | Heptachlor epoxide | 8.1 | U |
| 959-98-8 | Endosulfan I | 8.1 | U |
| 60-57-1 | Dieldrin | 16 | U |
| 72-55-9 | 4,4'-DDE | 16 | U |
| 72-20-8 | Endrin | 16 | U |
| 33213-65-9 | Endosulfan II | 16 | U |
| 72-54-8 | 4,4'-DDD | 16 | U |
| 1031-07-8 | Endosulfan sulfate | 16 | U |
| 50-29-3 | 4,4'-DDT | 16 | U |
| 72-43-5 | Methoxychlor | 81 | U |
| 53494-70-5 | Endrin ketone | 16 | U |
| 5103-71-9 | alpha-Chlordane | 81 | U |
| 5103-74-2 | gamma-Chlordane | 81 | U |
| 8001-35-2 | Toxaphene | 160 | U |
| 12674-11-2 | Aroclor-1016 | 81 | U |
| 11104-28-2 | Aroclor-1221 | 81 | U |
| 11141-16-5 | Aroclor-1232 | 81 | U |
| 53469-21-9 | Aroclor-1242 | 81 | U |
| 12672-29-6 | Aroclor-1248 | 81 | U |
| 11097-69-1 | Aroclor-1254 | 110 | J |
| 11096-82-5 | Aroclor-1260 | 50 | J |

2 of 2

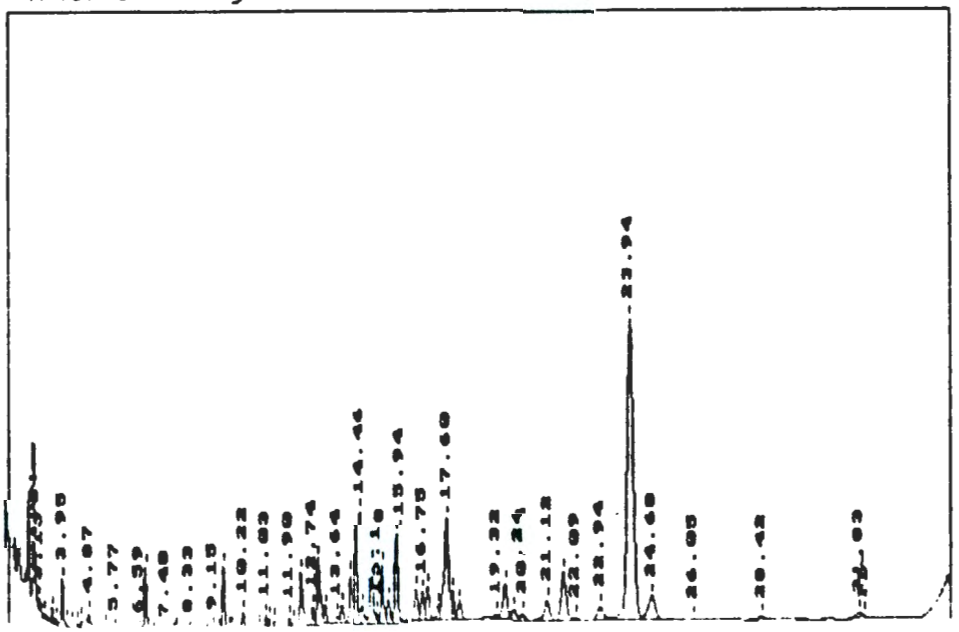
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 43 | 12.94 | Aroclor ~~1260~~ 1254 | 25.4321 | 5.1388% | 254321 | 34570 | 7.4 | 2 | | | 1.0000E-04 |
| 44 | 13.19 | Aroclor 1254 | 5.2980 | 1.0705% | 52980 | 8941 | 5.9 | 2 | | | 1.0000E-04 |
| 45 | 13.64 | ~~g-chlordane~~ | 0.0008 | 0.0002% | 25586 | 3635 | 7.0 | 2 | 0 | .5892 | 3.1831E-08 |
| 46 | 13.79 | ~~a-chlordane~~ | 0.0021 | 0.0004% | 66205 | 9177 | 7.2 | 2 | 0 | .3653 | 3.2455E-08 |
| 47 | 14.09 | ~~4,4'-DDE~~ | 0.0079 | 0.0016% | 224666 | 24917 | 9.0 | 2 | 0 | -.2068 | 3.5290E-08 |
| 48 | 14.46 | Aroclor 1254 | 34.6992 | 7.0113% | 346992 | 56831 | 6.1 | 3 | | | 1.0000E-04 |
| 49 | 14.68 | ~~Dieldrin~~ | 0.0033 | 0.0007% | 88406 | 8505 | 10.4 | 4 | 0 | .3096 | 3.7280E-08 |
| 50 | 14.99 | | 22.9104 | 4.6293% | 229104 | 31294 | 7.3 | 3 | | | 1.0000E-04 |
| 51 | 15.18 | | 2.4940 | 0.5039% | 24940 | 3889 | 6.4 | 4 | | | 1.0000E-04 |
| 52 | 15.41 | ~~Endrin~~ | 0.0082 | 0.0017% | 221226 | 29820 | 7.4 | 2 | 0 | .1305 | 3.7142E-08 |
| 53 | 15.66 | | 9.6030 | 1.9404% | 96030 | 11846 | 8.1 | 2 | | | 1.0000E-04 |
| 54 | 15.94 | | 32.9738 | 6.6627% | 329738 | 45160 | 7.3 | 2 | | | 1.0000E-04 |
| 55 | 16.50 | | 15.0927 | 3.0496% | 150927 | 16872 | 8.9 | 2 | | | 1.0000E-04 |
| 56 | 16.75 | | 12.3107 | 2.4875% | 123107 | 15029 | 8.2 | 2 | | | 1.0000E-04 |
| 57 | 16.91 | | 14.2890 | 2.8873% | 142890 | 17461 | 8.2 | 2 | | | 1.0000E-04 |
| 58 | 17.30 | | 6.1017 | 1.2329% | 61017 | 7919 | 7.7 | 2 | | | 1.0000E-04 |
| 59 | 17.60 | ~~4,4'-DDD~~ | 0.0370 | 0.0075% | 594793 | 52562 | 11.3 | 2 | 0 | .3867 | 6.2251E-08 |
| 60 | 17.78 | ~~Endosulfan II~~ | 0.0124 | 0.0025% | 115791 | 15333 | 7.6 | 2 | 0 | .4604 | 1.0680E-07 |
| 61 | 18.05 | | 9.4349 | 1.9064% | 94349 | 10051 | 9.4 | 3 | | | 1.0000E-04 |
| 64 | 19.32 | | 2.4081 | 0.4866% | 24081 | 2767 | 8.7 | 2 | | | 1.0000E-04 |
| 65 | 19.64 | | 19.8410 | 4.0091% | 198410 | 18904 | 10.5 | 2 | | | 1.0000E-04 |
| 66 | 19.95 | Aroclor-1260 | 5.5748 | 1.1265% | 55748 | 5468 | 10.2 | 2 | | | 1.0000E-04 |
| 67 | 20.24 | ~~Endrin Aldehyde~~ Aroclor-1260 | 0.0013 | 0.0003% | 31449 | 3000 | 10.5 | 2 | 0 | .3292 | 4.1017E-08 |
| 69 | 21.12 | | 13.2774 | 2.6828% | 132774 | 10138 | 13.1 | 2 | | | 1.0000E-04 |
| 70 | 21.69 | Aroclor - 1260 | 30.4754 | 6.1579% | 304754 | 25001 | 12.2 | 3 | | | 1.0000E-04 |
| 71 | 22.09 | | 1.3817 | 0.2792% | 13817 | 1137 | 12.2 | 4 | | | 1.0000E-04 |
| 72 | 22.94 | ~~Methoxychlor~~ | 0.0077 | 0.0016% | 104058 | 7220 | 14.4 | 2 | 0 | -.5987 | 7.4199E-08 |
| 73 | 23.94 | DBC | 0.1061 | 0.0214% | 2284654 | 155435 | 14.7 | 2 | 0 | 1.199 | 4.6457E-08 |
| 74 | 24.68 | Aroclor-1260 | 22.2979 | 4.5055% | 222979 | 12394 | 18.0 | 2 | | | 1.0000E-04 |
| 76 | 26.05 | ~~Endrin Ketone~~ | 0.0005 | 0.0001% | 13308 | 595 | 22.4 | 1 | 0 | 0 | 3.4229E-08 |
| 79 | 28.42 | Aroclor-1260 | 3.5451 | 0.7163% | 35451 | 1606 | 22.1 | 1 | | | 1.0000E-04 |
| 83 | 31.83 | | 2.7794 | 0.5616% | 27794 | 1773 | 15.7 | 1 | | | 1.0000E-04 |

Total Area Aroclor -1260 = 660381 : 49.00 ug/kg

TOTAL AMOUNT = 494.9005

Total Area Aroclor-1254 = 918884 : 108.15 ug/kg

Data File = A:B20349.PTS Printed on 02-05-1992 at 11:03:19 cy 2-11-92
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 47497 uv High Value: 210688 uv Scale factor: 0.5



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00202
EPA SAMPLE NO.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

B01CG0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-04A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 dec. __ Date Extracted: 01/15/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/04/92

GPC Cleanup: (Y/N) N pH: 8.8 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 8.2 | U |
| 319-85-7 | beta-BHC | 8.2 | U |
| 319-86-8 | delta-BHC | 8.2 | U |
| 58-89-9 | gamma-BHC (Lindane) | 8.2 | U |
| 76-44-8 | Heptachlor | 8.2 | U |
| 309-00-2 | Aldrin | 8.2 | U |
| 1024-57-3 | Heptachlor epoxide | 8.2 | U |
| 959-98-8 | Endosulfan I | 8.2 | U |
| 60-57-1 | Dieldrin | 16 | U |
| 72-55-9 | 4,4'-DDE | 16 | U |
| 72-20-8 | Endrin | 16 | U |
| 33213-65-9 | Endosulfan II | 16 | U |
| 72-54-8 | 4,4'-DDD | 16 | U |
| 1031-07-8 | Endosulfan sulfate | 16 | U |
| 50-29-3 | 4,4'-DDT | 16 | U |
| 72-43-5 | Methoxychlor | 82 | U |
| 53494-70-5 | Endrin ketone | 16 | U |
| 5103-71-9 | alpha-Chlordane | 82 | U |
| 5103-74-2 | gamma-Chlordane | 82 | U |
| 8001-35-2 | Toxaphene | 160 | U |
| 12674-11-2 | Aroclor-1016 | 82 | U |
| 11104-28-2 | Aroclor-1221 | 82 | U |
| 11141-16-5 | Aroclor-1232 | 82 | U |
| 53469-21-9 | Aroclor-1242 | 82 | U |
| 12672-29-6 | Aroclor-1248 | 82 | U |
| 11097-69-1 | Aroclor-1254 | 160 | U |
| 11096-82-5 | Aroclor-1260 | 160 | U |

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00197

EPA SAMPLE NO.

B01CF9

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-03B

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 5 dec. __ Date Extracted: 01/15/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/04/92

GPC Cleanup: (Y/N) N pH: 9.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 8.4 | U |
| 319-85-7 | beta-BHC | 8.4 | U |
| 319-86-8 | delta-BHC | 8.4 | U |
| 58-89-9 | gamma-BHC (Lindane) | 8.4 | U |
| 76-44-8 | Heptachlor | 8.4 | U |
| 309-00-2 | Aldrin | 8.4 | U |
| 1024-57-3 | Heptachlor epoxide | 8.4 | U |
| 959-98-8 | Endosulfan I | 8.4 | U |
| 60-57-1 | Dieldrin | 17 | U |
| 72-55-9 | 4,4'-DDE | 17 | U |
| 72-20-8 | Endrin | 17 | U |
| 33213-65-9 | Endosulfan II | 17 | U |
| 72-54-8 | 4,4'-DDD | 17 | U |
| 1031-07-8 | Endosulfan sulfate | 17 | U |
| 50-29-3 | 4,4'-DDT | 17 | U |
| 72-43-5 | Methoxychlor | 84 | U |
| 53494-70-5 | Endrin ketone | 17 | U |
| 5103-71-9 | alpha-Chlordane | 84 | U |
| 5103-74-2 | gamma-Chlordane | 84 | U |
| 8001-35-2 | Toxaphene | 170 | U |
| 12674-11-2 | Aroclor-1016 | 84 | U |
| 11104-28-2 | Aroclor-1221 | 84 | U |
| 11141-16-5 | Aroclor-1232 | 84 | U |
| 53469-21-9 | Aroclor-1242 | 84 | U |
| 12672-29-6 | Aroclor-1248 | 84 | U |
| 11097-69-1 | Aroclor-1254 | 170 | U |
| 11096-82-5 | Aroclor-1260 | 170 | U |

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00212
EPA SAMPLE NO.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

B01CG3

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 01029 SAS No.: NA SDG No.: NA

Matrix: (soil/water) SOIL Lab Sample ID: A201029-02A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 01/08/92

% Moisture: not dec. 4 dec. __ Date Extracted: 01/15/92

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/04/92

GPC Cleanup: (Y/N) N pH: 9.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 8.2 | U |
| 319-85-7 | beta-BHC | 8.2 | U |
| 319-86-8 | delta-BHC | 8.2 | U |
| 58-89-9 | gamma-BHC (Lindane) | 8.2 | U |
| 76-44-8 | Heptachlor | 8.2 | U |
| 309-00-2 | Aldrin | 8.2 | U |
| 1024-57-3 | Heptachlor epoxide | 8.2 | U |
| 959-98-8 | Endosulfan I | 8.2 | U |
| 60-57-1 | Dieldrin | 16 | U |
| 72-55-9 | 4,4'-DDE | 16 | U |
| 72-20-8 | Endrin | 16 | U |
| 33213-65-9 | Endosulfan II | 16 | U |
| 72-54-8 | 4,4'-DDD | 16 | U |
| 1031-07-8 | Endosulfan sulfate | 16 | U |
| 50-29-3 | 4,4'-DDT | 16 | U |
| 72-43-5 | Methoxychlor | 82 | U |
| 53494-70-5 | Endrin ketone | 16 | U |
| 5103-71-9 | alpha-Chlordane | 82 | U |
| 5103-74-2 | gamma-Chlordane | 82 | U |
| 8001-35-2 | Toxaphene | 160 | U |
| 12674-11-2 | Aroclor-1016 | 82 | U |
| 11104-28-2 | Aroclor-1221 | 82 | U |
| 11141-16-5 | Aroclor-1232 | 82 | U |
| 53469-21-9 | Aroclor-1242 | 82 | U |
| 12672-29-6 | Aroclor-1248 | 82 | U |
| 11097-69-1 | Aroclor-1254 | 93 | J |
| 11096-82-5 | Aroclor-1260 | 47 | J |

KG

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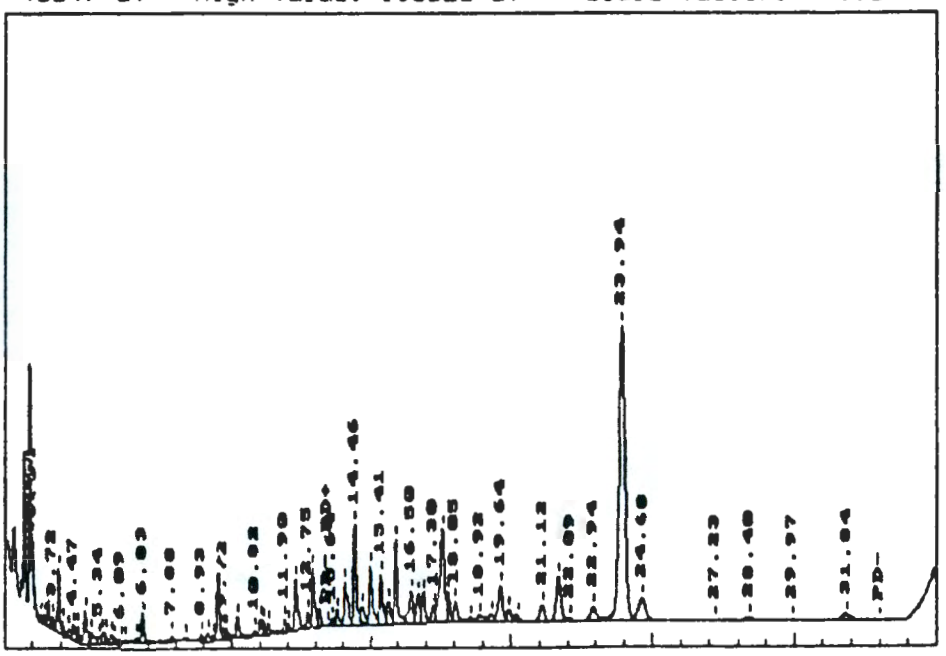
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 47 | 13.19 | Aroclor-1254 | 4.8865 | 1.1196% | 48865 | 7880 | 6.2 | 2 | | | 1.0000E-04 |
| 48 | 13.64 | ~~g-chlordane~~ | 0.0005 | 0.0001% | 15521 | 2452 | 6.3 | 2 | 0 | .5892 | 3.1831E-08 |
| 49 | 13.81 | ~~a-chlordane~~ | 0.0015 | 0.0004% | 47215 | 6549 | 7.2 | 2 | 0 | .4868 | 3.2455E-08 |
| 50 | 14.09 | ~~4,4'-DDE~~ | 0.0069 | 0.0016% | 194109 | 19880 | 9.8 | 2 | 0 | -.2068 | 3.5290E-08 |
| 51 | 14.46 | Aroclor-1254 | 29.8457 | 6.8380% | 298457 | 47341 | 6.3 | 3 | | | 1.0000E-04 |
| 52 | 14.69 | ~~Dieldrin~~ | 0.0032 | 0.0007% | 86026 | 7728 | 11.1 | 4 | 0 | .4237 | 3.7280E-08 |
| 53 | 15.01 | | 24.0527 | 5.5107% | 240527 | 26992 | 8.9 | 2 | | | 1.0000E-04 |
| 54 | 15.41 | ~~Endrin~~ | 0.0067 | 0.0015% | 181575 | 23057 | 7.9 | 2 | 0 | .1305 | 3.7142E-08 |
| 55 | 15.66 | | 9.1142 | 2.0882% | 91142 | 10442 | 8.7 | 2 | | | 1.0000E-04 |
| 56 | 15.94 | | 30.7980 | 7.0562% | 307980 | 39591 | 7.8 | 2 | | | 1.0000E-04 |
| 57 | 16.50 | | 14.6643 | 3.3598% | 146643 | 14759 | 9.9 | 2 | | | 1.0000E-04 |
| 58 | 16.75 | | 11.5164 | 2.6385% | 115164 | 13708 | 8.4 | 2 | | | 1.0000E-04 |
| 59 | 16.93 | | 12.8438 | 2.9427% | 128438 | 14674 | 8.8 | 2 | | | 1.0000E-04 |
| 60 | 17.30 | | 6.4199 | 1.4709% | 64199 | 7627 | 8.4 | 2 | | | 1.0000E-04 |
| 61 | 17.60 | ~~4,4'-DDD~~ | 0.0320 | 0.0073% | 514672 | 44422 | 11.6 | 2 | 0 | .3867 | 6.2251E-08 |
| 62 | 17.80 | ~~Endosulfan II~~ | 0.0121 | 0.0028% | 113031 | 14073 | 8.0 | 2 | 0 | .5547 | 1.0680E-07 |
| 63 | 18.05 | | 10.3571 | 2.3729% | 103571 | 9510 | 10.9 | 3 | | | 1.0000E-04 |
| 65 | 18.60 | ~~4,4'-DDT~~ | 0.0015 | 0.0003% | 32203 | 1767 | 18.2 | 4 | 0 | .9761 | 4.7288E-08 |
| 66 | 18.92 | | 5.2253 | 1.1972% | 52253 | 2897 | 18.0 | 2 | | | 1.0000E-04 |
| 67 | 19.32 | | 4.2942 | 0.9838% | 42942 | 3564 | 12.0 | 2 | | | 1.0000E-04 |
| 68 | 19.64 | | 18.8959 | 4.3292% | 188959 | 17122 | 11.0 | 2 | | | 1.0000E-04 |
| 69 | 19.95 | Aroclor-1260 | 6.0631 | 1.3891% | 60631 | 5589 | 10.8 | 2 | | | 1.0000E-04 |
| 70 | 20.24 | ~~Endrin Aldehyde~~ Aroclor-1260 | 0.0014 | 0.0003% | 33866 | 2915 | 11.6 | 2 | 0 | .3292 | 4.1017E-08 |
| 71 | 21.12 | | 9.6873 | 2.2195% | 96873 | 7831 | 12.4 | 1 | | | 1.0000E-04 |
| 72 | 21.69 | Aroclor-1260 | 26.8506 | 6.1518% | 268506 | 21636 | 12.4 | 3 | | | 1.0000E-04 |
| 73 | 22.09 | | 1.1318 | 0.2593% | 11318 | 842 | 13.4 | 4 | | | 1.0000E-04 |
| 74 | 22.94 | ~~Methoxychlor~~ | 0.0074 | 0.0017% | 99304 | 6409 | 15.5 | 2 | 0 | -.5987 | 7.4199E-08 |
| 75 | 23.94 | DBC | 0.0952 | 0.0218% | 2048645 | 140030 | 14.6 | 2 | 0 | 1.199 | 4.6457E-08 |
| 76 | 24.68 | Aroclor-1260 | 20.2891 | 4.6485% | 202891 | 10955 | 18.5 | 2 | | | 1.0000E-04 |
| 79 | 27.23 | | 1.5196 | 0.3482% | 15196 | 511 | 29.7 | 2 | | | 1.0000E-04 |
| 80 | 28.40 | Aroclor-1260 | 3.6617 | 0.8389% | 36617 | 1504 | 24.4 | 2 | | | 1.0000E-04 |
| 81 | 29.97 | | 1.4478 | 0.3317% | 14478 | 521 | 27.8 | 1 | | | 1.0000E-04 |
| 82 | 31.84 | | 8.9960 | 2.0611% | 89960 | 3054 | 29.5 | 1 | | | 1.0000E-04 |

Total Area Aroclor-1260 = 602511 : ~~45.9~~ 45.39 ug/kg

TOTAL AMOUNT = 436.4696 Aroclor-1254 = 169534 : 90.57 ug/kg

Data File = A:B20350.PTS Printed on 02-11-1992 at 15:12:16 cy 2-12-92
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 45847 uv High Value: 196325 uv Scale factor: 0.5



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***** EXTERNAL STANDARD TABLE *****

********************* 02-05-1992 10:33:27 Version 4.1 *********************

* Sample Name: CLP,B01CG3/A201029-02A;S Data File: A:A20350 *

* Date: ~~02-04-1992~~ ~~18:56:57~~ Method: A:ACLP088 02-03-1992 15:59:35 # 301*

* Interface: 1 Cycle#: 'F,54' 50 Operator CP Channel#: 0 Vial#: N.A. *

* Starting Peak Width: 10 Threshold: 1 Area Threshold: 100 *

************************************************************************

* Instrument Type: HP5890~~0~~ B Column Type: DB-608, DB-1701 *

* Solvent Description: *

* Conditions: 160D,5D/M,230D,15M(35M RUN) *

* Detector 0: ECD C Detector 1: ECD *

* Misc. Information: 02-03-92, ~~P~~, Col 0.53mm, 4UL *

************************************************************************

Starting Delay: 2.00 Ending retention time: 35.00

Area reject: 5000 One sample per 1.002 sec.

Amount injected: ~~1.00~~ 4.00 Dilution factor: 1.00

Sample Weight: 1.000000

| PEAK NUM | RET TIME | PEAK NAME | CONCENTRATION in ug/ml | NORMALIZED CONC | AREA | HEIGHT | AREA/ HEIGHT | BL | REF PEAK | % DELTA RET TIME | CONC/AREA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.00 | | 1.9161 | 1.2485% | 19161 | 4906 | 3.9 | 1 | | | 1.0000E-04 |
| 2 | 3.14 | | 1.6684 | 1.0871% | 16684 | 3805 | 4.4 | 1 | | | 1.0000E-04 |
| 3 | 3.50 | | 1.6981 | 1.1065% | 16981 | 1395 | 12.2 | 2 | | | 1.0000E-04 |
| 4 | 3.85 | | 1.5851 | 1.0329% | 15851 | 1349 | 11.7 | 2 | | | 1.0000E-04 |
| 6 | 4.37 | | 1.1273 | 0.7346% | 11273 | 2155 | 5.2 | 2 | | | 1.0000E-04 |
| 7 | 4.59 | | 1.0996 | 0.7165% | 10996 | 2064 | 5.3 | 2 | | | 1.0000E-04 |
| 8 | 5.34 | | 0.7586 | 0.4943% | 7586 | 812 | 9.3 | 2 | | | 1.0000E-04 |
| 9 | 5.64 | | 1.6788 | 1.0940% | 16788 | 2539 | 6.6 | 2 | | | 1.0000E-04 |
| 11 | 6.21 | | 1.2291 | 0.8009% | 12291 | 975 | 12.6 | 2 | | | 1.0000E-04 |
| 17 | 8.65 | | 0.5203 | 0.3391% | 5203 | 616 | 8.4 | 2 | | | 1.0000E-04 |
| 22 | 9.65 | | 10.4122 | 6.7847% | 104122 | 16203 | 6.4 | 3 | | | 1.0000E-04 |
| 23 | 9.87 | | 0.5151 | 0.3356% | 5151 | 1054 | 4.9 | 4 | | | 1.0000E-04 |
| 25 | 10.68 | | 0.7000 | 0.4561% | 7000 | 589 | 11.9 | 2 | | | 1.0000E-04 |
| 28 | 11.42 | | 3.1282 | 2.0384% | 31282 | 4569 | 6.8 | 2 | | | 1.0000E-04 |
| 29 | 11.57 | | 1.4675 | 0.9562% | 14675 | 1657 | 8.9 | 2 | | | 1.0000E-04 |
| 30 | 12.55 | | 1.1381 | 0.7416% | 11381 | 1190 | 9.6 | 2 | | | 1.0000E-04 |
| 32 | 12.99 | | 1.0553 | 0.6877% | 10553 | 1181 | 8.9 | 2 | | | 1.0000E-04 |
| 33 | 13.26 | ~~Hept. epoxide~~ | 0.0010 | 0.0006% | 6997 | 808 | 8.7 | 2 | 0 | .1193 | 1.3844E-07 |
| 34 | 13.46 | | 1.2579 | 0.8197% | 12579 | 2026 | 6.2 | 2 | | | 1.0000E-04 |
| 35 | 13.67 | | 1.3101 | 0.8537% | 13101 | 1606 | 8.2 | 2 | | | 1.0000E-04 |
| 36 | 13.97 | Aroclor-1254 | 4.7589 | 3.1010% | 47589 | 7463 | 6.4 | 2 | | | 1.0000E-04 |
| 37 | 14.19 | Aroclor-1254 | 5.5442 | 3.6127% | 55442 | 8121 | 6.8 | 2 | | | 1.0000E-04 |
| 38 | 14.46 | ~~a-chlordane~~ Aroclor-1254 | 0.0032 | 0.0021% | 22680 | 3497 | 6.5 | 2 | 0 | .1954 | 1.4069E-07 |
| 39 | 14.71 | | 0.6320 | 0.4118% | 6320 | 1031 | 6.1 | 2 | | | 1.0000E-04 |
| 40 | 15.26 | Aroclor-1254 | 0.9393 | 0.6120% | 9393 | 1379 | 6.8 | 1 | | | 1.0000E-04 |
| 41 | 15.58 | ~~4,4'-DDE~~ | 0.0020 | 0.0013% | 12187 | 1368 | 8.9 | 2 | 0 | .2387 | 1.6270E-07 |
| 42 | 15.86 | ~~Dieldrin~~ | 0.0048 | 0.0031% | 28647 | 4358 | 6.6 | 2 | 0 | .6408 | 1.6759E-07 |
| 43 | 16.18 | | 1.3233 | 0.8623% | 13233 | 1974 | 6.7 | 2 | | | 1.0000E-04 |
| 44 | 16.36 | | 8.2439 | 5.3718% | 82439 | 10829 | 7.6 | 2 | | | 1.0000E-04 |

