



**WORK PLAN FOR THE REMOVAL OF  
STOCKPILED AND DRUMMED SOILS**

**BUILDING NO. 52 AREA  
CHRYSLER CORPORATION MAIN PLANT  
KENOSHA, WISCONSIN  
WDNR TID NO. 230004500**

RECEIVED  
SEP 1 1998

DEPT. of NATURAL RESOURCES  
SERVICE CENTER  
S. STEVANT, WI

**PREPARED FOR:**

Chrysler Corporation  
800 Chrysler Drive  
Auburn Hills, Michigan 48326-2757

**PREPARED BY:**

GZA GeoEnvironmental, Inc.  
N4140 DuPlainville Road  
Pewaukee, Wisconsin 53072

September 8, 1998  
File No. 150313.19

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September 8, 1998  
File No. 150313.19

Chrysler Corporation  
800 Chrysler Drive  
Auburn Hills, Michigan 48326-2757

Attention: Mr. Louis Alan Johnston  
CIMS 482-00-51  
Supervisor, Environmental Remediation  
Pollution Prevention and Remediation

Subject: Work Plan for Removal of Stockpiled and Drummed Soils  
Building No. 52 Area  
Chrysler Corporation Main Plant  
Kenosha, Wisconsin  
WDNR FID No. 230004500



N4140 DuPlainville Road  
Pewaukee, Wisconsin  
53072  
414-691-2662  
FAX 414-691-9279

Dear Mr. Johnston:

GZA GeoEnvironmental, Inc. (GZA), on behalf of Chrysler Corporation (Chrysler), has prepared this Work Plan to document the removal of a soil stockpile and seven drums of soil located near Building No. 52 (MP-7 Area) of the Chrysler Main Plant (Site) in Kenosha, Wisconsin (refer to Figure No. 1). This Work Plan presents the scope of services to be performed and a schedule for their execution. The location of the stockpiled and drummed soils, relative to Building No. 52, is illustrated on Figure No. 2.

This Work Plan has been prepared in general accordance with the notification requirements stipulated in Wisconsin Administrative Code (WAC) Chapters NR 700. Upon authorization by Chrysler, a copy of this Work Plan will be submitted to the Wisconsin Department of Natural Resources (WDNR) to document the removal and disposition of contaminated soil from the Site.

#### **BACKGROUND SUMMARY**

The drummed and stockpiled soils are currently staged outside in the southern region of Building No. 52 (refer to Figure No. 2). The generation of approximately 200 cubic yards of petroleum impacted (stockpiled) soil resulted from the excavation of equipment footings during the recent equipment line change-out activities associated with Building No. 19 (Engine Head Finishing Area). The drummed soils were generated during geotechnical drilling activities in the vicinity of Building No. 52, performed by Triad Engineering Services, Inc. (Triad) from December 2, through December 4, 1997.

#### **SUMMARY OF SOIL ANALYTICAL RESULTS**

The stockpiled soils were sampled by Triad on December 19, 1997. A summary of the laboratory results from the disposal characterization soil sample collected from the stock pile and drummed soils is presented in Table 1. Drummed soils were sampled by GZA on September 1, 1998. Copies of the Waste Management of Wisconsin Generators Profile Sheet with an

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accompanying profile number and soil sample laboratory results for the soil drums and stockpile are included in Appendix A.

### SCOPE OF WORK

#### Task 1: Scheduling and Permitting



GZA will schedule with Chrysler personnel and Chrysler-approved service providers for the excavation of contaminated soils. Soil sample laboratory results and waste profile documentation from the Site are pre-approved by Waste Management of Wisconsin, Inc. GZA will notify Waste Management of Wisconsin, Inc. of the scheduled excavation activities.

#### Task 2: Soil Loading, Transport, and Disposal

The contaminated soil stockpile and drum removal activities include the removal of approximately 200 cubic yards (300 tons) of impacted soil. GZA will provide oversight of the Chrysler-approved service providers to document that the soils are properly loaded and removed from the Site. A Chrysler-approved service provider will perform the loading of impacted soil. Soils will be directly loaded into trucks provided by Waste Management of Wisconsin, Inc. Soils will be transported to the Pheasant Run Recycling and Disposal Facility for treatment in a biocell<sup>sm</sup> and eventual reuse within the landfill as daily cover or temporary roads.

#### Task 3: Summary Letter Report Preparation

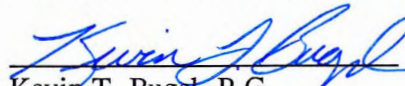
GZA will provide a brief summary letter to document the completion of the soil removal action and provide a brief description of the activities performed. Copies of all waste manifest documentation will also be provided in the letter report.

### WORK SCHEDULE

A work schedule is included in Appendix B. Soils are scheduled for removal and disposal during the week of September 11, 1998.

### CERTIFICATIONS

"I, Kevin T. Bugel, hereby certify that I am a Hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

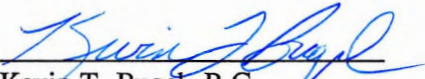
  
Kevin T. Bugel, P.G.                      9/9/98  
Project Manager                      Date  
Hydrogeologist

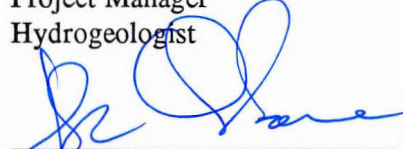
GZA appreciates the opportunity to be of continued service to Chrysler Corporation and looks forward to our continued association with you on this project. Should you have any questions or require additional information, please do not hesitate to contact the undersigned at your convenience.


Very truly yours,



**GZA GeoEnvironmental, Inc.**

  
Kevin T. Bugel, P.G.  
Project Manager  
Hydrogeologist

  
John C. Osborne, P.G.  
Associate Principal  
District Manager

  
Mark K. Borucki, P.G.  
Senior Project Manager  
Hydrogeologist

c: Andy Boettcher (WDNR-Sturtevant, WI)  
Jack Bugno (Chrysler-Kenosha, WI)

f:\wp51\chrysler\kenosha\reports\WP52bldg.doc

Attachments: Table 1 Disposal Characterization Soil Analytical Summary  
Figure No. 1 Site Plan  
Figure No. 2 Soil Stockpile and Drum Staging Area Detail  
Appendix A Waste Management Generators Profile Sheet and Soil Sample  
Laboratory Results  
Appendix B Schedule



**TABLE 1**  
**DISPOSAL CHARACTERIZATION SOIL ANALYTICAL SUMMARY**

**Chrysler Main Engine Plant**  
**Chrysler Corporation**  
**Kenosha, Wisconsin**

Analytical Parameter	Matrix	Max. Landfill Concentration	STC-LEX / Units
<u>Volatile Organic Compounds (VOCs)</u> Methylene Chloride	Soil	5,000 mg/kg for total DRO & VOC	570 (B) $\mu\text{g}/\text{kg}$
<u>Diesel Range Organic (DRO)</u>	Soil		810 $\text{mg}/\text{kg}$
<u>Metals</u> Arsenic	Water	5,000 mg/kg for total metals	3.7 (B) $\mu\text{g}/\text{l}$
Chromium (Total)	Water		2.7 (B) $\mu\text{g}/\text{l}$

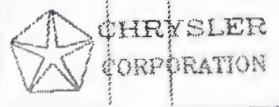
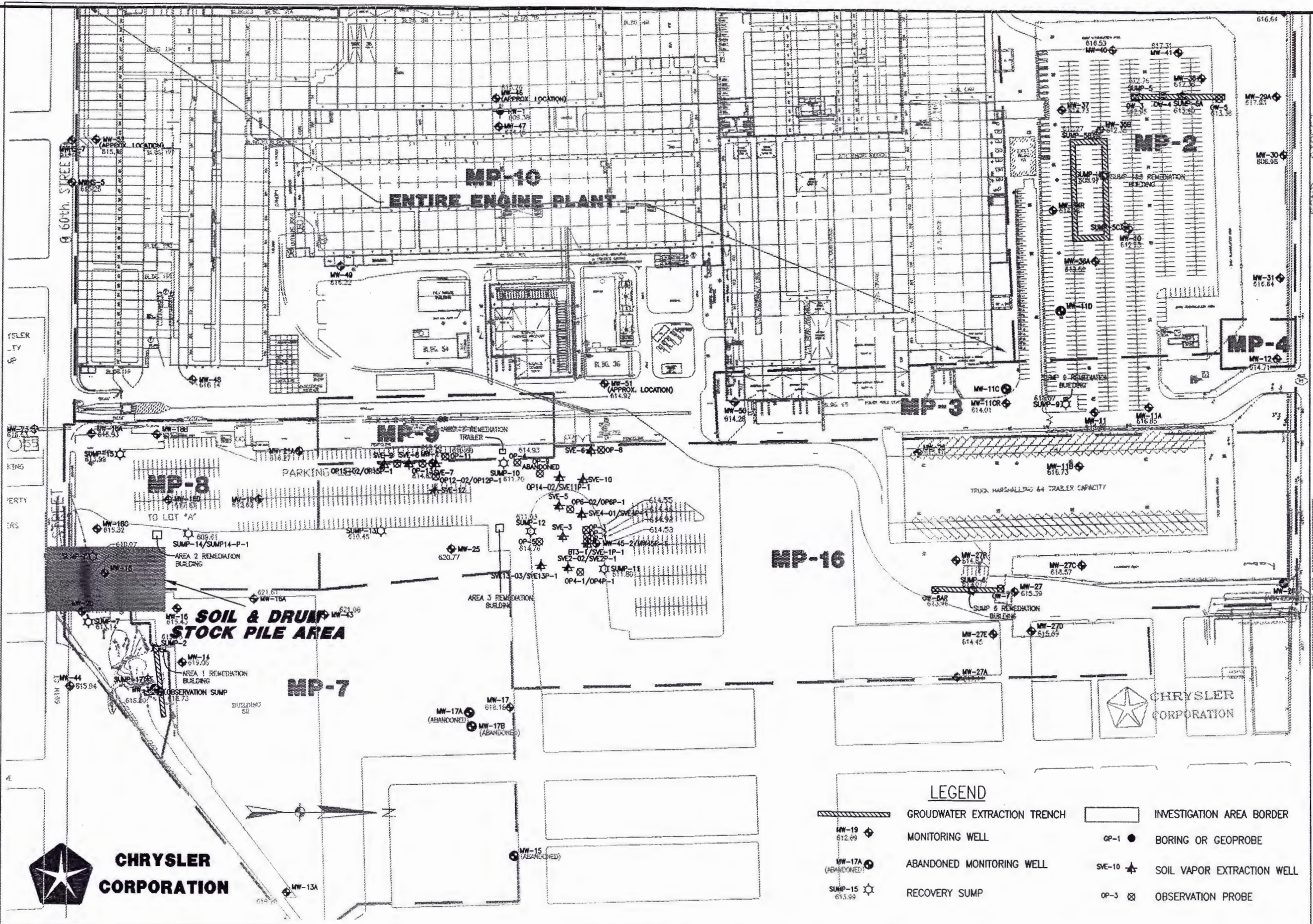
Notes:

1. Samples were collected by Triad Engineering, Inc. on December 19, 1997.
2.  $\text{mg}/\text{kg}$  = milligrams per kilogram;  $\mu\text{g}/\text{kg}$  = micrograms per kilogram; and  $\mu\text{g}/\text{l}$  = micrograms per liter.
3. "B" indicates that the analyte was found in the associated blank as well as in the sample.



**FIGURES**





- LEGEND**
- GROUNDWATER EXTRACTION TRENCH
  - MONITORING WELL
  - ABANDONED MONITORING WELL
  - RECOVERY SUMP
  - INVESTIGATION AREA BORDER
  - BORING OR GEOPROBE
  - SOIL VAPOR EXTRACTION WELL
  - OBSERVATION PROBE

DESIGNED BY: RPK  
 REVIEWED BY: RPK  
 DRAWN BY: RPK  
 DATE: 8/31/98  
 FILENAME: H:DWG\CHRYSLER\STOCK.DWG

SCALE IN FEET  
 100 0 100 200

DATE: \_\_\_\_\_ REVISIONS: \_\_\_\_\_

**SITE PLAN**

**CHRYSLER CORPORATION**  
**KENOSHA WI,**

FILE NO.  
 150313.19

FIGURE NO.  
 1

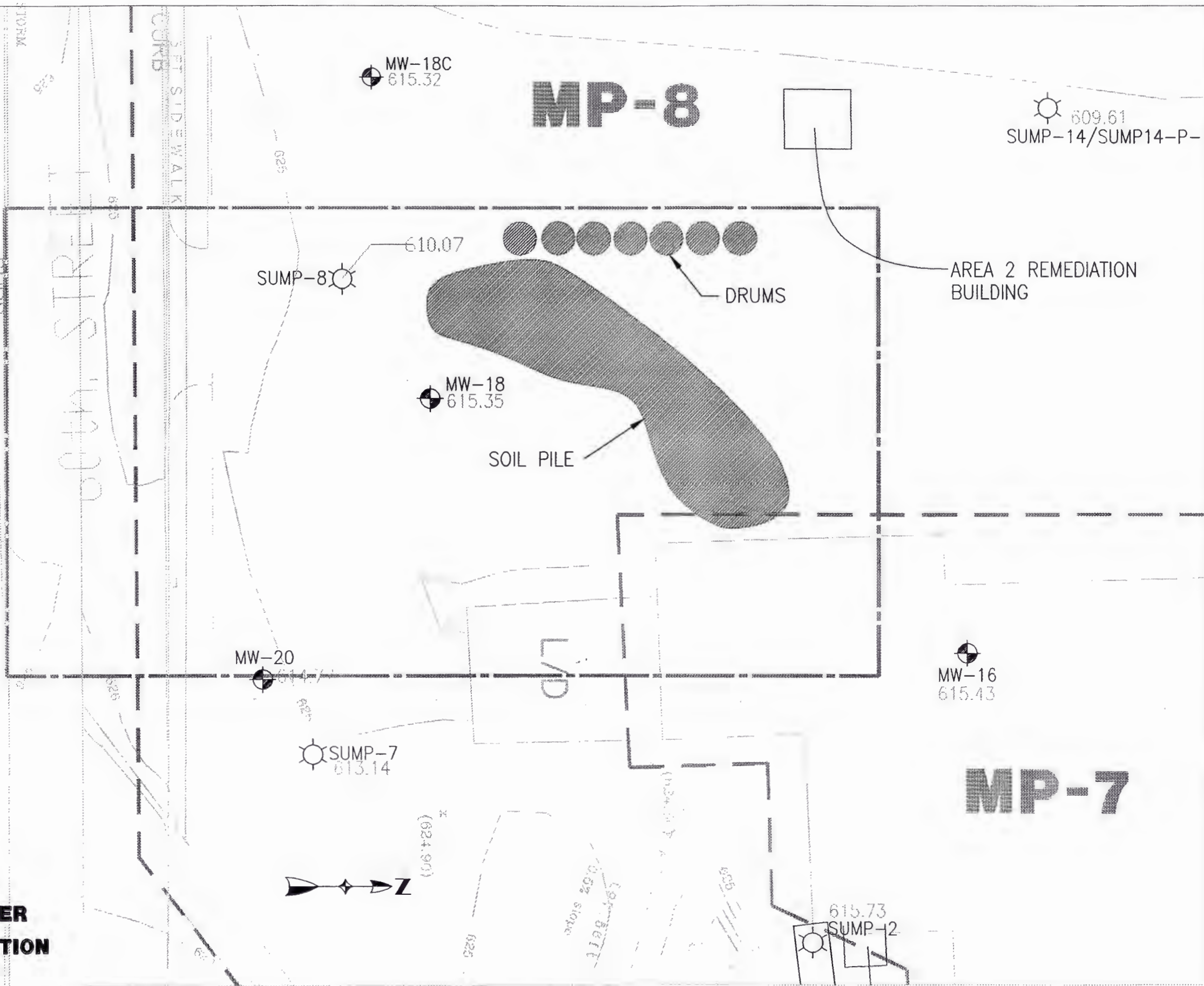
GZA  
 GeoEnvironmental, Inc.  
 P 440 DePaula Blvd • Pewaukee, Wisconsin • 53073  
 Phone (414) 961-8888 • Fax (414) 961-8879

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**CHRYSLER CORPORATION**



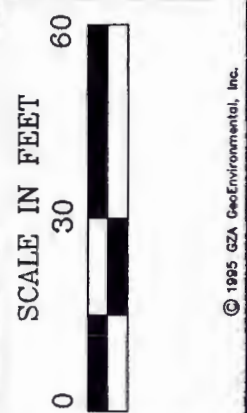
DATE	REVISIONS	IN

**SOIL STOCK PILE & DRUM STAGING AREA DETAIL**

**CHRYSLER CORPORATION  
KEMOSHA, WI**

FILE NO.  
150313.19

FIGURE NO.  
2



DESIGNED BY: *[Signature]*  
 REVIEWED BY: RPK  
 DRAWN BY: RPK  
 DATE: 08/31/98  
 FILENAME: H:\DWG\CHRYSLER\STOCK\_DT.DWG

**GZA**  
 GeoEnvironmental, Inc.  
 4400 DuPont Road • Perkasie, Pa. 19372  
 Phone (414) 691-2682 • Fax (414) 691-8279





**APPENDIX A**

**Waste Management Generators Profile Sheet and Soil Sample Laboratory Results**



# MIDWEST REGION GENERATOR'S WASTE PROFILE SHEET

PLEASE PRINT IN INK OR TYPE

Waste Profile Sheet Code

  MW 28052

*AOK The Blue area*

Proposed Management Facility PHEASANT RUN  
RECYCLING &  
DISPOSAL FACILITY

This form is to be used to comply with the requirements of a waste agreement.

INSTRUCTIONS FOR COMPLETING THIS FORM ARE ATTACHED

Decision Expiration Date:   /  /  

**I. WASTE GENERATOR INFORMATION**

1. Generator Name: CHRYSLER CORPORATION - KENOSHA ENGINE PLANT 2. SIC Code: 3711  
 Facility Address (site of waste generation): 555 30TH AVE  
 Generator City, State: KENOSHA, WISCONSIN 5. Zip/Postal Code: 53142-2800  
 6. State ID #: WI0050269372  
 7. Technical Contact: MR JOHN P. BUGNO 8. Phone: (414) 658 - 6000

**II. WASTE STREAM INFORMATION (See Instructions)**

Name of Waste: CONTAMINATED SOILS - diesel, gasoline & oil's (per Ross Caughlin - Tried 7-12-95 - B.S.)  
 2. Process Generating Waste: SEE ATTACHED LETTER  
 Amount/Units: ESTIMATED 20,000 CUBIC YARDS 4. Type A  Type B   
 Special Handling Instructions/Supplemental Information: N/A

Incidental Waste Types and Amounts: N/A

**III. TRANSPORTATION INFORMATION**

Method of Shipment:  Bulk Liquid  Bulk Sludge  Bulk Solid  Drum/Box  Other  
 Supplemental Shipping Information: SOILS WILL BE TRANSPORTED VIA DUMP TRUCKS

**D. PHYSICAL CHARACTERISTICS OF WASTE (See Instructions) (Omit for Type B)**

Color <u>BROWN</u>	2. Does the waste have a strong incidental odor? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes; if so, describe: _____	3. Physical State @ 70°F/21°C: <input checked="" type="checkbox"/> Solid <input type="checkbox"/> Semi-Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Powder <input type="checkbox"/> Other: _____	4. Layers <input type="checkbox"/> Multi-layered <input type="checkbox"/> Bi-layered <input checked="" type="checkbox"/> Single Phased	5. Specific Gravity Range <u>1.9 - 2.2</u>	6. Free Liquids: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Volume: _____ %
7. pH: <input type="checkbox"/> < 2 <input type="checkbox"/> > 2-4 <input type="checkbox"/> 4-7 <input type="checkbox"/> 7 <input checked="" type="checkbox"/> 7-10 <input type="checkbox"/> 10- <12.5 <input type="checkbox"/> ≥12.5 <input type="checkbox"/> Range <input type="checkbox"/> NA					
8. Flash Point: <input type="checkbox"/> None <input type="checkbox"/> <140°F/60°C <input type="checkbox"/> 140 - 199°F/60 - 93°C <input checked="" type="checkbox"/> ≥200°F/93°C <input checked="" type="checkbox"/> Closed Cup <input type="checkbox"/> Open Cup					

**E. CHEMICAL COMPOSITION (Omit for Type B)**

1.	RANGE (MIN-MAX)	2. Does the waste contain any of the following? (provide concentration if known):	NO	or	LESS THAN	or	ACTUAL
<u>SOILS</u>	<u>&gt; .99 %</u>						
<u>VOCs/DRO/GRO</u>	<u>&lt; 0.5 %</u>						
<u>METALS</u>	<u>&lt; 0.5 %</u>	PCBs	<input type="checkbox"/>		<input checked="" type="checkbox"/> < 50 ppm		_____ ppm
		Cyanides	<input type="checkbox"/>		<input checked="" type="checkbox"/> < 50 ppm		_____ ppm
		Sulfides	<input type="checkbox"/>		<input checked="" type="checkbox"/> < 50 ppm		_____ ppm
		Phenols	<input checked="" type="checkbox"/>		<input type="checkbox"/> < 50 ppm		_____ ppm
Total:	<u>100 %</u>						

The total composition must be greater than or equal to 100%. (.0001% = 1 ppm or 1 mg/l)

F. SAMPLING SOURCE (Omit for Type B) (e.g., Drum, Lagoon, Pit, Pond, Tank, Vat)

G. REPRESENTATIVE SAMPLE CERTIFICATION (Omit for Type B)

1. Print Sampler's Name: JEANNE M. RAMPONI 2. Sample Date: 6/21/95  
3. Sampler's Title: HYDROGEOLOGIST  
4. Sampler's Employer (if other than Generator): TRIAD ENGINEERING INCORPORATED

The sampler's signature certifies that any sample submitted is representative of the waste described above pursuant to 40 CFR 261.20(c) or equivalent rules.

5. Sampler's Signature *Jeanne Ramponi*

H. GENERATOR CERTIFICATION

By signing this profile sheet, the Generator certifies:

1. This waste is not "Hazardous Waste" as defined by USEPA and/or state regulation.
  2. This waste does not contain regulated radioactive materials or regulated concentrations of PCB's (Polychlorinated Biphenyls).
  3. The waste does not contain regulated concentrations of the following pesticides and herbicides: Chlordane, Endrin, Heptachlor (and it's epoxide), Lindane, Methoxychlor, Toxaphene, 2, 4-D, or 2, 4, 5-TP (Silvex).
  4. The waste does not contain halogenated compounds such as: tetrachloroethylene, trichloroethylene, methylene chloride, 1, 1, 1-trichloroethane, carbon tetrachloride, chloroform, ortho-dichlorobenzene, dichlorodifluoromethane, 1, 1, 2-trichloro-1, 2, 2-trifluoroethane, trichlorofluoromethane, 1, 1-dichloroethylene, and 1, 2-dichloroethylene at greater than 1% (10,000ppm) total solvent concentration. This listing includes any combination of the above named halogenated compounds where the total concentration or the sum of the concentrations of the individual compounds exceed 1% or 10,000 ppm on a weight to weight basis.
  5. This sheet and the attachments contain true and accurate descriptions of the waste material. All relevant information regarding known or suspected hazards in the possession of the Generator has been disclosed.
  6. The Generator has read and understands the Contractor's Definition of Special Waste included in Part B.5. of the attached instructions form. All types and amounts of special wastes provided in incidental amounts have been identified in section B.6. of this form.
  7. The analytical data presented herein or attached hereto were derived from testing a representative sample taken in accordance with 40 CFR 261.20(c) or equivalent rules.
  8. If any changes occur in the character of the waste, the Generator shall notify the Contractor prior to providing the waste to the Contractor.
9. Signature *John P. Bugno* 10. Title SITE ADMINISTRATOR/WISCONSIN OPERATIONS  
1. Name (Type or Print) JOHN P. BUGNO 12. Date 7/11/95

NOTE: Omit sections D., E., F., and G., for Type B waste.

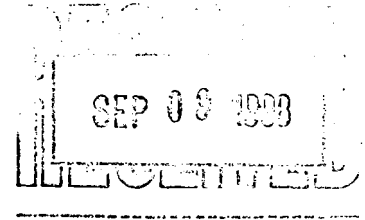
Comments:



CompuChem  
A Division of Liberty Analytical Corp.  
501 Madison Avenue  
Cary, NC 27513

September 4, 1998

Mr. Mark Krumenacher  
GZA Geoenvironmental  
North 4140 Duplainville Road  
Pewaukee, WI 53072



Dear Mr. Krumenacher:

We at CompuChem are pleased to provide our report for the analysis you requested.  
Data for the following samples are enclosed:

Client ID Number	CompuChem ID Number	Analysis Code	Case Number	Description of Work Requested
BLDG52-DRUMS	908442	1316	33805. 13001	Reactive Cyanide

Thank you for selecting CompuChem Environmental for your sample analysis.  
If you have any questions concerning this report or the analytical methods employed,  
please contact your Sales Representative at 919-379-4100.