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| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 45 | 16.73 | | 2.0749 | 1.3520% | 20749 | 1644 | 12.6 | 2 | | | 1.0000E-04 |
| 46 | 16.95 | Aroclor-1254 | 4.5120 | 2.9401% | 45120 | 5090 | 8.9 | 2 | | | 1.0000E-04 |
| 47 | 17.26 | | 6.5641 | 4.2773% | 65641 | 6547 | 10.0 | 2 | | | 1.0000E-04 |
| 48 | 17.73 | ~~Endrin~~ | 0.0148 | 0.0097% | 89696 | 9297 | 9.6 | 2 | 0 | .9760 | 1.6521E-07 |
| 49 | 18.22 | | 0.5752 | 0.3748% | 5752 | 594 | 9.7 | 2 | | | 1.0000E-04 |
| 51 | 18.92 | | 2.1508 | 1.4015% | 21508 | 2413 | 8.9 | 1 | | | 1.0000E-04 |
| 52 | 19.43 | | 1.9860 | 1.2941% | 19860 | 2065 | 9.6 | 2 | | | 1.0000E-04 |
| 53 | 19.79 | | 4.6727 | 3.0448% | 46727 | 3906 | 12.0 | 2 | | | 1.0000E-04 |
| 54 | 20.12 | | 3.8920 | 2.5361% | 38920 | 3369 | 11.6 | 2 | | | 1.0000E-04 |
| 55 | 20.50 | ~~4,4'-DDT~~ | 0.0223 | 0.0146% | 104680 | 8902 | 11.8 | 2 | 0 | .4094 | 2.1349E-07 |
| 56 | 20.77 | ~~Endrin Aldehyde~~ | 0.0061 | 0.0040% | 30165 | 2800 | 10.8 | 2 | 0 | -.7131 | 2.0144E-07 |
| 57 | 21.27 | Aroclor-1260 | 2.1502 | 1.4011% | 21502 | 1744 | 12.3 | 2 | | | 1.0000E-04 |
| 58 | 21.54 | ~~Endo. sulfate~~ | 0.0007 | 0.0005% | 5042 | 477 | 10.6 | 2 | 0 | -1.603 | 1.4332E-07 |
| 59 | 22.31 | Aroclor 1260 | 0.9764 | 0.6362% | 9764 | 659 | 14.8 | 1 | | | 1.0000E-04 |
| 61 | 23.29 | | 2.2411 | 1.4604% | 22411 | 1523 | 14.7 | 2 | | | 1.0000E-04 |
| 62 | 23.78 | Aroclor-1260 | 1.9169 | 1.2491% | 19169 | 1533 | 12.5 | 2 | | | 1.0000E-04 |
| 63 | 24.09 | | 2.8268 | 1.8420% | 28268 | 1943 | 14.5 | 2 | | | 1.0000E-04 |
| 64 | 24.53 | | 2.9864 | 1.9460% | 29864 | 1350 | 22.1 | 2 | | | 1.0000E-04 |
| 65 | 28.18 | ~~DDE~~ Aroclor-1260 | 0.0138 | 0.0090% | 72649 | 5906 | 12.3 | 2 | 0 | -.1205 | 1.8948E-07 |
| 66 | 25.53 | DBC | 54.1376 | 35.2768% | 541376 | 33301 | 16.3 | 2 | | | 1.0000E-04 |
| 67 | 29.61 | ~~Endrin ketone~~ Aroclor-1260 | 0.0025 | 0.0016% | 17844 | 892 | 20.0 | 2 | 0 | .3222 | 1.4055E-07 |
| 68 | 30.19 | | 0.7590 | 0.4946% | 7590 | 436 | 17.4 | 2 | | | 1.0000E-04 |
| 69 | 30.66 | | 3.2642 | 2.1270% | 32642 | 1732 | 18.8 | 2 | | | 1.0000E-04 |

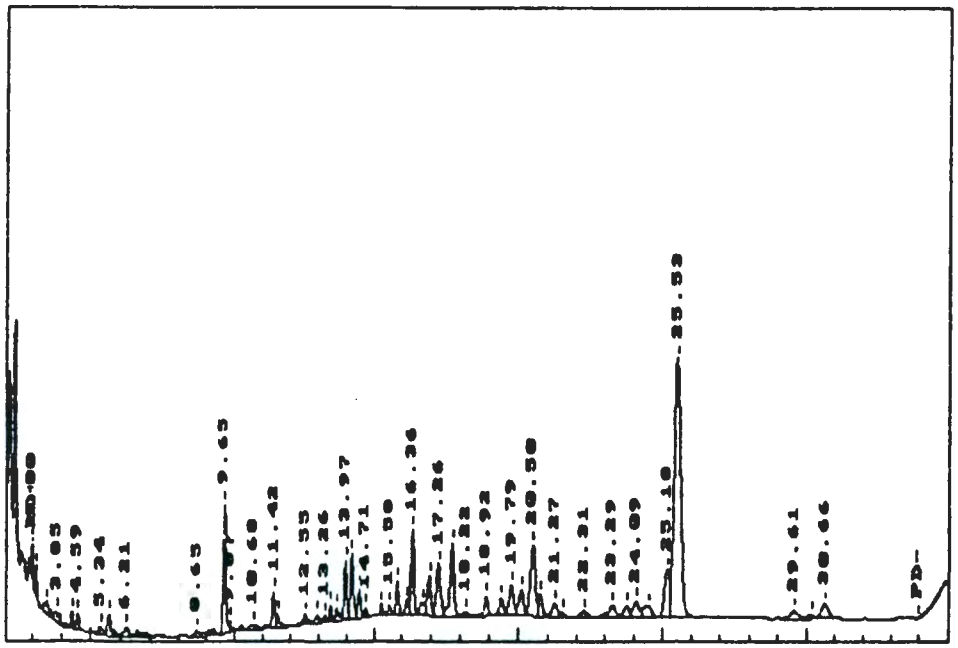
Total Area Aroclor-1260 = 140928 : 46.01 ug/kg

Aroclor-1254 = 180224 : 86.11 ug/kg

TOTAL AMOUNT = 153.4653

Data File = A:A20350.FTS Printed on 02-05-1992 at 10:33:47
Start time: 2.00 min. Stop time: 35.02 min. Offset: 0 mv.
Low Value: 15174 uv High Value: 55643 uv Scale factor: 0.5

cy 2-Rg



## 3.2 ANALYSIS

### 3.2.1 VOLATILE ANALYSIS COMMENTS :

LOW LEVEL SOIL :

The samples were analyzed by heated purge within the CLP SOW holding times. All of the QC results were within the limits specified by the EPA CLP SOW.

TUNES :

All of the BFB tunes are injected directly into the GC/MS instrument.

### 3.2.2 PESTICIDE/PCB ANALYSIS COMMENTS :

SEQUENCE NOTES :

The sequence was started on 2/3/92 and analyzed in accordance with the EPA CLP SOW.

During the sequence the computer program was interrupted causing it to stop collecting data from the data systems' storage box (interface box). This interface box can hold only a limited number of sample results after which it begins to overwrite previously stored files. Because of this the data files for the EVAL B standard analyzed at 5:02 on 2/4/92 (B20330 and A20330) and the data files for five sample injections (B20331-35 and A20331-35) were over written. The EVAL B standard and the five samples were set up and re-injected later in the sequence.

The sequence was interrupted after the injection made at 8:12 on 2/4/92 to determine what samples needed to be re-injected. The sequence was resumed with the injection of EVAL B at 9:59 on 2/4/92. EVAL B was injected to preserve the standard sequence.

IND A and IND B were injected consecutively in the sequence at 21:25 and 22:03 on 2/4/92. IND A (B20354) was used for quantitation.

9213928.0811

300-FF-1 OPERABLE UNIT DATA VALIDATION
WESTINGHOUSE HANFORD COMPANY
DISTRIBUTION & FILE RECORD FORM

Task E-92-15/2978-40
2/3/92
Rev. 0

Document Title: A201029 Gan Chen
Document Number:

Date: 10/20/92
Originator: CMR

HCS - WHC/E - 92 15/T 1-100

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| PROJECT FILES | | |
|---|---|---|
| MANAGEMENT | | Comments |
| M-1 Correspondence | | |
| M-2 Meeting Minutes | | |
| M-3 Telecons | | |
| M-4 Statements of Work, Task Orders | | |
| M-5 Purchase Requisitions and Receipt documentation | | |
| M-6 Other Management Documents Generated | | |
| M-7 Financial Data | | |
| SOURCE DATA | | |
| S-1 Original Data Packages | | |
| S-2 Memos Transmitting Original Source Packages to WHC | | |
| S-3 Other Original Data Documentation | | |
| TASK TECHNICAL | | |
| T-1 Validation Calculations and Notated Packages | X | |
| T-2 Progress Memos | | |
| T-3 Completeness Checklists | | |
| T-4 Draft Summary Report(s) | | |
| T-5 Final Summary Report(s) | | |
| T-6 Draft Summary Report Review Comments | | |
| T-7 Other Technical Documentation | | |

FORM

9213528.0812

WHC-SD-EN-SPP-002, Rev. 1

# WET CHEMISTRY DATA VALIDATION CHECKLIST - FORM A-7

| | | |
|---|---|---|
| PROJECT: | REVIEWER: SS | DATE: 5-18-92 |
| LABORATORY: TMA/ARL | CASE: 01-029 | SDG: |
| SAMPLES/MATRIX: B01CG2 (soil) | | |
| B01CG3 (") | | |
| B01CF4 (") | | |
| B01CG0 (") | | |
| | | |

HCS - WHC/E - 92 15/S 1-029

## 1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal of the omitted data.

| Data Package Item | Present?: | Yes | No | N/A |
|---|---|---|---|---|
| Case Narrative | | ✓ | | |
| Cover Page | | ✓ | | |
| Traffic Reports/Chain-of-Custody | | ✓ | | |
| Sample Analysis Data Report Forms | | ✓ | SS ✓ | |
| Standards Data | | ✓ | ✓ | |
| QC Summary | | | | |
| Blanks Summary Report Forms | | | ✓ | |
| Spike Sample Recovery Report Forms | | ✓ | | |
| Duplicate Sample Analysis Report Forms | | ✓ | | |
| Laboratory Control Sample Report Forms | | | | |
| Raw Data | | | | |
| Ion Chromatograph Chromatograms | | ✓ | | |
| TOC and TOX Instrument Printouts | | ✓ | | |
| Laboratory Bench Sheets | | | ✓ | |
| Additional Data | | | | |
| Laboratory Sample Preparation Logs | | ✓ | | |
| Instrument Run Logs | | | ✓ | |
| Internal Laboratory Chain-of-Custory | | | ✓ | |
| Percent Solids Analysis Records | | | | |
| Reduction Formulae | | | | |
| Chemist Notebook Pages | | | | |

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## 2. HOLDING TIMES

| | Yes | No | N/A |
|---|---|---|---|
| Were all samples analyzed within holding times? | | | |

Action: If any holding times were exceeded qualify all affected results as estimated (J for detects and UJ for nondetects).

3. INITIAL CALIBRATIONS

| | | | |
|---|---|---|---|
| Were all instruments calibrated daily, each set-up time and were the proper number of standards used? | Yes | No | N/A |
| Are the correlation coefficients ≥0.995? | Yes | No | N/A |
| Was a balance check conducted prior to the TDS analysis? | Yes | No | N/A |
| Was the titrant normality checked? | Yes | No | N/A |

ACTION: Qualify all data as unusable (R) if reported from an analysis in which the above criteria were not met.

4. INITIAL AND CONTINUING CALIBRATION VERIFICATION

| | | | |
|---|---|---|---|
| Have ICV and CCV been analyzed at the proper frequency? | Yes | No | N/A |
| Are ICV and CCV percent recoveries within control? | Yes | No | N/A |
| Are there calculation errors? | Yes | No | N/A |

ACTION: Qualify all affected data in accordance with the validation requirements.

5. LABORATORY BLANKS

| | | | |
|---|---|---|---|
| Are target analytes present in the laboratory blanks? | Yes | No | N/A |

ACTION: Qualify all associated sample results for any analyte <5 times the amount in any laboratory blank as nondetected (U) and list the affected samples and analytes below.

6. FIELD BLANKS

| | | | |
|---|---|---|---|
| Are target analytes present in the field blanks? | Yes | No | N/A |

ACTION: Qualify all sample results for any analyte <5 times the amount in any valid field blank as nondetected (U).

7. MATRIX SPIKE SAMPLE ANALYSIS

| | | | |
|---|---|---|---|
| Are spike recoveries within the acceptance limits? | Yes | No | N/A |

ACTION: If the sample concentration exceeds the spike concentration by a factor of 4 or more, and spike recoveries are outside the acceptance limits, no qualification is necessary. If spike recovery is outside the control limits and the sample results are >CRQL, qualify the data as estimated (J). If the spike recovery is <30% and the sample results are less then the IDL qualify the data as unusable (R).

## 8. LABORATORY CONTROL SAMPLE

Are percent recoveries within the acceptance limits? Yes No N/A

Are there calculation errors? Yes No N/A

ACTION: Qualify the affected results according to the following requirements:

AQUEOUS LCS - Qualify as estimated (J), all sample results > IDL, for which the LCS %R falls within the range 50-79% or > 120%. Qualify as estimated (UJ), all sample results < IDL, for which the LCS falls within the range of 50-79%. Qualify as unusable (R) all sample results, for which the LCS %R < 50%.

SOLID LCS - Qualify as estimated (J), all sample results > IDL for which the LCS %R is outside the established control limits. Qualify as estimated (UJ), all sample results < IDL for which the LCS %R are lower than the established control limits.

## 9. PERFORMANCE AUDIT ANALYSES

Are the performance audit sample results within the acceptance limits? Yes No N/A

ACTION: Note the results of the performance audit samples in the validation narrative.

## 10. DUPLICATE SAMPLE ANALYSIS

Are RPD values within the acceptance limits? Yes No N/A

Action: Qualify the results for all associated samples of the same matrix as estimated (J) if the RPD falls outside the acceptance limits.

## 11. FIELD DUPLICATE SAMPLES

Do RPD values exceed the acceptance limits? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

## 12. FIELD SPLIT SAMPLES

Do RPD values exceed the acceptance limits? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

## 13. ANALYTE QUANTITATION AND DETECTION LIMITS

| | | | |
|---|---|---|---|
| Have results been reported and calculated correctly? | Yes | No | N/A |
| Are instrument detection limits below the CRDL? | Yes | No | N/A |

Action: If analyte quantitation is in error, contact the laboratory for explanation. If errors or deficiencies can not be resolved with the laboratory, qualify associated data as unusable (R).

## 14. OVERALL ASSESSMENT AND SUMMARY

| | | | |
|---|---|---|---|
| Has the laboratory conducted the analysis in accordance with the analytical SOW? | Yes | No | N/A |
| Were project specific data quality objectives met for this analysis? | Yes | No | N/A |

ACTION: Summarize all the data qualifications and complete the data validation narrative as specified in Section 10.0 of the data validation requirements.

COMMENTS (attach additional sheets as necessary):

# INORGANIC ANALYSIS DATA VALIDATION CHECKLIST - FORM A-6

| | | |
|---|---|---|
| PROJECT: | REVIEWER: SS | DATE: 5-18-92 |
| LABORATORY: TMA/ALI | CASE: N2-01-052 ~~21-052~~ | SDG: |
| SAMPLES/MATRIX: B01C79 (soil) | | |
| B01C60 ( " ) | | |
| B01C03 ( " ) | | |
| B01C02 ( " ) | | |
| | | |

## 1. COMPLETENESS AND CONTRACT COMPLIANCE

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal of the omitted data.

| Data Package Item | Present?: Yes | No | N/A |
|---|---|---|---|
| Case Narrative | ✓ | | |
| Cover Page | ✓ | | |
| Traffic Reports | ✓ | | |
| Sample Data | | | |
| Inorganic Analysis Data Sheets | ✓ | | |
| Standards Data | | | |
| Initial and Continuing Calibration Verification | ✓ | | |
| CRDL Standard for AA and ICP | ✓ | | |
| QC Summary | | | |
| Blanks | ✓ | | |
| ICP Interference Check Summary | ✓ | | |
| Spike Sample Recovery | ✓ | | |
| Post-Digestion Spike Sample Recovery | ✓ | | |
| Duplicate | ✓ | | |
| Laboratory Control Sample | ✓ | | |
| Standard Addition Results | ✓ | | |
| ICP Serial Dilutions | ✓ | | |
| Instrument Detection Limits | ✓ | | |
| ICP Interelement Correction Factors | ✓ | | |
| ICP Linear Ranges | ✓ | | |
| Preparation Log | ✓ | | |
| Analysis Run Log | ✓ | | |
| Raw Data | | | |
| ICP Raw Data | ✓ | | |
| Furnace AA Raw Data | ✓ | | |
| Mercury Raw Data | ✓ | | |
| Cyanide Raw Data | | ✓ | |
| Additional Data | | | |
| Internal laboratory chain-of-custody | ✓ | | |
| Laboratory Sample Preparation Records | ✓ | | |

| Data Package Item | Present?: Yes | No | N/A |
|---|---|---|---|
| Percent Solids Analysis Records | ___ | ✓ | ___ |
| Reduction Formulae | ___ | ✓ | ___ |
| Instrument Run Logs | ___ | ✓ | ___ |
| Chemist Notebook Pages | ___ | ✓ | ___ |

## 2. HOLDING TIMES

| | | | |
|---|---|---|---|
| Have all samples been analyzed within holding times? | Yes | No | N/A |

ACTION: If any holding times have been exceeded qualify all affected results as estimated (J for detects and UJ for nondetects).

## 3. INITIAL CALIBRATIONS

| | | | |
|---|---|---|---|
| Were all instruments calibrated daily, each set-up time and were the proper number of standards used? | Yes | No | N/A |
| Are the correlation coefficients ≥0.995? | Yes | No | N/A |
| Was a midrange cyanide standard distilled? | Yes | No | N/A |

ACTION: Qualify all data as unusable if reported from an analysis in which an instrument was not calibrated or was calibrated with less than the minimum number of standards. Qualify associated sample results > IDL as estimated (J) and results < IDL as estimated (UJ), if the correlation coefficient is <0.995 or the laboratory did not distill the midrange cyanide standard.

## 4. INITIAL AND CONTINUING CALIBRATION VERIFICATION

| | | | |
|---|---|---|---|
| Are ICV and CCV percent recoveries within control? | Yes | No | N/A |
| Are there calculation errors? | Yes | No | N/A |

ACTION: Qualify all affected data in accordance with Section 8.3 of the validation requirements. If calculation errors are noted, contact the laboratory for clarification.

## 5. ICP INTERFERENCE CHECK SAMPLE

| | | | |
|---|---|---|---|
| Has an ICS sample been analyzed at the proper frequency? | Yes | No | N/A |
| Are the AB solution %R values within control? | Yes | No | N/A |
| Are there calculation errors? | Yes | No | N/A |

ACTION: Qualify all affected data in accordance with Section 8.3 of the validation requirements. If calculation errors are noted, contact the laboratory for clarification.

6. LABORATORY BLANKS

Are target analytes present in the laboratory blanks? Yes No N/A

ACTION: Qualify all associated sample results for any analyte <5 times the amount in any laboratory blank as nondetected (U). If analyte concentrations in the blank are >CRDL or below the negative CRDL, verify the laboratory has redigested and reanalyzed associated samples with analyte concentrations < 10 times the blank concentration. If the laboratory has not redigested and reanalyzed the samples, note in the validation narrative.

7. FIELD BLANKS

Are target analytes present in the field blanks? Yes No N/A

ACTION: Qualify all sample results for any analyte <5 times the amount in any valid field blank as nondetected (U).

8. MATRIX SPIKE SAMPLE ANALYSIS

Are spike recoveries within the control limits? Yes No N/A

ACTION: Qualify the affected sample data according to the following requirements:

If spike recovery is >125% and sample results are <IDL no qualification is required. If spike recovery is >125% or <75% qualify all positive results as estimated (J). If spike recovery is 30% to 74% qualify all nondetects as estimated (UJ). If spike recovery is <30%, reject all nondetects (R). If the field blank has been used for spike analysis, note in the validation narrative.

9. LABORATORY CONTROL SAMPLE

Are percent recoveries within the acceptance limits? Yes No N/A

Are there calculation errors? Yes No N/A

ACTION: Qualify the sample data according to the following requirements:

AQUEOUS LCS - Qualify as estimated (J), all sample results >IDL, for which the LCS %R falls within the range 50-79% or >120%. Qualify as estimated (UJ), all sample results <IDL, for which the LCS falls within the range of 50-79%. Qualify as unusable (R) all sample results, for which the LCS %R <50%.

SOLID LCS - Qualify as estimated (J), all sample results >IDL for which the LCS result is outside the established control limits. Qualify as estimated (UJ), all sample results <IDL for which the LCS %R are lower than the established control limits.

## 10. PERFORMANCE AUDIT ANALYSES

Are the performance audit sample results within the acceptance limits? Yes No N/A

ACTION: Note the results of the performance audit sample analyses in the data validation narrative.

## 11. DUPLICATE SAMPLE ANALYSIS

Are RPD values acceptable? Yes No N/A

ACTION: Qualify the results for all associated samples of the same matrix as estimated (J) if the RPD results fall outside the appropriate control limits. If field blanks were used for laboratory duplicates, note in the validation narrative.

## 12. ICP SERIAL DILUTION

Are the serial dilution results acceptable? Yes No N/A

Is there evidence of negative interference? Yes No N/A

ACTION: Qualify the associated data as estimated (J) for those analytes in which the %D is outside the control limits. If evidence of negative interference is found, use professional judgment to qualify the data.

## 13. FIELD DUPLICATE SAMPLES

Do the RPD values exceed the control limits? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

## 14. FIELD SPLIT SAMPLES

Do the RPD values exceed the control limits? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

## 1516. FURNACE ATOMIC ABSORPTION QUALITY CONTROL

Do all applicable analyses have duplicate injections? Yes No N/A

Are applicable duplicate injection RSD values within control? Yes No N/A

If no, were samples rerun once as required? Yes No N/A

Does the RSD for the rerun fall within the control limits? Yes No N/A

Were analytical spike recoveries within the control limits? Yes No N/A

| | | | |
|---|---|---|---|
| If no, were MSA analyses performed when required? | Yes | No | N/A |
| Are MSA correlation coefficients $\geq$0.995? | Yes | No | N/A |
| If no, was a second MSA analysis performed? | Yes | No | N/A |

ACTION: If duplicate injections are outside the acceptance limits and the sample has not been reanalyzed or the reanalysis is outside the acceptance limits, qualify the associated data as estimated (J for detects and UJ for nondetects). If the analytical spike recovery is <40% qualify detects as estimated (J). If the analytical spike recovery is $\geq$10% but <40%, qualify all nondetects as estimated (UJ) and if the analytical spike recovery is < 10%, reject all nondetects (R). If the sample absorbance is <50% of the analytical spike absorbance and the analytical spike recovery is < 85% or > 115%, qualify all results as estimated (J for detects and UJ for nondetects). If method of standard additions (MSA) was required but was not performed, the MSA samples were spiked incorrectly, or the MSA correllation coefficient was <0.995, qualify the associated detected results as estimated (J).

## 17. ANALYTE QUANTITATION AND DETECTION LIMITS

| | | | |
|---|---|---|---|
| Have results been reported and calculated correctly? | Yes | No | N/A |
| Are results within the calibrated range of the instruments and within the linear range of the ICP? | Yes | No | N/A |
| Are all detection limits below the CRQL? | Yes | No | N/A |

Action: If analyte quantitation is in error, contact the laboratory for explanation. If errors or deficiencies can not be resolved with the laboratory, qualify associated data as unusable (R).

## 18. OVERALL ASSESSMENT AND SUMMARY

| | | | |
|---|---|---|---|
| Has the laboratory conducted the analysis in accordance with the analytical SOW? | Yes | No | N/A |
| Were project specific data quality objectives met for this analysis? | Yes | No | N/A |

ACTION: Summarize all the data qualifications and complete the data validation narrative as specified in Section 10.0 of the data validation requirements.

COMMENTS (attach additional sheets as necessary):

WHC-SD-EN-SPP-002, Rev. 1

WET CHEMISTRY DATA VALIDATION CHECKLIST - FORM A-7

| PROJECT: | REVIEWER: SS | DATE: 05-18-92 |
|---|---|---|
| LABORATORY: TMA/AALI | CASE: 61-029 | SDG: |
| SAMPLES/MATRIX: B01CG2 (SOIL) | | |
| B01CG3 (") | | |
| B01CF9 (") | | |
| B01CG0 (") | | |
| | | |

1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal of the omitted data.

| Data Package Item | Present?: Yes | No | N/A |
|---|---|---|---|
| Case Narrative | ✓ | | |
| Cover Page | ✓ | | |
| Traffic Reports/Chain-of-Custody | ✓ | | |
| Sample Analysis Data Report Forms | ✓ | ✓ | |
| Standards Data | ✓ | ✓ | |
| QC Summary | | | |
| Blanks Summary Report Forms | | ✓ | |
| Spike Sample Recovery Report Forms | ✓ | | |
| Duplicate Sample Analysis Report Forms | ✓ | | |
| Laboratory Control Sample Report Forms | | ✓ | |
| Raw Data | | | |
| Ion Chromatograph Chromatograms | ✓ | | |
| TOC and TOX Instrument Printouts | ✓ | | |
| Laboratory Bench Sheets | | ✓ | |
| Additional Data | | | |
| Laboratory Sample Preparation Logs | ✓ | | |
| Instrument Run Logs | | ✓ | |
| Internal Laboratory Chain-of-Custory | | ✓ | |
| Percent Solids Analysis Records | | ✓ | |
| Reduction Formulae | | ✓ | |
| Chemist Notebook Pages | | ✓ | |

2. HOLDING TIMES

Ammon. N / pH

Were all samples analyzed within holding times? Yes (No) N/A

Action: If any holding times were exceeded qualify all affected results as estimated (J for detects and UJ for nondetects).

## 3. INITIAL CALIBRATIONS

| | | | |
|---|---|---|---|
| Were all instruments calibrated daily, each set-up time and were the proper number of standards used? | Yes | No | N/A |
| Are the correlation coefficients ≥0.995? | Yes | No | N/A |
| Was a balance check conducted prior to the TDS analysis? | Yes | No | N/A |
| Was the titrant normality checked? | Yes | No | N/A |

ACTION: Qualify all data as unusable (R) if reported from an analysis in which the above criteria were not met.

## 4. INITIAL AND CONTINUING CALIBRATION VERIFICATION

| | | | |
|---|---|---|---|
| Have ICV and CCV been analyzed at the proper frequency? | Yes | No | N/A |
| Are ICV and CCV percent recoveries within control? | Yes | No | N/A |
| Are there calculation errors? | Yes | No | N/A |

ACTION: Qualify all affected data in accordance with the validation requirements.

## 5. LABORATORY BLANKS

| | | | |
|---|---|---|---|
| Are target analytes present in the laboratory blanks? | Yes | No | N/A |

ACTION: Qualify all associated sample results for any analyte <5 times the amount in any laboratory blank as nondetected (U) and list the affected samples and analytes below.

## 6. FIELD BLANKS

| | | | |
|---|---|---|---|
| Are target analytes present in the field blanks? | Yes | No | N/A |

ACTION: Qualify all sample results for any analyte <5 times the amount in any valid field blank as nondetected (U).

## 7. MATRIX SPIKE SAMPLE ANALYSIS

| | | | |
|---|---|---|---|
| Are spike recoveries within the acceptance limits? | Yes | No | N/A |

ACTION: If the sample concentration exceeds the spike concentration by a factor of 4 or more, and spike recoveries are outside the acceptance limits, no qualification is necessary. If spike recovery is outside the control limits and the sample results are >CRQL, qualify the data as estimated (J). If the spike recovery is <30% and the sample results are less then the IDL qualify the data as unusable (R).

8. LABORATORY CONTROL SAMPLE

Are percent recoveries within the acceptance limits? Yes No N/A

Are there calculation errors? Yes No N/A

ACTION: Qualify the affected results according to the following requirements:

AQUEOUS LCS - Qualify as estimated (J), all sample results >IDL, for which the LCS %R falls within the range 50-79% or >120%. Qualify as estimated (UJ), all sample results <IDL, for which the LCS falls within the range of 50-79%. Qualify as unusable (R) all sample results, for which the LCS %R <50%.

SOLID LCS - Qualify as estimated (J), all sample results >IDL for which the LCS %R is outside the established control limits. Qualify as estimated (UJ), all sample results <IDL for which the LCS %R are lower than the established control limits.

9. PERFORMANCE AUDIT ANALYSES

Are the performance audit sample results within the acceptance limits? Yes No N/A

ACTION: Note the results of the performance audit samples in the validation narrative.

10. DUPLICATE SAMPLE ANALYSIS

Are RPD values within the acceptance limits? Yes No N/A

Action: Qualify the results for all associated samples of the same matrix as estimated (J) if the RPD falls outside the acceptance limits.

11. FIELD DUPLICATE SAMPLES

Do RPD values exceed the acceptance limits? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

12. FIELD SPLIT SAMPLES

Do RPD values exceed the acceptance limits? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

## 13. ANALYTE QUANTITATION AND DETECTION LIMITS

| | | | |
|---|---|---|---|
| Have results been reported and calculated correctly? | Yes | No | N/A |
| Are instrument detection limits below the CRDL? | Yes | No | N/A |

Action: If analyte quantitation is in error, contact the laboratory for explanation. If errors or deficiencies can not be resolved with the laboratory, qualify associated data as unusable (R).

## 14. OVERALL ASSESSMENT AND SUMMARY

| | | | |
|---|---|---|---|
| Has the laboratory conducted the analysis in accordance with the analytical SOW? | Yes | No | N/A |
| Were project specific data quality objectives met for this analysis? | Yes | No | N/A |

ACTION: Summarize all the data qualifications and complete the data validation narrative as specified in Section 10.0 of the data validation requirements.

COMMENTS (attach additional sheets as necessary): Cal. curves for IC analytes and Ammonia were not done on the same day as sample analysis. ∴ J or UJ

Ammonia Initial calibration data is unreadable. (page 24)

NO CCVs FOR $NO_2$, $NO_3$, F, AMMONIA, $SO_4$.

NO ICV RUN FOR AMMONIA

pH holding time exceeded.