Sincerely,

Project Manager

ANALYTICAL REPORT OF DATA - CASE # 33805. 13001

SUBMITTED TO:  
Mr. Mark Krumenacher  
GZA Geoenvironmental  
North 4140 Duplainville Road  
Pewaukee, WI 53072

LABORATORY CHRONICLE - REACTIVE CYANIDE ANALYSIS

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	DATE SAMPLE RECEIVED	DATE EXTRACTION COMPLETED	DATE ANALYSIS COMPLETED
1.	BLDG52-DRUM	908442	09/02/98	09/03/98	09/03/98

REACTIVE CYANIDE ANALYSIS

SUMMARY REPORT

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	CONCENTRATION (mg/kg)	REPORTING LIMIT (mg/kg)
1.	BLDG52-DRUMS	908442	BRL	125

BRL = BELOW REPORTING LIMIT

NWR = NOT WITHIN RANGE

Reviewed by/ID#: S. Beulem 12326 Date: 9/4/98



REACTIVE CYANIDE ANALYSIS

QUALITY CONTROL REPORT

CASE: 33805. 13001  
 MATRIX: SOIL

Analyst:2059  
 Date Analyzed: 09/03/98

BLANK SPIKE (BS) COMPUCHEM #: 908443		
SPIKE ADDED (mg/kg)	BS CONC. (mg/kg)	BS % RECOVERY
40.00	7.993	20.00

COMPUCHEM #	QC TYPE	AMOUNT DETECTED (mg/kg)
PBS	METHOD BLANK	BRL

The reporting limit for Reactive Cyanide is 125 mg/kg

BRL = BELOW REPORTING LIMIT  
 RPD = RELATIVE PERCENT DIFFERENCE  
 NWR = NOT WITHIN RANGE

**CompuChem Receiving Log**

Client: <u>GZA/Chryster</u>	Received on: <u>9.2.98</u> # of COC's <u>1</u>	PPS/RFA# <u>130</u> Page <u>1</u> of <u>1</u>
Order # <u>33805</u>	Delivered by: <u>Geo-Ex</u>	Lab Instructions: <u>LS</u>
Project: <u>RFA130</u>	Freight # <u>806312667763</u>	<u>Reactivity - Cyanide only</u>
Quote # <u>98-7040</u>	Subcontract Y <u>(N)</u>	
Account # <u>501119</u>	TAT: Verbal <u>48HR</u> Hardcopy <u>10 day</u>	

	SDG	REQ	SAMPLE ID	CCN	AMOUNT / CONTAINER	PARAMETER	ANALYSIS CODE	LINE ITEM	SAMPLE DATE	MX	pH
1	13001	1	BLD52-Drums	90844.2	4-2 oz jars	Reactive Cyn. <sup>Protocol</sup> B	1316	1	9/1/98	50	NA
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

*Ellmore 9/2/98*

Logged In By: <u><i>Susan Ellmore</i></u>	Order Entered By: <u><i>Susan Ellmore</i></u>
Cyanide samples checked for sulfide and chlorine Y <u>(NA)</u>	Received in good condition <u>(Y)</u> N
Holding Blank(s): Counter / Page <u>1</u>	CCN's <u>1</u> Temperature(s) <u>16</u> °C



CompuChem  
 501 Madison Avenue  
 Cary, NC 27513  
 Phone Number: 1-800-833-5097  
 Fax Number: (919) 379-4050

Project Name: Chrysler Main Engine Plant  
 Site Location: Rensselaer, WI  
 Site Code:  
 RFA Number: YEQP9800130  
 Chrysler PM:

Consultant: GZA Geo Environmental, Inc  
 Address: N4140 Duplainville Rd  
Rensselaer, WI 53072  
 Consultant PM: Mark Barucki  
 Phone: (414) 691-2662 Fax: (414) 691-9279

Turn-around Time Request:  
 24 calendar hrs.  
 48 calendar hrs.  
 10 days  
 28 days

Data Package Deliverables: (circle)  
 Chrysler Level 1  
 Chrysler Level 2  
 Other (specify):

Compound List-Parameter/Method/Bottle Type/Preservative

Matrix Codes  
 S - Soil SW - Surface Water  
 GW - Groundwater A - Air  
 Sed. - Sediment  
 O - Other (specify)

Field Sample Identification	Date Collected	Time Collected	Grab (G) or Composite (C)	Matrix Code	Total # of Containers	Lab Use Only				Remarks
						Volatiles pH < 2	Metals pH < 2	Cyanide pH > 12	Other	
B1052-Drums	9/1/98	9:05	C	S	4					

Reactive Cyanide (Protocol B)

Sampler(s)  
John Bruskewitz  
 Cooler ID #  
 Is RFA sampling complete?  
 Yes No

Bottles Relinquished under Airbill No.  
 Relinquished by: Date: Time: Received by: Date: Time: Custody Seal Intact?  
 Relinquished by: Date: Time: Received by: Date: Time: Custody Seal Intact?  
 Relinquished by: Date: Time: Received for Laboratory by: Date: Time: Custody Seal Intact?  
Matthew J. Smith 9/2/98 10:30 (Yes) No

Samples Relinquished under Airbill No. 806312667763 Temperature (corrected) 16 C  
 opened 10:35 a.m. 9/2/98

Chrysler Corporation 800 Chrysler Drive, CIMS 482-08-51, Auburn Hills, Michigan 48326-2757

Distribution: White copy: Data package Yellow: Retained by laboratory Pink: Retained by sampler

Client did not relinquish C-O-C m/c 9/2/98

Sample placed in storage ID 1 on 9/1/98 11:00 am





**COMPUCHEM  
ENVIRONMENTAL**

a division of Liberty Analytical Corp.

*Received 1/5/98  
242*

02/JAN/98

TRIAD ENGINEERING INC.  
ATTN: ROSS CREIGHTON  
325 E CHICAGO STREET  
SUITE 400  
MILWAUKEE, WI 53202

Subject: Report of Data - Account Number# 500957 Order# 33352

ATTN: ROSS CREIGHTON

Enclosed are the results of analytical work performed in accordance with the referenced account number.

This report covers 2 sample(s) appearing on the attached listing.

Thank you for selecting CompuChem Environmental for your sample analysis. If you should have questions or require additional analytical services please contact your representative at 1-800-833-5097.

Sincerely,

CompuChem Environmental  
a division of Liberty Analytical

Attachment



**COMPUCHEM  
ENVIRONMENTAL**

a division of Liberty Analytical Corp.

02/JAN/98

TRIAD ENGINEERING INC.  
ATTN: ROSS CREIGHTON  
325 E CHICAGO STREET  
SUITE 400  
MILWAUKEE, WI 53202

ACCOUNT #: 500957

CC#	SAMPLE-ID	RECEIPT DATE
879011	STC-LEX	12/23/97
879029	METHANBLNK	12/23/97

TOTAL NUMBER OF SAMPLES = 2

CompuChem Environmental  
a Division of Liberty Analytical  
501 N. Madison Avenue  
Cary, NC 27513

SDG NARRATIVE  
CASE:33352  
SDG:83564  
CONTRACT:500957

SAMPLE IDENTIFICATIONS: STC-LEX

The one(1) soil sample listed above was received intact, properly refrigerated, with chain of custody documentation on December 23, 1997. The samples were prepared and analyzed following SW846 method 8260 by medium level analysis.

VOLATILES:

Analysis holding time requirements were met for this sample. No target analytes were identified above the reporting limit except methylene chloride.

No Tentatively Identified Compound (TIC) data is provided as requested by the client.


All of the surrogates met recovery criteria in all of the samples and all of the internal standards met response and retention time criteria in the analyses of these samples.

The associated method blank met all quality control criteria. The method blank contained methylene chloride below the reporting limit.

The associated Laboratory Control Sample(LCS) met all QC acceptance limits.

Duplicate matrix spikes were generated from the original STC-LEX. All advisory accuracy and precision criteria were met with one exception. The spike compound toluene exceeded the recovery limits in the matrix spike duplicate.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions listed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

  
\_\_\_\_\_  
Roy M. Sutton  
Development Chemist  
January 02, 1998



# Chain-of-Custody

00404 A

ATTN: DIANE ELLMORE

CompuChem  
501 Madison Avenue  
Cary, NC 27513  
Phone Number: 1-800-833-5097  
Fax Number: (919) 379-4050

Project Name: Chrysler Corp.  
Site Location: Kenosha, Wisconsin  
Site Code:  
RFA Number: YGQP9700835-836  
Chrysler PM: DIANE ELLMORE

Consultant: Triad Engineering Inc.  
Address: 325 E. Chicago Street  
Milw. Wisconsin 53202  
Consultant PM: Ross Creighton  
Phone: (414) 291-8840 Fax: (414) 291-8841

Turn-around Time Request:  
24 calendar hrs.  
48 calendar hrs.  
10 days  
28 days

Data Package Deliverables: (circle)  
Chrysler Level 1  
Chrysler Level 2  
Other (specify):

Compound List-Parameter/Method/Bottle Type/Preservative

Matrix Codes  
S - Soil  
GW - Groundwater  
Sed. - Sediment  
O - Other (specify)  
Lab Use Only  
Volatiles pH < 2  
Metals pH < 2  
Cyanide pH > 12  
Other  
SW - Surface Water  
A - Air

PROTOCOL B  
(no preserv.)

Field Sample Identification	Date Collected	Time Collected	Grab (G) or Composite (C)	Matrix Code	Total # of Containers	Compound List-Parameter/Method/Bottle Type/Preservative											Remarks								
STC-LEX	12/19/97	1430	G	S	6	X																			

Sampler(s) ARK, JMR  
Cooler ID # \_\_\_\_\_  
Is RFA sampling complete?  
Yes No

Bottles Relinquished under Airbill No.		Samples Relinquished under Airbill No.		Temperature (corrected) _____ C	
Relinquished by: <u>Jarzi</u>	Date: <u>12/22/97</u> Time: <u>1145</u>	Received by:	Date:	Time:	Custody Seal Intact? Yes No
Relinquished by:	Date:	Received by:	Date:	Time:	Custody Seal Intact? Yes No
Relinquished by:	Date:	Received for Laboratory by:	Date:	Time:	Custody Seal Intact? Yes No

Chrysler Corporation 800 Chrysler Drive, CIMS 482-00-51, Auburn Hills, Michigan 48326-2757

Distribution: White copy: Data package Yellow: Retained by laboratory Pink: Retained by sampler



1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

METHANBLNK

Project: RFA835 Date Sampled: \_\_\_\_\_  
 Lab Code: COMPU Case No.: 33352 SAS No.: SDG No.: 83564  
 Matrix: (soil/water) SOIL Lab Sample ID: 879029  
 Sample wt/vol: 20.0 (g/mL) G Lab File ID: CN079029A52.D  
 Level: (low/med) MED Date Received: \_\_\_\_\_  
 % Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/30/97  
 GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 0 (uL) Soil Aliquot Volume: 0.00 (uL)

CONCENTRATION UNITS: UG/KG  
DL CONC Q

CAS NO.	COMPOUND	DL	CONC	Q
75-01-4-----	Vinyl Chloride	480		U
75-00-3-----	Chloroethane	480		U
75-09-2-----	Methylene Chloride	480	480	J
75-35-4-----	1,1-Dichloroethene	480		U
75-34-3-----	1,1-Dichloroethane	480		U
67-66-3-----	Chloroform	480		U
107-06-2-----	1,2-Dichloroethane	480		U
71-55-6-----	1,1,1-Trichloroethane	480		U
56-23-5-----	Carbon Tetrachloride	480		U
75-27-4-----	Bromodichloromethane	480		U
79-01-6-----	Trichloroethene	480		U
124-48-1-----	Dibromochloromethane	480		U
79-00-5-----	1,1,2-Trichloroethane	480		U
71-43-2-----	Benzene	480		U
127-18-4-----	Tetrachloroethene	480		U
79-34-5-----	1,1,2,2-Tetrachloroethane	480		U
108-88-3-----	Toluene	480		U
108-90-7-----	Chlorobenzene	480		U
100-41-4-----	Ethylbenzene	480		U
106-93-4-----	1,2-Dibromoethane	480		U
96-12-8-----	1,2-Dibromo-3-Chloropropane	480		U
75-69-4-----	Trichlorofluoromethane	480		U
594-20-7-----	2,2-Dichloropropane	480		U
98-82-8-----	Isopropyl Benzene	480		U
108-86-1-----	Bromobenzene	480		U
95-49-8-----	2-Chlorotoluene	480		U
106-43-4-----	4-Chlorotoluene	480		U
108-67-8-----	1,3,5-Trimethyl Benzene	480		U
98-06-6-----	tert-Butyl Benzene	480		U
95-63-6-----	1,2,4-Trimethyl Benzene	480		U
135-98-8-----	sec-Butyl Benzene	480		U
541-73-1-----	1,3-Dichlorobenzene	480		U
106-46-7-----	1,4-Dichlorobenzene	480		U

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

METHANBLNK

Project: RFA835  
 Date Sampled: \_\_\_\_\_  
 Lab Code: COMPU Case No.: 33352 SAS No.: \_\_\_\_\_ SDG No.: 83564  
 Matrix: (soil/water) SOIL Lab Sample ID: 879029  
 Sample wt/vol: 20.0 (g/mL) G Lab File ID: CN079029A52.D  
 Level: (low/med) MED Date Received: \_\_\_\_\_  
 % Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/30/97  
 GC Column:DB624 ID: 0.53 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 0(uL) Soil Aliquot Volume: 0.00 (uL)

CONCENTRATION UNITS: UG/KG  
DL CONC Q

CAS NO.	COMPOUND	DL	CONC	Q
99-87-6-----	p-Isopropyl Toluene	480		U
95-50-1-----	1,2-Dichlorobenzene	480		U
104-51-8-----	n-Butyl Benzene	480		U
120-82-1-----	1,2,4-Trichlorobenzene	480		U
87-68-3-----	Hexachlorobutadiene	480		U
91-20-3-----	Naphthalene	480		U
78-87-5-----	1,2-Dichloropropane	480		U
142-28-9-----	1,3-Dichloropropane	480		U
103-65-1-----	n-Propyl Benzene	480		U
74-87-3-----	Chloromethane	480		U
87-61-6-----	1,2,3-Trichlorobenzene	480		U
75-71-8-----	Dichlorodifluoromethane	480		U
1634-04-4-----	Methyl-tert-butyl ether	480		U
540-59-0-----	1,2-Dichloroethene (total)	480		U
1330-20-7-----	Xylene (total)	480		U

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

STC-LEX

Project: RFA835 Date Sampled: 12/19/97  
 Lab Code: COMPU Case No.: 33352 SAS No.: SDG No.: 83564  
 Matrix: (soil/water) SOIL Lab Sample ID: 879011  
 Sample wt/vol: 20.0 (g/mL) G Lab File ID: CN079011A52.D  
 Level: (low/med) MED Date Received: 12/23/97  
 % Moisture: not dec. 14 Date Analyzed: 12/30/97  
 GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 0 (uL) Soil Aliquot Volume: 0.00 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG		Q
		DL	CONC	
75-01-4	Vinyl Chloride	480		U
75-00-3	Chloroethane	480		U
75-09-2	Methylene Chloride	480	570	B
75-35-4	1,1-Dichloroethene	480		U
75-34-3	1,1-Dichloroethane	480		U
67-66-3	Chloroform	480		U
107-06-2	1,2-Dichloroethane	480		U
71-55-6	1,1,1-Trichloroethane	480	68	J
56-23-5	Carbon Tetrachloride	480		U
75-27-4	Bromodichloromethane	480		U
79-01-6	Trichloroethene	480	390	J
124-48-1	Dibromochloromethane	480		U
79-00-5	1,1,2-Trichloroethane	480		U
71-43-2	Benzene	480		U
127-18-4	Tetrachloroethene	480		U
79-34-5	1,1,2,2-Tetrachloroethane	480		U
108-88-3	Toluene	480	76	J
108-90-7	Chlorobenzene	480		U
100-41-4	Ethylbenzene	480		U
106-93-4	1,2-Dibromoethane	480		U
96-12-8	1,2-Dibromo-3-Chloropropane	480		U
75-69-4	Trichlorofluoromethane	480		U
594-20-7	2,2-Dichloropropane	480		U
98-82-8	Isopropyl Benzene	480		U
108-86-1	Bromobenzene	480		U
95-49-8	2-Chlorotoluene	480		U
106-43-4	4-Chlorotoluene	480		U
108-67-8	1,3,5-Trimethyl Benzene	480		U
98-06-6	tert-Butyl Benzene	480		U
95-63-6	1,2,4-Trimethyl Benzene	480		U
135-98-8	sec-Butyl Benzene	480		U
541-73-1	1,3-Dichlorobenzene	480		U
106-46-7	1,4-Dichlorobenzene	480		U

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

STC-LEX
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Project: RFA835	Date Sampled: 12/19/97
Lab Code: COMPU      Case No.: 33352      SAS No.:	SDG No.: 83564
Matrix: (soil/water) SOIL	Lab Sample ID: 879011
Sample wt/vol:            20.0 (g/mL) G	Lab File ID:    CN079011A52.D
Level:    (low/med)    MED	Date Received: 12/23/97
% Moisture: not dec. 14	Date Analyzed: 12/30/97
GC Column:DB624            ID: 0.53    (mm)	Dilution Factor: 1.0
Soil Extract Volume:            0 (uL)	Soil Aliquot Volume:    0.00 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	
		DL	CONC
			Q

99-87-6-----	p-Isopropyl Toluene	480		U
95-50-1-----	1,2-Dichlorobenzene	480		U
104-51-8-----	n-Butyl Benzene	480		U
120-82-1-----	1,2,4-Trichlorobenzene	480		U
87-68-3-----	Hexachlorobutadiene	480		U
91-20-3-----	Naphthalene	480		U
78-87-5-----	1,2-Dichloropropane	480		U
142-28-9-----	1,3-Dichloropropane	480		U
103-65-1-----	n-Propyl Benzene	480		U
74-87-3-----	Chloromethane	480		U
87-61-6-----	1,2,3-Trichlorobenzene	480	100	J
75-71-8-----	Dichlorodifluoromethane	480		U
1634-04-4-----	Methyl-tert-butyl ether	480		U
540-59-0-----	1,2-Dichloroethene (total)	480		U
1330-20-7-----	Xylene (total)	480		U

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

STC-LEXMS

Project: RFA835 Date Sampled: 12/19/97  
 Lab Code: COMPU Case No.: 33352 SAS No.: SDG No.: 83564  
 Matrix: (soil/water) SOIL Lab Sample ID: 879014  
 Sample wt/vol: 20.0 (g/mL) G Lab File ID: CN079014A52.D  
 Level: (low/med) MED Date Received: 12/23/97  
 % Moisture: not dec. 14 Date Analyzed: 12/30/97  
 GC Column:DB624 ID: 0.53 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 0(uL) Soil Aliquot Volume: 0.00 (uL)

CONCENTRATION UNITS: UG/KG  
 DL CONC Q

CAS NO.	COMPOUND	DL	CONC	Q
75-01-4	Vinyl Chloride	480		U
75-00-3	Chloroethane	480		U
75-09-2	Methylene Chloride	480	460	JB
75-35-4	1,1-Dichloroethene	480	2600	
75-34-3	1,1-Dichloroethane	480		U
67-66-3	Chloroform	480		U
107-06-2	1,2-Dichloroethane	480		U
71-55-6	1,1,1-Trichloroethane	480	64	J
56-23-5	Carbon Tetrachloride	480		U
75-27-4	Bromodichloromethane	480		U
79-01-6	Trichloroethene	480	3400	
124-48-1	Dibromochloromethane	480		U
79-00-5	1,1,2-Trichloroethane	480		U
71-43-2	Benzene	480	3000	
127-18-4	Tetrachloroethene	480		U
79-34-5	1,1,2,2-Tetrachloroethane	480		U
108-88-3	Toluene	480	3600	
108-90-7	Chlorobenzene	480	2400	
100-41-4	Ethylbenzene	480		U
106-93-4	1,2-Dibromoethane	480		U
96-12-8	1,2-Dibromo-3-Chloropropane	480		U
75-69-4	Trichlorofluoromethane	480		U
594-20-7	2,2-Dichloropropane	480		U
98-82-8	Isopropyl Benzene	480		U
108-86-1	Bromobenzene	480		U
95-49-8	2-Chlorotoluene	480		U
106-43-4	4-Chlorotoluene	480		U
108-67-8	1,3,5-Trimethyl Benzene	480		U
98-06-6	tert-Butyl Benzene	480		U
95-63-6	1,2,4-Trimethyl Benzene	480		U
135-98-8	sec-Butyl Benzene	480		U
541-73-1	1,3-Dichlorobenzene	480		U
106-46-7	1,4-Dichlorobenzene	480		U



1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

STC-LEXMS

Project: RFA835 Date Sampled: 12/19/97  
 Lab Code: COMPU Case No.: 33352 SAS No.: SDG No.: 83564  
 Matrix: (soil/water) SOIL Lab Sample ID: 879014  
 Sample wt/vol: 20.0 (g/mL) G Lab File ID: CN079014A52.D  
 Level: (low/med) MED Date Received: 12/23/97  
 % Moisture: not dec. 14 Date Analyzed: 12/30/97  
 GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 0 (uL) Soil Aliquot Volume: 0.00 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG		Q
		DL	CONC	
99-87-6-----	p-Isopropyl Toluene	480		U
95-50-1-----	1,2-Dichlorobenzene	480		U
104-51-8-----	n-Butyl Benzene	480		U
120-82-1-----	1,2,4-Trichlorobenzene	480		U
87-68-3-----	Hexachlorobutadiene	480		U
91-20-3-----	Naphthalene	480		U
78-87-5-----	1,2-Dichloropropane	480		U
142-28-9-----	1,3-Dichloropropane	480		U
103-65-1-----	n-Propyl Benzene	480		U
74-87-3-----	Chloromethane	480		U
87-61-6-----	1,2,3-Trichlorobenzene	480		U
75-71-8-----	Dichlorodifluoromethane	480		U
1634-04-4-----	Methyl-tert-butyl ether	480		U
540-59-0-----	1,2-Dichloroethene (total)	480		U
1330-20-7-----	Xylene (total)	480		U

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

STC-LEXMSD
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Project: RFA835

Date Sampled: 12/19/97

Lab Code: COMPU

Case No.: 33352

SAS No.:

SDG No.: 83564

Matrix: (soil/water) SOIL

Lab Sample ID: 879015

Sample wt/vol: 20.0 (g/mL) G

Lab File ID: CN079015A52.D

Level: (low/med) MED

Date Received: 12/23/97

% Moisture: not dec. 14

Date Analyzed: 12/30/97

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: 0 (uL)

Soil Aliquot Volume: 0.00 (uL)

CONCENTRATION UNITS: UG/KG  
DL                      CONC                      Q

CAS NO.	COMPOUND	DL	CONC	Q
75-01-4-----	Vinyl Chloride	480		U
75-00-3-----	Chloroethane	480		U
75-09-2-----	Methylene Chloride	480	400	JB
75-35-4-----	1,1-Dichloroethene	480	2700	
75-34-3-----	1,1-Dichloroethane	480		U
67-66-3-----	Chloroform	480		U
107-06-2-----	1,2-Dichloroethane	480		U
71-55-6-----	1,1,1-Trichloroethane	480		U
56-23-5-----	Carbon Tetrachloride	480		U
75-27-4-----	Bromodichloromethane	480		U
79-01-6-----	Trichloroethene	480	3400	
124-48-1-----	Dibromochloromethane	480		U
79-00-5-----	1,1,2-Trichloroethane	480		U
71-43-2-----	Benzene	480	3000	
127-18-4-----	Tetrachloroethene	480		U
79-34-5-----	1,1,2,2-Tetrachloroethane	480		U
108-88-3-----	Toluene	480	4000	
108-90-7-----	Chlorobenzene	480	2500	
100-41-4-----	Ethylbenzene	480		U
106-93-4-----	1,2-Dibromoethane	480		U
96-12-8-----	1,2-Dibromo-3-Chloropropane	480		U
75-69-4-----	Trichlorofluoromethane	480		U
594-20-7-----	2,2-Dichloropropane	480		U
98-82-8-----	Isopropyl Benzene	480		U
108-86-1-----	Bromobenzene	480		U
95-49-8-----	2-Chlorotoluene	480		U
106-43-4-----	4-Chlorotoluene	480		U
108-67-8-----	1,3,5-Trimethyl Benzene	480		U
98-06-6-----	tert-Butyl Benzene	480		U
95-63-6-----	1,2,4-Trimethyl Benzene	480		U
135-98-8-----	sec-Butyl Benzene	480		U
541-73-1-----	1,3-Dichlorobenzene	480		U
106-46-7-----	1,4-Dichlorobenzene	480		U

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

STC-LEXMSD

Project: RFA835 Date Sampled: 12/19/97  
 Lab Code: COMPU Case No.: 33352 SAS No.: SDG No.: 83564  
 Matrix: (soil/water) SOIL Lab Sample ID: 879015  
 Sample wt/vol: 20.0 (g/mL) G Lab File ID: CN079015A52.D  
 Level: (low/med) MED Date Received: 12/23/97  
 % Moisture: not dec. 14 Date Analyzed: 12/30/97  
 GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 0 (uL) Soil Aliquot Volume: 0.00 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG		Q
		DL	CONC	
99-87-6-----	p-Isopropyl Toluene	480		U
95-50-1-----	1,2-Dichlorobenzene	480		U
104-51-8-----	n-Butyl Benzene	480		U
120-82-1-----	1,2,4-Trichlorobenzene	480		U
87-68-3-----	Hexachlorobutadiene	480		U
91-20-3-----	Naphthalene	480		U
78-87-5-----	1,2-Dichloropropane	480		U
142-28-9-----	1,3-Dichloropropane	480		U
103-65-1-----	n-Propyl Benzene	480		U
74-87-3-----	Chloromethane	480		U
87-61-6-----	1,2,3-Trichlorobenzene	480		U
75-71-8-----	Dichlorodifluoromethane	480		U
1634-04-4-----	Methyl-tert-butyl ether	480		U
540-59-0-----	1,2-Dichloroethene (total)	480		U
1330-20-7-----	Xylene (total)	480		U



**COMPUCHEM  
ENVIRONMENTAL**

a division of Liberty Analytical Corp.