NO RAW DATA FOR AMMONIA BLANK ✓dc

NO FORM 1 REPORT FOR METHOD BLANK ✓dc

9713528.0829

HOLDING TIME SUMMARY - FORM B-1

| SDG: NA | REVIEWER: C Roberts | DATE: 6-19-92 | PAGE 1 OF 1 |
|---|---|---|---|

COMMENTS: CASE 01-029 1/27 1/14 2/14 IC pH Amm. IC pH Amm.

| FIELD SAMPLE ID | IC pH Amm. ANALYSIS TYPE | DATE SAMPLED | IC DATE PREPARED | pH DATE PREPARED | Amm. DATE PREPARED | IC pH Amm. DATE ANALYZED | | | PREP. HOLDING TIME, DAYS | | | ANALYSIS HOLDING TIME, DAYS | | | QUALIFIER | pH Amm. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B01CF9 | WET CHEM | 1-3-92 | 1/27 | 1/14 | 2/14 | 1/27 | 1/14 | 2/14 | 24 | 11 | 42 | 24 | 11 | 42 | | J |
| B01CG0 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | | ↓ |
| B01CG2 | | | | | | | | | | | | | | | | |
| B01CG3 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | | ↓ |





9713528.0830

CALIBRATION DATA SUMMARY - FORM B-2

| SDG: NA | REVIEWER: C Roberts | DATE: 6/22 | | PAGE 1 OF 1 | |
|---|---|---|---|---|---|
| COMMENTS: WET CHEMISTRY CASE # 01-029 | | | | | |
| CALIB. TYPE: | INITIAL CONTINUING | INSTRUMENT: | | | |
| CALIB. DATE | COMPOUND | ~~RF~~ R2 | ~~RSD/%D/%R~~ | SAMPLES AFFECTED | QUALIFIER |
| 1/17/92 | FLUORIDE | .9717 | | ALL | R |
| 2/10, 2/12/92 | AMMONIA | DATA UNREADABLE | | | |
| | | | | | |
| 1/14/92 | pH = buffer at 4.0 and | 10.0 | — | — | — |
| | | | | | |
| | All other anions acceptable | | | | |
| | | | | | |
| | | | | | |
| No anion calib performed same day as analysis | | | | all | J or UJ |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

9713528.0831

WHC-SD-EN-SPP-002, Rev. 1

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

| SDG: NA | REVIEWER: C ROBERTS | DATE: 6/22/92 | PAGE 1 OF 1 |
|---|---|---|---|
| COMMENTS: CASE 01-029 (WET CHEMISTRY) NO TARGET ANALYTES IN I.C. | | | |

| SAMPLE ID | COMPOUND | RESULT | Q | RT | UNITS | 5X RESULT | 10X RESULT | SAMPLES AFFECTED | QUALIFIER |
|---|---|---|---|---|---|---|---|---|---|
| Blank (anions) 1/27/92 8:32 | | — | | | | — | — | — | — |
| | No ammonia blank | | | | | | | | |





9713528.0832

ACCURACY DATA SUMMARY - FORM B-4

| SDG: NA | REVIEWER: C Dobbras | DATE: 6/22 | PAGE 1 OF 1 | |
|---|---|---|---|---|
| COMMENTS: CASE 01-029 (GEN. CHEM.) ALL SPIKE RECOVERYS ACCEPTABLE | | | | |
| SAMPLE ID | COMPOUND | % RECOVERY | SAMPLE(S) AFFECTED | QUALIFIER REQUIRED |
| B01CG2 MS (GNNVS) | All recoveries acceptable | 80 - 99 % | — | — |
| | | | | |
| | | | | |
| 01B3 | $NH_3$ spiked at 5 mg/kg | 4.0 mg/kg = | 80% ✓ | |
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9713528.0033

PRECISION DATA SUMMARY - FORM B-5

| SDG: NA | REVIEWER C ROBERTS | DATE: 6/22 | PAGE 1 OF 1 |
|---|---|---|---|

COMMENTS: CASE 01-029 (GEN. CHEMISTRY) ALL DUPLICATES RPD's ACCEPTABLE

| COMPOUND | SAMPLE ID: | SAMPLE ID: | RPD | SAMPLES AFFECTED | QUALIFIER |
|---|---|---|---|---|---|
| | | | | | |
| (various) B01CG3 dup pH, N-NH3 | 1-7 % | — | ✓ | — | — |
| | | | | | |
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CALCULATION SUMMARY - FORM B-6

A2-01-029

| SDG: A | REVIEWER: KR/AS | DATE: 6/26/92 | PAGE 1 OF 1 |
|---|---|---|---|
| COMMENTS: Level 4 — 100% validated — | | | |

9713528.0836



# APPENDIX AB
# DATA VALIDATION DOCUMENTATION

*Thermo Analytical Laboratories*

*Data Package A201029*

*Conventional Wet Chemistry Analyses*

9716528.0857

THIS APPENDIX CONSISTS OF FIVE ATTACHMENTS

*Attachment 1 - Glossary of Data Qualifiers*

This attachment provides a glossary explaining all data qualifiers applied as a result of the validation.

*Attachment 2 - As Received Laboratory Sample Concentration Reports*

This attachment provides a copy of the as-received sample concentration reports. This may be a tabular summary similar to that provided in Attachment 4, or may be a copy of the laboratory reports (e.g., Form I).

*Attachment 3 - Summary of Data Qualifications (Form B-7)*

This attachment provides a complete summary of all qualifications applied as a result of the validation.

*Attachment 4 - As Qualified Data Summary*

This attachment provides a tabular data summary of all data qualified from the validation.

*Attachment 5 - Data Review Supporting Documentation*

This attachment provides copies of the data validation checklists, data summary forms, telephone contact memoranda and other documentation completed as a result of the data validation.

9715528.0856

# ATTACHMENT 1

## *Glossary of Data Qualifiers*

***U*** - Indicates the compound or analyte was analyzed for and not detected. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

***UJ*** - Indicates the compound or analyte was analyzed for and not detected. Due to quality control deficiencies identified during data validation the value reported may not accurately reflect the sample quantitation limit.

***J*** - Indicates the compound or analyte was analyzed for and detected. The associated value is estimated but the data are useable for decision making processes.

***R*** - Indicates the compound or analyte was analyzed for and due to an identified quality control deficiency the data are unusable.

***NJ*** - Indicates the presumptive evidence of a compound at an estimated value.

***N*** - Indicates presumptive evidence of a compound.

9713528.0839

# ATTACHMENT 2

*As Received Laboratory Sample Concentration Reports*

Received: 01/08/92

Results by Sample

SAMPLE ID B01CG2 FRACTION 01A TEST CODE VCCLPS NAME Anions in Solids - VW232

Date & Time Collected 01/03/92 Category

ANIONS AND WET CHEMISTRY - SOLIDS

| ANALYSIS | METHOD | RESULT | UNITS | LIMIT |
|---|---|---|---|---|
| Fluoride | 300 | <1 | mg/Kg | 1.0 |
| Nitrite | 300 | <1 | mg/Kg | 1.0 |
| Nitrate | 300 | 5.6 | mg/Kg | 2.0 |
| Sulfate | 300 | 41 | mg/Kg | 10.0 |
| pH | 150.1 | 8.9 | pH | 1.0 |
| Ammonia | 350.3 | <0.5 | mg/Kg | 0.5 |
| | | | | |

FORM I

Received: 01/08/92

Results by Sample

SAMPLE ID B01CG3 FRACTION 02A TEST CODE WCCLPS NAME Anions in Solids - WH232

Date & Time Collected 01/03/92 Category

ANIONS AND WET CHEMISTRY - SOLIDS

| ANALYSIS | METHOD | RESULT | UNITS | LIMIT |
|---|---|---|---|---|
| Fluoride | 300 | <1 | mg/Kg | 1.0 |
| Nitrite | 300 | <1 | mg/Kg | 1.0 |
| Nitrate | 300 | 5.5 | mg/Kg | 2.0 |
| Sulfate | 300 | 41 | mg/Kg | 10.0 |
| pH | 150.1 | 9.0 | pH | 1.0 |
| Ammonia | 350.3 | <0.5 | mg/Kg | 0.5 |
| | | | | |

FORM I

9713528.0842

JMA Inc. REPORT Work Order # A2-01-029

Received: 01/08/92

Results by Sample

SAMPLE ID B01CF9 FRACTION 03B TEST CODE WCCLPS NAME Anions in Solids - WH232

Date & Time Collected 01/03/92 Category

ANIONS AND WET CHEMISTRY - SOLIDS

| ANALYSIS | METHOD | RESULT | UNITS | LIMIT |
|---|---|---|---|---|
| Fluoride | 300 | <1 | mg/Kg | 1.0 |
| Nitrite | 300 | <1 | mg/Kg | 1.0 |
| Nitrate | 300 | 6.1 | mg/Kg | 2.0 |
| Sulfate | 300 | 34 | mg/Kg | 10.0 |
| pH | 150.1 | 9.0 | pH | 1.0 |
| Ammonia | 350.3 | <0.5 | mg/Kg | 0.5 |
| | | | | |

FORM I

Received: 01/08/92

Results by Sample

SAMPLE ID B01CG0 FRACTION 04A TEST CODE WCCLPS NAME Anions in Solids - WM232

Date & Time Collected 01/03/92 Category

ANIONS AND WET CHEMISTRY - SOLIDS

| ANALYSIS | METHOD | RESULT | UNITS | LIMIT |
|---|---|---|---|---|
| Fluoride | 300 | <1 | mg/Kg | 1.0 |
| Nitrite | 300 | <1 | mg/Kg | 1.0 |
| Nitrate | 300 | 5.7 | mg/Kg | 2.0 |
| Sulfate | 300 | 43 | mg/Kg | 10.0 |
| pH | 150.1 | 8.8 | pH | 1.0 |
| Ammonia | 350.3 | <0.5 | mg/Kg | 0.5 |
| | | | | |

FORM I

9713528.0844

# ATTACHMENT 3

*Summary of Data Qualifications*

DATA QUALIFICATION SUMMARY - FORM B-7

| SDG: 01-029 | REVIEWER: CER | DATE: 6/22/92 | PAGE 1 OF 1 |
|---|---|---|---|
| COMMENTS: WET CHEMISTRY CASE # 01-029 | | | |
| COMPOUND | QUALIFIER | SAMPLES AFFECTED | REASON |
| AMMONIA | J | ALL | HOLDING TIME VIOLATIO |
| FLUORIDE | R | ALL | BAD $R^2$. |
| pH | J | ALL | Holding time violation |
| all anions | J or UJ | all | calib. not performed same day. |

9713528.0846

# ATTACHMENT 4

*As Qualified Data Summary*

TMA Inc. REPORT

Work Order # A2-01-029

Received: 01/08/92

Results by Sample

SAMPLE ID B01CG2 FRACTION 01A TEST CODE WCCLPS NAME Anions in Solids - WM232

Date & Time Collected 01/03/92 Category

ANIONS AND WET CHEMISTRY - SOLIDS

| ANALYSIS | METHOD | RESULT | UNITS | LIMIT |
|---|---|---|---|---|
| Fluoride | 300 | <1 R | mg/Kg | 1.0 |
| Nitrite | 300 | <1 UJ | mg/Kg | 1.0 |
| Nitrate | 300 | 5.6 J | mg/Kg | 2.0 |
| Sulfate | 300 | 41 J | mg/Kg | 10.0 |
| pH | 150.1 | 8.9 J | pH | 1.0 |
| Ammonia | 350.3 | <0.5 UJ | mg/Kg | 0.5 |

FORM I

UJ

C Thibs

Received: 01/08/92

Results by Sample

SAMPLE ID B01CG3 FRACTION 02A TEST CODE VCCLPS NAME Anions in Solids - VM232

Date & Time Collected 01/03/92 Category

ANIONS AND WET CHEMISTRY - SOLIDS

| ANALYSIS | METHOD | RESULT | UNITS | LIMIT |
|---|---|---|---|---|
| Fluoride | 300 | ~~<1~~ R | mg/Kg | 1.0 |
| Nitrite | 300 | ~~<1~~ UJ | mg/Kg | 1.0 |
| Nitrate | 300 | 5.5 | J mg/Kg | 2.0 |
| Sulfate | 300 | 41 | J mg/Kg | 10.0 |
| pH | 150.1 | 9.0 | J pH | 1.0 |
| Ammonia | 350.3 | ~~<0.5~~ UJ | mg/Kg | 0.5 |
| | | | | |

FORM I

C Tobin
6/22

Page 1 TMA Inc. REPORT Work Order # A2-01-029

Received: 01/08/92 Results by Sample

SAMPLE ID B01CF9 FRACTION 03B TEST CODE VCCLPS NAME Anions in Solids - VM232

Date & Time Collected 01/03/92 Category

ANIONS AND WET CHEMISTRY - SOLIDS

| ANALYSIS | METHOD | RESULT | UNITS | LIMIT |
|---|---|---|---|---|
| Fluoride | 300 | ~~<1~~ R | mg/Kg | 1.0 |
| Nitrite | 300 | ~~<1~~ UJ | mg/Kg | 1.0 |
| Nitrate | 300 | 6.1 J | mg/Kg | 2.0 |
| Sulfate | 300 | 34 J | mg/Kg | 10.0 |
| pH | 150.1 | 9.0 J | pH | 1.0 |
| Ammonia | 350.3 | ~~<0.5~~ UJ | mg/Kg | 0.5 |
| | | | | |

FORM I

CRobertz
6/22

Received: 01/08/92

Results by Sample

SAMPLE ID B01CG0 FRACTION 04A TEST CODE WCCLPS NAME Anions in Solids - WM232

Date & Time Collected 01/03/92 Category

ANIONS AND WET CHEMISTRY - SOLIDS

| ANALYSIS | METHOD | RESULT | UNITS | LIMIT |
|---|---|---|---|---|
| Fluoride | 300 | ~~<1~~ R | mg/Kg | 1.0 |
| Nitrite | 300 | <1 UJ | mg/Kg | 1.0 |
| Nitrate | 300 | 5.7 J | mg/Kg | 2.0 |
| Sulfate | 300 | 43 J | mg/Kg | 10.0 |
| pH | 150.1 | 8.8 J | pH | 1.0 |
| Ammonia | 350.3 | <0.5 UJ | mg/Kg | 0.5 |
| | | | | |

FORM I

C Rubio
6/22

9713528.0851

# ATTACHMENT 5

*Data Review Supporting Documentation*

9214528.0850

00002

| Westinghouse Hanford Company | CHAIN OF CUSTODY | ARLI |
|---|---|---|

Custody Form Initiator: W. Setzer/B.E. Innis

Company Contact: B.E. Innis

Telephone: 509-376-7690

Project Designation/Sampling Locations: 300-ff-1/T1

Collection Date: 1-3-92

Ice Chest No.: SML 78

Field Logbook No.: WHC-N- 557

Bill of Lading/Airbill No.: 2509864896

Offsite Property No.: 4192-1-0104 #9

Method of Shipment: OVERNIGHT AIR SERVICE

Shipped to: TMA/NORCAL

Possible Sample Hazards/Remarks: None detected with field instruments

Sample Identification

1) B01GG2
1, 500ml Amber Glass: PCB's, ~~CLP Metals~~, Anions by IC (F,SO4,NO2,NO3),pH
~~1, 500ml Clear Glass: Gross Alpha/Beta, Co-60,Sr-90,Cs-137,U-235,U-238~~
1, 125ml Clear Glass: CLP VOA

2) B01C63
1, 500ml Amber Glass: PCB's, ~~CLP Metals~~, Anions by IC (F,SO4,NO2,NO3),pH
~~1, 500ml Clear Glass: Gross Alpha/Beta, Co-60,Sr-90,Cs-137,U-235,U-238~~
1, 125ml Clear Glass: CLP VOA

3)
~~1, 500ml Amber Glass: PCB's,CLP Metals,Anions by IC (F,SO4,NO2,NO3),pH~~
~~1, 500ml Clear Glass: Gross Alpha/Beta, Co-60,Sr-90,Cs-137,U-235,U-238~~
~~1, 125ml Clear Glass: CLP VOA~~
WVS 1-3-92

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

| Relinquished by: | Received by: | Date/Time: |
|---|---|---|
| W. V. SETZER<br>W. V. Setzer | Kermit Blum | 1-8-92 1130 |
| 1-8-92<br>Kermit Blum | T Bernard | 1/9/92 1000 |
| | | |
| | | |

Final Sample Disposition

| Disposal Method: | Disposed by: | Date/Time: |
|---|---|---|
| | | |

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9213528.0851

00003

| Westinghouse Hanford Company | CHAIN OF CUSTODY |
|---|---|

Custody Form Initiator: W. Setzer/B.E. Innis

Company Contact: B.E. Innis

Telephone: 509-376-7690

Project Designation/Sampling Locations: 300-ff-1 /T1

Collection Date: 1-3-92

Ice Chest No.:

Field Logbook No.: WHC-N-557

Bill of Lading/Airbill No.:

Offsite Property No.: W92-D-0104 #9

Method of Shipment: OVERNIGHT AIR SERVICE

Shipped to: TMA/NORCAL

Possible Sample Hazards/Remarks: None detected with field instruments

**Sample Identification**

1) B0KCF9 1, 500ml Amber Glass: PCB's, ~~CLP Metals~~, Anions by IC (F,SO4,NO2,NO3),pH
~~1, 500ml Clear Glass: Gross Alpha/Beta, Co-60,Sr-90,Cs-137,U-235,U-238~~
1, 125ml Clear Glass: CLP VOA

2) B0KCG0 1, 500ml Amber Glass: PCB's, ~~CLP Metals~~, Anions by IC (F,SO4,NO2,NO3),pH
~~1, 500ml Clear Glass: Gross Alpha/Beta, Co-60,Sr-90,Cs-137,U-235,U-238~~
1, 125ml Clear Glass: CLP VOA

(3) ~~B0KGG1~~ 1, 500ml Amber Glass: PCB's,CLP Metals,Anions by IC (F,SO4,NO2,NO3),pH
~~1, 500ml Clear Glass: Gross Alpha/Beta, Co-60,Sr-90,Cs-137,U-235,U-238~~
1, 125ml Clear Glass: CLP VOA WVS 1-3-92

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

| Relinquished by: | Received by: | Date/Time: |
|---|---|---|
| W.V. SETZER W.V. Setzer | Kermit Blum | 1-8-92 1130 |
| Kermit Blum 1-8-92 | T Bernard | 1/9/92 1000 |
| | | |
| | | |

**Final Sample Disposition**

| Disposal Method: | Disposed by: | Date/Time: |
|---|---|---|
| | | |

Comments:

✓ KG

A-6000-407 (12/90) (EF) WEF061

Page 2 TMA Inc. REPORT Work Order # A2-01-029

Received: 01/08/92

Results by Sample

SAMPLE ID B01CG2 FRACTION 01A TEST CODE VCCLPS NAME Anions in Solids - VM232

Date & Time Collected 01/03/92 Category

ANIONS AND WET CHEMISTRY - SOLIDS

| ANALYSIS | METHOD | RESULT | UNITS | LIMIT |
|---|---|---|---|---|
| Fluoride | 300 | ~~1~~ R | mg/Kg | 1.0 |
| Nitrite | 300 | ~~1~~ UJ | mg/Kg | 1.0 |
| Nitrate | 300 | 5.6 J | mg/Kg | 2.0 |
| Sulfate | 300 | 41 J | mg/Kg | 10.0 |
| pH | 150.1 | 8.9 J | pH | 1.0 |
| Ammonia | 350.3 | ~~0.5~~ UJ | mg/Kg | 0.5 |
| | | | | |

FORM I

UJ

C Roberts

TMA Inc. REPORT

Work Order # A2-01-029

Received: 01/08/92

Results by Sample

SAMPLE ID B01CG2 MS FRACTION 01B TEST CODE VCQCS NAME Quality Control Summary

Date & Time Collected 01/03/92 Category

SPIKE QC SUMMARY

| ANALYSIS | SAMPLE ID | SAMPLE RESULT | SPIKE RESULT | AMOUNT ADDED | % R |
|---|---|---|---|---|---|
| Fluoride | B01CG2 | <1 | 98.6 | 100.00 | 98.6 |
| Nitrite | B01CG2 | <1 | 98.8 | 100.00 | 98.8 |
| Nitrate | B01CG2 | 5.6 | 97.6 | 100.00 | 92.0 |
| Sulfate | B01CG2 | 41 | 304 | 300.00 | 87.7 |
| Ammonia | B01CG2 | <0.5 | 4.0 J | 5.00 | 80.0 |
| | | | | | |

FORM V

CRobb
6/22

TMA Inc. REPORT Work Order # A2-01-029

Received: 01/08/92

Results by Sample

SAMPLE ID B01CG3 FRACTION 02A TEST CODE VCCLPS NAME Anions in Solids - WH232

Date & Time Collected 01/03/92 Category

ANIONS AND WET CHEMISTRY - SOLIDS

| ANALYSIS | METHOD | RESULT | UNITS | LIMIT |
|---|---|---|---|---|
| Fluoride | 300 | ~~<1~~ R | mg/Kg | 1.0 |
| Nitrite | 300 | ~~<1~~ UJ | mg/Kg | 1.0 |
| Nitrate | 300 | 5.5 J | mg/Kg | 2.0 |
| Sulfate | 300 | 41 J | mg/Kg | 10.0 |
| pH | 150.1 | 9.0 J | pH | 1.0 |
| Ammonia | 350.3 | ~~<0.5~~ UJ | mg/Kg | 0.5 |
| | | | | |

FORM I

CTabbs
6/22

SAMPLE ID B01CG3 Duplicate FRACTION 02B TEST CODE WCQCD NAME Quality Control Summary
Date & Time Collected 01/03/92 Category

DUPLICATE QC SUMMARY

| ANALYSIS | SAMPLE ID | SAMPLE RESULT | DUPL. RESULT | RPD |
|---|---|---|---|---|
| Fluoride | B01CG3 | <1 | <1 | |
| Nitrite | B01CG3 | <1 | <1 | |
| Nitrate | B01CG3 | 5.5 | 5.8 | 5.3 |
| Sulfate | B01CG3 | 41 | 44 | 7.1 |
| pH | B01CG3 | 9.0 | 8.9 | 1.1 |
| Ammonia | B01CG3 | <0.5 J | <0.5 | |
| | | | | |

FORM VI

CTabbe
6/92

9713628.0858

00014

Page 1 TMA Inc. REPORT Work Order # A2-01-029

Received: 01/08/92 Results by Sample

SAMPLE ID B01CF9 FRACTION 03B TEST CODE WCCLPS NAME Anions in Solids - WM232

Date & Time Collected 01/03/92 Category

ANIONS AND WET CHEMISTRY - SOLIDS

| ANALYSIS | METHOD | RESULT | UNITS | LIMIT |
|---|---|---|---|---|
| Fluoride | 300 | ~~<1~~ R | mg/Kg | 1.0 |
| Nitrite | 300 | ~~<1~~ UJ | mg/Kg | 1.0 |
| Nitrate | 300 | 6.1 J | mg/Kg | 2.0 |
| Sulfate | 300 | 34 J | mg/Kg | 10.0 |
| pH | 150.1 | 9.0 J | pH | 1.0 |
| Ammonia | 350.3 | ~~<~~0.5 UJ | mg/Kg | 0.5 |
| | | | | |

FORM I

CRoberts
6/22

TMA Inc. REPORT

Work Order # A2-01-029

Received: 01/08/92

Results by Sample

SAMPLE ID B01CG0 FRACTION 04A TEST CODE WCCLPS NAME Anions in Solids - WH232

Date & Time Collected 01/03/92 Category

ANIONS AND WET CHEMISTRY - SOLIDS

| ANALYSIS | METHOD | RESULT | UNITS | LIMIT |
|---|---|---|---|---|
| Fluoride | 300 | ~~<1~~ R | mg/Kg | 1.0 |
| Nitrite | 300 | ~~<1~~ UJ | mg/Kg | 1.0 |
| Nitrate | 300 | 5.7 J | mg/Kg | 2.0 |
| Sulfate | 300 | 43 J | mg/Kg | 10.0 |
| pH | 150.1 | 8.8 J | pH | 1.0 |
| Ammonia | 350.3 | <0.5 UJ | mg/Kg | 0.5 |
| | | | | |

FORM I

CR 2/6/2
6/22

ION CHROMATOGRAPHIC 5 POINT CALIBRATION
1/17/92
CONCENTRATION IN 100 MLS INJECTION SOLN *
100 uMHOs, full scale

| | F CONC, * mg/L | AREA | CALC AREA | RT | mg/L | mg/L DIFF |
|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 166043 | | -0.28 | 0.28 |
| 2 | 0.1 | 209295 | 210779 | 0.90 | 0.18 | -0.08 |
| 3 | 0.5 | 360511 | 389721 | 0.89 | 0.51 | -0.01 |
| 4 | 2.0 | 940951 | 1060753 | 0.89 | 1.77 | 0.23 |
| 5 | 5.0 | 2985022 | 2402817 | 0.89 | 6.21 | -1.21 |
| 6 | 10.0 | 4373923 | 4639590 | 0.89 | 9.22 | 0.78 |

Avg Rt = 0.892 Sd = 0.605

Area = a x (mg/L) + b

Regression Output:

| | |
|---|---|
| Constant | 166043 |
| Std Err of Y Est | 336273 |
| R Squared | 0.9717 |
| No. of Observations | 6 |
| Degrees of Freedom | 4 |

| | |
|---|---|
| X Coefficient(s) | 447355 |
| Std Err of Coef. | 38165 |

mg/L = a x (AREA) + b

Regression Output:

| | |
|---|---|
| Constant | b = -0.277 mg/L |
| Std Err of Y Est | 0.7409 |
| R Squared | 0.9717 0.9858 = R |
| No. of Observations | 6 |
| Degrees of Freedom | 4 |

| | |
|---|---|
| X Coefficient(s) | 0.000002 = a |
| Std Err of Coef. | 0.000000 |

6/22
CBrown

ION CHROMATOGRAPHIC 5 POINT CALIBRATION
1/17/92
CONCENTRATION IN 100 MLS INJECTION SOLN *
100 uMHOs, full scale

| | N(NO2) CONC, * mg/L | AREA | CALC AREA | RT | mg/L | mg/L DIFF |
|---|---|---|---|---|---|---|
| 1 | 0 | 0 | -32682 | | 0.1 | -0.05 |
| 2 | 0.1 | 44123 | 28704 | 1.54 | 0.1 | -0.03 |
| 3 | 1.0 | 535561 | 581175 | 1.54 | 0.9 | 0.07 |
| 4 | 5.0 | 2982126 | 3036600 | 1.55 | 4.9 | 0.09 |
| 5 | 10.0 | 6198554 | 6105882 | 1.56 | 10.1 | -0.15 |
| 6 | 15.0 | 9134479 | 9175164 | 1.56 | 14.9 | 0.07 |

Avg Rt = 1.55 Sd = 0.086

Area = a x (mg/L) + b

Regression Output:

| | |
|---|---|
| Constant | -32681 |
| Std Err of Y Est | 64415. |
| R Squared | 0.9997 |
| No. of Observations | 6 |
| Degrees of Freedom | 4 |

X Coefficient(s) 613856.3
Std Err of Coef. 4675.523

mg/L = a x (AREA) + b

Regression Output:

| | |
|---|---|
| Constant | b = 0.0544 mg/L |
| Std Err of Y Est | 0.1049 |
| R Squared | 0.9997 0.9999 = R |
| No. of Observations | 6 |
| Degrees of Freedom | 4 |

X Coefficient(s) 0.000001 = a
Std Err of Coef. 0.000000

6/22
CTRoh

ION CHROMATOGRAPHIC 5 POINT CALIBRATION
1/17/92
CONCENTRATION IN 100 MLS INJECTION SOLN *
100 uMHOs, full scale

| | N(NO3) CONC, * mg/L | AREA | CALC AREA | RT | mg/L | mg/L DIFF |
|---|---|---|---|---|---|---|
| 1 | 0 | 0 | -279171 | | 0.4 | -0.35 |
| 2 | 0.2 | 110869 | -115268 | 2.56 | 0.5 | -0.29 |
| 3 | 2.0 | 1259403 | 1359859 | 2.54 | 1.9 | 0.11 |
| 4 | 5.0 | 3473100 | 3818403 | 2.51 | 4.6 | 0.42 |
| 5 | 10.0 | 7608659 | 7915978 | 2.47 | 9.6 | 0.38 |
| 6 | 20 | 16358896 | 16111126 | 2.41 | 20.273 | -0.27 |

Avg Rt = 2.498 Sd = 0.320

Area = a x (mg/L) + b

Regression Output:

| | |
|---|---|
| Constant | -3E+05 |
| Std Err of Y Est | 321805 |
| R Squared | 0.9979 |
| No. of Observations | 6 |
| Degrees of Freedom | 4 |

X Coefficient(s) 819514.8
Std Err of Coef. 18629.18

mg/L = a x (AREA) + b

Regression Output:

| | |
|---|---|
| Constant | b = 0.3527 mg/L |
| Std Err of Y Est | 0.3922 |
| R Squared | 0.9979 0.9990 = R |
| No. of Observations | 6 |
| Degrees of Freedom | 4 |

X Coefficient(s) 0.000001 =a
Std Err of Coef. 0.000000

6/22
CPRichter

ION CHROMATOGRAPHIC 5 POINT CALIBRATION
1/17/92
CONCENTRATION IN 100 MLS INJECTION SOLN *
100 uMHOs, full scale

| | SO4 CONC, * mg/L | AREA | CALC AREA | RT | mg/L | mg/L DIFF |
|---|---|---|---|---|---|---|
| 1 | 0 | 0 | -421769 | | 1.8 | -1.84 |
| 2 | 1.0 | 165384 | -184681 | 4.61 | 2.5 | -1.54 |
| 3 | 10.0 | 1820628 | 1949112 | 4.59 | 9.5 | 0.49 |
| 4 | 20.0 | 3846265 | 4319994 | 4.58 | 18.0 | 1.97 |
| 5 | 50.0 | 10885210 | 11432639 | 4.53 | 47.7 | 2.35 |
| 6 | 100.0 | 23664856 | 23287048 | 4.47 | 101.4 | -1.43 |

Avg Rt = 4.556 Sd = 1.71

Area = a x (mg/L) + b

Regression Output:

| | |
|---|---|
| Constant | -4E+05 |
| Std Err of Y Est | 495928 |
| R Squared | 0.9976 |
| No. of Observations | 6 |
| Degrees of Freedom | 4 |

| | |
|---|---|
| X Coefficient(s) | 237088.1 |
| Std Err of Coef. | 5710.963 |

mg/L = a x (AREA) + b

Regression Output:

| | |
|---|---|
| Constant | b = 1.8446 mg/L |
| Std Err of Y Est | 2.0893 |
| R Squared | 0.9976 0.9988 = R |
| No. of Observations | 6 |
| Degrees of Freedom | 4 |

| | |
|---|---|
| X Coefficient(s) | 0.000004 = a |
| Std Err of Coef. | 0.000000 |