*Received 1/5/98  
Jef 2*

05/JAN/98

TRIAD ENGINEERING INC.  
ATTN: ROSS CREIGHTON  
325 E CHICAGO STREET  
SUITE 400  
MILWAUKEE, WI 53202

Subject: Report of Data - Account Number# 500957 Order# 33352

ATTN: ROSS CREIGHTON

Enclosed are the results of analytical work performed in accordance with the referenced account number.

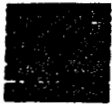
This report covers 1 sample(s) appearing on the attached listing.

Thank you for selecting CompuChem Environmental for your sample analysis. If you should have questions or require additional analytical services please contact your representative at 1-800-833-5097.

Sincerely,

CompuChem Environmental  
a division of Liberty Analytical

Attachment



**COMPUCHEM**  
**ENVIRONMENTAL**

a division of Liberty Analytical Corp.

05/JAN/98

TRIAD ENGINEERING INC.  
ATTN: ROSS CREIGHTON  
325 E CHICAGO STREET  
SUITE 400  
MILWAUKEE, WI 53202

ACCOUNT #: 500957

CC#	SAMPLE-ID	RECEIPT DATE
879000	STC-LEX	12/23/97
TOTAL NUMBER OF SAMPLES =		1



CompuChem Environmental  
a Division of Liberty Analytical  
501 N. Madison Avenue  
Cary, NC 27513

SDG NARRATIVE  
CASE:33352  
SDG:83561  
CONTRACT:500957

SAMPLE IDENTIFICATIONS: STC-LEX

The one(1) soil sample listed above was received intact, properly refrigerated, with proper chain of custody(COC) documentation on December 23, 1997. The sample was prepared and analyzed following ZHE extraction for SW846 method 8240.

VOLATILES:

Analysis holding time requirements were met for this sample. Chloroform was present below the reporting limit.

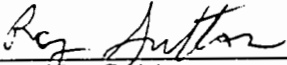
All of the surrogates met recovery criteria and all of the internal standards met response and retention time criteria in the analyses of these samples.

The associated method blank met all quality control criteria. The method blank did not contain any reportable target analytes.

The duplicate matrix spikes met all QC recovery and RPD advisory limits without exception.

The associated LCS met all QC acceptance criteria.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness. for other than the conditions listed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

  
\_\_\_\_\_  
Roy M. Sutton  
Development Chemist  
December 30, 1997



# Chain-of-Custody

00404 A

ATTN: DIANE ELLMORE

CompuChem  
501 Madison Avenue  
Cary, NC 27513  
Phone Number: 1-800-833-5097  
Fax Number: (919) 379-4050

Project Name: Chrysler Corp.  
Site Location: Kenosha, Wisconsin  
Site Code: \_\_\_\_\_  
RFA Number: YGQP9700835-836  
Chrysler PM: DIANE ELLMORE

Consultant: Triad Engineering Inc.  
Address: 325 E. Chicago Street  
Milw. Wisconsin 53202  
Consultant PM: Ross Creighton  
Phone: (414) 291-8840 Fax: (414) 291-8841

Turn-around Time Request:  
24 calendar hrs.  
48 calendar hrs.  
10 days  
28 days

Data Package Deliverables: (circle)  
Chrysler Level 1  
Chrysler Level 2  
Other (specify): \_\_\_\_\_

Compound List-Parameter/Method/Bottle Type/Preservative

S - Soil	SW - Surface Water
	A - Air
GW - Groundwater	
Sed. - Sediment	
O - Other (specify)	
Lab Use Only	
Volatiles pH < 2	
Metals pH < 2	
Cyanide pH > 12	
Other	

Field Sample Identification	Date Collected	Time Collected	Grab (G) or Composite (C)	Matrix Code	Total # of Containers	Protocol	Preservative	Compound List-Parameter/Method/Bottle Type/Preservative	Matrix Codes	Remarks
<u>STC-LEX</u>	<u>12/19/97</u>	<u>1430</u>	<u>G</u>	<u>S</u>	<u>6</u>	<u>PROTOCOL B</u>	<u>(no preserv.)</u>			

Sampler(s) ARK, JMR

Cooler ID # \_\_\_\_\_

Is RFA sampling complete?  
Yes No

Bottles Relinquished under Airbill No.	Samples Relinquished under Airbill No.	Temperature (corrected) _____ C
Relinquished by: <u>[Signature]</u> Date: <u>12/22/97</u> Time: <u>1145</u>	Received by: _____ Date: _____ Time: _____	Custody Seal Intact? Yes No
Relinquished by: _____ Date: _____ Time: _____	Received by: _____ Date: _____ Time: _____	Custody Seal Intact? Yes No
Relinquished by: _____ Date: _____ Time: _____	Received for Laboratory by: _____ Date: _____ Time: _____	Custody Seal Intact? Yes No

Chrysler Corporation 800 Chrysler Drive, CIMS 482-00-51, Auburn Hills, Michigan 48326-2757

Distribution: White copy: Data package Yellow: Retained by laboratory Pink: Retained by sampler

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

STC-LEX

Project: RFA835 Date Sampled: 12/19/97  
 Lab Code: COMPU Case No.: 33352 SAS No.: SDG No.: 83561  
 Matrix: (soil/water) WATER Lab Sample ID: 879000  
 Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN079000B52.D  
 Level: (low/med) LOW Date Received: 12/23/97  
 % Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/29/97  
 GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 5.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS: UG/L  
DL                      CONC                      Q

CAS NO.	COMPOUND	DL	CONC	Q
75-01-4-----	Vinyl Chloride	50		U
75-35-4-----	1,1-Dichloroethene	25		U
67-66-3-----	Chloroform	25	5	J
107-06-2-----	1,2-Dichloroethane	25		U
78-93-3-----	2-Butanone	100		U
56-23-5-----	Carbon Tetrachloride	50		U
79-01-6-----	Trichloroethene	25		U
71-43-2-----	Benzene	50		U
127-18-4-----	Tetrachloroethene	50		U
108-90-7-----	Chlorobenzene	50		U

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

STC-LEXMS

Project: RFA835 Date Sampled: 12/19/97,  
 Lab Code: COMPU Case No.: 33352 SAS No.: SDG No.: 83561  
 Matrix: (soil/water) WATER Lab Sample ID: 879001  
 Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN079001B52.D  
 Level: (low/med) LOW Date Received: 12/23/97  
 % Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/29/97  
 GC Column:DB624 ID: 0.53 (mm) Dilution Factor: 5.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS: UG/L  
DL CONC Q

CAS NO.	COMPOUND	DL	CONC	Q
75-01-4-----	Vinyl Chloride	50	400	
75-35-4-----	1,1-Dichloroethene	25	680	
67-66-3-----	Chloroform	25	580	
107-06-2-----	1,2-Dichloroethane	25	600	
78-93-3-----	2-Butanone	100	470	
56-23-5-----	Carbon Tetrachloride	50	560	
79-01-6-----	Trichloroethene	25	540	
71-43-2-----	Benzene	50	600	
127-18-4-----	Tetrachloroethene	50	490	
108-90-7-----	Chlorobenzene	50	510	

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

STC-LEXMSD

Project: RFA835 Date Sampled: 12/19/97,  
 Lab Code: COMPU Case No.: 33352 SAS No.: SDG No.: 83561  
 Matrix: (soil/water) WATER Lab Sample ID: 879002  
 Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN079002B52.D  
 Level: (low/med) LOW Date Received: 12/23/97  
 % Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/29/97  
 GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 5.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS: UG/L  
DL                      CONC                      Q

CAS NO.	COMPOUND	DL	CONC	Q
75-01-4-----	Vinyl Chloride	50	410	
75-35-4-----	1,1-Dichloroethene	25	690	
67-66-3-----	Chloroform	25	580	
107-06-2-----	1,2-Dichloroethane	25	600	
78-93-3-----	2-Butanone	100	450	
56-23-5-----	Carbon Tetrachloride	50	570	
79-01-6-----	Trichloroethene	25	560	
71-43-2-----	Benzene	50	620	
127-18-4-----	Tetrachloroethene	50	510	
108-90-7-----	Chlorobenzene	50	530	



1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

VBLKUN

Project: RFA174

Date Sampled: \_\_\_\_\_

Lab Code: COMPU

Case No.: 33352

SAS No.:

SDG No.: 83561

Matrix: (soil/water) WATER

Lab Sample ID: VBLKUN

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: CB971229A52.D

Level: (low/med) LOW

Date Received: \_\_\_\_\_

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 12/29/97

GC Column:DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS: UG/L  
DL                      CONC

Q

CAS NO.	COMPOUND	DL	CONC	Q
75-01-4-----	Vinyl Chloride	10		U
75-35-4-----	1,1-Dichloroethene	5		U
67-66-3-----	Chloroform	5		U
107-06-2-----	1,2-Dichloroethane	5		U
78-93-3-----	2-Butanone	20		U
56-23-5-----	Carbon Tetrachloride	10		U
79-01-6-----	Trichloroethene	5		U
71-43-2-----	Benzene	10		U
127-18-4-----	Tetrachloroethene	10		U
108-90-7-----	Chlorobenzene	10		U

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

ZHEBLKF7

Project: RFA174 Date Sampled: \_\_\_\_\_,  
 Lab Code: COMPU Case No.: 33352 SAS No.: SDG No.: 83561  
 Matrix: (soil/water) WATER Lab Sample ID: 879104  
 Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN079104A52.D  
 Level: (low/med) LOW Date Received: \_\_\_\_\_  
 % Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/29/97  
 GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 5.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS: UG/L  
DL                      CONC                      Q

CAS NO.	COMPOUND	DL	CONC	Q
75-01-4-----	Vinyl Chloride	50		U
75-35-4-----	1,1-Dichloroethene	25		U
67-66-3-----	Chloroform	25		U
107-06-2-----	1,2-Dichloroethane	25		U
78-93-3-----	2-Butanone	100		U
56-23-5-----	Carbon Tetrachloride	50		U
79-01-6-----	Trichloroethene	25		U
71-43-2-----	Benzene	50		U
127-18-4-----	Tetrachloroethene	50		U
108-90-7-----	Chlorobenzene	50		U

3A  
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM ENV. CORP.