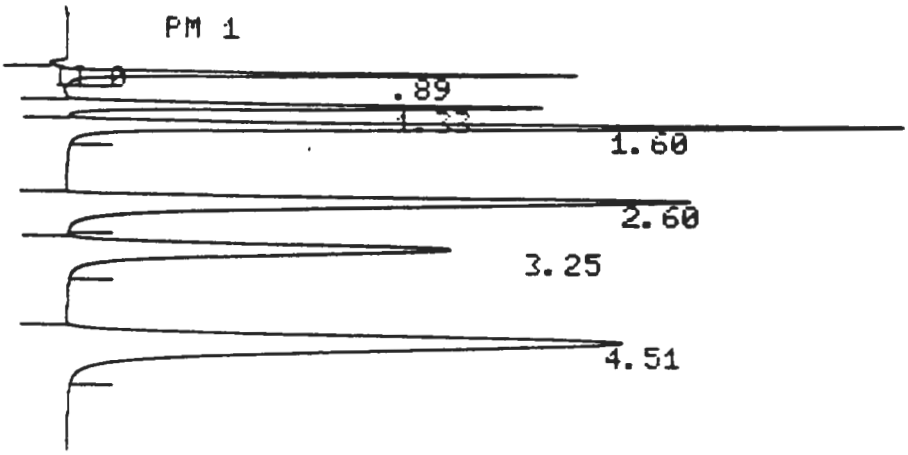
6/22
CDhh

SAMPLE TABLE...
ANALYST:AN=" RSF
INJECTIONS/SAMPLE:RA=
SAMPLES BETWEEN CALIB:CI=
CONC UNITS:CU=" MG/L

| SAM IDX | NAME | SAM AMT | SCALE FACTOR |
|---|---|---|---|
| SI= 1 | SN=" STD4 | SA= 1 | XF= 1 |
| SI= | | | |

END OF DIALOG

CHANNEL A INJECT 01/27/92 08:42:07




01/27/92 08:42:07 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 219 INDEX 1

ANALYST: RSF

SAMPLE 1 STD4 04E

| SA | IS | XF |
|---|---|---|
| 1. | 0. | 1. |

Check std 4.

| NAME | MG/L | RT | AREA | BC | RF |
|---|---|---|---|---|---|
| F | 4.905 ✓ | 0.89 | 2419272 | 01 | 493225.688 |
| CL | 9.422 ✓ | 1.33 | 3162080 | 02 | 335606.029 |
| NNO2 | 9.889 ✓ | 1.6 | 6395802 | 03 | 646759.227 |
| NNO3 | 9.637 ✓ | 2.6 | 8178476 | 01 | 848653.73 |
| PPO4 | 19.015 | 3.25 | 5815841 | 01 | 305855.43 |
| SO4 | 47.921 ✓ | 4.51 | 11779982 | 01 | 245820.872 |
| TOTALS | 100.789 | | 37751453 | | |

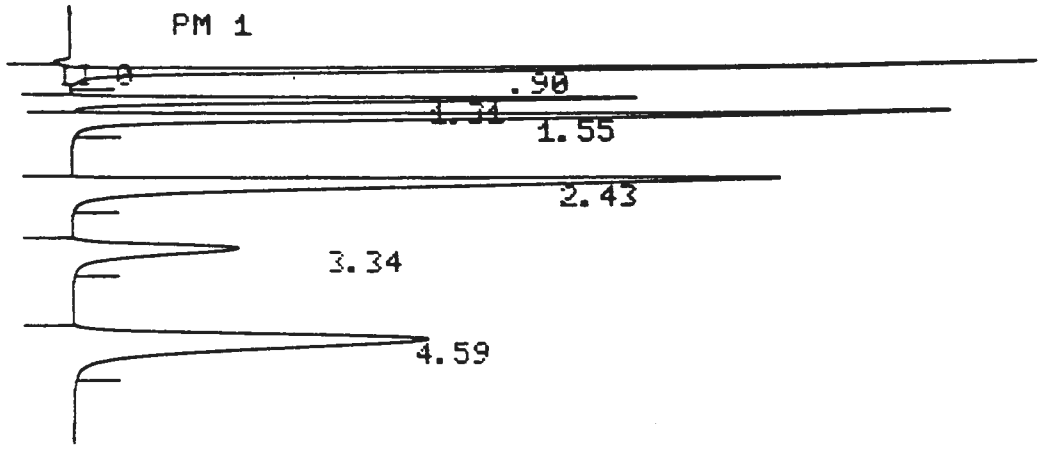
F: 5 mg/l.
Cl: 10 mg/l.
N-NO2: 10 mg/l.
N-NO3: 10 mg/l.
P-PO4: 20 mg/l.
SO4: 50 mg/l.

SAMPLE TABLE...
ANALYST:AN=" RSF
INJECTIONS/SAMPLE:RA=
SAMPLES BETWEEN CALIB:CI=
CONC UNITS:CU=" MG/KG

| SAM IDX | NAME | SAM AMT | SCALE FACTOR |
|---|---|---|---|
| SI= 1 | SN=" 102901BMS | SA= 10 | XF= 100 |

SI=
END OF DIALOG

CHANNEL A INJECT 01/27/92 14:47:31




01/27/92 14:47:31 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 249 INDEX 1

ANALYST: RSF

SAMPLE 1 102901BMS

| SA | IS | XF |
|---|---|---|
| 10. | 0. | 100. |

| NAME | MG/KG | RT | AREA | BC | RF |
|---|---|---|---|---|---|
| F | 98.576 ✓ | 0.9 | 4756961 | 01 | 48256.787 |
| CL | 105.92 ✓ | 1.31 | 3567112 | 02 | 33677.417 |
| NNO2 | 98.833 ✓ | 1.55 | 6392331 | 03 | 64678.103 |
| NNO3 | 97.622 ✓ | 2.43 | 8288494 | 01 | 84903.956 |
| PPO4 | 83.803 | 3.34 | 2453617 | 01 | 29278.391 |
| SO4 | 303.542 ✓ | 4.59 | 7299309 | 01 | 24047.114 |
| TOTALS | 788.296 | | 32757824 | | |

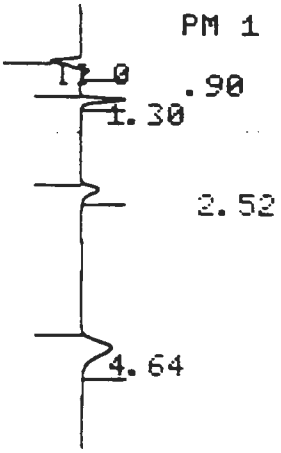
Spike level.
F : 100 mg/kg
Cl : 100 mg/kg.
N-NO2 : 100 mg/kg
N-NO3 : 100 mg/kg
P-PO4 : 100 mg/kg
SO4 : 300 mg/kg

SAMPLE TABLE...
ANALYST:AN=" RSF
INJECTIONS/SAMPLE:RA=
SAMPLES BETWEEN CALIB:CI=
CONC UNITS:CU=" MG/KGU

| SAM IDX | NAME | SAM AMT | SCALE FACTOR |
|---|---|---|---|
| SI= 1 | SN=" 102902A | SA= 10 | XF= 100 |

SI=
END OF DIALOG

CHANNEL A INJECT 01/27/92 14:58:48




01/27/92 14:58:48 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 250 INDEX 1

ANALYST: RSF

SAMPLE 1 102902A

| SA | IS | XF |
|---|---|---|
| 10. | 0. | 100. |

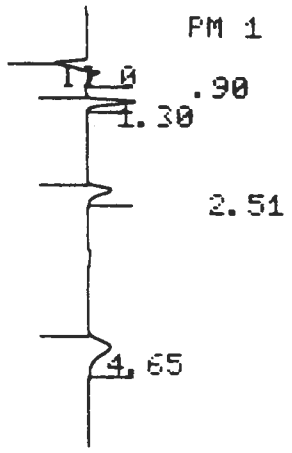
| NAME | MG/KGU | RT | AREA | BC | RF |
|---|---|---|---|---|---|
| F | <1 ~~2.206~~ | 0.9 | 207798 | 01 | 94196.736 |
| CL | 10.112 | 1.3 | 251756 | 01 | 24896.756 |
| NNO3 | 5.503 | 2.52 | 182377 | 01 | 33141.377 |
| SO4 | 40.635 | 4.64 | 593421 | 01 | 14603.691 |
| TOTALS | 58.456 | | 1235352 | | |

9715428.0867



```
SAMPLE TABLE...
ANALYST:AN=" RSF
INJECTIONS/SAMPLE:RA=
SAMPLES BETWEEN CALIB:CI=
CONC UNITS:CU=" MG/KG
SAM IDX    NAME            SAM AMT      SCALE FACTOR
SI= 1     SN=" 102903B    SA= 10       XF= 100
SI=
END OF DIALOG
```

CHANNEL A  INJECT  01/27/92 15:16:56




01/27/92 15:16:56  CH= "A"  PS= 1.

FILE 1.  METHOD 5.  RUN 252  INDEX 1

ANALYST: RSF

SAMPLE 1  102903B

| SA | IS | XF |
|---|---|---|
| 10. | 0. | 100. |

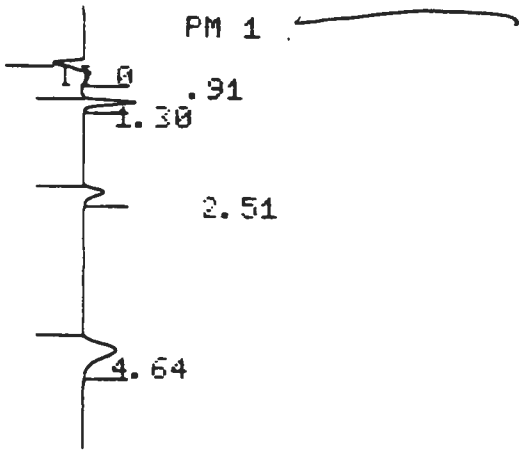
| NAME | MG/KG | RT | AREA | BC | RF |
|---|---|---|---|---|---|
| F | < 1 mg/kg ~~4.984~~ | 0.9 | 338937 | 01 | 68005.016 |
| CL | 10.73 | 1.3 | 273123 | 01 | 25454.147 |
| NNO3 | 6.143 | 2.51 | 238710 | 01 | 38858.864 |
| SO4 | 33.891 | 4.65 | 421397 | 01 | 12433.891 |
| TOTALS | 55.748 | | 1272167 | | |

SAMPLE TABLE...
ANALYST:AN=" RSF
INJECTIONS/SAMPLE:RA=
SAMPLES BETWEEN CALIB:CI=
CONC UNITS:CU=" MG/KG

| SAM IDX | NAME | SAM AMT | SCALE FACTOR |
|---|---|---|---|
| SI= 1 | SN=" 102904A | SA= 10 | XF= 100 |

SI=
END OF DIALOG

CHANNEL A INJECT 01/27/92 15:26:04




01/27/92 15:26:04 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 253 INDEX 1

ANALYST: RSF

SAMPLE 1 102904A

| SA | IS | XF |
|---|---|---|
| 10. | 0. | 100. |

| NAME | MG/KG | RT | AREA | BC | RF |
|---|---|---|---|---|---|
| F | rl < 1mg/kg ~~3.953~~ | 0.91 | 290307 | 01 | 73439.666 |
| CL | 11.313 | 1.3 | 293290 | 01 | 25925.042 |
| NNO3 | 5.717 | 2.51 | 201218 | 01 | 35196.432 |
| SO4 | 43.066 | 4.64 | 655428 | 01 | 15219.152 |
| TOTALS | 64.049 | | 1440243 | | |

9713528.0869

THERMO ANALYTICAL, INC.
TMA/ARLI

778-12

WORK ORDER # A2-01-029

CLIENT: Westinghouse Hanford Company 00035

METHODS USED

pH and moisture Determination

DATA & CALCULATIONS:

Sample 01A ID B01CG2

| | | |
|---|---|---|
| 8.4761g Tare + Sample | 8.4761g | $\frac{0.2994g \times 100\%}{7.4598g} = 4.01\%$ |
| 1.0163g Tare | 8.1767g | |
| 7.4598g Sample wt. | 0.2994g | |
| pH = 8.88 units | | |

Sample 02A ID B01CG3

| | | |
|---|---|---|
| 8.8669g Tare + Sample | 8.8669g | $\frac{0.3077g \times 100\%}{7.8496g} = 3.92\%$ |
| 1.0173g Tare | 8.5592g | |
| 7.8496g Sample wt. | 0.3077g | |
| pH = 8.96 units | | |

Sample 02B ID B01CG3 (Duplicate) pH = 8.93 units

Sample 03B ID B01CF9

| | | |
|---|---|---|
| 9.6614g Tare + Sample | 9.6614g | $\frac{0.3955g \times 100\%}{8.6418g} = 4.58\%$ |
| 1.0196g Tare | 9.2659g | |
| 8.6418g Sample wt. | 0.3955g | |
| pH = 9.01 units | | |

Sample 04A ID B01CG0

| | | |
|---|---|---|
| 9.0365g Tare + Sample | 9.0365g | $\frac{0.3299g \times 100\%}{8.0139g} = 4.12\%$ |
| 1.0226g Tare | 8.7066g | |
| 8.0139g Sample wt. | 0.3299g | |
| pH = 8.81 units | | |

COMMENTS:

| | | | |
|---|---|---|---|
| DATE | 1 | 14 | 92 |
| Signed | R. Sonibo | | |
| Approved | RL | | |

9713528.0870

300-FF-1 OPERABLE UNIT DATA VALIDATION
WESTINGHOUSE HANFORD COMPANY
DISTRIBUTION & FILE RECORD FORM

Task E-92-15 /2978-40
2/3/92
Rev. 0

Document Title: N201052 METALS
Document Number:

Date: 10/20/92
Originator: CMR

HCS - WHC/E - 92 15/T 1-013

| DISTRIBUTION | | | | | |
|---|---|---|---|---|---|
| M. Gerboth (HC-RL) | | S. Kis-Young (HC-Sea) | | Other: | |
| C. Russell (HC-Sea) | | S. Kis-Young (Filing) | X | | |
| D. Mantooth (Ebasco) | | R. Moses (HC-RL) | | | |

| PROJECT FILES | | |
|---|---|---|
| MANAGEMENT | | Comments |
| M-1 Correspondence | | |
| M-2 Meeting Minutes | | |
| M-3 Telecons | | |
| M-4 Statements of Work, Task Orders | | |
| M-5 Purchase Requisitions and Receipt documentation | | |
| M-6 Other Management Documents Generated | | |
| M-7 Financial Data | | |
| SOURCE DATA | | |
| S-1 Original Data Packages | | |
| S-2 Memos Transmitting Original Source Packages to WHC | | |
| S-3 Other Original Data Documentation | | |
| TASK TECHNICAL | | |
| T-1 Validation Calculations and Notated Packages | X | |
| T-2 Progress Memos | | |
| T-3 Completeness Checklists | | |
| T-4 Draft Summary Report(s) | | |
| T-5 Final Summary Report(s) | | |
| T-6 Draft Summary Report Review Comments | | |
| T-7 Other Technical Documentation | | |

FORM

9715528.0871

Appendix (R)



# INORGANIC ANALYSIS DATA VALIDATION CHECKLIST - FORM A-6

| | | |
|---|---|---|
| PROJECT: 300FF1 | REVIEWER: SS | DATE: 5-18-92 |
| LABORATORY: TMA/~~AALI~~ Skinner | CASE: N2-01-052 ~~04-052~~ | SDG: |
| SAMPLES/MATRIX: B01CF9 (soil) | | |
| B01CG0 ( " ) | | |
| B01CG3 ( " ) | | |
| B01CG2 ( " ) | | |
| | | |

## 1. COMPLETENESS AND CONTRACT COMPLIANCE

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal of the omitted data.

| Data Package Item | Present?: | Yes | No | N/A |
|---|---|---|---|---|
| Case Narrative | | ✓ | | |
| Cover Page | | ✓ | | |
| Traffic Reports | | ✓ | | |
| Sample Data | | | | |
| Inorganic Analysis Data Sheets | | ✓ | | |
| Standards Data | | | | |
| Initial and Continuing Calibration Verification | | ✓ | | |
| CRDL Standard for AA and ICP | | ✓ | | |
| QC Summary | | | | |
| Blanks | | ✓ | | |
| ICP Interference Check Summary | | ✓ | | |
| Spike Sample Recovery | | ✓ | | |
| Post-Digestion Spike Sample Recovery | | ✓ | | |
| Duplicate | | ✓ | | |
| Laboratory Control Sample | | ✓ | | |
| Standard Addition Results | | ✓ | | |
| ICP Serial Dilutions | | ✓ | | |
| Instrument Detection Limits | | ✓ | | |
| ICP Interelement Correction Factors | | ✓ | | |
| ICP Linear Ranges | | ✓ | | |
| Preparation Log | | ✓ | | |
| Analysis Run Log | | ✓ | | |
| Raw Data | | | | |
| ICP Raw Data | | ✓ | | |
| Furnace AA Raw Data | | ✓ | | |
| Mercury Raw Data | | ✓ | | |
| Cyanide Raw Data | | | ✓ | |
| Additional Data | | | | |
| Internal laboratory chain-of-custody | | ✓ | | |
| Laboratory Sample Preparation Records | | ✓ | | |

| Data Package Item | Present?: Yes | No | N/A |
|---|---|---|---|
| Percent Solids Analysis Records | | ✓ | |
| Reduction Formulae | | ✓ | |
| Instrument Run Logs | | ✓ | |
| Chemist Notebook Pages | | ✓ | |

## 2. HOLDING TIMES

Have all samples been analyzed within holding times? Yes No N/A

ACTION: If any holding times have been exceeded qualify all affected results as estimated (J for detects and UJ for nondetects).

## 3. INITIAL CALIBRATIONS

Were all instruments calibrated daily, each set-up time and were the proper number of standards used? Yes No N/A

Are the correlation coefficients ≥0.995? Yes No N/A

Was a midrange cyanide standard distilled? Yes No N/A

ACTION: Qualify all data as unusable if reported from an analysis in which an instrument was not calibrated or was calibrated with less than the minimum number of standards. Qualify associated sample results > IDL as estimated (J) and results < IDL as estimated (UJ), if the correlation coefficient is < 0.995 or the laboratory did not distill the midrange cyanide standard.

## 4. INITIAL AND CONTINUING CALIBRATION VERIFICATION

Are ICV and CCV percent recoveries within control? Yes No N/A

Are there calculation errors? Yes No N/A

ACTION: Qualify all affected data in accordance with Section 8.3 of the validation requirements. If calculation errors are noted, contact the laboratory for clarification.

## 5. ICP INTERFERENCE CHECK SAMPLE

Has an ICS sample been analyzed at the proper frequency? Yes No N/A

Are the AB solution %R values within control? Yes No N/A

Are there calculation errors? Yes No N/A

ACTION: Qualify all affected data in accordance with Section 8.3 of the validation requirements. If calculation errors are noted, contact the laboratory for clarification.

6. LABORATORY BLANKS

Are target analytes present in the laboratory blanks? (Yes) No N/A

ACTION: Qualify all associated sample results for any analyte <5 times the amount in any laboratory blank as nondetected (U). If analyte concentrations in the blank are >CRDL or below the negative CRDL, verify the laboratory has redigested and reanalyzed associated samples with analyte concentrations < 10 times the blank concentration. If the laboratory has not redigested and reanalyzed the samples, note in the validation narrative.

7. FIELD BLANKS

Are target analytes present in the field blanks? Yes No (N/A)

ACTION: Qualify all sample results for any analyte <5 times the amount in any valid field blank as nondetected (U).

8. MATRIX SPIKE SAMPLE ANALYSIS

Are spike recoveries within the control limits? Yes (No) N/A

ACTION: Qualify the affected sample data according to the following requirements:

If spike recovery is > 125% and sample results are <IDL no qualification is required. If spike recovery is > 125% or <75% qualify all positive results as estimated (J). If spike recovery is 30% to 74% qualify all nondetects as estimated (UJ). If spike recovery is <30%, reject all nondetects (R). If the field blank has been used for spike analysis, note in the validation narrative.

9. LABORATORY CONTROL SAMPLE

Are percent recoveries within the acceptance limits? (Yes) No N/A

Are there calculation errors? Yes (No) N/A

ACTION: Qualify the sample data according to the following requirements:

AQUEOUS LCS - Qualify as estimated (J), all sample results >IDL, for which the LCS %R falls within the range 50-79% or >120%. Qualify as estimated (UJ), all sample results <IDL, for which the LCS falls within the range of 50-79%. Qualify as unusable (R) all sample results, for which the LCS %R <50%.

SOLID LCS - Qualify as estimated (J), all sample results >IDL for which the LCS result is outside the established control limits. Qualify as estimated (UJ), all sample results <IDL for which the LCS %R are lower than the established control limits.

## 10. PERFORMANCE AUDIT ANALYSES

Are the performance audit sample results within the acceptance limits? Yes No N/A

ACTION: Note the results of the performance audit sample analyses in the data validation narrative.

## 11. DUPLICATE SAMPLE ANALYSIS

Are RPD values acceptable? Yes No N/A

ACTION: Qualify the results for all associated samples of the same matrix as estimated (J) if the RPD results fall outside the appropriate control limits. If field blanks were used for laboratory duplicates, note in the validation narrative.

## 12. ICP SERIAL DILUTION

Are the serial dilution results acceptable? Yes No N/A

Is there evidence of negative interference? Yes No N/A

ACTION: Qualify the associated data as estimated (J) for those analytes in which the %D is outside the control limits. If evidence of negative interference is found, use professional judgment to qualify the data.

## 13. FIELD DUPLICATE SAMPLES

Do the RPD values exceed the control limits? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

## 14. FIELD SPLIT SAMPLES

Do the RPD values exceed the control limits? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

## 1516. FURNACE ATOMIC ABSORPTION QUALITY CONTROL

Do all applicable analyses have duplicate injections? Yes No N/A

Are applicable duplicate injection RSD values within control? Yes No N/A

If no, were samples rerun once as required? Yes No N/A

Does the RSD for the rerun fall within the control limits? Yes No N/A

Were analytical spike recoveries within the control limits? Yes No N/A

| | | | |
|---|---|---|---|
| If no, were MSA analyses performed when required? | Yes | No | N/A |
| Are MSA correlation coefficients $\geq$0.995? | Yes | No | N/A |
| If no, was a second MSA analysis performed? | Yes | No | N/A |

ACTION: If duplicate injections are outside the acceptance limits and the sample has not been reanalyzed or the reanalysis is outside the acceptance limits, qualify the associated data as estimated (J for detects and UJ for nondetects). If the analytical spike recovery is <40% qualify detects as estimated (J). If the analytical spike recovery is $\geq$10% but <40%, qualify all nondetects as estimated (UJ) and if the analytical spike recovery is <10%, reject all nondetects (R). If the sample absorbance is <50% of the analytical spike absorbance and the analytical spike recovery is <85% or >115%, qualify all results as estimated (J for detects and UJ for nondetects). If method of standard additions (MSA) was required but was not performed, the MSA samples were spiked incorrectly, or the MSA correllation coefficient was <0.995, qualify the associated detected results as estimated (J).

## 17. ANALYTE QUANTITATION AND DETECTION LIMITS

| | | | |
|---|---|---|---|
| Have results been reported and calculated correctly? | Yes | No | N/A |
| Are results within the calibrated range of the instruments and within the linear range of the ICP? | Yes | No | N/A |
| Are all detection limits below the CRQL? | Yes | No | N/A |

Action: If analyte quantitation is in error, contact the laboratory for explanation. If errors or deficiencies can not be resolved with the laboratory, qualify associated data as unusable (R).

## 18. OVERALL ASSESSMENT AND SUMMARY

| | | | |
|---|---|---|---|
| Has the laboratory conducted the analysis in accordance with the analytical SOW? | Yes | No | N/A |
| Were project specific data quality objectives met for this analysis? | Yes | No | N/A |

all other Se

ACTION: Summarize all the data qualifications and complete the data validation narrative as specified in Section 10.0 of the data validation requirements.

9713528.0876



COMMENTS (attach additional sheets as necessary):

9713528.0877



# APPENDIX R
# DATA VALIDATION DOCUMENTATION

*Thermo Analytical Laboratories*

*Data Package N201052*

*Metals Analyses*

0714528 10878

**THIS APPENDIX CONSISTS OF FIVE ATTACHMENTS**

***Attachment 1 - Glossary of Data Qualifiers***

This attachment provides a glossary explaining all data qualifiers applied as a result of the validation.

***Attachment 2 - As Received Laboratory Sample Concentration Reports***

This attachment provides a copy of the as-received sample concentration reports. This may be a tabular summary similar to that provided in Attachment 4, or may be a copy of the laboratory reports (e.g., Form I).

***Attachment 3 - Summary of Data Qualifications (Form B-7)***

This attachment provides a complete summary of all qualifications applied as a result of the validation.

***Attachment 4 - As Qualified Data Summary***

This attachment provides a tabular data summary of all data qualified from the validation.

***Attachment 5 - Data Review Supporting Documentation***

This attachment provides copies of the data validation checklists, data summary forms, telephone contact memoranda and other documentation completed as a result of the data validation.

9713528.0879

# ATTACHMENT 1

## *Glossary of Data Qualifiers*

***U*** - Indicates the compound or analyte was analyzed for and not detected. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

***UJ*** - Indicates the compound or analyte was analyzed for and not detected. Due to quality control deficiencies identified during data validation the value reported may not accurately reflect the sample quantitation limit.

***J*** - Indicates the compound or analyte was analyzed for and detected. The associated value is estimated but the data are useable for decision making processes.

***R*** - Indicates the compound or analyte was analyzed for and due to an identified quality control deficiency the data are unusable.

***NJ*** - Indicates the presumptive evidence of a compound at an estimated value.

***N*** - Indicates presumptive evidence of a compound.

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# ATTACHMENT 2

*As Received Laboratory Sample Concentration Reports*

9713528.0881

WESTINGHOUSE/HANFORD

1

# INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B01CF9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Matrix (soil/water): SOIL Lab Sample ID: 01032-01S

Level (low/med): LOW Date Received: 01/09/92

% Solids: 95.4

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 5730.00 | | | P |
| 7440-36-0 | Antimony | 1.60 | U | N | P |
| 7440-38-2 | Arsenic | 1.50 | B | | F |
| 7440-39-3 | Barium | 63.60 | | E | P |
| 7440-41-7 | Beryllium | 0.20 | U | | P |
| 7440-43-9 | Cadmium | 0.31 | B | | P |
| 7440-70-2 | Calcium | 4390.00 | | | P |
| 7440-47-3 | Chromium | 19.20 | | N | P |
| 7440-48-4 | Cobalt | 8.20 | B | | P |
| 7440-50-8 | Copper | 20.00 | | | P |
| 7439-89-6 | Iron | 16500.00 | | | P |
| 7439-92-1 | Lead | 4.80 | | * | F |
| 7439-95-4 | Magnesium | 3690.00 | | | P |
| 7439-96-5 | Manganese | 271.00 | | | P |
| 7439-97-6 | Mercury | 0.10 | U | | CV |
| 7440-02-0 | Nickel | 9.60 | | | P |
| 7440-09-7 | Potassium | 1040.00 | | | P |
| 7782-49-2 | Selenium | 4.00 | U | N | F |
| 7440-22-4 | Silver | 0.40 | U | | P |
| 7440-23-5 | Sodium | 144.00 | B | | P |
| 7440-28-0 | Thallium | 0.40 | U | | F |
| 7440-62-2 | Vanadium | 39.70 | | | P |
| 7440-66-6 | Zinc | 37.30 | | | P |
| | Cyanide | | | | NR |

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:
STONES

9713528.0882

WESTINGHOUSE/HANFORD

1

# INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B01CG0

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Matrix (soil/water): SOIL Lab Sample ID: 01032-02S

Level (low/med): LOW Date Received: 01/09/92

% Solids: 95.6

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6480.00 | | | P |
| 7440-36-0 | Antimony | 1.60 | U | N | P |
| 7440-38-2 | Arsenic | 1.30 | B | | F |
| 7440-39-3 | Barium | 75.60 | | E | P |
| 7440-41-7 | Beryllium | 0.39 | B | | P |
| 7440-43-9 | Cadmium | 0.29 | B | | P |
| 7440-70-2 | Calcium | 5540.00 | | | P |
| 7440-47-3 | Chromium | 19.70 | | N | P |
| 7440-48-4 | Cobalt | 9.10 | B | | P |
| 7440-50-8 | Copper | 6.70 | | | P |
| 7439-89-6 | Iron | 18600.00 | | | P |
| 7439-92-1 | Lead | 6.00 | | * | F |
| 7439-95-4 | Magnesium | 3850.00 | | | P |
| 7439-96-5 | Manganese | 301.00 | | | P |
| 7439-97-6 | Mercury | 0.10 | | | CV |
| 7440-02-0 | Nickel | 9.00 | | | P |
| 7440-09-7 | Potassium | 1240.00 | | | P |
| 7782-49-2 | Selenium | 0.80 | U | EN | F |
| 7440-22-4 | Silver | 0.40 | U | | P |
| 7440-23-5 | Sodium | 165.00 | B | | P |
| 7440-28-0 | Thallium | 0.40 | U | | F |
| 7440-62-2 | Vanadium | 46.00 | | | P |
| 7440-66-6 | Zinc | 39.20 | | | P |
| | Cyanide | | | | NR |

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:
STONES

9713528.0885

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B01CG3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Matrix (soil/water): SOIL Lab Sample ID: 01032-03S

Level (low/med): LOW Date Received: 01/09/92

% Solids: 95.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 5300.00 | | | P |
| 7440-36-0 | Antimony | 1.60 | U | N | P |
| 7440-38-2 | Arsenic | 2.10 | | | F |
| 7440-39-3 | Barium | 58.00 | | E | P |
| 7440-41-7 | Beryllium | 0.20 | U | | P |
| 7440-43-9 | Cadmium | 0.20 | U | | P |
| 7440-70-2 | Calcium | 5090.00 | | | P |
| 7440-47-3 | Chromium | 19.50 | | N | P |
| 7440-48-4 | Cobalt | 8.00 | B | | P |
| 7440-50-8 | Copper | 10.10 | | | P |
| 7439-89-6 | Iron | 16300.00 | | | P |
| 7439-92-1 | Lead | 30.50 | | * | F |
| 7439-95-4 | Magnesium | 3540.00 | | | P |
| 7439-96-5 | Manganese | 251.00 | | | P |
| 7439-97-6 | Mercury | 0.20 | | | CV |
| 7440-02-0 | Nickel | 9.40 | | | P |
| 7440-09-7 | Potassium | 941.00 | B | | P |
| 7782-49-2 | Selenium | 3.90 | U | N | F |
| 7440-22-4 | Silver | 0.40 | U | | P |
| 7440-23-5 | Sodium | 156.00 | B | | P |
| 7440-28-0 | Thallium | 0.39 | U | | F |
| 7440-62-2 | Vanadium | 40.10 | | | P |
| 7440-66-6 | Zinc | 39.00 | | | P |
| | Cyanide | | | | NR |

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:
STONES

9213528.0884

WESTINGHOUSE/HANFORD

1

# INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B01GG2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Matrix (soil/water): SOIL Lab Sample ID: 01032-04S

Level (low/med): LOW Date Received: 01/09/92

% Solids: 95.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 5480.00 | | | P |
| 7440-36-0 | Antimony | 1.60 | U | N | P |
| 7440-38-2 | Arsenic | 1.60 | B | | F |
| 7440-39-3 | Barium | 60.40 | | E | P |
| 7440-41-7 | Beryllium | 0.20 | U | | P |
| 7440-43-9 | Cadmium | 0.20 | U | | P |
| 7440-70-2 | Calcium | 5530.00 | | | P |
| 7440-47-3 | Chromium | 19.60 | | N | P |
| 7440-48-4 | Cobalt | 8.20 | B | | P |
| 7440-50-8 | Copper | 9.10 | | | P |
| 7439-89-6 | Iron | 16700.00 | | | P |
| 7439-92-1 | Lead | 25.10 | | * | F |
| 7439-95-4 | Magnesium | 3540.00 | | | P |
| 7439-96-5 | Manganese | 265.00 | | | P |
| 7439-97-6 | Mercury | 0.10 | U | | CV |
| 7440-02-0 | Nickel | 9.20 | | | P |
| 7440-09-7 | Potassium | 998.00 | B | | P |
| 7782-49-2 | Selenium | 4.10 | U | N | F |
| 7440-22-4 | Silver | 0.41 | U | | P |
| 7440-23-5 | Sodium | 159.00 | B | | P |
| 7440-28-0 | Thallium | 0.41 | U | | F |
| 7440-62-2 | Vanadium | 41.00 | | | P |
| 7440-66-6 | Zinc | 39.90 | | | P |
| | Cyanide | | | | NR |

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:
STONES

9713528.0885

# ATTACHMENT 3

*Summary of Data Qualifications*

Appendix (R)

DATA QUALIFICATION SUMMARY - FORM B-7

| SDG: N2.01.052 | REVIEWER: | DATE: 6/11/92 | PAGE 1 OF 1 |
|---|---|---|---|
| COMMENTS: Level 4 | | | |
| COMPOUND | QUALIFIER | SAMPLES AFFECTED | REASON |
| Sb | UJ | B01CF9, B01CG0, B01CG3 | MS |
| Ba | J | B01CG2 | Serial dil. |
| Cd | U | | <5x Blank |
| Cr | J | B01CG2, B01CG3 | MS |
| Pb | J | | DUP. |
| Se | R | | MS; AS |
| Be | U | B01CG0 | <5x Blank |
| Cu | U | {B01CG0, B01CG3, B01CG2} | <5x Blank |
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# ATTACHMENT 4

*As Qualified Data Summary*

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WESTINGHOUSE/HANFORD Appendix R

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B01CF9

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Matrix (soil/water): SOIL Lab Sample ID: 01032-01S

Level (low/med): LOW Date Received: 01/09/92

% Solids: 95.4

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 5730.00 | | | P | |
| 7440-36-0 | Antimony | 1.60 | U | J N | P | MS |
| 7440-38-2 | Arsenic | 1.50 | B | | F | |
| 7440-39-3 | Barium | 63.60 | | E J | P | ISP |
| 7440-41-7 | Beryllium | 0.20 | U | | P | |
| 7440-43-9 | Cadmium | 0.31 | B | W | P | <5xBL |
| 7440-70-2 | Calcium | 4390.00 | | | P | |
| 7440-47-3 | Chromium | 19.20 | | N J | P | MS |
| 7440-48-4 | Cobalt | 8.20 | B | | P | |
| 7440-50-8 | Copper | 20.00 | | | P | |
| 7439-89-6 | Iron | 16500.00 | | | P | |
| 7439-92-1 | Lead | 4.80 | | * J | F | DUP |
| 7439-95-4 | Magnesium | 3690.00 | | | P | |
| 7439-96-5 | Manganese | 271.00 | | | P | |
| 7439-97-6 | Mercury | 0.10 | U | | CV | |
| 7440-02-0 | Nickel | 9.60 | | | P | |
| 7440-09-7 | Potassium | 1040.00 | | | P | |
| 7782-49-2 | Selenium | ~~4.00~~ | ~~U~~ | ~~N~~ R | F | MS;AS |
| 7440-22-4 | Silver | 0.40 | U | | P | |
| 7440-23-5 | Sodium | 144.00 | B | | P | |
| 7440-28-0 | Thallium | 0.40 | U | | F | |
| 7440-62-2 | Vanadium | 39.70 | | | P | |
| 7440-66-6 | Zinc | 37.30 | | | P | |
| | Cyanide | | | | NR | |

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:
STONES

9/15/92 0889

WESTINGHOUSE/HANFORD

Appendix (R)

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B01CG0

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Matrix (soil/water): SOIL Lab Sample ID: 01032-02S

Level (low/med): LOW Date Received: 01/09/92

% Solids: 95.6

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6480.00 | | | P | |
| 7440-36-0 | Antimony | 1.60 | U | ~~J~~ N | P | ms |
| 7440-38-2 | Arsenic | 1.30 | ~~B~~ | | F | |
| 7440-39-3 | Barium | 75.60 | | ~~E~~ J | P | ICP ser. Dil. |
| 7440-41-7 | Beryllium | 0.39 | ~~B~~ | U | P | <5xBL |
| 7440-43-9 | Cadmium | 0.29 | ~~B~~ | U | P | <5xBL |
| 7440-70-2 | Calcium | 5540.00 | | | P | |
| 7440-47-3 | Chromium | 19.70 | | ~~N~~ J | P | ms |
| 7440-48-4 | Cobalt | 9.10 | ~~B~~ | | P | |
| 7440-50-8 | Copper | 6.70 | | U | P | <5xBL |
| 7439-89-6 | Iron | 18600.00 | | | P | |
| 7439-92-1 | Lead | 6.00 | | ~~*~~ J | F | DUP |
| 7439-95-4 | Magnesium | 3850.00 | | | P | |
| 7439-96-5 | Manganese | 301.00 | | | P | |
| 7439-97-6 | Mercury | 0.10 | | | CV | |
| 7440-02-0 | Nickel | 9.00 | | | P | |
| 7440-09-7 | Potassium | 1240.00 | | | P | |
| 7782-49-2 | Selenium | ~~0.80~~ | ~~U~~ | ~~EN~~ R | F | ms;AS |
| 7440-22-4 | Silver | 0.40 | U | | P | |
| 7440-23-5 | Sodium | 165.00 | ~~B~~ | | P | |
| 7440-28-0 | Thallium | 0.40 | U | | F | |
| 7440-62-2 | Vanadium | 46.00 | | | P | |
| 7440-66-6 | Zinc | 39.20 | | | P | |
| | Cyanide | | | | NR | |

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:
STONES

003

FORM I - IN Rev.6/89

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WESTINGHOUSE/HANFORD.

Appendix R

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B01CG3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Matrix (soil/water): SOIL Lab Sample ID: 01032-03S

Level (low/med): LOW Date Received: 01/09/92

% Solids: 95.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 5300.00 | | | P | |
| 7440-36-0 | Antimony | 1.60 | U | J N | P | MS |
| 7440-38-2 | Arsenic | 2.10 | | | F | |
| 7440-39-3 | Barium | 58.00 | | E J | P | ISD |
| 7440-41-7 | Beryllium | 0.20 | U | | P | |
| 7440-43-9 | Cadmium | 0.20 | U | | P | |
| 7440-70-2 | Calcium | 5090.00 | | | P | |
| 7440-47-3 | Chromium | 19.50 | | N J | P | MS |
| 7440-48-4 | Cobalt | 8.00 | B | | P | |
| 7440-50-8 | Copper | 10.10 | | U | P | <5xBL |
| 7439-89-6 | Iron | 16300.00 | | | P | |
| 7439-92-1 | Lead | 30.50 | | * J | F | DUP |
| 7439-95-4 | Magnesium | 3540.00 | | | P | |
| 7439-96-5 | Manganese | 251.00 | | | P | |
| 7439-97-6 | Mercury | 0.20 | | | CV | |
| 7440-02-0 | Nickel | 9.40 | | | P | |
| 7440-09-7 | Potassium | 941.00 | B | | P | |
| 7782-49-2 | Selenium | ~~3.90~~ | ~~U~~ | ~~N~~ R | F | MS; AS |
| 7440-22-4 | Silver | 0.40 | U | | P | |
| 7440-23-5 | Sodium | 156.00 | B | | P | |
| 7440-28-0 | Thallium | 0.39 | U | | F | |
| 7440-62-2 | Vanadium | 40.10 | | | P | |
| 7440-66-6 | Zinc | 39.00 | | | P | |
| | Cyanide | | | | NR | |

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:
STONES

WESTINGHOUSE/HANFORD

Appendix (R)

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B01GG2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Matrix (soil/water): SOIL Lab Sample ID: 01032-04S

Level (low/med): LOW Date Received: 01/09/92

% Solids: 95.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 5480.00 | | | P | |
| 7440-36-0 | Antimony | 1.60 | U | J N | P | MS |
| 7440-38-2 | Arsenic | 1.60 | B | | F | |
| 7440-39-3 | Barium | 60.40 | | E J | P | ISD |
| 7440-41-7 | Beryllium | 0.20 | U | | P | |
| 7440-43-9 | Cadmium | 0.20 | U | | P | |
| 7440-70-2 | Calcium | 5530.00 | | | P | |
| 7440-47-3 | Chromium | 19.60 | | N J | P | MS |
| 7440-48-4 | Cobalt | 8.20 | B | | P | |
| 7440-50-8 | Copper | 9.10 | | U | P | LSXBL |
| 7439-89-6 | Iron | 16700.00 | | | P | |
| 7439-92-1 | Lead | 25.10 | | X J | F | DUP |
| 7439-95-4 | Magnesium | 3540.00 | | | P | |
| 7439-96-5 | Manganese | 265.00 | | | P | |
| 7439-97-6 | Mercury | 0.10 | U | | CV | |
| 7440-02-0 | Nickel | 9.20 | | | P | |
| 7440-09-7 | Potassium | 998.00 | B | | P | |
| 7782-49-2 | Selenium | ~~4.10~~ | ~~U~~ | ~~N~~ R | F | MS; AS |
| 7440-22-4 | Silver | 0.41 | U | | P | |
| 7440-23-5 | Sodium | 159.00 | B | | P | |
| 7440-28-0 | Thallium | 0.41 | U | | F | |
| 7440-62-2 | Vanadium | 41.00 | | | P | |
| 7440-66-6 | Zinc | 39.90 | | | P | |
| | Cyanide | | | | NR | |

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:
STONES

9713528.0892

# ATTACHMENT 5

*Data Review Supporting Documentation*

Appendix (R)

# HOLDING TIME SUMMARY - FORM B-1

| SDG: N2-01-052 | REVIEWER: | | | DATE: 6/11/92 | | PAGE 1 OF 1 | |
|---|---|---|---|---|---|---|---|
| COMMENTS: Level 4 | | | | | | | |
| FIELD SAMPLE ID | ANALYSIS TYPE | DATE SAMPLED | DATE PREPARED | DATE ANALYZED | PREP. HOLDING TIME, DAYS | ANALYSIS HOLDING TIME, DAYS | QUALIFIER |
| B01CF9 | GFAA | 1/3/92 | 1/22/92 | 1/30/92 | 19 | 8 | none |
| | ICP | ↓ | 1/22/92 | 1/31/92 | 19 | 9 | none |
| | Mercury | ↓ | 1/~~28~~ 27/92 | 1/28/92 ✓ | ~~14~~ 24 | ~~14~~ 1 | none ~~none~~ |
| B01CG0 | AA | 1/3/92 | 1/22/92 | 1/30/92 | 19 | 8 | none |
| | ICP | ↓ | 1/22/92 | 1/31/92 | 19 | 9 | none ~~none~~ |
| | Mercury | ↓ | 1/~~28~~ 27/92 | 1/28/92 ✓ | ~~14~~ 24 | ~~14~~ 1 | none |
| B01CG3 | AA | 1/3/92 | 1/22/92 | 1/30/92 | 19 | 8 | ↓ |
| | ICP | ↓ | 1/22/92 | 1/31/92 | 19 | 9 | ↓ |
| | Mercury | ↓ | 1/~~28~~ 27/92 | 1/28/92 ✓ | ~~14~~ 24 | ~~14~~ 1 | ↓ |
| B01CG2 | AA | 1/3/92 | 1/22/92 | 1/30/92 | 19 | 8 | ↓ |
| | ICP | ↓ | 1/22/92 | 1/31/92 | 19 | 9 | ↓ |
| | Mercury | ↓ | 1/~~28~~ 27/92 | 1/28/92 ✓ | ~~14~~ 24 | ~~14~~ 1 | ↓ |
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Appendix (R)

# CALIBRATION DATA SUMMARY - FORM B-2

| SDG: N2.01.052 | REVIEWER: A.S. | DATE: 6/11/92 | | PAGE 1 OF 1 | |
|---|---|---|---|---|---|
| COMMENTS: Level 4 | | | | | |
| CALIB. TYPE: | INITIAL CONTINUING | INSTRUMENT: | | | |
| CALIB. DATE | COMPOUND | RF | RSD/%D/%R | SAMPLES AFFECTED | QUALIFIER |
| | All initial calibration %R | — | — | None | — |
| | acceptable within 90-110% | | | | |
| | Hg = 80-120%, | | | | |
| | All continuing calibration %R | — | — | — | — |
| | acceptable. | | | | |
| | 90-110% for all metals | — | — | — | — |
| | Hg = 80-120% | | | | |
| | | | | | |
| | | | | | |
| | Hg correlation coeff = .996 | | | — | — |
| | Pb = .996 | | | — | — |
| | Tl = .999 | | | — | — |
| | Hg = .999 | | | — | — |
| | Se = .986 * | | | B01CF9, B01CG1 ~~UJ(+)~~, ~~UJ(-)~~ prev. | |
| | | | | B01CG3, B01CG2 ~~"~~ " " qual. | |
| | | | | | |

(R)

B-2



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Appendix (R)

# BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: N201052 REVIEWER: AS DATE: 6/11/92 PAGE 1 OF 3

COMMENTS:

| SAMPLE ID | COMPOUND | RESULT | Q | RT | UNITS | 5X RESULT | 10X RESULT | SAMPLES AFFECTED | QUALIFIER |
|---|---|---|---|---|---|---|---|---|---|
| ICB | Al ND | — | | | — | | | | |
| CCB1 | Al ~~28.7~~ .0287 | 28.7 | X | | us/L | .143 mg/kg | | — | — |
| ~~PB~~ CCB2 | Al ~~23.9~~ .0239 | 23.9 | | | us/L | .1195 | | — | — |
| CCB3 | Al 20.9 .0209 | 20.9 | | | us/L | .1045 | | — | — |
| PB | Al ND | — | | | — | | | | |
| | | | | | | | | | |
| CCB3 | Beryllium .00129 | 1.3 | | | us/L | .0065 | | B01CG0 | U |
| CCB2 | cadmium .0013 | 1.3 | | | us/L | .0065 | | B01CF9, B01CG0 | U |
| CCB2 | calcium .0418 | 41.9 | | | us/L | .209 | | — | — |
| ~~PB~~ | ~~calcium .0418~~ | | | | | | | | |
| PB | calcium | 11.6 [58.0 mg/kg] | | | mg/kg | 58 | | — | — |
| | | | | | | | | | |
| ICB | copper | -14.1 | | | us/L | ~~.0705~~ ~~-70.5~~ | | | |
| CCB1 | | -14.1 | | | | ~~-70.5~~ .070 | | | |
| CCB2 | | -16.3 | | | | -081.5 | | | |
| CCB3 | | -17.0 | | | | -085.0 | | B01CG0, B01CG3 B01CG2 | U |
| PB | (13.3) | -2.666 | | | mg/kg | -13.33 | | | |
| CCB1 | Iron | 29.7 | | | us/L | ~~.0297~~ .149 | | | |
| CCB2 | | X 42.6 | | | | .213 | | | |
| CCB3 | | 39.3 | | | | .197 | | | |
| PB | | (29.7) 5.94 | | | mg/kg | .97 | | | |



9713528.0093 SD-EN-SPP-002, Rev. 1

(R)

# BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: 92-01-052 REVIEWER: AS DATE: 6/11/92 PAGE 2 OF 3

COMMENTS:

| SAMPLE ID | COMPOUND | RESULT | Q | RT | UNITS | 5X RESULT | 10X RESULT | SAMPLES AFFECTED | QUALIFIER |
|---|---|---|---|---|---|---|---|---|---|
| CCB2 | Magnesium | -50.2 | | | ug/L | .251 mg/kg | | | |
| CCB3 | " " | -75.4 | | | ug/L | | | — | — |
| ICB | Manganese | 3.9 | | | | .0194 | | | |
| CCB1 | | 3.9 | | | | .0194 | | | |
| CCB2 | | 5.3 | | | | .0265 | | | |
| CCB3 | | 5.6 | | | | .028 | | — | — |
| PB | 3.16 | .632 | | | mg/kg | 3.16 | | | |
| | | | | | | | | | |
| CCB1 | Nickel | 5.7 | | | ug/L | .0285 | | — | — |
| CCB2 | | 4.8 | | | | .024 | | | |
| CCB3 | | 5.7 | | | | .0285 | | | |
| | | | | | | | | | |
| CCB1 | Potassium | 133.8 | | | ug/L | .669 | | — | — |
| CCB1 | Sodium | 93.8 | | | ug/L | .469 | | — | — |
| | (57.7) | 11.548 | | | mg/kg | 57.74 | | | |
| ICB | ~~Vanadium~~ Vanadium | 2.2 | | | ug/L | .011 | | | |
| CCB2 | | 4.3 | | | ug/L | .0215 | | | |
| CCB3 | | 5.0 | | | ug/L | .025 | | — | — |
| ICB | Zinc | 14.3 | | | | .0715 | | — | — |
| CCB1 | | 7.6 | | | | .038 | | | |
| CCB2 | | 7.2 | | | | .036 | | | |
| CCB3 | | 8.0 | | | | " | | | |



92-0502.DB/WEC-SD-EN-SPP-002, Rev. 1

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

(R)

SDG: 92-01-052 | REVIEWER: A.S. | DATE: 6/11/92 | PAGE 3 OF 3

COMMENTS:

| SAMPLE ID | COMPOUND | RESULT | Q | RT | UNITS | 5X RESULT | 10X RESULT | SAMPLES AFFECTED | QUALIFIER |
|---|---|---|---|---|---|---|---|---|---|
| CCB1 | Al | 34.1 | | | ug/L | .175 | ug/kg | — | — |
| | Cadmium | 1.1 | | | | .005 | | | |
| | copper | -13.3 | | | | -.0065 | | | |
| | iron | 44.3 | | | | .22 | | — | — |
| | manganese | 4.9 | | | | .0245 | | | |
| | nickel | 4.3 | | | | .0215 | | | |
| | vanadium | 2.9 | | | | .0195 | | | |
| | zinc | 7.2 | | | | .036 | | | |



9713528.0897 WEC-SD-EN-SPP-002, Rev. 1

Appendix (R)

# ACCURACY DATA SUMMARY - FORM B-4

| SDG: N2-01-052 | REVIEWER: UM Russell | DATE: 6/11/92 | PAGE 1 OF 1 | |
|---|---|---|---|---|
| COMMENTS: Level 4 | | | | |
| SAMPLE ID | COMPOUND | % RECOVERY | SAMPLE(S) AFFECTED | QUALIFIER REQUIRED |
| (1) CRDL Std. | chromium | 255%, 279% | — | none |
| (2) all ICS recoveries were acceptable; sample values were | | | | |
| not high enough to apply ICS rules. UMR | | | | |
| (3) B01CF9S (matrix spike) | antimony | 41% | B01CF9, B01CG0, B01CG3, B01CG4 | UJ |
| ↓ ↓ | selenium | 0% | ↓ | (R) |
| ↓ ↓ | chromium | 73% | ↓ | J |
| (4) B01CF9A (post spike) | antimony | 90% | — | — |
| ↓ ↓ | chromium | 81% | — | — |
| (5) LCSS → all acceptable. | | | | |
| (6) — (anal spike) | arsenic - all acceptable | — | — | — |
| B01CF9 | selenium | 0, (88%) | B01CF9 | prev. qual (R) |
| B01CG0 | ↓ | (0) not re-run | B01CG0 | |
| B01CG3 + B01CG2 | acceptable ↓ | 0, 0 → (104), (86) dil | B01CG3 + B01CG4 | |
| — | lead → all acceptable | — | — | — |
| — ↓ | thallium → all acceptable | — | — | — |



9713520.0000
WHC-SD-EN-SPP-002, Rev. 1

Appendix (R)

# PRECISION DATA SUMMARY - FORM B-5

SDG: N2-01.052 REVIEWER CMRussell DATE: ~~6/4/92~~ 6/18/92 PAGE 1 OF 1

COMMENTS: Level 4

| | COMPOUND | SAMPLE ID: | SAMPLE ID: | RPD | SAMPLES AFFECTED | QUALIFIER |
|---|---|---|---|---|---|---|
| 1 | Lab Dups lead | B01CF9 | B01CF9D | 49.3 | B01CF9, B01CG0 B01CG3, B01CG2 | J |
| 2 | Serial Dil barium | B01CF9 | B01CF9L | 12 %D | ↓ | J |
| 3 | Field Dup | B01CG3 | B01CG2 | | all 300FF1 area samples | none at present |

See printout (attached)



9713528.0890 WHC-SD-EN-SPP-002, Rev. 1

Appendix (R)

CALCULATION SUMMARY - FORM B-6

| SDG: N2-01-052 | REVIEWER: CMK Usnell | DATE: ~~6/10/92~~ 6/18/92 | PAGE 1 OF 1 |
|---|---|---|---|
| COMMENTS: Level 4 | | | |

100% of all sample concentrations and CRDLs have been recalculated. A minimum of 20% of all QC sample calculations have been verified.

Field Dups

| | MG/KG | MG/KG | RPD |
|---|---|---|---|
| AL | 5300.00 | 5480.00 | -3.3% |
| SB | 0.00 | 0.00 | ERR |
| AS | 2.10 | 1.60 | 27.0% |
| BA | 58.00 | 60.40 | -4.1% |
| BE | 0.00 | 0.00 | ERR |
| CD | 0.00 | 0.00 | ERR |
| CA | 5090.00 | 5530.00 | -8.3% |
| CR | 19.50 | 19.60 | -0.5% |
| CO | 8.00 | 8.20 | -2.5% |
| CU | 0.00 | 0.00 | ERR |
| FE | 16300.00 | 16700.00 | -2.4% |
| PB | 30.50 | 25.10 | 19.4% |
| MG | 3540.00 | 3540.00 | 0.0% |
| MN | 251.00 | 265.00 | -5.4% |
| HG | 0.20 | 0.00 | 200.0% |
| NI | 9.40 | 9.20 | 2.2% |
| K | 941.00 | 998.00 | -5.9% |
| SE | 0.00 | 0.00 | ERR |
| AG | 0.00 | 0.00 | ERR |
| NA | 156.00 | 159.00 | -1.9% |
| TL | 0.00 | 0.00 | ERR |
| V | 40.10 | 41.00 | -2.2% |
| ZN | 39.00 | 39.90 | -2.3% |

B01CG3 B01CG2

Appendix R

9713528.0902

Calculations

HARTCROWSER

Page 1 of 3

Job No. 2978-40

Project WHC

Date 6/11/92

Calculations for ~~[illegible]~~ Ical & CCV

Made by AS

As correlation coefficient = 0.0, 0.0330, .1665, .2835

= .996 ✓

Se = 0, ~~.0151~~ .012, .135, .209 = .986

Pb = 0, .013, .261, .481 = .996 ✓

Tl = 0, .024, .116, .219 = .999 ✓

Hg = 0, 10, 22, 44, 83 = .999 ✓

ICP interference check

Al = 529100 ppb = 105820 ppm ✓

Ca = 476450 ppb = 95290 ppm ✓

Fe = 36668 ppm ✓

Mg = 100198 ppm ✓

Recycled Paper

9713528.0903

Calculations

HARTCROWSER

Page 2 of 3

Job No. 2978-40

Project

Date

Calculations for

Made by AS

ICP & GFAA

$\frac{mg}{L} \times \frac{1000ug}{1mg} \times \frac{.2L}{g\ extracted} \times \frac{1}{\%\ solids}$

ICP

B01CP9 Al $\frac{28.7(1000)(.2)(1)}{1(1)(1.05)(.954)} = 5730.25$ ✓

Ca $\frac{21.975(1000)(.2)(1)}{1(1)(1.05)(.954)} = 4387.54$ ✓

Manganese $\frac{1.3559(1000)(.2)(1)}{1(1)(1.05)(.954)} = 255.94$ ✓

Vanadium $\frac{.198(1000)(.2)(1)}{1(1)(1.05)(.954)} = 39.53$ ✓

Recycled Paper

9713528.0904

Calculations

HARTCROWSER

Page 3 of 3

Job No. 2978-40

Project

Date

Calculations for

Made by AS

B01CG3: As = Ca: $\frac{25.591(1)(1000)(.2)(1)}{(1)(1)(1.05)(.957)} = 5093.5$

AA: As: $\frac{10.63(1)(1000)(.2)(1)}{(1)(1)(1.05)(.957)} = 2115$

Recycled Paper

9213528.0905

**TMA**
**Thermo Analytical Inc.**

Skinner & Sherman Laboratories Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200 • FAX (617) 890-3883

MAR 1992
RECEIVED
OSM DMO

Federal Express 4009270322
February 3, 1992

TMA/NORCAL
2030 Wright Avenue
Richmond, CA 94804
Attention: Dan Stuermer

## Quality Control Narrative

**Scope**
Four (4) soil samples were submitted to TMA/Skinner & Sherman Laboratories, Inc. on January 09, 1992 from Westinghouse/Hanford Company. The sample was analyzed for the USEPA CLP metals. The analysis was performed under Skinner and Sherman work order S201032.

**Methodology**
The samples were prepared, analyzed and reported in accordance with the USEPA Contract Laboratory Program Statement of Work 7/88 (CLP SOW788).

**Discussion**
All quality control requirements were met for the samples with the following exceptions:

The antimony, chromium and selenium digestion spike recoveries exceeded the control limit requirements.

The lead duplicates exceeded the control limit requirements.

The ICP serial dilution for barium exceeded the control limit requirements.

Please feel free to call if there are any questions concerning this package.

Respectfully submitted,

TMA/SKINNER & SHERMAN LABORATORIES, INC.