Contract: 500957

Lab Code: COMPU

Case No.: 33352

SAS No.:

SDG No.: 83561

Matrix Spike - Sample No.: STC-LEX

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Vinyl Chloride	500.0	0.000	402.6	80	1-251
1,1-Dichloroethene	500.0	0.000	680.9	136	1-234
Chloroform	500.0	5.08	582.1	115	51-138
1,2-Dichloroethane	500.0	0.000	600.6	120	49-155
2-Butanone	500.0	0.000	466.7	93	1-200
Carbon Tetrachloride	500.0	0.000	558.8	112	70-140
Trichloroethene	500.0	0.000	536.2	107	71-157
Benzene	500.0	0.000	600.9	120	37-151
Tetrachloroethene	500.0	0.000	488.6	98	64-148
Chlorobenzene	500.0	0.000	507.4	101	37-160

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Vinyl Chloride	500.0	408.0	82	2	20	1-251
1,1-Dichloroethene	500.0	690.5	138	1	20	1-234
Chloroform	500.0	579.1	115	0	20	51-138
1,2-Dichloroethane	500.0	598.7	120	0	20	49-155
2-Butanone	500.0	451.2	90	3	20	1-200
Carbon Tetrachloride	500.0	567.5	114	2	20	70-140
Trichloroethene	500.0	556.9	111	4	20	71-157
Benzene	500.0	617.7	124	3	20	37-151
Tetrachloroethene	500.0	505.7	101	3	20	64-148
Chlorobenzene	500.0	527.8	106	5	20	37-160

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

\* Values outside of QC limits

RPD: 0 out of 10 outside limits

Spike Recovery: 0 out of 20 outside limits

COMMENTS:

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VLCS59

Lab Name: COMPUCHEM ENV. CORP.                      Contract: 500957  
 Lab Code: COMPU                      Case No.: 33352                      SAS No.:                      SDG No.: 83561  
 Lab Sample ID: 879121    LCS Lot No.: 46702  
 Lab File ID: CN079121A52.D                                      Date Analyzed: 12/29/97  
 Purge Volume: 5.0 (mL)    Dilution Factor: 1.0

COMPOUND	AMOUNT ADDED (ug/L )	AMOUNT RECOVERED (ug/L )	%REC #	QC LIMITS
Carbon Tetrachloride	100.0	116.5	116	70-140
Tetrachloroethene	100.0	103.2	103	64-148
Benzene	100.0	123.0	123	37-151
1,2-Dichloroethane	100.0	122.4	122	49-155
Trichloroethene	100.0	111.0	111	71-157
2-Butanone	100.0	95.87	96	1-200
Chloroform	100.0	117.6	118	51-138
Chlorobenzene	100.0	108.3	108	37-160
1,1-Dichloroethene	100.0	138.2	138	1-234
Vinyl Chloride	100.0	82.76	83	1-251

# Column to be used to flag LCS recovery with an asterisk.  
 \* Values outside of QC limits.

LCS Recovery: 0 outside limits out of 10 total.

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_

4A  
VOLATILE METHOD BLANK SUMMARY

SAMPLE NO.

VBLKUN

Lab Name: COMPUCHEM ENV. CORP.                      Contract: 500957  
 Lab Code: COMPU                      Case No.: 33352                      SAS No.:                      SDG No.: 83561  
 Lab File ID: CB971229A52.D                      Lab Sample ID:                      VBLKUN  
 Date Analyzed: 12/29/97                      Time Analyzed: 1205  
 GC Column: DB624                      ID: 0.53 (mm)                      Heated Purge: (Y/N) N  
 Instrument ID: F50052

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

	SAMPLE NO. =====	LAB SAMPLE ID =====	LAB FILE ID =====	TIME ANALYZED =====
01	VLCS59	879121	CN079121A52.D	1306
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
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29				
30				

COMMENTS:

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4A  
VOLATILE METHOD BLANK SUMMARY

SAMPLE NO.

ZHEBLKF7

Lab Name: COMPUCHEM ENV. CORP.                      Contract: 500957  
 Lab Code: COMPU                      Case No.: 33352                      SAS No.:                      SDG No.: 83561  
 Lab File ID: CN079104A52.D                      Lab Sample ID:                      879104  
 Date Analyzed: 12/29/97                      Time Analyzed: 1351  
 GC Column: DB624                      ID: 0.53 (mm)                      Heated Purge: (Y/N) N  
 Instrument ID: F50052

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

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	STC-LEX	879000	CN079000B52.D	1756
02	STC-LEXMS	879001	CN079001B52.D	1835
03	STC-LEXMSD	879002	CN079002B52.D	1911
04				
05				
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30				

COMMENTS:

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Quanterra Incorporated  
4101 Shuffel Drive, NW  
North Canton, Ohio 44720

330 497-9396 Telephone  
330 497-0772 Fax

*Received 1/21/98  
2 of 2*

## **ANALYTICAL REPORT**

**PROJECT NO. RFA835/836**

**Lot #: A7L240112**

**Cathy Dover**

**Compuchem Environmental**

**QUANTERRA INCORPORATED**



**Jeffrey C. Smith**  
Project Manager

**January 19, 1998**



## **CASE NARRATIVE**

The following report contains the analytical results for one solid sample submitted to Quanterra-North Canton by Compuchem Environmental from project number RFA835/836. The sample was received December 24, 1997, according to documented sample acceptance procedures.

Quanterra-North Canton utilizes only USEPA approved methods and instrumentation in all analytical work. The sample presented in this report was analyzed for the parameters listed on the method reference page in accordance with the methods indicated. Preliminary results were provided by facsimile transmission to Cathy Dover on January 14, 1998.

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with laboratory protocol.

### **SUPPLEMENTAL QC INFORMATION**

#### **SAMPLE RECEIVING**

The sample was received at the laboratory at a temperature of 5.3° C.

The sample submitted for WI Diesel Range Organics and WI Gasoline Range Organics analyses, was split into two containers.

#### **GC VOLATILES**

The matrix spike/matrix spike duplicate associated with sample STC-LEX CCN: 879028 failed recovery and RPD criteria. The laboratory control sample associated with this batch was in control. This is believed to be a matrix effect; therefore, no further corrective action was taken.

# ANALYTICAL METHODS SUMMARY

A7L240112

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Diesel Range Organics	WI-DRO DRO
Gasoline Range Organics	WI-GRO GRO
Total Residue as Percent Solids	MCAWW 160.3 MOD

## References:

- MCAWW "Methods for Chemical Analysis of Water and Wastes",  
EPA-600/4-79-020, March 1983 and subsequent revisions.
- WI-DRO "Modified DRO: Method for Determining Diesel Range  
Organics"; Wisconsin DNR, PUBL-SW-141, September, 1995.
- WI-GRO "Modified GRO: Method for Determining Gasoline Range  
Organics", Wisconsin DNR, PUBL-SW-140, September, 1995.

# SAMPLE SUMMARY

A7L240112

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
CEP5T	001	STC-LEX CCN: 879028	12/19/97	00:00

**NOTE(S) :**

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

COMPUCHEM ENVIRONMENTAL

Client Sample ID: STC-LEX CCN: 879028

GC Volatiles

Lot-Sample #...: A7L240112-001    Work Order #...: CEP5T103    Matrix.....: SOLID  
Date Sampled...: 12/19/97 00:00    Date Received...: 12/24/97  
Prep Date.....: 12/31/97    Analysis Date...: 12/31/97  
Prep Batch #...: 8002129  
Dilution Factor: 1  
% Moisture.....: 15

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>
Gasoline Range Organics	ND	12	mg/kg	WI-GRO GRO

**NOTE(S):**

Results and reporting limits have been adjusted for dry weight.

COMPUCHEM ENVIRONMENTAL

Client Sample ID: STC-LEX CCN: 879028

GC Semivolatiles

Lot-Sample #....: A7L240112-001 Work Order #....: CEP5T102 Matrix.....: SOLID  
Date Sampled....: 12/19/97 00:00 Date Received...: 12/24/97  
Prep Date.....: 01/04/98 Analysis Date...: 01/09/98  
Prep Batch #....: 8002114  
Dilution Factor: 10  
% Moisture.....: 15

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>
Diesel Range Organics	810	59	mg/kg	WI-DRO DRO

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

**QUALITY CONTROL SECTION**

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: A7L240112      Work Order #...: CEQPT102      Matrix.....: SOLID  
LCS Lot-Sample#: A8A020000-129  
Prep Date.....: 12/31/97      Analysis Date...: 01/02/98  
Prep Batch #...: 8002129  
Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
Gasoline Range Organics	91	(50 - 100)	WI-GRO GRO

**NOTE(S) :**

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Calculations are performed before rounding to avoid round-off errors in calculated results.



LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A7L240112      Work Order #...: CEQNM102-LCS      Matrix.....: SOLID  
 LCS Lot-Sample#: A8A020000-114      CEQNM103-LCSD  
 Prep Date.....: 01/04/98      Analysis Date...: 01/13/98  
 Prep Batch #...: 8002114  
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
Diesel Range Organics	66	(60 - 130)			WI-DRO DRO
	62	(60 - 130)	5.3	(0-25)	WI-DRO DRO

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: A7L240112  
MB Lot-Sample #: A8A020000-129

Work Order #...: CEQPT101

Matrix.....: SOLID

Analysis Date...: 01/02/98  
Dilution Factor: 1

Prep Date.....: 12/31/97  
Prep Batch #...: 8002129

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>
Gasoline Range Organics	ND	10	mg/kg	WI-GRO GRO

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: A7L240112  
MB Lot-Sample #: A8A020000-114

Work Order #...: CEQNM101

Matrix.....: SOLID

Prep Date.....: 01/04/98

Analysis Date...: 01/09/98

Prep Batch #...: 8002114

Dilution Factor: 1

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>
Diesel Range Organics	ND	5.0	mg/kg	WI-DRO DRO

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #....: A7L240112      Work Order #....: CEP5T104-MS      Matrix.....: SOLID  
MS Lot-Sample #: A7L240112-001      CEP5T105-MSD  
Date Sampled....: 12/19/97 00:00      Date Received...: 12/24/97  
Prep Date.....: 12/31/97      Analysis Date...: 01/02/98  
Prep Batch #....: 8002129  
Dilution Factor: 1      % Moisture.....: 15

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
Gasoline Range Organics	5.2 a	(50 - 100)			WI-GRO GRO
	141 a,p	(50 - 100)	186	(0-25)	WI-GRO GRO

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

a Spiked analyte recovery is outside stated control limits.

p Relative percent difference (RPD) is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.



**COMPUCHEM**  
ENVIRONMENTAL  
a division of Liberty Analytical Corp.

**CHAIN-OF-CUSTODY RECORD**

No. **01106**

4600 Silicon Drive  
Durham, NC 27703  
1-800-833-5097

Ship to: <i>Quantero North Canton, OH</i>	Project Name: <i>RFA S35/836</i>	Field Point-of-Contact: <i>Cathy Dover</i>
Carrier: Airbill No.:	Sampler Name:	Telephone No.: <i>919-377-4010</i>
Sampler Signature:	Sampling for project complete? <input checked="" type="radio"/> or N (See Note 1)	Project-specific (PS) or Batch (B) QC: <u>B</u>
<b>BOX #1:</b> 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil / Sediment / Sludge	<b>BOX #2:</b> A. HCl B. HNO <sub>3</sub> C. NaHSO <sub>4</sub> D. Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> E. Ice Only O. Other _____ N. Not Preserved	<b>BOX #3:</b> F. Filtered U. Unfiltered
<b>BOX #4:</b> C. CLP 3/90 S. SW-846 W. CWA 600-series L. Low Conc. CLP	<b>BOX #5:</b> H. - High M. - Medium L. - Low	R. Radiological T. TCLP O. Other <i>WISC. DR0</i> <i>WISC. BLO</i>

Sample ID (Organics 9 characters max, Inorganics 6 characters, See Note 2)	Date: Year: 19 <i>97</i>	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered/Unfiltered	Box #4 Method	Box #5 Expect. Conc.	No. of Bottles	Use for Lab QC (MS or DUP)	Organic Analysis Inorganics Other													Remarks / Comments						
										VOA-GC/MS	SV-GC/MS	Pest/PCB-GC	Herb-GC	VOA-GC	<i>WISC. DR0</i>	<i>WISC. DR0</i>	Metals	Mercury	Cyanides	Radiologicals	TOC/TOX	O&G/TPH		Phenols	Other				
<i>STC-LEX</i>	<i>12/17</i>	:	<i>S</i>	<i>E</i>	<i>U</i>	<i>U</i>		<i>1</i>																				<i>CCN: 879028</i>	

Client's Special Instructions:							
Lab: Received in Good Condition? <input checked="" type="radio"/> or N				Describe Problems, if Any:			
#1 Relinquished By: (Sig) <i>Deane Ellison</i>	Date: <i>12/23/97</i>	#2 Relinquished By: (Sig)	Date:	#3 Relinquished By: (Sig)	Date:	Sample storage time requested? (In days, see Note 3)	
Company Name: <i>Compuchem</i>	Time: <i>4:15 pm</i>	Company Name:	Time:	Company Name:	Time:		
#1 Received By: (Sig) <i>James G. Howell</i>	Date: <i>12/23/97</i>	#2 Received By: (Sig)	Date:	#3 Received By: (Sig)	Date:	DESTROY or RETURN data after five years of archival? (Circle choice; see Note 4)	
Company Name: <i>Quantero</i>	Time: <i>10:00</i>	Company Name:	Time:	Company Name:	Time:		

Note (1): If "N" lab will hold samples to await remainder of project-maximizing batch size and minimizing QC ratio; if "Y" lab will begin processing batches now. Note (2): If CLP Inorganics diskette required, ID limited to maximum of six characters. Note (3): Samples stored 60 days after date report mailed at no extra charge. Note (4): All lab copies of data destroyed after five years unless client requests and pays for return of copies; annual storage fee billed in January of year six.