David N. Peterson
Assistant Laboratory Manager

9713538.0906

A.B. 1/9/92

TMA/Skinner & Serman Labs SAMPLE LOG-IN
WORKORDER N2-01-032 CLIENT HANFORD-NOR No. SAMPLES:
PROTCL CLP TURNARND 33days 4 (Soil) (Water) (Specify Other)
COOLER TEMP: 4 oC, or NA
CUSTODIAN A. Benney SDG/BATCH N/A
CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE N2-01-052
SHIPER & # PO/CONTRACT# N/
TAGS: PRESENT/ABSENT/NA/SEE COC CONTACT Dolores Sanchez
CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS: None

SAMPLE CONTAINERS-INTACT/BROKEN COMMENTS

CLIENT COMMENT? YES/NO Samples contain radioactive material
SAMPLE LABELS AGREE WITH CHAIN OF CUSTODY INFO? YES/NO (COMMENT)
CLIENT PAPERWORK AGREES WITH SAMPLES & COC? YES /NO (COMMENT)

SHIPMENT DATES 01/09/92
LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

N/A

| | CLIENT ID | MATRIX | RECEIVED | QC | TEST(S) | HOLD TIME UP |
|---|---|---|---|---|---|---|
| 1 | B0KF9 | SOIL | 01/09/92 | D.S | TM | |
| 2 | CG0 | | | | | |
| 3 | CG3 | | | | | HG due |
| 4 | GG2 | | | | | 01/29/92 |
| 5 | | | | | | |
| 6 | | | | | | |
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| 26 | | | | | | |
| 27 | | | | | | |

Complete
01/09/92
AB

SUBCONTRACT: YES/NO, TO: DATE:
REVIEWED Rev. 1.4 PAGE

9215228.0907

| Westinghouse Hanford Company | CHAIN OF CUSTODY | S&S |
|---|---|---|

Custody Form Initiator: W. Setzer/B.E. Innis

Company Contact: B.E. Innis

Telephone: 509-376-7690

Project Designation/Sampling Locations: 300-ff-1/T1

Collection Date: 1-3-92

Ice Chest No.: SML 78

Field Logbook No.: WHC-N- 557

Bill of Lading/Airbill No.: 2509864896

Offsite Property No.: 4/92-0-0104 #9

Method of Shipment: OVERNIGHT AIR SERVICE

Shipped to: TMA/NORCAL

Possible Sample Hazards/Remarks: None detected with field instruments

**Sample Identification**

1) B01GG2 1, 500ml ~~Amber~~ Glass: ~~PCB's~~,CLP Metals,~~Anions by IC (F,SO4,NO2,NO3),pH~~
~~1, 500ml Clear Glass: Gross Alpha/Beta, Co-60,Sr-90,Cs-137,U-235,U-238~~
~~1, 125ml Clear Glass: CLP VOA~~

2) B01GG3 1, 500ml ~~Amber~~ Glass: ~~PCB's~~,CLP Metals,~~Anions by IC (F,SO4,NO2,NO3),pH~~
~~1, 500ml Clear Glass: Gross Alpha/Beta, Co-60,Sr-90,Cs-137,U-235,U-238~~
~~1, 125ml Clear Glass: CLP VOA~~

3) ~~1, 500ml Amber Glass: PCB's,CLP Metals,Anions by IC (F,SO4,NO2,NO3),pH~~
~~1, 500ml Clear Glass: Gross Alpha/Beta, Co-60,Sr-90,Cs-137,U-235,U-238~~
~~1, 125ml Clear Glass: CLP VOA~~ WWS 1-3-92

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

| Relinquished by: | Received by: | Date/Time: |
|---|---|---|
| W. V. SETZER<br>W. V. Setzer | Kermit Blum | 1-8-92 1130 |
| 1-8-92<br>Kermit Blum | [illegible] | 01/09/92 9:30 |
| | | |
| | | |

**Final Sample Disposition**

| Disposal Method: | Disposed by: | Date/Time: |
|---|---|---|
| | | |

Comments:



A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9213528.0906

| Westinghouse Hanford Company | CHAIN OF CUSTODY |
|---|---|

Custody Form Initiator: W. Setzer/B.E. Innis

Company Contact: B.E. Innis

Telephone: 509-376-7690

Project Designation/Sampling Locations: 300-ff-1 /T1

Collection Date: 1-3-92

Ice Chest No.:

Field Logbook No.: WHC-N-557

Bill of Lading/Airbill No.:

Offsite Property No.: W92-D-0104 #9

Method of Shipment: OVERNIGHT AIR SERVICE

Shipped to: TMA/NORCAL

Possible Sample Hazards/Remarks: None detected with field instruments

**Sample Identification**

1) B0KCF9 1, 500ml ~~Amber~~ Glass: ~~PCB's~~, CLP Metals, ~~Anions by IC (F,SO4,NO2,NO3),pH~~
~~1, 500ml Clear Glass: Gross Alpha/Beta, Co-60,Sr-90,Cs-137,U-235,U-238~~
~~1, 125ml Clear Glass: CLP VOA~~

2) B0KCG0 1, 500ml ~~Amber~~ Glass: ~~PCB's~~, CLP Metals, ~~Anions by IC (F,SO4,NO2,NO3),pH~~
~~1, 500ml Clear Glass: Gross Alpha/Beta, Co-60,Sr-90,Cs-137,U-235,U-238~~
~~1, 125ml Clear Glass: CLP VOA~~

(3) ~~B0KCG1~~ 1, 500ml Amber Glass: PCB's, CLP Metals, Anions by IC (F,SO4,NO2,NO3),pH
~~1, 500ml Clear Glass: Gross Alpha/Beta, Co-60,Sr-90,Cs-137,U-235,U-238~~
1, 125ml Clear Glass: CLP VOA WVS 1-3-92

| [] Field Transfer of Custody | Chain of Possession | (Sign and Print Names) |
|---|---|---|
| Relinquished by: W.V. SETZER W.V. Setzer | Received by: Kermit Blum | Date/Time: 1-8-92 1130 |
| Relinquished by: 1-8-92 Kermit Blum | Received by: [illegible] | Date/Time: 01/09/92 09:30 |
| Relinquished by: | Received by: | Date/Time: |
| Relinquished by: | Received by: | Date/Time: |

**Final Sample Disposition**

| Disposal Method: | Disposed by: | Date/Time: |
|---|---|---|

Comments:



A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9713528.0909

Westinghouse Hanford Company

# SAMPLE ANALYSIS REQUEST

## PART I: FIELD SECTION

Collector W. Setzer/B.E. Innis Date Sampled 1-3-92 Time _____ hours

Company Contact B.E. Innis Telephone ( 509 ) 376 7690

| Sample Number | Number and Type of Sample Containers | Type of Sample* | Analysis Requested |
|---|---|---|---|
| | 1, ~~Amber~~ Glass, 500ml | soil | ~~PCB's,~~ CLP Metals, ~~Anions (F,SO4,NO2,NO3),~~ |
| | | | ~~pH, Ammonium~~ |
| B0ICF9 | ~~1, Clear Glass, 500ml~~ | ~~soil~~ | ~~Gross Alpha/Beta, Co-60,Sr-90,Cs-137,U-235~~ |
| | | | ~~U-238~~ |
| | ~~1, Amber Glass, 125ml~~ | ~~soil~~ | ~~CLP VOA~~ |
| | | | |
| | 1, ~~Amber~~ Glass, 500ml | soil | ~~PCB's~~, CLP Metals, ~~Anions (F, SO4, NO2, NO3~~ |
| | | | ~~pH, Ammonium~~ |
| B0ICG0 | ~~1, Clear Glass, 500ml~~ | ~~soil~~ | ~~Gross Alpha/Beta, Co-60, Sr-90, Cs-137,~~ |
| | | | ~~U-235, U-238~~ |
| | ~~1, Amber Glass, 125ml~~ | ~~soil~~ | ~~CLP VOA~~ |
| | | | |
| | 1, ~~Amber~~ Glass, 500ml | soil | ~~PCB's~~, CLP Metals, ~~Anions (F, SO4, NO2, NO3~~ |
| | | | ~~pH, Ammonium~~ |
| B0ICG2 | ~~1, Clear Glass, 500ml~~ | ~~soil~~ | ~~Gross Alpha/Beta, Co-60, Sr-90, Cs-137,~~ |
| | | | ~~U-235, U-238~~ |
| | ~~1, Amber Glass, 125ml~~ | ~~soil~~ | ~~CLP VOA~~ |
| | | | |
| | | | |
| | | | |

Field Information** Samples taken from 300-FF-1 borehole/Pit #

Special Handling and/or Storage Samples must be maintained at 4°Celsius

Possible Sample Hazards NONE OBSERVED

## PART II: LABORATORY SECTION

Received by Kermit Blum Title Sample Control Supervisor Date 1-8-92

Analysis Required

115

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location

A-6000-406 (05/

9213528.0910

Westinghouse Hanford Company

# SAMPLE ANALYSIS REQUEST

## PART I: FIELD SECTION

Collector W. Setzer/B.E. Innis Date Sampled 1-3-92 Time _____ hours

Company Contact B.E. Innis Telephone ( 509 ) 376-7690

| Sample Number | Number and Type of Sample Containers | Type of Sample* | Analysis Requested |
|---|---|---|---|
| | 1, ~~Amber~~ Glass, 500ml | soil | ~~PCB's~~, CLP Metals, ~~Anions (F,SO4,NO2,NO3),~~ |
| | | | ~~pH, Ammonium~~ |
| B01CG3 | ~~1, Clear Glass, 500ml~~ | ~~soil~~ | ~~Gross Alpha/Beta, Co-60,Sr-90,Cs-137,U-235~~ |
| | | | ~~U-238~~ |
| | ~~1, Amber Glass, 125ml~~ | ~~soil~~ | ~~CLP VOA~~ |
| | | | |
| | 1, Amber Glass, 500ml | soil | PCB's, CLP Metals, Anions (F, SO4, NO2, NO3 |
| | | | pH, Ammonium |
| | 1, Clear Glass, 500ml | soil | Gross Alpha/Beta, Co-60, Sr-90, Cs-137, |
| | | | U-235, U-238 |
| | 1, Amber Glass, 125ml | soil | CLP VOA |
| | | | WVS 1-7-92 |
| | 1, Amber Glass, 500ml | soil | PCB's, CLP Metals, Anions (F, SO4, NO2, NO3 |
| | | | pH, Ammonium |
| | 1, Clear Glass, 500ml | soil | Gross Alpha/Beta, Co-60, Sr-90, Cs-137, |
| | | | U-235, U-238 |
| | 1, Amber Glass, 125ml | soil | CLP VOA |
| | | | |
| | | | |
| | | | |

Field Information** Samples taken from 300-FF-1 borehole/Pit #

Special Handling and/or Storage Samples must be maintained at 4°Celsius

Possible Sample Hazards NONE OBSERVED

## PART II: LABORATORY SECTION

Received by Kermit Blum Title Sample Control Supervisor Date 1-8-92

Analysis Required

116

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location

A-6000-406 (05

9716528.0911

WESTINGHOUSE/HANFORD

13

PREPARATION LOG

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Method: CV

| EPA Sample No. | Preparation Date | Weight (gram) | Volume (mL) |
|---|---|---|---|
| B01CF9 | 01/17/92 | 0.23 | 100 |
| B01CF9 | 01/27/92 | 0.22 | 100 |
| B01CF9D | 01/17/92 | 0.23 | 100 |
| B01CF9D | 01/27/92 | 0.22 | 100 |
| B01CF9S | 01/17/92 | 0.21 | 100 |
| B01CF9S | 01/27/92 | 0.21 | 100 |
| B01CG0 | 01/17/92 | 0.23 | 100 |
| B01CG0 | 01/27/92 | 0.22 | 100 |
| B01CG3 | 01/17/92 | 0.23 | 100 |
| B01CG3 | 01/27/92 | 0.24 | 100 |
| B01GG2 | 01/17/92 | 0.22 | 100 |
| B01GG2 | 01/27/92 | 0.22 | 100 |
| LCSS | 01/17/92 | 0.02 | 100 |
| LCSS | 01/27/92 | 0.02 | 100 |
| PBS | 01/17/92 | 0.20 | 100 |
| PBS | 01/27/92 | 1.00 | 100 |

FORM XIII - IN Rev.6/89

9214528.0912

WESTINGHOUSE/HANFORD

13

PREPARATION LOG

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Method: F

| EPA Sample No. | Preparation Date | Weight (gram) | Volume (mL) |
|---|---|---|---|
| B01CF9 | 01/22/92 | 1.05 | 200 |
| B01CF9D | 01/22/92 | 1.11 | 200 |
| B01CF9S | 01/22/92 | 1.03 | 200 |
| B01CG0 | 01/22/92 | 1.05 | 200 |
| B01CG3 | 01/22/92 | 1.08 | 200 |
| B01GG2 | 01/22/92 | 1.02 | 200 |
| LCSS | 01/22/92 | 1.00 | 200 |
| PBS | 01/22/92 | 1.00 | 200 |

FORM XIII - IN Rev.6/89

9713528.D915

WESTINGHOUSE/HANFORD

13

.PREPARATION LOG

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Method: P

| EPA Sample No. | Preparation Date | Weight (gram) | Volume (mL) |
|---|---|---|---|
| B01CF9 | 01/22/92 | 1.05 | 200 |
| B01CF9D | 01/22/92 | 1.09 | 200 |
| B01CF9S | 01/22/92 | 1.01 | 200 |
| B01CG0 | 01/22/92 | 1.04 | 200 |
| B01CG3 | 01/22/92 | 1.05 | 200 |
| B01GG2 | 01/22/92 | 1.02 | 200 |
| LCSS | 01/22/92 | 1.00 | 200 |
| PBS | 01/22/92 | 1.00 | 200 |

FORM XIII - IN Rev.6/89

9215628.0914

WESTINGHOUSE/HANFORD

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Initial Calibration Source: EPA-LV

Continuing Calibration Source: SKINER

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 | 2056.0 | 1942.40 | 94.5 | 25000.0 | 24635.00 | 98.5 | 24284.00 | 97.1 | P |
| Antimony | 978.0 | 983.11 | 100.5 | 2500.0 | 2504.80 | 100.2 | 2474.30 | 99.0 | P |
| Arsenic | 50.4 | 52.08 | 103.3 | 50.0 | 50.48 | 101.0 | 51.19 | 102.4 | F |
| Barium | 2078.0 | 1998.60 | 96.2 | 2500.0 | 2489.80 | 99.6 | 2449.20 | 98.0 | P |
| Beryllium | 508.0 | 494.20 | 97.3 | 500.0 | 508.36 | 101.7 | 498.71 | 99.7 | P |
| Cadmium | 516.0 | 496.33 | 96.2 | 2500.0 | 2476.60 | 99.1 | 2460.00 | 98.4 | P |
| Calcium | 51382.0 | 49457.00 | 96.3 | 25000.0 | 24736.00 | 98.9 | 24540.00 | 98.2 | P |
| Chromium | 514.0 | 492.09 | 95.7 | 2500.0 | 2489.30 | 99.6 | 2497.50 | 99.9 | P |
| Cobalt | 499.0 | 491.10 | 98.4 | 2500.0 | 2469.70 | 98.8 | 2452.70 | 98.1 | P |
| Copper | 525.0 | 480.82 | 91.6 | 2500.0 | 2467.20 | 98.7 | 2419.70 | 96.8 | P |
| Iron | 2147.0 | 1982.20 | 92.3 | 10000.0 | 10013.00 | 100.1 | 9990.20 | 99.9 | P |
| Lead | 98.4 | 101.05 | 102.7 | 50.0 | 48.63 | 97.3 | 51.91 | 103.8 | F |
| Magnesium | 25587.0 | 24812.00 | 97.0 | 25000.0 | 24661.00 | 98.6 | 24422.00 | 97.7 | P |
| Manganese | 509.0 | 489.37 | 96.1 | 2500.0 | 2475.80 | 99.0 | 2445.90 | 97.8 | P |
| Mercury | 5.0 | 4.74 | 94.8 | 2.0 | 1.99 | 99.5 | 2.09 | 104.5 | CV |
| Nickel | 504.0 | 493.00 | 97.8 | 2500.0 | 2461.70 | 98.5 | 2439.80 | 97.6 | P |
| Potassium | 50563.0 | 49831.00 | 98.6 | 25000.0 | 24550.00 | 98.2 | 24273.00 | 97.1 | P |
| Selenium | 50.3 | 54.03 | 107.4 | 50.0 | 48.42 | 96.8 | 49.33 | 98.7 | F |
| Silver | 517.0 | 518.97 | 100.4 | 500.0 | 502.10 | 100.4 | 500.91 | 100.2 | P |
| Sodium | 52348.0 | 50007.00 | 95.5 | 25000.0 | 24548.00 | 98.2 | 24148.00 | 96.6 | P |
| Thallium | 100.7 | 101.12 | 100.4 | 50.0 | 47.06 | 94.1 | 49.39 | 98.8 | F |
| Vanadium | 517.0 | 501.03 | 96.9 | 2500.0 | 2489.00 | 99.6 | 2460.90 | 98.4 | P |
| Zinc | 3052.0 | 2974.40 | 97.5 | 2500.0 | 2479.20 | 99.2 | 2467.20 | 98.7 | P |
| Cyanide | | | | | | | | | NR |

(1) Control limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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WESTINGHOUSE/HANFORD

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Initial Calibration Source: EPA-LV

Continuing Calibration Source: SKINER

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 | | | | 25000.0 | 24410.00 | 97.6 | 24445.00 | 97.8 | P |
| Antimony | | | | 2500.0 | 2503.00 | 100.1 | 2488.50 | 99.5 | P |
| Arsenic | | | | 50.0 | 52.61 | 105.2 | 53.51 | 107.0 | F |
| Barium | | | | 2500.0 | 2469.50 | 98.8 | 2486.40 | 99.5 | P |
| Beryllium | | | | 500.0 | 507.07 | 101.4 | 510.29 | 102.1 | P |
| Cadmium | | | | 2500.0 | 2492.20 | 99.7 | 2494.70 | 99.8 | P |
| Calcium | | | | 25000.0 | 24843.00 | 99.4 | 24720.00 | 98.9 | P |
| Chromium | | | | 2500.0 | 2525.50 | 101.0 | 2536.20 | 101.4 | P |
| Cobalt | | | | 2500.0 | 2488.00 | 99.5 | 2485.90 | 99.4 | P |
| Copper | | | | 2500.0 | 2437.50 | 97.5 | 2442.00 | 97.7 | P |
| Iron | | | | 10000.0 | 10100.00 | 101.0 | 10092.00 | 100.9 | P |
| Lead | | | | 50.0 | 52.65 | 105.3 | 51.80 | 103.6 | F |
| Magnesium | | | | 25000.0 | 24686.00 | 98.7 | 24648.00 | 98.6 | P |
| Manganese | | | | 2500.0 | 2475.80 | 99.0 | 2473.30 | 98.9 | P |
| Mercury | | | | 2.0 | 1.94 | 97.0 | | | CV |
| Nickel | | | | 2500.0 | 2469.30 | 98.8 | 2469.30 | 98.8 | P |
| Potassium | | | | 25000.0 | 24442.00 | 97.8 | 24532.00 | 98.1 | P |
| Selenium | | | | 50.0 | 47.27 | 94.5 | 47.27 | 94.5 | F |
| Silver | | | | 500.0 | 503.88 | 100.8 | 504.48 | 100.9 | P |
| Sodium | | | | 25000.0 | 24306.00 | 97.2 | 24355.00 | 97.4 | P |
| Thallium | | | | 50.0 | 47.99 | 96.0 | | | F |
| Vanadium | | | | 2500.0 | 2487.00 | 99.5 | 2489.10 | 99.6 | P |
| Zinc | | | | 2500.0 | 2491.40 | 99.7 | 2477.50 | 99.1 | P |
| Cyanide | | | | | | | | | 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: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Initial Calibration Source: EPA-LV

Continuing Calibration Source: SKINER

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 | | | | | | | | | NR |
| Barium | | | | | | | | | NR |
| Beryllium | | | | | | | | | NR |
| Cadmium | | | | | | | | | NR |
| Calcium | | | | | | | | | NR |
| Chromium | | | | | | | | | NR |
| Cobalt | | | | | | | | | NR |
| Copper | | | | | | | | | NR |
| Iron | | | | | | | | | NR |
| Lead | | | | | | | | | NR |
| Magnesium | | | | | | | | | NR |
| Manganese | | | | | | | | | NR |
| Mercury | | | | | | | | | NR |
| Nickel | | | | | | | | | NR |
| Potassium | | | | | | | | | NR |
| Selenium | | | | 50.0 | 47.74 | 95.5 | | | F |
| Silver | | | | | | | | | NR |
| Sodium | | | | | | | | | NR |
| Thallium | | | | | | | | | NR |
| Vanadium | | | | | | | | | NR |
| Zinc | | | | | | | | | NR |
| Cyanide | | | | | | | | | NR |

(1) Control limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

ICP ID Number: P1 ICS Source: ICF-1089

Concentration Units: ug/L

| Analyte | True Sol. A | True Sol. AB | Initial Found Sol. A | Initial Found Sol. AB | %R | Final Found Sol. A | Final Found Sol. AB | %R |
|---|---|---|---|---|---|---|---|---|
| Aluminum | 481000 | 536472 | 529100 | 526380.0 | 98.1 | 524290 | 522780.0 | 97.4 |
| Antimony | 0 | 0 | -32 | -28.6 | | -40 | -44.4 | |
| Arsenic | | | | | | | | |
| Barium | 0 | 502 | 30 | 467.5 | 93.1 | 30 | 460.7 | 91.8 |
| Beryllium | 0 | 480 | 0 | 457.5 | 95.3 | 0 | 458.8 | 95.6 |
| Cadmium | 0 | 907 | 14 | 852.2 | 94.0 | 12 | 862.2 | 95.1 |
| Calcium | 448250 | 512228 | 476450 | 474990.0 | 92.7 | 478340 | 476610.0 | 93.0 |
| Chromium | 25 | 529 | 19 | 480.6 | 90.9 | 23 | 490.4 | 92.7 |
| Cobalt | 0 | 477 | 0 | 430.4 | 90.2 | 1 | 435.4 | 91.3 |
| Copper | 0 | 543 | 5 | 476.2 | 87.7 | 3 | 471.5 | 86.8 |
| Iron | 182650 | 199845 | 183340 | 182980.0 | 91.6 | 184960 | 185050.0 | 92.6 |
| Lead | | | | | | | | |
| Magnesium | 450900 | 527530 | 500990 | 498230.0 | 94.4 | 500980 | 499020.0 | 94.6 |
| Manganese | 16 | 496 | 31 | 461.3 | 93.0 | 31 | 461.7 | 93.1 |
| Mercury | | | | | | | | |
| Nickel | 0 | 940 | 10 | 833.7 | 88.7 | 12 | 840.8 | 89.4 |
| Potassium | 0 | 0 | 49 | 26.8 | | -22 | 40.1 | |
| Selenium | | | | | | | | |
| Silver | 0 | 960 | -18 | 925.0 | 96.4 | -20 | 926.8 | 96.5 |
| Sodium | 0 | 0 | 1669 | 1662.4 | | 1664 | 1658.6 | |
| Thallium | | | | | | | | |
| Vanadium | 0 | 509 | -14 | 438.1 | 86.1 | -9 | 444.3 | 87.3 |
| Zinc | 0 | 1208 | 194 | 1175.7 | 97.3 | 193 | 1179.7 | 97.7 |

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3

BLANKS

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

| Analyte | Initial Calib. Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Prepa-ration Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 20.0 | U | 28.7 | B | 23.9 | B | 20.9 | B | 4.000 | U | P |
| Antimony | 8.0 | U | 8.0 | U | 8.0 | U | 8.0 | U | 1.600 | U | P |
| Arsenic | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 0.400 | U | F |
| Barium | 4.0 | U | 4.0 | U | 4.0 | U | 4.0 | U | 0.800 | U | P |
| Beryllium | 1.0 | U | 1.0 | U | 1.0 | U | 1.3 | B | 0.200 | U | P |
| Cadmium | 1.0 | U | 1.0 | U | 1.3 | B | 1.0 | U | 0.200 | U | P |
| Calcium | 39.0 | U | 39.0 | U | 41.8 | B | 39.0 | U | 11.600 | B | P |
| Chromium | 4.0 | U | 4.0 | U | 4.0 | U | 4.0 | U | 0.800 | U | P |
| Cobalt | 3.0 | U | 3.0 | U | 3.0 | U | 3.0 | U | 0.600 | U | P |
| Copper | -14.1 | B | -14.1 | B | -16.3 | B | -17.0 | B | -2.666 | B | P |
| Iron | 11.0 | U | 29.7 | B | 42.6 | B | 39.3 | B | 5.946 | B | P |
| Lead | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 0.200 | U | F |
| Magnesium | 49.0 | U | 49.0 | U | -50.2 | B | -75.4 | B | 9.800 | U | P |
| Manganese | 3.9 | B | 3.9 | B | 5.3 | B | 5.6 | B | 0.632 | B | P |
| Mercury | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | | | CV |
| Nickel | 4.0 | U | 5.7 | B | 4.8 | B | 5.7 | B | 0.800 | U | P |
| Potassium | 130.0 | U | 133.8 | B | 130.0 | U | 130.0 | U | 26.000 | U | P |
| Selenium | 4.0 | U | 4.0 | U | 4.0 | U | 4.0 | U | 0.800 | U | F |
| Silver | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 0.400 | U | P |
| Sodium | 38.0 | U | 93.8 | B | 38.0 | U | 38.0 | U | 11.548 | B | P |
| Thallium | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 0.400 | U | F |
| Vanadium | 2.2 | B | 2.0 | U | 4.3 | B | 5.0 | B | 0.400 | U | P |
| Zinc | 14.3 | B | 7.6 | B | 7.2 | B | 8.0 | B | 2.020 | B | P |
| Cyanide | | | | | | | | | | | NR |



GA

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3

BLANKS

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

| Analyte | Initial Calib. Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Prepa-ration Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | 34.1 | B | | | | | | | P |
| Antimony | | | 8.0 | U | | | | | | | P |
| Arsenic | | | 2.0 | U | | | | | | | F |
| Barium | | | 4.0 | U | | | | | | | P |
| Beryllium | | | 1.0 | U | | | | | | | P |
| Cadmium | | | 1.1 | B | | | | | | | P |
| Calcium | | | 39.0 | U | | | | | | | P |
| Chromium | | | 4.0 | U | | | | | | | P |
| Cobalt | | | 3.0 | U | | | | | | | P |
| Copper | | | -13.3 | B | | | | | | | P |
| Iron | | | 44.3 | B | | | | | | | P |
| Lead | | | 1.0 | U | | | | | | | F |
| Magnesium | | | 49.0 | U | | | | | | | P |
| Manganese | | | 4.9 | B | | | | | | | P |
| Mercury | | | | | | | | | 0.020 | U | CV |
| Nickel | | | 4.3 | B | | | | | | | P |
| Potassium | | | 130.0 | U | | | | | | | P |
| Selenium | | | 4.0 | U | 4.0 | U | | | | | F |
| Silver | | | 2.0 | U | | | | | | | P |
| Sodium | | | 38.0 | U | | | | | | | P |
| Thallium | | | | | | | | | | | NR |
| Vanadium | | | 2.9 | B | | | | | | | P |
| Zinc | | | 7.2 | B | | | | | | | P |
| Cyanide | | | | | | | | | | | NR |

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WESTINGHOUSE/HANFORD

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

AA CRDL Standard Source: SKINER

ICP CRDL Standard Source: SKINER

Concentration Units: ug/L

| Analyte | CRDL Standard for AA | | | CRDL Standard for ICP | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Initial | | Final | |
| | True | Found | %R | True | Found | %R | Found | %R |
| Aluminum | | | | | | | | |
| Antimony | | | | 120.0 | 103.72 | 86.4 | 109.18 | 91.0 |
| Arsenic | 10.0 | 8.54 | 85.4 | | | | | |
| Barium | | | | | | | | |
| Beryllium | | | | 10.0 | 9.65 | 96.5 | 10.29 | 102.9 |
| Cadmium | | | | 10.0 | 9.65 | 96.5 | 10.84 | 108.4 |
| Calcium | | | | | | | | |
| Chromium | | | | 20.0 | 51.02 | 255.1 | 55.95 | 279.8 |
| Cobalt | | | | 100.0 | 95.96 | 96.0 | 98.78 | 98.8 |
| Copper | | | | 50.0 | 44.51 | 89.0 | 42.29 | 84.6 |
| Iron | | | | | | | | |
| Lead | 3.0 | 2.11 | 70.3 | | | | | |
| Magnesium | | | | | | | | |
| Manganese | | | | 30.0 | 30.58 | 101.9 | 31.28 | 104.3 |
| Mercury | | | | | | | | |
| Nickel | | | | 80.0 | 80.42 | 100.5 | 82.32 | 102.9 |
| Potassium | | | | | | | | |
| Selenium | 5.0 | 5.41 | 108.2 | | | | | |
| Silver | | | | 20.0 | 20.21 | 101.0 | 19.61 | 98.0 |
| Sodium | | | | | | | | |
| Thallium | 10.0 | 7.89 | 78.9 | | | | | |
| Vanadium | | | | 100.0 | 93.95 | 94.0 | 97.57 | 97.6 |
| Zinc | | | | 40.0 | 50.40 | 126.0 | 48.72 | 121.8 |

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WESTINGHOUSE/HANFORD

5A

SPIKE SAMPLE RECOVERY

SAMPLE NUMBER: B01CF9S

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Matrix: SOIL Level (low/med): LOW

% Solids for Sample: 95.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| Analyte | Control Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | NR |
| Antimony | 75-125 | 42.8960 | | 1.5973 | U | 103.78 | 41.3 | N | P |
| Arsenic | 75-125 | 9.9518 | | 1.4852 | B | 8.14 | 104.0 | | F |
| Barium | 75-125 | 459.8460 | | 63.5759 | | 415.14 | 95.5 | | P |
| Beryllium | 75-125 | 9.7495 | | 0.1997 | U | 10.38 | 93.9 | | P |
| Cadmium | 75-125 | 9.9134 | | 0.3095 | B | 10.38 | 92.5 | | P |
| Calcium | | | | | | | | | NR |
| Chromium | 75-125 | 49.3638 | | 19.2213 | | 41.51 | 72.6 | N | P |
| Cobalt | 75-125 | 105.3054 | | 8.1701 | B | 103.78 | 93.6 | | P |
| Copper | 75-125 | 64.6927 | | 20.0299 | | 51.89 | 86.1 | | P |
| Iron | | | | | | | | | NR |
| Lead | 75-125 | 9.8966 | | 4.7933 | | 4.07 | 125.4 | | F |
| Magnesium | | | | | | | | | NR |
| Manganese | 75-125 | 353.0315 | | 270.7198 | | 22X 103.78 | 79.3 | | P |
| Mercury | 75-125 | 0.5640 | | 0.0953 | U | 0.50 | 112.8 | | CV |
| Nickel | 75-125 | 104.9941 | | 9.5957 | | 103.78 | 91.9 | | P |
| Potassium | | | | | | | | | NR |
| Selenium | 75-125 | 0.8141 | U | ? 3.9932 | U | 2.04 | 0.0 | N | F |
| Silver | 75-125 | 8.3463 | | 0.3993 | U | 10.38 | 80.4 | | P |
| Sodium | | | | | | | | | NR |
| Thallium | 75-125 | 10.8159 | | 0.3993 | U | 10.18 | 106.2 | | F |
| Vanadium | 75-125 | 138.5661 | | 39.6586 | | 103.78 | 95.3 | | P |
| Zinc | 75-125 | 131.5213 | | 37.2786 | | 103.78 | 90.8 | | P |
| Cyanide | | | | | | | | | NR |

Comments:

FORM V (Part 1) - IN Rev. 6/89

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5B

POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NUMBER: B01CF9A

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Matrix: SOIL Level (low/med): LOW

Concentration Units: ug/L

| Analyte | Control Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | NR |
| Antimony | | 108.52 | | 8.00 | U | 120.0 | 90.4 | | P |
| Arsenic | | | | | | | | | NR |
| Barium | | | | | | | | | NR |
| Beryllium | | | | | | | | | NR |
| Cadmium | | | | | | | | | NR |
| Calcium | | | | | | | | | NR |
| Chromium | | 242.75 | | 96.27 | | 180.0 | 81.4 | | P |
| Cobalt | | | | | | | | | NR |
| Copper | | | | | | | | | NR |
| Iron | | | | | | | | | NR |
| Lead | | | | | | | | | NR |
| Magnesium | | | | | | | | | NR |
| Manganese | | | | | | | | | NR |
| Mercury | | | | | | | | | NR |
| Nickel | | | | | | | | | NR |
| Potassium | | | | | | | | | NR |
| Selenium | | | | | | | | | NR |
| Silver | | | | | | | | | NR |
| Sodium | | | | | | | | | NR |
| Thallium | | | | | | | | | NR |
| Vanadium | | | | | | | | | NR |
| Zinc | | | | | | | | | NR |
| Cyanide | | | | | | | | | NR |

Comments:

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WESTINGHOUSE/HANFORD

7

LABORATORY CONTROL SAMPLE

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Solid LCS Source: QAL-0287

Aqueous LCS Source:

| Analyte | Aqueous (ug/L) True | Aqueous (ug/L) Found | Aqueous (ug/L) %R | Solid (mg/kg) True | Solid (mg/kg) Found | C | Limits | Limits | %R |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | 325.0 | 257.8 | | 225.0 | 424.0 | 79.3 |
| Antimony | | | | 211.0 | 200.3 | | 127.0 | 294.0 | 94.9 |
| Arsenic | | | | 917.0 | 1007.5 | | 635.0 | 1199.0 | 109.9 |
| Barium | | | | 4.8 | 6.1 | B | 0.0 | 40.0 | 127.1 |
| Beryllium | | | | 19.4 | 18.5 | | 16.5 | 22.3 | 95.4 |
| Cadmium | | | | 45.4 | 39.1 | | 35.7 | 55.1 | 86.1 |
| Calcium | | | | 196200.0 | 171346.0 | | 166800.0 | 225600.0 | 87.3 |
| Chromium | | | | 99.6 | 89.8 | | 79.2 | 120.0 | 90.2 |
| Cobalt | | | | 144.0 | 131.8 | | 125.0 | 162.0 | 91.5 |
| Copper | | | | 6910.0 | 6420.0 | | 6006.0 | 7820.0 | 92.9 |
| Iron | | | | 22430.0 | 19204.6 | | 17770.0 | 27080.0 | 85.6 |
| Lead | | | | 236.0 | 225.7 | | 188.0 | 285.0 | 95.6 |
| Magnesium | | | | 118100.0 | 112650.0 | | 100400.0 | 129900.0 | 95.4 |
| Manganese | | | | 208.0 | 194.6 | | 177.0 | 239.0 | 93.6 |
| Mercury | | | | | | | | | |
| Nickel | | | | 60.9 | 52.0 | | 49.2 | 72.6 | 85.4 |
| Potassium | | | | 50.0 | 48.2 | B | 0.0 | 1000.0 | 96.4 |
| Selenium | | | | 39.2 | 30.7 | | 19.1 | 59.4 | 78.3 |
| Silver | | | | 22.2 | 16.2 | | 15.5 | 29.0 | 73.0 |
| Sodium | | | | 50.0 | 42.9 | B | 0.0 | 1000.0 | 85.8 |
| Thallium | | | | 39.0 | 34.1 | | 24.6 | 53.5 | 87.4 |
| Vanadium | | | | 65.8 | 67.0 | | 51.7 | 79.9 | 101.8 |
| Zinc | | | | 187.0 | 155.8 | | 138.0 | 236.0 | 83.3 |
| Cyanide | | | | | | | | | |

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6
DUPLICATES

SAMPLE NUMBER:

B01CF9D

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 95.4 % Solids for Duplicate: 95.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| Analyte | Control Limit | Sample (S) 5xCRDL? | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | 5732.2552 | | 5962.9181 | | 3.9 | | P |
| Antimony | | 1.5973 | U | 1.5387 | U | | | P |
| Arsenic | | 1.4852 | B | 1.6653 | B | 11.4 | | F |
| Barium | 39.9 | 63.5759 | | 62.5469 | | 1.6 | | P |
| Beryllium | | no 0.1997 | U | 0.2462 | B | ~~200.0~~ | | P |
| Cadmium | | 0.3095 | B | 0.3597 | B | 15.0 | | P |
| Calcium | 998.3 | 4387.5412 | | 4773.1425 | | 8.4 | | P |
| Chromium | | 19.2213 | | 18.9910 | | 1.2 | | P |
| Cobalt | | 8.1701 | B | 8.0068 | B | 2.0 | | P |
| Copper | 5.0 | 20.0299 | | 18.5583 | | 7.6 | | P |
| Iron | | 16519.9161 | | 16511.0688 | | 0.1 | | P |
| Lead | | yes 4.7933 | | 7.9293 | | 49.3 | * | P |
| Magnesium | 998.3 | 3694.7190 | | 3752.4282 | | 1.5 | | P |
| Manganese | | 270.7198 | | 259.0156 | | 4.4 | | P |
| Mercury | | 0.0953 | U | 0.0953 | U | | | CV |
| Nickel | 8.0 | 9.5957 | | 10.5245 | | 9.2 | | P |
| Potassium | 998.3 | 1044.6042 | | 1043.1597 | | 0.1 | | P |
| Selenium | | 3.9932 | U | 3.7774 | U | | | F |
| Silver | | 0.3993 | U | 0.3847 | U | | | P |
| Sodium | | 143.6777 | B | 163.3951 | B | 12.8 | | P |
| Thallium | | 0.3993 | U | 0.3777 | U | | | F |
| Vanadium | 10.0 | 39.6586 | | 38.1301 | | 3.9 | | P |
| Zinc | | 37.2786 | | 37.3781 | | 0.3 | | P |
| Cyanide | | | | | | | | NR |

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9

IGP SERIAL DILUTIONS

SAMPLE NUMBER: B01CF9L

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

| Analyte | Initial Sample Result (I) >50x IDL? | C | Serial Dilution Result (S) | C | % Difference | Q | M |
|---|---|---|---|---|---|---|---|
| Aluminum | 28710.00 | | 29288.50 | | 2.0 | | P |
| Antimony | 8.00 | U | 40.00 | U | | | P |
| Arsenic | | | | | | | NR |
| Barium | yes 318.42 | | 355.65 | B | 11.7 | E | P |
| Beryllium | 1.00 | U | 5.00 | U | | | P |
| Cadmium | — 1.55 | B | 5.00 | U | ~~100.0~~ | | P |
| Calcium | 21975.00 | | 22758.00 | B | 3.6 | | P |
| Chromium | — 96.27 | | 20.00 | U | ~~100.0~~ | | P |
| Cobalt | — 40.92 | B | 45.85 | B | ~~12.0~~ | | P |
| Copper | — 100.32 | | 15.00 | U | ~~100.0~~ | | P |
| Iron | 82740.00 | | 85455.00 | | 3.3 | | P |
| Lead | | | | | | | NR |
| Magnesium | 18505.00 | | 18781.50 | B | 1.5 | | P |
| Manganese | 1355.90 | | 1398.75 | | 3.2 | | P |
| Mercury | | | | | | | NR |
| Nickel | — slel. ~~48.06~~ | | 59.45 | B | ~~23.7~~ | | P |
| Potassium | 5231.90 | | 5508.50 | B | 5.3 | | P |
| Selenium | | | | | | | NR |
| Silver | 2.00 | U | 10.00 | U | | | P |
| Sodium | 719.61 | B | 1129.95 | B | ~~57.0~~ | | P |
| Thallium | | | | | | | NR |
| Vanadium | 198.63 | | 205.15 | B | 3.3 | | P |
| Zinc | 186.71 | | 240.45 | | ~~28.8~~ | | P |

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10

Instrument Detection Limits (Quarterly)

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

ICP ID Number: P1 Date: 01/15/92

Flame AA ID Number:

Furnace AA ID Number:

| Analyte | Wave-length (nm) | Back-ground | CRDL (ug/L) | IDL (ug/L) | M |
|---|---|---|---|---|---|
| Aluminum | 308.20 | | 200 | 20.0 | P |
| Antimony | 206.80 | | 60 | 8.0 | P |
| Arsenic | | | 10 | | NR |
| Barium | 493.40 | | 200 | 4.0 | P |
| Beryllium | 313.00 | | 5 | 1.0 | P |
| Cadmium | 226.50 | | 5 | 1.0 | P |
| Calcium | 317.90 | | 5000 | 39.0 | P |
| Chromium | 267.70 | | 10 | 4.0 | P |
| Cobalt | 228.60 | | 50 | 3.0 | P |
| Copper | 324.70 | | 25 | 3.0 | P |
| Iron | 259.90 | | 100 | 11.0 | P |
| Lead | | | 3 | | NR |
| Magnesium | 279.00 | | 5000 | 49.0 | P |
| Manganese | 257.60 | | 15 | 1.0 | P |
| Mercury | | | 0.2 | | NR |
| Nickel | 231.60 | | 40 | 4.0 | P |
| Potassium | 766.40 | | 5000 | 130.0 | P |
| Selenium | | | 5 | | NR |
| Silver | 328.00 | | 10 | 2.0 | P |
| Sodium | 588.90 | | 5000 | 38.0 | P |
| Thallium | | | 10 | | NR |
| Vanadium | 292.40 | | 50 | 2.0 | P |
| Zinc | 213.80 | | 20 | 4.0 | P |

Comments:
P1: THERMO JARRELL-ASH ICAP61 (#10782)



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8

STANDARD ADDITION RESULTS

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Concentration Units: ug/L

| EPA Sample No. | An | 0 ADD ABS | 1 ADD CON | 1 ADD ABS | 2 ADD CON | 2 ADD ABS | 3 ADD CON | 3 ADD ABS | Final Conc. | r | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|



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11

ICP Interelement Correction Factors (Annually)

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

ICP ID Number: P1 Date: 07/01/91

| Analyte | Wave-length (nm) | Al | Ca | Fe | Mg | Cr |
|---|---|---|---|---|---|---|
| Aluminum | 308.20 | 0.0000000 | 0.0000000 | 0.0002600 | 0.0000000 | 0.0000000 |
| Antimony | 206.80 | 0.0000000 | 0.0000000 | 0.0003100 | 0.0000000 | 0.0109700 |
| Arsenic | | | | | | |
| Barium | 493.40 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Beryllium | 313.00 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Cadmium | 226.50 | 0.0000000 | 0.0000000 | 0.0001800 | 0.0000000 | 0.0000000 |
| Calcium | 317.90 | 0.0000000 | 0.0000000 | -0.0004000 | 0.0000000 | 0.0000000 |
| Chromium | 267.70 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Cobalt | 228.60 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Copper | 324.70 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Iron | 259.90 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Lead | | | | | | |
| Magnesium | 279.00 | 0.0000000 | 0.0001600 | 0.0000000 | 0.0000000 | 0.0000000 |
| Manganese | 257.60 | 0.0000200 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Mercury | | | | | | |
| Nickel | 231.60 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | -0.0000500 |
| Potassium | 766.40 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Selenium | | | | | | |
| Silver | 328.00 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Sodium | 588.90 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 | 0.0000000 |
| Thallium | | | | | | |
| Vanadium | 292.40 | 0.0000300 | 0.0000000 | -0.0001300 | 0.0000000 | -0.0032600 |
| Zinc | 213.80 | 0.0000000 | 0.0000000 | 0.0001100 | 0.0000000 | 0.0000000 |

Comments:
P1: THERMO JARRELL-ASH ICAP61 (#10782)

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12
ICP Linear Ranges (Quarterly)

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

ICP ID Number: P1 Date: 01/15/92

| Analyte | Integ. Time (Sec.) | Concentration (ug/L) | M |
|---|---|---|---|
| Aluminum | 5.00 | 1000000.0 | |
| Antimony | 5.00 | 25000.0 | |
| Arsenic | | | NR |
| Barium | 5.00 | 100000.0 | |
| Beryllium | 5.00 | 25000.0 | |
| Cadmium | 5.00 | 25000.0 | |
| Calcium | 5.00 | 1200000.0 | |
| Chromium | 5.00 | 200000.0 | |
| Cobalt | 5.00 | 100000.0 | |
| Copper | 5.00 | 250000.0 | |
| Iron | 5.00 | 1000000.0 | |
| Lead | | | NR |
| Magnesium | 5.00 | 1000000.0 | |
| Manganese | 5.00 | 250000.0 | |
| Mercury | | | NR |
| Nickel | 5.00 | 250000.0 | |
| Potassium | 5.00 | 1000000.0 | |
| Selenium | | | NR |
| Silver | 5.00 | 100000.0 | |
| Sodium | 5.00 | 1000000.0 | |
| Thallium | | | NR |
| Vanadium | 5.00 | 50000.0 | |
| Zinc | 5.00 | 150000.0 | |

Comments:
P1: THERMO JARRELL-ASH ICAP61 (#10782)

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14

# ANALYSIS RUN LOG

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Instrument ID Number: P1 Method: P

Start date: 01/31/92 End date: 01/31/92

| 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 | CN |
| S0 | 1.00 | 1045 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| S | 1.00 | 1048 | | X | | | | | | X | | | | X | | X | | | | X | | | X | | | | |
| S | 1.00 | 1050 | | | X | | X | X | X | | X | X | X | | | | X | | X | | | | | | X | X | |
| S | 1.00 | 1053 | | | | | | | | | | | | | | | | | | | | X | | | | | |
| ICV | 1.00 | 1056 | | X | | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| ICV | 1.00 | 1059 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 1101 | | | X | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 1104 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| ICSA | 1.00 | 1107 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| ICSAB | 1.00 | 1109 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| CRI | 1.00 | 1112 | | | X | | | X | X | | X | X | X | | | | X | | X | | | X | | | X | X | |
| CCV | 1.00 | 1115 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| CCB | 1.00 | 1117 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| PBS | 1.00 | 1120 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| LCSS | 1.00 | 1123 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| ZZZZZZ | 1.00 | 1125 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B01CF9 | 1.00 | 1130 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| B01CF9D | 1.00 | 1133 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| B01CF9S | 1.00 | 1135 | | | X | | X | X | X | | X | X | X | | | | X | | X | | | X | | | X | X | |
| B01CF9L | 5.00 | 1138 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| B01CG0 | 1.00 | 1140 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| B01CG3 | 1.00 | 1143 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| B01GG2 | 1.00 | 1146 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| CCV | 1.00 | 1148 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| CCB | 1.00 | 1151 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| B01CF9A | 1.00 | 1154 | | | X | | | | | | X | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 1156 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| CCB | 1.00 | 1159 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| ICSA | 1.00 | 1202 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| ICSAB | 1.00 | 1204 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |
| CRI | 1.00 | 1207 | | | X | | | X | X | | X | X | X | | | | X | | X | | | X | | | X | X | |
| CCV | 1.00 | 1209 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |

FORM XIV - IN

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14

.ANALYSIS RUN LOG

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Instrument ID Number: P1 Method: P

Start date: 01/31/92 End date: 01/31/92

| 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 | CN |
| CCB | 1.00 | 1212 | | X | X | | X | X | X | X | X | X | X | X | | X | X | | X | X | | X | X | | X | X | |

FORM XIV - IN



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Analysis Report QC Standard Fri 01-31-92 10:59:11 AM page 1

Method: CLP0LD Sample Name: ICV1;ICV Operator: SRP
Run Time: 01/31/92 10:56:38
Comment: ICV#1
Mode: CONC Corr. Factor: 1

| Elem | Al3082 | Sb2068 | As1936 | Ba4934 | Be3130 | Cd2265 | Ca3179 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avge | 1.9424 | -.00665 | -.00545 | 1.9986 | .49421 | .49634 | 49.457 |
| SDev | .0047 | .00740 | .01321 | .0155 | .00193 | .00150 | .196 |
| %RSD | .24437 | -111.32 | -242.50 | .77671 | .39063 | .30299 | .39546 |
| #1 | 1.9442 | -.00868 | -.01985 | 1.9817 | .49421 | .49541 | 49.379 |
| #2 | 1.9370 | -.01282 | .00610 | 2.0020 | .49228 | .49553 | 49.313 |
| #3 | 1.9460 | .00156 | -.00259 | 2.0122 | .49614 | .49807 | 49.680 |
| Errors | QC Pass | NOCHECK | NOCHECK | QC Pass | QC Pass | QC Pass | QC Pass |
| Value | 2.0560 | | | 2.0780 | .50800 | .51600 | 51.382 |
| Range | 10.000 | | | 10.000 | 10.000 | 10.000 | 10.000 |

| Elem | Cr2677 | Co2286 | Cu3247 | Fe2599 | Pb2203 | Mg2790 | Mn2576 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avge | .49210 | .49111 | .48082 | 1.9822 | 4.9339 | 24.812 | .48938 |
| SDev | .00570 | .00323 | .00000 | .0019 | .0261 | .058 | .00183 |
| %RSD | 1.1585 | .65842 | .00008 | .09808 | .52970 | .23203 | .37330 |
| #1 | .48881 | .48758 | .48082 | 1.9800 | 4.9220 | 24.799 | .48832 |
| #2 | .48881 | .49393 | .48082 | 1.9833 | 4.9158 | 24.761 | .48832 |
| #3 | .49868 | .49181 | .48082 | 1.9834 | 4.9638 | 24.874 | .49149 |
| Errors | QC Pass | QC Pass | QC Pass | QC Pass | QC Pass | QC Pass | QC Pass |
| Value | .51400 | .49900 | .52500 | 2.1470 | 5.2030 | 25.587 | .50900 |
| Range | 10.000 | 10.000 | 10.000 | 10.000 | 10.000 | 10.000 | 10.000 |

| Elem | Ni2316 | K_7664 | Ag3280 | Na5889 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avge | .49300 | 49.831 | .51897 | 50.007 | .50104 | 2.9744 |
| SDev | .00082 | .419 | .00371 | .251 | .00126 | .0072 |
| %RSD | .16721 | .84106 | .71538 | .50137 | .25131 | .24097 |
| #1 | .49348 | 49.630 | .51600 | 49.831 | .49958 | 2.9723 |
| #2 | .49205 | 49.550 | .51778 | 49.896 | .50175 | 2.9685 |
| #3 | .49348 | 50.312 | .52313 | 50.294 | .50178 | 2.9824 |
| Errors | QC Pass | QC Pass | QC Pass | QC Pass | QC Pass | QC Pass |
| Value | .50400 | 50.563 | .51700 | 52.348 | .51700 | 3.0520 |
| Range | 10.000 | 10.000 | 10.000 | 10.000 | 10.000 | 10.000 |

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Analysis Report Fri 01-31-92 11:07:06 AM page 1

Method: CLP0LD Sample Name: STDB;ICB Operator: SRP
Run Time: 01/31/92 11:04:33
Comment: ICB#1
Mode: CONC Corr. Factor: 1

| Elem | Al3082 | Sb2068 | As1936 | Ba4934 | Be3130 | Cd2265 | Ca3179 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avge | .00598 | .00759 | -.00146 | .00000 | .00000 | -.00008 | .01474 |
| SDev | .00989 | .00727 | .01244 | .00000 | .00000 | .00018 | .00599 |
| %RSD | 165.35 | 95.730 | -854.14 | .00000 | .00000 | -234.05 | 40.637 |
| #1 | .01615 | .00828 | .00571 | .00000 | .00000 | .00012 | .01690 |
| #2 | .00538 | .01450 | .00574 | .00000 | .00000 | -.00011 | .01935 |
| #3 | -.00359 | .00001 | L-.01583 | .00000 | .00000 | -.00023 | .00797 |
| Errors | LC Pass | LC Pass | LC Pass | LC Pass | LC Pass | LC Pass | LC Pass |
| High | .20000 | .06000 | .01300 | .20000 | .00500 | .00500 | 5.0000 |
| Low | -.20000 | -.06000 | -.01300 | -.20000 | -.00500 | -.00500 | -5.0000 |

| Elem | Cr2677 | Co2286 | Cu3247 | Fe2599 | Pb2203 | Mg2790 | Mn2576 |
|---|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| Avge | .00000 | .00282 | -.01409 | -.00953 | .00836 | -.01256 | .00387 |
| SDev | .0000 | .00212 | .00463 | .00000 | .01072 | .05757 | .00061 |
| %RSD | -32.864 | 75.000 | -32.864 | -.00741 | 128.32 | -458.26 | 15.742 |
| #1 | .00000 | .00494 | -.00890 | -.00953 | H.01741 | .03769 | .00422 |
| #2 | .00000 | .00282 | -.01557 | -.00953 | .01114 | -.07538 | .00422 |
| #3 | .00000 | .00071 | -.01780 | -.00953 | -.00348 | .00000 | .00316 |
| Errors | LC Pass | LC Pass | LC Pass | LC Pass | LC Pass | LC Pass | LC Pass |
| High | .01000 | .05000 | .02500 | .10000 | .01200 | 5.0000 | .01500 |
| Low | -.01000 | -.05000 | -.02500 | -.10000 | -.01200 | -5.0000 | -.01500 |

| Elem | Ni2316 | K_7664 | Ag3280 | Na5889 | V_2924 | Zn2138 |
|---|---|---|---|---|---|---|
| Units | ppm | ppm | ppm | ppm | ppm | ppm |
| Avge | .00238 | .03122 | .00000 | -.01666 | .00216 | .01432 |
| SDev | .00247 | .06867 | .0010 | .00976 | .00000 | .00769 |
| %RSD | 103.92 | 219.93 | -131220. | -58.595 | .00198 | 53.716 |
| #1 | .00095 | .01338 | .00059 | -.00944 | .00216 | H.02272 |
| #2 | .00523 | -.02676 | -.00119 | -.01277 | .00216 | .01263 |
| #3 | .00095 | .10705 | .00059 | -.02776 | .00216 | .00761 |
| Errors | LC Pass | LC Pass | LC Pass | LC Pass | LC Pass | LC Pass |
| High | .04000 | 5.0000 | .01000 | 5.0000 | .05000 | .02000 |
| Low | -.04000 | -5.0000 | -.01000 | -5.0000 | -.05000 | -.02000 |

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WESTINGHOUSE/HANFORD

14

ANALYSIS RUN LOG

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Instrument ID Number: F4 Method: F

Start date: 01/30/92 End date: 01/30/92

| 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 | CN |
| S0 | 1.00 | 0857 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| S10 | 1.00 | 0901 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| S50 | 1.00 | 0905 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| S100 | 1.00 | 0909 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 0915 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 0919 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| CRA | 1.00 | 0923 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 0927 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 0931 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 5.00 | 0935 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 5.00 | 0939 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0943 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0947 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 5.00 | 0952 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 5.50 | 0956 | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 1000 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 1004 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| PBS | 1.00 | 1014 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| PBSA | 1.00 | 1018 | 93.9 | | | X | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZ | 5.00 | 1022 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZ | 5.00 | 1026 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1030 | | | | | | | | | | | | | | | | | | | | | | | | | |
| LCSS | 200.00 | 1034 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| LCSSA | 200.00 | 1038 | 92.8 | | | X | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1042 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B01CF9 | 1.00 | 1046 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| B01CF9A | 1.00 | 1050 | 88.0 | | | X | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 1054 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 1059 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| B01CF9D | 1.00 | 1103 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| B01CF9DA | 1.00 | 1107 | 100.2 | | | X | | | | | | | | | | | | | | | | | | | | | |
| B01CF9S | 1.00 | 1111 | | | | X | | | | | | | | | | | | | | | | | | | | | |

9214528.1955

WESTINGHOUSE/HANFORD

14

# ANALYSIS RUN LOG

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Instrument ID Number: F4 Method: F

Start date: 01/30/92 End date: 01/30/92

| 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 | CN |
| ZZZZZZ | 1.00 | 1115 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B01CG0 | 1.00 | 1119 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| B01CG0A | 1.00 | 1123 | 98.0 | | | X | | | | | | | | | | | | | | | | | | | | | |
| B01CG3 | 1.00 | 1127 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| B01CG3A | 1.00 | 1131 | 96.6 | | | X | | | | | | | | | | | | | | | | | | | | | |
| B01GG2 | 1.00 | 1135 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| B01GG2A | 1.00 | 1139 | 102.7 | | | X | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 1144 | | | | X | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 1148 | | | | X | | | | | | | | | | | | | | | | | | | | | |

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WESTINGHOUSE/HANFORD

14

ANALYSIS RUN LOG

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Instrument ID Number: F4 Method: F

Start date: 01/30/92 End date: 01/30/92

| 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 | CN |
| S0 | 1.00 | 0857 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| S5 | 1.00 | 0901 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| S50 | 1.00 | 0905 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| S100 | 1.00 | 0909 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| ICV | 1.00 | 0915 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| ICB | 1.00 | 0919 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| CRA | 1.00 | 0923 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| CCV | 1.00 | 0927 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| CCB | 1.00 | 0931 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| ZZZZZZ | 5.00 | 0935 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 5.00 | 0939 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0943 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 0947 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 5.00 | 0952 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 5.50 | 0956 | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 1000 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| CCB | 1.00 | 1004 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| PBS | 1.00 | 1014 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| PBSA | 1.00 | 1018 | 105.4 | | | | | | | | | | | | | | | | | | X | | | | | | |
| LCSS | 5.00 | 1022 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| LCSSA | 5.00 | 1026 | 126.4 | | | | | | | | | | | | | | | | | | X | | | | | | |
| ZZZZZZ | 1.00 | 1030 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZ | 200.00 | 1034 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZ | 200.00 | 1038 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1042 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B01CF9 | 1.00 | 1046 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B01CF9A | 1.00 | 1050 | 0.0 | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 1054 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| CCB | 1.00 | 1059 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| B01CF9D | 1.00 | 1103 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B01CF9DA | 1.00 | 1107 | 0.0 | | | | | | | | | | | | | | | | | | | | | | | | |
| B01CF9S | 1.00 | 1111 | | | | | | | | | | | | | | | | | | | X | | | | | | |

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WESTINGHOUSE/HANFORD

14

ANALYSIS RUN LOG

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Instrument ID Number: F4 Method: F

Start date: 01/30/92 End date: 01/30/92

| 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 | CN |
| ZZZZZZ | 1.00 | 1115 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B01CG0 | 1.00 | 1119 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| B01CG0A | 1.00 | 1123 | 0.0 | | | | | | | | | | | | | | | | | | X | | | | | | |
| B01CG3 | 1.00 | 1127 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B01CG3A | 1.00 | 1131 | 0.0 | | | | | | | | | | | | | | | | | | | | | | | | |
| B01GG2 | 1.00 | 1135 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B01GG2A | 1.00 | 1139 | 0.0 | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 1144 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| CCB | 1.00 | 1148 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| B01CF9 | 5.00 | 1152 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| B01CF9A | 5.00 | 1156 | 87.5 | ✓ | | | | | | | | | | | | | | | | | X | | | | | | |
| B01CF9D | 5.00 | 1200 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| B01CF9DA | 5.00 | 1205 | 108.7 | | | | | | | | | | | | | | | | | | X | | | | | | |
| B01CG3 | 5.00 | 1209 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| B01CG3A | 5.00 | 1213 | 103.8 | ✓ | | | | | | | | | | | | | | | | | X | | | | | | |
| B01GG2 | 5.00 | 1217 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B01GG2A | 5.00 | 1221 | 120.3 | | | | | | | | | | | | | | | | | | | | | | | | |
| B01GG2 | 5.00 | 1243 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| B01GG2A | 5.00 | 1247 | 85.9 | ✓ | | | | | | | | | | | | | | | | | X | | | | | | |
| CCV | 1.00 | 1251 | | | | | | | | | | | | | | | | | | | X | | | | | | |
| CCB | 1.00 | 1255 | | | | | | | | | | | | | | | | | | | X | | | | | | |

9716528.D939

C L P  M E T A L S  3.00k2

SELENIUM

un id: F4 9203052
THERMO JARRELL-ASH VIDEO 22E (#2664)
nalytical method: F
lement: Multi-Element