CompuChem  
A Division of Liberty Analytical Corp.  
501 Madison Avenue  
Cary, NC 27513

December 30, 1997

Mr. Ross Creighton  
Triad Engineering Inc.  
325 E. Chicago Street  
Suite 400  
Milwaukee, WI 53202

*Received 1/2/98  
1 of 2*

Dear Mr. Creighton:

We at CompuChem are pleased to provide our report for the analysis you requested.  
Data for the following samples are enclosed:

Client ID Number	CompuChem ID Number	Analysis Code	Case Number	Description of Work Requested
STC-LEX	879023	1254	33352. 83563	Ignitability
		1316		Reactive Cyanide
		1316		Reactive Sulfide

Thank you for selecting CompuChem Environmental for your sample analysis.  
If you have any questions concerning this report or the analytical methods employed,  
please contact your Sales Representative at 919-379-4100.

Sincerely,



Project Manager

ANALYTICAL REPORT OF DATA - CASE # 33352. 83563

SUBMITTED TO:  
Mr. Ross Creighton  
Triad Engineering Inc.  
325 E. Chicago Street  
Suite 400  
Milwaukee, WI 53202

LABORATORY CHRONICLE - IGNITABILITY ANALYSIS

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	DATE SAMPLE RECEIVED	DATE ANALYSIS COMPLETED
1.	STC-LEX	879023	12/23/97	12/26/97



ANALYTICAL REPORT OF DATA - CASE # 33352. 83563

SUBMITTED TO:  
Mr. Ross Creighton  
Triad Engineering Inc.  
325 E. Chicago Street  
Suite 400  
Milwaukee, WI 53202

LABORATORY CHRONICLE - REACTIVE CYANIDE ANALYSIS

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	DATE SAMPLE RECEIVED	DATE EXTRACTION COMPLETED	DATE ANALYSIS COMPLETED
1.	STC-LEX	879023	12/23/97	12/26/97	12/26/97

ANALYTICAL REPORT OF DATA - CASE # 33352. 83563

SUBMITTED TO:  
Mr. Ross Creighton  
Triad Engineering Inc.  
325 E. Chicago Street  
Suite 400  
Milwaukee, WI 53202

LABORATORY CHRONICLE - REACTIVE SULFIDE ANALYSIS

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	DATE SAMPLE RECEIVED	DATE EXTRACTION COMPLETED	DATE ANALYSIS COMPLETED
1.	STC-LEX	879023	12/23/97	12/26/97	12/26/97

IGNITABILITY ANALYSIS

SUMMARY REPORT

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	CONCENTRATION (F)	REPORTING LIMIT (F)
1.	STC-LEX	879023	NWR	140

BRL = BELOW REPORTING LIMIT

NWR = NOT WITHIN RANGE

Reviewed by/ID#: Colleen Wilson 2244

Date: 12/30/97

REACTIVE CYANIDE ANALYSIS

SUMMARY REPORT

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	CONCENTRATION (mg/kg)	REPORTING LIMIT (mg/kg)
1.	STC-LEX	879023	BRL	125

BRL = BELOW REPORTING LIMIT

NWR = NOT WITHIN RANGE

Reviewed by/ID#: Colleen Wilson, 2244

Date: 12/30/97

REACTIVE SULFIDE ANALYSIS

SUMMARY REPORT

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	CONCENTRATION (mg/kg)	REPORTING LIMIT (mg/kg)
1.	STC-LEX	879023	BRL	125

BRL = BELOW REPORTING LIMIT

NWR = NOT WITHIN RANGE

Reviewed by/ID#: Colleen Wilson, 2244

Date: 12/30/97

IGNITABILITY ANALYSIS  
 QUALITY CONTROL REPORT

CASE: 33352. 83563  
 MATRIX: SOIL

Analyst: 2322  
 Date Analyzed: 12/26/97

BLANK SPIKE (BS) COMPUCHEM #: 879026	
p-XYLENE VALUE (F)	BS CONC. (F)
81 +/- 2	82.76

ORIG. SAMPLE COMPUCHEM #: 879023 DUPLICATE (DUP.) COMPUCHEM #: 879027			
	SAMPLE CONC. (F)	DUP. CONC. (F)	RPD
	NWR	NWR	N/A

The reporting limit for Ignitability is 140 F

BRL = BELOW REPORTING LIMIT  
 RPD = RELATIVE PERCENT DIFFERENCE  
 NWR = NOT WITHIN RANGE

REACTIVE CYANIDE ANALYSIS

QUALITY CONTROL REPORT

CASE: 33352. 83563  
 MATRIX: SOIL

Analyst:2322  
 Date Analyzed: 12/26/97

BLANK SPIKE (BS) COMPUCHEM #: 879026		
SPIKE ADDED (mg/kg)	BS CONC. (mg/kg)	BS % RECOVERY
40.00	5.995	15.00

ORIG. SAMPLE COMPUCHEM #: 879023 MATRIX SPIKE (MS) COMPUCHEM #: 879023 DUPLICATE (DUP.) COMPUCHEM #: 879027					
SPIKE ADDED (mg/kg)	SAMPLE CONC. (mg/kg)	DUP. CONC. (mg/kg)	MS CONC. (mg/kg)	MS % RECOVERY	RPD
40.00	BRL	BRL	6.994	17.50	N/A

COMPUCHEM #	QC TYPE	AMOUNT DETECTED (mg/kg)
PBW	METHOD BLANK	BRL

The reporting limit for Reactive Cyanide is 125 mg/kg

BRL = BELOW REPORTING LIMIT  
 RPD = RELATIVE PERCENT DIFFERENCE  
 NWR = NOT WITHIN RANGE



REACTIVE SULFIDE ANALYSIS

QUALITY CONTROL REPORT

CASE: 33352. 83563  
 MATRIX: SOIL

Analyst:2322  
 Date Analyzed: 12/26/97

BLANK SPIKE (BS) COMPUCHEM #: 879026		
SPIKE ADDED (mg/kg)	BS CONC. (mg/kg)	BS % RECOVERY
250.0	240.5	96.00

ORIG. SAMPLE COMPUCHEM #: 879023					
MATRIX SPIKE (MS) COMPUCHEM #: 879023					
DUPLICATE (DUP.) COMPUCHEM #: 879027					
SPIKE ADDED (mg/kg)	SAMPLE CONC. (mg/kg)	DUP. CONC. (mg/kg)	MS CONC. (mg/kg)	MS % RECOVERY	RPD
250.0	BRL	BRL	220.4	88.17	N/A

COMPUCHEM #	QC TYPE	AMOUNT DETECTED (mg/kg)
PBW	METHOD BLANK	BRL

The reporting limit for Reactive Sulfide is 125 mg/kg

BRL = BELOW REPORTING LIMIT  
 RPD = RELATIVE PERCENT DIFFERENCE  
 NWR = NOT WITHIN RANGE

### IGNITABILITY RUNLOG

OPERATOR: BRUCE STEWART

DATE: 12/26/97

AMBIENT BAROMETRIC PRESSURE: 754 mm Hg

AMBIENT TEMP = 70° F

	CompuChem Number	Customer ID	CASE	OBSERVED FLASH POINT (C)	OBSERVED FLASH POINT (F)	CORRECTED FLASH POINT (F)
ICV	Chlorobenzene	N/A	33352.83563	29°C	84.2°F	84.56°F <del>83.8°F</del>
LCS	p-Xylene ←	879026	33352.83563	28°C	82.4°F	82.76°F
DUR	879027	STC-LEX	↓	NWR	NWR	NWR
1	879023	↓	↓	NWR	NWR	NWR
2						
3						
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22						
23						
24						
25						

BS  
12/26/97

Corrected flashpoint =  $F + 0.06(760 - P)$

F=observed flashpoint, F P=ambient barometric pressure, mm Hg

RANGE → 140 F NWR = NOT WITHIN RANGE

p-Xylene certified flashpoint =  $81 \pm 2^\circ$  Chlorobenzene certified flashpoint =  $82 \pm 4^\circ$

REVIEWED BY: Kimberly Davis

DATE: 12-26-97

# REACTIVE CYANIDE PREPARATION AND RUNLOG

COMPUCHEM ENV. LOGBOOK 1 BBBBBB 3

OPERATOR: BRUCE STEWART

PAGE 1 OF 1

DATE: 12/24/97

METHOD CH. 71 9010A

CASE NAME: 33352.83563

#	CompuChem Number	Customer ID	Titration Volume (ml)	Initial weight (g)	Final Volume (ml)	#	CompuChem Number	Customer ID	Titration Volume (ml)	Initial weight (g)	Final Volume (ml)
1	879023 org	STC-LEX	0.15 ml	10.00 g	250 ml						
2	879027 DRP	STC-LEX	0.10 ml	10.02 g	↓						
3	879038 BS	N/A	0.35 ml	10							
4	SS	STC-LEX	0.40 ml	10.03 g							
5	BK	N/A	0.05 ml	10							

12/24/97  
BS

BS  
12/24/97

(1) ICV/BS Solutions: 40 mg/kg

Reagent Manufacturer & Lot #'s AgNO<sub>3</sub> TM2-209-16, CN<sup>-</sup> STOCK SOLN. TM2-161-17

Reviewed by: S. Bondora

Date: 12/24/97

12

TOTAL RELEASABLE CYANIDE IN WASTE

Date: 12/26/97  
Analyst: Bruce Stewart

SDG: 33352.83563

COMPUCHEM NUMBER	SAMPLE ID	SILVER NITRATE 0.0192 NORMALITY VOL. (ml.)	WEIGHT OF SAMPLE (g)	FINAL SAMPLE VOLUME (ml)	DIL. FACTOR	CALC. CONC. mg/L	WEIGHT OF WASTE (kg)	TOTAL RELEASABLE HCN mg/kg	% REC
BLK	PBW	0.05	10.00	250	1	0.200	0.01	0.000	
879026	BS	0.35	10.00	250	1	1.199	0.01	5.995	15.0
879023	OR STC-LEX	0.15	10.00	250	1	0.400	0.01	1.998	
879027	DUP STC-LEX	0.10	10.02	250	1	0.200	0.01	0.999	
879023MS	SS STC-LEX	0.40	10.03	250	1	1.399	0.01	6.994	17.5

BS and SS True Value= 40.0 mg/kg

Reviewed by: Colleen Wilson

Date: 12/30/97

# Reactive Sulfide Preparation and Runlog Log

1 WWWW

Operator: Blake STEWART

Page 1 of 1

Date: 12/24/97

Case Name: 33352.83563

Method: Ch. 7/ 9030A

#	CompuChem Number	Customer ID	Titration Volume (ml)	Initial Weight (g)	Final Volume (ml)	Comments
1	879023orig	STC-LEX	8.2 ml	10.01	200	10ml
2	879027 DVP	STC-LEX	7.8 ml	10.03	↓	10ml
3	879026 BS	N/A	4 ml	10.0		10ml
4	SS	STC-LEX	4.5 ml	10.0		10ml
5	Blk	N/A	8.0 ml	10.0		10ml
←						
12/24/97 BS						

Reagent Manufacturer & Lot#'s Na<sub>2</sub>S Fma-219-17, Iodine Fma-209-17, Na<sup>+</sup> thiosulfate

(1) ICV/BS Solutions:

Fma-210-6

250 mg/kg

Reviewed by: S. J. Jern

Date: 12/24/97

11

### Total Releasable Sulfide in Waste

CCN	Sample ID	Sample Vol. (g.)	Iodine Vol. (ml.)	Sodium Thiosulfate Vol. (ml.)	Scrubber Sulfide Conc. (mg/L)	Scrubber Solution Vol. (ml.)	Weight of Waste (kg)	Total Releasable H <sub>2</sub> S (mg/kg)	% Recovery
BLK	BLK	10.00	10	8	16.03	50	0.01	80.15	
879030	LCS	10.00	10	4	48.09	50	0.01	240.45	96.18
879023	STC-LEX	10.00	10	8.2	14.43	50	0.01	72.14	
879026 <sup>D</sup>	STC-LEX	10.02	10	7.8	17.63	50	0.01	88.17	
879023MS	STC-LEX	10.03	10	4.5	44.08	50	0.01	220.41	88.17