Acquired: 01/30/92 by RPP
Crunched: 02/03/92 by RPP
Time: 1447
Processing protocol: 3/90

| OS | Sample | Code | Preparation Meth | Batch | Date | Client ID | Date | Time |
|---|---|---|---|---|---|---|---|---|
| 1 | 0 PPB | WS0 | F | | | S0 | 01/30/92 | 08:57 |
| 2 | 5 PPB | WS1 | F | | | S5 | 01/30/92 | 09:01 |
| 3 | 50 PPB | WS2 | F | | | S50 | 01/30/92 | 09:05 |
| 4 | 100 PPB | WS3 | F | | | S100 | 01/30/92 | 09:09 |
| 5 | ICV-2 | ICV | F | | | ICV | 01/30/92 | 09:15 |
| 6 | CAL BLK | ICB | F | | | ICB | 01/30/92 | 09:19 |
| 7 | CRA | CRAO | F | | | CRA | 01/30/92 | 09:23 |
| 8 | 50 PPB | CCV | F | | | CCV | 01/30/92 | 09:27 |
| 9 | CAL BLK | CCB | F | | | CCB | 01/30/92 | 09:31 |
| 10 | X | X | F | | | ZZZZZZ | 01/30/92 | 09:35 |
| 11 | X | X | F | | | ZZZZZZ | 01/30/92 | 09:39 |
| 12 | X | X | F | | | ZZZZZZ | 01/30/92 | 09:43 |
| 13 | X | X | F | | | ZZZZZZ | 01/30/92 | 09:47 |
| 14 | X | X | F | | | ZZZZZZ | 01/30/92 | 09:52 |
| 15 | X | X | F | | | ZZZZZZ | 01/30/92 | 09:56 |
| 16 | 50 PPB | CCV | F | | | CCV | 01/30/92 | 10:00 |
| 17 | CAL BLK | CCB | F | | | CCB | 01/30/92 | 10:04 |
| 18 | PB | PBS | F | 2847 | 01/22/92 | PBS | 01/30/92 | 10:14 |
| 19 | PB | ASPBS | F | 2847 | | PBSA | 01/30/92 | 10:18 |
| 20 | LCSFS | LCSS | F | 2847 | 01/22/92 | LCSS | 01/30/92 | 10:22 |
| 21 | LCSFS | ASLCSS | F | 2847 | | LCSSA | 01/30/92 | 10:26 |
| 22 | X | X | F | | | ZZZZZZ | 01/30/92 | 10:30 |
| 23 | LCSFS | LCSS | F | | | LCSS | 01/30/92 | 10:34 |
| 24 | LCSFS | ASLCSS | F | | | LCSSA | 01/30/92 | 10:38 |
| 25 | X | X | F | | | ZZZZZZ | 01/30/92 | 10:42 |
| 26 | S201032-01 | S | F | 2847 | 01/22/92 | B01CF9 | 01/30/92 | 10:46 |
| 27 | S201032-01 | AS | F | 2847 | | B01CF9A | 01/30/92 | 10:50 |
| 28 | 50 PPB | CCV | F | | | CCV | 01/30/92 | 10:54 |
| 29 | CAL BLK | CCB | F | | | CCB | 01/30/92 | 10:59 |
| 30 | S201032-01 | S2 | F | 2847 | 01/22/92 | B01CF9D | 01/30/92 | 11:03 |
| 31 | S201032-01 | ASS2 | F | 2847 | | B01CF9DA | 01/30/92 | 11:07 |
| 32 | S201032-01 | DS | F | 2847 | 01/22/92 | B01CF9S | 01/30/92 | 11:11 |
| 33 | X | X | F | | | ZZZZZZ | 01/30/92 | 11:15 |
| 34 | S201032-02 | S | F | 2847 | 01/22/92 | B01CG0 | 01/30/92 | 11:19 |
| 35 | S201032-02 | AS | F | 2847 | | B01CG0A | 01/30/92 | 11:23 |
| 36 | S201032-03 | S | F | 2847 | 01/22/92 | B01CG3 | 01/30/92 | 11:27 |
| 37 | S201032-03 | AS | F | 2847 | | B01CG3A | 01/30/92 | 11:31 |
| 38 | S201032-04 | S | F | 2847 | 01/22/92 | B01GG2 | 01/30/92 | 11:35 |
| 39 | S201032-04 | AS | F | 2847 | | B01GG2A | 01/30/92 | 11:39 |
| 40 | 50 PPB | CCV | F | | | CCV | 01/30/92 | 11:44 |
| 41 | CAL BLK | CCB | F | | | CCB | 01/30/92 | 11:48 |
| 42 | S201032-01 | S | F | 2847 | 01/22/92 | B01CF9 | 01/30/92 | 11:52 |
| 43 | S201032-01 | AS | F | 2847 | | B01CF9A | 01/30/92 | 11:56 |

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ELENIUM

| Os | Sample | Code | Preparation Meth | Batch | Date | Client ID | Date | Time |
|---|---|---|---|---|---|---|---|---|
| 44 | S201032-01 | S2 | F | 2847 | 01/22/92 | B01CF9D | 01/30/92 | 12:00 |
| 45 | S201032-01 | ASS2 | F | 2847 | | B01CF9DA | 01/30/92 | 12:05 |
| 46 | S201032-03 | S | F | 2847 | 01/22/92 | B01CG3 | 01/30/92 | 12:09 |
| 47 | S201032-03 | AS | F | 2847 | | B01CG3A | 01/30/92 | 12:13 |
| 48 | S201032-04 | S | F | 2847 | 01/22/92 | B01GG2 | 01/30/92 | 12:17 |
| 49 | S201032-04 | AS | F | 2847 | | B01GG2A | 01/30/92 | 12:21 |
| 50 | S201032-04 | S | F | 2847 | 01/22/92 | B01GG2 | 01/30/92 | 12:43 |
| 51 | S201032-04 | AS | F | 2847 | | B01GG2A | 01/30/92 | 12:47 |
| 52 | 50 PPB | CCV | F | | | CCV | 01/30/92 | 12:51 |
| 53 | CAL BLK | CCB | F | | | CCB | 01/30/92 | 12:55 |

9713528.0940

Jarrell-Ash Video 22
Run: F4 9203001 Analyst: JST Page 1

Concentrations/Absorbances

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 1 | STD1(0) | XWS0 | S0 | 1.00x | 01/30/92 | 08:57 |

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Abs) | [0]A | [0]A | [0]A | [0]A |
| Mean | 0.0000 | | 0.0000 | |
| CV % | --- | | --- | |

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 2 | STD2(10,5) | WS1 | S | 1.00x | 01/30/92 | 09:01 |

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Abs) | 0.034 A | 0.032 A | 0.012A | 0.015A |
| Mean | 0.0330 | | 0.0135 | |
| CV % | 0.00 | | 0.00 | |

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 3 | STD3(50) | WS2 | S | 1.00x | 01/30/92 | 09:05 |

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Abs) | 0.165 A | 0.168 A | 0.135A | 0.139A |
| Mean | 0.1665 | | 0.1370 | |
| CV % | 0.00 | | 0.00 | |

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 4 | STD4(100) | WS3 | S | 1.00x | 01/30/92 | 09:09 |

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Abs) | 0.284 A | 0.283 A | 0.209A | 0.223A |
| Mean | 0.2835 | | 0.2160 | |
| CV % | 0.00 | | 4.58 | |

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 5 | ICV-2 | ICV | ICV | 1.00x | 01/30/92 | 09:15 |

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Conc) | 53.151 | 51.008 | 53.543 | 54.50 |
| Mean | 52.0795 | | 54.0260 | |
| CV % | 2.91 | | 1.26 | |
| Sample value | 52.08 | | 54.03 | |

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 6 | CAL BLK | ICB | ICB | 1.00x | 01/30/92 | 09:19 |

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Conc) | 0.531 | -0.530 | 4.309 | 2.75 |
| Mean | 0.0005 | | 3.5320 | |
| CV % | >9999.99 | | 31.11 | |
| Sample value | 2.00U | | 4.00U | |

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 7 | CRA | CRA | CRA | 1.00x | 01/30/92 | 09:23 |

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Conc) | 8.956 | 8.125 | 5.880 | 4.93 |
| Mean | 8.5405 | | 5.4075 | |
| CV % | 6.88 | | 12.36 | |
| Sample value | 8.54 | | 5.41 | |

076

ARGOS MODEL SA4 Version 1.28

9713528.0941

Jarrell-Ash Video 22
Run: F4 9203001 Analyst: JST Page 2

Concentrations/Absorbances

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 8 | 50 PPB | CCV | CCV | 1.00x | 01/30/92 | 09:27 |

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Conc) | 50.300 | 50.653 | 46.597 | 50.238 |
| Mean | 50.4765 | | 48.4175 | |
| CV % | 0.49 | | 5.32 | |
| Sample value | 50.48 | | 48.42 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 9 | CAL BLK | CCB | CCB | 1.00x | 01/30/92 | 09:31 |

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Conc) | 0.266 | -0.795 | 3.374 | 0.91 |
| Mean | -0.2645 | | 2.1430 | |
| CV % | 283.64 | | 81.24 | |
| Sample value | 2.00U ✓ | | 4.00U ✓ | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 10 | X | X | ZZZZZZ | 5.00x | 01/30/92 | 09:35 |

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Conc) | 0.266 | 0.266 | 2.755 | 0.608 |
| Mean | 0.2660 | | 1.6815 | |
| CV % | 0.00 | | 90.29 | |
| Sample value | 10.00U | | 20.00U | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11 | X | X | ZZZZZZ | 5.00x | 01/30/92 | 09:39 |

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Conc) | 21.882 | 20.401 | 10.704 | 10.70 |
| Mean | 21.1415 | | 10.7040 | |
| CV % | 4.95 | | 0.00 | |
| Sample value | 105.71 | | 53.52 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 12 | X | X | ZZZZZZ | 1.00x | 01/30/92 | 09:43 |

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Conc) | 5.652 | 5.379 | 1.831 | 2.44 |
| Mean | 5.5155 | | 2.1385 | |
| CV % | 3.50 | | 20.34 | |
| Sample value | 5.52 | | 4.00U | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 13 | X | X | ZZZZZZ | 1.00x | 01/30/92 | 09:47 |

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Conc) | 30.727 | 31.669 | 5.880 | 6.83 |
| Mean | 31.1980 | | 6.3555 | |
| CV % | 2.14 | | 10.58 | |
| Sample value | 31.20 | | 6.36 | |

ARGOS MODEL SA4 Version 1.28

Jarrell-Ash Video 22
Run: F4 9203001 Analyst: JST Page 3

Concentrations/Absorbances

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 14 | X | X | ZZZZZZ | 5.00x | 01/30/92 | 09:52 |

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Conc) | 0.266 | 0.798 | 1.524 | 1.524 |
| Mean | 0.5320 | | 1.5240 | |
| CV % | 70.71 | | 0.00 | |
| Sample value | 10.00U | | 20.00U | |

| 15 | X | X | ZZZZZZ | 5.50x | 01/30/92 | 09:56 |
|---|---|---|---|---|---|---|

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Conc) | 23.677 | 23.376 | 12.682 | 11.03 |
| Mean | 23.5265 | | 11.8565 | |
| CV % | 0.90 | | 9.85 | |
| Sample value | 129.39 | | 65.21 | |

| 16 | 50 PPB | CCV | CCV | 1.00x | 01/30/92 | 10:00 |
|---|---|---|---|---|---|---|

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Conc) | 50.653 | 51.719 | 47.495 | 51.17 |
| Mean | 51.1860 | | 49.3330 | |
| CV % | 1.47 | | 5.27 | |
| Sample value | 51.19 | | 49.33 | |

| 17 | CAL BLK | CCB | CCB | 1.00x | 01/30/92 | 10:04 |
|---|---|---|---|---|---|---|

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Conc) | 0.531 | -0.795 | 1.831 | -0.30 |
| Mean | -0.1320 | | 0.7640 | |
| CV % | 710.32 | | 197.51 | |
| Sample value | 2.00U | | 4.00U | |

| 18 | PB | PBS | PBS | 1.00x | 01/30/92 | 10:14 |
|---|---|---|---|---|---|---|

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Conc) | 1.866 | 1.331 | 0.000 | 2.13 |
| Mean | 1.5985 | | 1.0690 | |
| CV % | 23.67 | | 141.42 | |
| Sample value | 2.00U | | 4.00U | |

| 19 | PB | ASPBS | PBSA | 1.00x | 01/30/92 | 10:18 |
|---|---|---|---|---|---|---|

| | <-As-> | | <-Se-> | |
|---|---|---|---|---|
| Burns (Conc) | 19.224 | 18.347 | 9.725 | 11.36 |
| Mean | 18.7855 | | 10.5425 | |
| CV % | 3.30 | | 10.97 | |
| Sample value | 18.78 | | 10.54 | |
| Spike added | 20.00 | | 10.00 | |
| Spike recovery, % | 93.93 | | 105.42 | |

ARGOS MODEL SA4 Version 1.28

9713528.0943

WESTINGHOUSE/HANFORD

14

.ANALYSIS RUN LOG

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Instrument ID Number: F3 Method: F

Start date: 01/27/92 End date: 01/27/92

| 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 | C N |
| S0 | 1.00 | 1723 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| S3 | 1.00 | 1728 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| S50 | 1.00 | 1732 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| S100 | 1.00 | 1736 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| ICV | 2.00 | 1751 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| ICB | 1.00 | 1756 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| CRA | 1.00 | 1800 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| CCV | 1.00 | 1804 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| CCB | 1.00 | 1809 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| PBS | 1.00 | 1813 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| PBSA | 1.00 | 1817 | 96.9 | | | | | | | | | | | | X | | | | | | | | | | | | |
| ZZZZZ | 5.00 | 1822 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZ | 5.00 | 1826 | | | | | | | | | | | | | | | | | | | | | | | | | |
| LCSS | 20.00 | 1830 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| LCSSA | 20.00 | 1835 | 90.5 | | | | | | | | | | | | X | | | | | | | | | | | | |
| B01CF9 | 1.00 | 1839 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| B01CF9A | 1.00 | 1843 | 101.2 | | | | | | | | | | | | X | | | | | | | | | | | | |
| B01CF9D | 1.00 | 1847 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| B01CF9DA | 1.00 | 1852 | 107.0 | | | | | | | | | | | | X | | | | | | | | | | | | |
| CCV | 1.00 | 1856 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| CCB | 1.00 | 1900 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| B01CF9S | 1.00 | 1905 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1909 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B01CG0 | 1.00 | 1913 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| B01CG0A | 1.00 | 1918 | 115.0 | | | | | | | | | | | | X | | | | | | | | | | | | |
| B01CG3 | 1.00 | 1922 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B01CG3A | 1.00 | 1926 | 9999.9 | | | | | | | | | | | | | | | | | | | | | | | | |
| B01GG2 | 1.00 | 1930 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B01GG2A | 1.00 | 1935 | 9999.9 | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 1939 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| CCB | 1.00 | 1943 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| B01CG3 | 10.00 | 2013 | | | | | | | | | | | | | X | | | | | | | | | | | | |

9213528 D944

WESTINGHOUSE/HANFORD

14

ANALYSIS RUN LOG

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Instrument ID Number: F3 Method: F

Start date: 01/27/92 End date: 01/27/92

| 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 | CN |
| B01CG3A | 10.00 | 2017 | 95.4 | ✓ | | | | | | | | | | | X | | | | | | | | | | | | |
| B01GG2 | 10.00 | 2021 | | ✓ | | | | | | | | | | | X | | | | | | | | | | | | |
| B01GG2A | 10.00 | 2025 | 93.6 | ✓ | | | | | | | | | | | X | | | | | | | | | | | | |
| CCV | 1.00 | 2030 | | | | | | | | | | | | | X | | | | | | | | | | | | |
| CCB | 1.00 | 2034 | | | | | | | | | | | | | X | | | | | | | | | | | | |

FORM XIV - IN

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14

ANALYSIS RUN LOG

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Instrument ID Number: F3 Method: F

Start date: 01/27/92 End date: 01/27/92

| 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 | CN |
| S0 | 1.00 | 1723 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| S10 | 1.00 | 1728 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| S50 | 1.00 | 1732 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| S100 | 1.00 | 1736 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| ICV | 2.00 | 1751 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| ICB | 1.00 | 1756 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| CRA | 1.00 | 1800 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| CCV | 1.00 | 1804 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| CCB | 1.00 | 1809 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| PBS | 1.00 | 1813 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| PBSA | 1.00 | 1817 | 91.4 | | | | | | | | | | | | | | | | | | | | | X | | | |
| LCSS | 5.00 | 1822 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| LCSSA | 5.00 | 1826 | 81.2 | | | | | | | | | | | | | | | | | | | | | X | | | |
| ZZZZZ | 20.00 | 1830 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZ | 20.00 | 1835 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B01CF9 | 1.00 | 1839 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| B01CF9A | 1.00 | 1843 | 101.1 | | | | | | | | | | | | | | | | | | | | | X | | | |
| B01CF9D | 1.00 | 1847 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| B01CF9DA | 1.00 | 1852 | 99.0 | | | | | | | | | | | | | | | | | | | | | X | | | |
| CCV | 1.00 | 1856 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| CCB | 1.00 | 1900 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| B01CF9S | 1.00 | 1905 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| ZZZZZZ | 1.00 | 1909 | | | | | | | | | | | | | | | | | | | | | | | | | |
| B01CG0 | 1.00 | 1913 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| B01CG0A | 1.00 | 1918 | 107.6 | | | | | | | | | | | | | | | | | | | | | X | | | |
| B01CG3 | 1.00 | 1922 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| B01CG3A | 1.00 | 1926 | 104.4 | | | | | | | | | | | | | | | | | | | | | X | | | |
| B01GG2 | 1.00 | 1930 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| B01GG2A | 1.00 | 1935 | 106.6 | | | | | | | | | | | | | | | | | | | | | X | | | |
| CCV | 1.00 | 1939 | | | | | | | | | | | | | | | | | | | | | | X | | | |
| CCB | 1.00 | 1943 | | | | | | | | | | | | | | | | | | | | | | X | | | |

9713528.0946

Jarrell-Ash Video 22
Run: F3 9202703 Analyst: JST Page 1

Concentrations/Absorbances

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 1 | STD1(0) | XWS0 | S0 | 1.00x | 01/27/92 | 17:23 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Abs) | [0]A | [0]A | [0]A | [0]A |
| Mean | 0.0000 | | 0.0000 | |
| CV % | --- | | --- | |

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 2 | STD2(3.10) | WS1 | S | 1.00x | 01/27/92 | 17:28 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Abs) | 0.013 A | 0.013 A | 0.024A | 0.023A |
| Mean | 0.0130 | | 0.0235 | |
| CV % | 0.00 | | 0.00 | |

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 3 | STD3(50) | WS2 | S | 1.00x | 01/27/92 | 17:32 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Abs) | 0.261 A | 0.262 A | 0.116A | 0.113A |
| Mean | 0.2615 | | 0.1145 | |
| CV % | 0.00 | | 0.00 | |

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 4 | STD4(100) | WS3 | S | 1.00x | 01/27/92 | 17:36 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Abs) | 0.481 A | 0.464 A | 0.219A | 0.209A |
| Mean | 0.4725 | | 0.2140 | |
| CV % | 2.54 | | 3.30 | |

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 5 | ICV-4 | ICV | ICV | 2.00x | 01/27/92 | 17:51 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Conc) | 51.480 | 49.571 | 52.198 | 48.92 |
| Mean | 50.5255 | | 50.5600 | |
| CV % | 2.67 | | 4.58 | |
| Sample value | 101.05 | | 101.12 | |

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 6 | CAL BLK | ICB | ICB | 1.00x | 01/27/92 | 17:56 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Conc) | 1.227 | 0.350 | -0.822 | -1.64 |
| Mean | 0.7885 | | -1.2320 | |
| CV % | 78.65 | | 47.06 | |
| Sample value | 1.00U | | 2.00U | |

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 7 | CRA | CRA | CRA | 1.00x | 01/27/92 | 18:00 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Conc) | 2.284 | 1.931 | 8.306 | 7.46 |
| Mean | 2.1075 | | 7.8870 | |
| CV % | 11.84 | | 7.51 | |
| Sample value | 2.11 | | 7.89 | |

088

ARGOS MODEL SA4 Version 1.28

9213528.0947

Jarrell-Ash Video 22
Run: F3 9202703 Analyst: JST Page 2

Concentrations/Absorbances

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 8 | 50 PPB | CCV | CCV | 1.00x | 01/27/92 | 18:04 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Conc) | 47.468 | 49.783 | 47.064 | 47.064 |
| Mean | 48.6255 | | 47.0640 | |
| CV % | 3.37 | | 0.00 | |
| Sample value | 48.63 | | 47.06 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 9 | CAL BLK | CCB | CCB | 1.00x | 01/27/92 | 18:09 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Conc) | 0.350 | -0.350 | -1.232 | -2.05 |
| Mean | -0.0000 | | -1.6415 | |
| CV % | >9999.99 | | 35.28 | |
| Sample value | 1.00U | | 2.00U | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 10 | PB | PBS | PBS | 1.00x | 01/27/92 | 18:13 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Conc) | -0.699 | -0.524 | -1.642 | -0.82 |
| Mean | -0.6115 | | -1.2320 | |
| CV % | 20.24 | | 47.06 | |
| Sample value | 1.00U | | 2.00U | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11 | PS | ASPBS | PBSA | 1.00x | 01/27/92 | 18:17 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Conc) | 19.372 | 19.372 | 18.503 | 18.07 |
| Mean | 19.3720 | | 18.2880 | |
| CV % | 0.02 | | 1.66 | |
| Sample value | 19.37 | | 18.29 | |
| Spike added | 20.00 | | 20.00 | |
| Spike recovery, % | 96.86 | | 91.44 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 12 | LCSFS | LCSS | LCSS | 5.00x | 01/27/92 | 18:22 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Conc) | 999.999 | 999.999 | 34.306 | 33.85 |
| Mean | 999.9990 | | 34.0820 | |
| CV % | 0.02 | | 0.93 | |
| Sample value | 5000.00 | | 170.41 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 13 | LCSFS | ASLCSS | LCSSA | 5.00x | 01/27/92 | 18:26 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Conc) | 999.999 | 999.999 | 51.728 | 48.92 |
| Mean | 999.9990 | | 50.3250 | |
| CV % | 0.02 | | 3.94 | |
| Sample value | 5000.00 | | 251.63 | |
| Spike added | 20.00 | | 20.00 | |
| Spike recovery, % | 0.00 *** | | 81.21 *** | |

Tl only DBW 1/29/92

089

ARGOS MODEL SA4 Version 1.28

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Jarrell-Ash Video 22
Run: F3 9202703 Analyst: JST Page 4

Concentrations/Absorbances

| POS | SAMPLE ID | CODE | CLIENT ID | DILUTION | DATE | TIME |
|---|---|---|---|---|---|---|
| 19 | -01 | ASS2 | B01CF9DA | 1.00x | 01/27/92 | 18:52 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Conc) | 64.167 | 62.598 | 19.364 | 20.228 |
| Mean | 63.3825 | | 19.7960 | |
| CV % | 1.75 | | 3.09 | |
| Sample value | 63.38 | | 19.80 | |
| Spike added | 20.00 | | 20.00 | |
| Spike recovery, % | 107.00 | | 98.98 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 20 | 50 PPB | CCV | CCV 2 | 1.00x | 01/27/92 | 18:56 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Conc) | 52.547 | 51.267 | 49.389 | 49.389 |
| Mean | 51.9070 | | 49.3890 | |
| CV % | 1.74 | | 0.00 | ✓ |
| Sample value | 51.91 | | 49.39 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 21 | CAL BLK | CCB | CCB 2 | 1.00x | 01/27/92 | 19:00 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Conc) | -0.524 | 0.000 | -2.051 | -1.238 |
| Mean | -0.2620 | | -1.6415 | |
| CV % | 141.42 | | 35.28 | |
| Sample value | 1.00U | | 2.00U | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 22 | -01 | DS | B01CF9S | 1.00x | 01/27/92 | 19:05 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Conc) | 49.149 | 48.097 | 53.611 | 52.668 |
| Mean | 48.6230 | | 53.1395 | |
| CV % | 1.53 | | 1.26 | |
| Sample value | 48.62 | | 53.14 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 23 | X | X | ZZZZZZ | 1.00x | 01/27/92 | 19:09 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Conc) | 69.863 | 68.024 | 78.022 | 76.005 |
| Mean | 68.9435 | | 77.0135 | |
| CV % | 1.89 | | 1.85 | |
| Sample value | 68.94 | | 77.01 | |

DDW 1/28/92

| | | | | | | |
|---|---|---|---|---|---|---|
| 24 | -02 | S | B01CGO | 1.00x | 01/27/92 | 19:13 |

| | <-Pb-> | | <-Tl-> | |
|---|---|---|---|---|
| Burns (Conc) | 29.893 | 30.283 | -0.822 | 0.000 |
| Mean | 30.0880 | | -0.4110 | |
| CV % | 0.92 | | 141.42 | |
| Sample value | 30.09 | | 2.00U | |

ARGOS MODEL SA4 Version 1.28

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WESTINGHOUSE/HANFORD

14

ANALYSIS RUN LOG

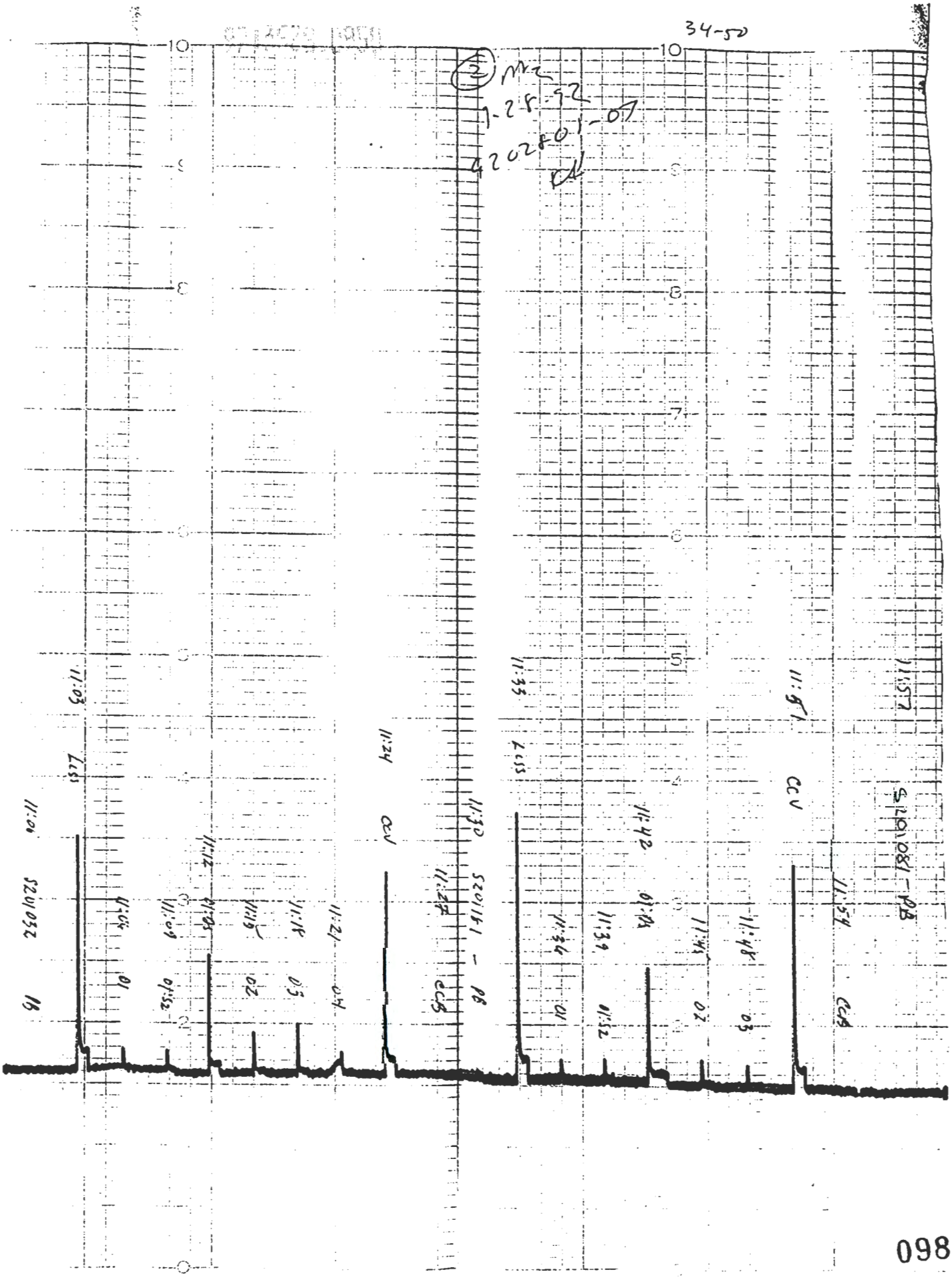
Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N201052 SAS No.: SDG No.: B01CF9

Instrument ID Number: M2 Method: CV

Start date: 01/28/92 End date: 01/28/92

| 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 | CN |
| S0 | 1.00 | 1000 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| S0.5 | 1.00 | 1003 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| S1.0 | 1.00 | 1006 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| S2.0 | 1.00 | 1009 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| S4.0 | 1.00 | 1012 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| ICV | 2.00 | 1015 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| ICB | 1.00 | 1018 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| CCV | 1.00 | 1021 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| CCB | 1.00 | 1024 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| ZZZZZZ | 1.00 | 1027 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1030 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1033 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1036 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1039 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1042 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1045 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1048 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1051 | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV | 1.00 | 1054 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| CCB | 1.00 | 1057 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| PBS | 1.00 | 1100 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| LCSS | 1.00 | 1103 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| B01CF9 | 1.00 | 1106 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| B01CF9D | 1.00 | 1109 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| B01CF9S | 1.00 | 1112 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| B01CG0 | 1.00 | 1115 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| B01CG3 | 1.00 | 1118 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| B01GG2 | 1.00 | 1121 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| CCV | 1.00 | 1124 | | | | | | | | | | | | | | | | X | | | | | | | | | |
| CCB | 1.00 | 1127 | | | | | | | | | | | | | | | | X | | | | | | | | | |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CCV
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LCS
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S201141 - PB
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CCG
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CCV
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18