Prep Date: 12/24/97      nalysis Date 12/24/97

Prepared by: Bruce Stewart

Reviewed by: *Colleen Wilson*

SDG: 33352. 83563

Client <b>Chrysler</b>	CompuChem Environmental Corporation		PPS: Y or N
Sample Saver #	Commercial Receiving Log		PPS 1:
			Page <u>    </u> of <u>    </u>

Order # <b>33357</b>	Received on: <b>12/23/97</b>	Quick TAT:	Verbal/Hardcopy	Lab Instructions: <b>TCLP / SV Total Ph</b>
Project # <b>RA835/82</b>	Delivered by: <b>Fed Ex</b>	INT. TAT:	Hardcopy TAT <b>10 day</b>	<b>React 504 EPH / Read PPS carefully</b>
Quote # <b>17-6776</b>	Freight #:	Subcontract Lab: <b>Y or N</b>		<b>TDS = Total Solids pH &amp; spec</b>
Account # <b>500457</b>	C of C: <b>Y or N</b> # of C of Cs: <b>1</b>	Subcontract #: <b>DRO/DRO</b>		<b>RFA 835 E 8.36</b>

#	SDG	LI	Remarks	Req	Sample ID	CUN	Container/Volume	A. Code	SD	MX	TEM	SUL	CHL	PH
1	8356		TCLP VOC EX	1	STC-LEX	879000	1-4oz 1-8oz		12/19/97	50	4	JA	NA	NA
2	83562		chilled paint filter pH, total solids	2		879016	1-4oz							
3	83563		ignit. react	3		879023	1-8oz							
4	83564		Pebbs VOC	4		879011	1-8oz							
5	8356Q		GRU/DRO	5		879025	1-4oz							
6	83564		VOC	6	Methanol Blank	879029	1-4oz							
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														

Logged in By: **Jane White** Received By: **J. Williams** Reviewed By: \_\_\_\_\_

Analysis Code	Del. Code	Line Item	Price	# Samp	%	Total	Order Total: \$	Discrepancies
1173								
487, 486, 114, 1142		7, 4, 5, 8, 15						
1174, 3030, 1154		17						
1045, 1316, 1254		1, 2, 13						
1357, 749, 286		10, 19, 24						
899		25						

Sales Rep: \_\_\_\_\_ Est. \_\_\_\_\_  
 Proj Mgr: \_\_\_\_\_ Est. \_\_\_\_\_  
 Cust Svc: \_\_\_\_\_ Est. \_\_\_\_\_



Chain-of-Custody

00404 A

ATTN: DIANE ELLMORE

CompuChem  
501 Madison Avenue  
Cary, NC 27513  
Phone Number: 1-800-833-5097  
Fax Number: (919) 379-4050

Project Name: Chrysler Corp.  
Site Location: Kenosha, Wisconsin  
Site Code:  
RFA Number: YGQP9700835-836  
Chrysler PM: DIANE ELLMORE

Consultant: Triad Engineering Inc.  
Address: 325 E. Chicago Street  
Milw. Wisconsin 53202  
Consultant PM: Ross Creighton  
Phone: (414) 291-8840 Fax: (414) 291-8841

Turn-around Time Request:  
24 calendar hrs.  
48 calendar hrs.  
10 days  
28 days

Data Package Deliverables: (circle)  
Chrysler Level 1  
Chrysler Level 2  
Other (specify):

Compound List-Parameter/Method/Bottle Type/Preservative

Matrix Codes  
S - Soil SW - Surface Water  
GW - Groundwater A - Air  
Sed. - Sediment  
O - Other (specify)

Field Sample Identification	Date Collected	Time Collected	Grab (G) or Composite (C)	Matrix Code	Total # of Containers	Volatiles pH < 2	Metals pH < 2	Cyanide pH > 12	Other	Remarks
STC-LEX	12/19/97	1430	G	S	6					
PROTOCOL B (no preserv.)										

Sampler(s) ARK, JMR

Bottles Relinquished under Airbill No.  
Relinquished by: [Signature]  
Date: 12/22/97 Time: 1145

Samples Relinquished under Airbill No. Temperature (corrected) \_\_\_ C  
Custody Seal Intact?  
Yes No

Cooler ID # \_\_\_\_\_

Relinquished by: \_\_\_\_\_  
Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_  
Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Custody Seal Intact?  
Yes No

Is RFA sampling complete?  
Yes No

Relinquished by: \_\_\_\_\_  
Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Received for Laboratory by: \_\_\_\_\_  
Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Custody Seal Intact?  
Yes No

Chrysler Corporation 800 Chrysler Drive, CIMS 482-00-51, Auburn Hills, Michigan 48326-2757

Distribution: White copy: Data package Yellow: Retained by laboratory Pink: Retained by sampler





**COMPUCHEM  
ENVIRONMENTAL**

a division of Liberty Analytical Corp.

*Revised 1/5/97*  
*Ref 2*

05/JAN/98

TRIAD ENGINEERING INC.  
ATTN: ROSS CREIGHTON  
325 E CHICAGO STREET  
SUITE 400  
MILWAUKEE, WI 53202

Subject: Report of Data - Account Number# 500957 Order# 33352

ATTN: ROSS CREIGHTON

Enclosed are the results of analytical work performed in accordance with the referenced account number.

This report covers 1 sample(s) appearing on the attached listing.

Thank you for selecting CompuChem Environmental for your sample analysis. If you should have questions or require additional analytical services please contact your representative at 1-800-833-5097.

Sincerely,

CompuChem Environmental  
a division of Liberty Analytical

Attachment



**COMPUCHEM  
ENVIRONMENTAL**

a division of Liberty Analytical Corp.

05/JAN/98

TRIAD ENGINEERING INC.  
ATTN: ROSS CREIGHTON  
325 E CHICAGO STREET  
SUITE 400  
MILWAUKEE, WI 53202

ACCOUNT #: 500957

CC#	SAMPLE-ID	RECEIPT DATE
879000	STC-LEX	12/23/97

TOTAL NUMBER OF SAMPLES = 1

COMPUCHEM ENVIRONMENTAL CORP.  
SEMI-VOLATILE WATER 8270 METHOD  
EXTRACTION WORKSHEET

C-0-C  
12-29-97

ASSIGNED TO: Dorren/Dorrell/Mat

DATE EXTRACTED: 12/29/97

EMP ID NUMBER \_\_\_\_\_

TCLP WASTE CHARACTERIZATION

QUEUE #127 48 HR TAT

SAMPLE NUMBER	PREP CODE	CASE #	CLIENT #	QC SAMPLE		BOTTLE #	SAMPLE VOLUME(ml)	FINAL EXTRACT VOLUME	ADJUSTED PH		COMMENTS
				TYPE	ORIG NO.				B/N	ACID	
1	-1022	33352. 333561	STC-LEX			12/24/97	200	1.0	12.8	1.6	USE 200 ml OF TCLP LEACHATE AND
2			TCLPBLKWX				<del>500</del>	1.0	12.8	1.6	DILUTE TO 1000 ml WITH EXTRACTED
3		33353. 17401	EWI-ABC				200	1.0	12.8	1.6	WATER FOR ALL SAMPLES. ADD 1.0 ml
4			EW-DEF				200	1.0	12.8	1.6	VALIDATION TCLP-BN-ACID SPIKE TO SS'S AND
5			EWI-GHI				200	1.0	12.8	1.6	LCS SS'S. ADD 1.0 ml #393 SURROGATE
6			EWI-JKL				200	1.0	12.8	1.6	TO ALL SAMPLES. FINAL VOL. = 1.0 ml.
7			EWI-MNO				200	1.0	12.8	1.6	
8			TCLPBLKWY			12/24/97	500	1.0	12.8	1.9	USE 500 ml VOLUME FOR LEACHATE BLANK.
9											
10											
11											ORIGINAL ENTERED FOR SS's:
12			SLC5WZ	LCS		12/24/97	1000	1.0	12.8	1.6	N/A
13			SBLKWZ	B1		12/26/97	1000	1.0	12.8	1.6	INITIALS / DATE

SURROGAT	NO.	S-VOL
	AMT.	393
	LOT	46768
TCLP VALIDATION BN-ACID SPIKE	NO.	
	AMT.	1.0 ml
	LOT	46539

MANUAL COUNTER 9261962  
FINAL VOLUME VERIFIED Chauhan  
SUPERVISOR REVIEWED M Bolton

EXTRACTS RECEIVED BY Temp storage  
C. Hacker checked

SURROGATE & SPIKE ADDED CORRECTLY DVM 12/29/97  
INITIALS DATE

ISSUED

# COMPUCHEM

A division of Liberty Analytical Corporation  
501 MADISON AVE..  
CARY, NC 27513  
(919) 379-4100

## SDG NARRATIVE

**CASE #33352**  
**SDG #83561**  
**PROTOCOL : SW-846**  
**METHOD : 8270**

### SAMPLES: STC-LEX

Attached are pertinent analytical data dealing with the analysis of one (1) soil sample associated with Case #33352, SDG #83561. The sample was received intact on December 23, 1997 in properly sealed shipping containers with the corresponding chains-of-custody. The sample was logged into the CompuChem Laboratory Management system and scheduled for the analysis of the semivolatile fraction by Method 8270.

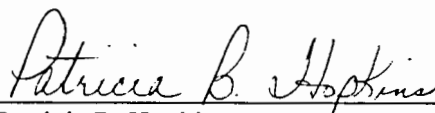
### SEMIVOLATILE

The semivolatile fraction was leached, extracted and analyzed within the required holding time. The sample was leached using the Toxicity Characteristic Leaching Procedure (TCLP). No target analytes were detected with concentrations above the reporting limits in the sample.

### QC SUMMARY

The surrogates met recovery criteria for the semivolatile sample. The Laboratory Control Sample (LCS) met accuracy criteria. The associated blanks, initial calibrations and continuing calibrations met Quality Control criteria.

Release of the data contained in the hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature:



---

Patricia B. Hopkins  
Final Technical Reviewer  
30 December 1997

1B  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

STC-LEX

Project: YGQP9700835/836 Date Sampled: 12/19/97  
 Lab Code: COMPU Case No.: 33352 SAS No.: SDG No.: 83561  
 Matrix: (soil/water) WATER Lab Sample ID: 879000  
 Sample wt/vol: 200 (g/mL) ML Lab File ID: GH079000A66.D  
 Level: (low/med) LOW Date Received: 12/23/97  
 % Moisture: \_\_\_\_\_ decanted: (Y/N) \_\_\_\_\_ Date Extracted: 12/29/97  
 Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/29/97  
 Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N CONCENTRATION UNITS: UG/L  
 CAS NO. COMPOUND DL CONC Q

110-86-1-----Pyridine	50	U
106-46-7-----1,4-Dichlorobenzene	50	U
95-48-7-----2-Methylphenol	50	U
108-39-4-----3-Methylphenol	50	U
106-44-5-----4-Methylphenol	50	U
67-72-1-----Hexachloroethane	50	U
98-95-3-----Nitrobenzene	50	U
87-68-3-----Hexachlorobutadiene	50	U
88-06-2-----2,4,6-Trichlorophenol	50	U
95-95-4-----2,4,5-Trichlorophenol	250	U
121-14-2-----2,4-Dinitrotoluene	50	U
118-74-1-----Hexachlorobenzene	50	U
87-86-5-----Pentachlorophenol	250	U

2C  
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: COMPUCHEM ENV. CORP.                      Contract: 500957

Lab Code: COMPU                      Case No.: 33352                      SAS No.:                      SDG No.: 83561

	SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 #	S8 #	TOT OUT
01	SBLKWZ	67	65	66	29	51	67			0
02	SLCSWZ	66	65	63	27	41	62			0
03	STC-LEX	60	60	61	20	33	41			0
04	TCLPBLKWY	70	66	63	30	50	73			0
05										
06										
07										
08										
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QC LIMITS

S1 (NBZ) = Nitrobenzene-d5                      (35-114)  
S2 (FBP) = 2-Fluorobiphenyl                      (43-116)  
S3 (TPH) = Terphenyl-d14                      (33-141)  
S4 (PHL) = Phenol-d5                      (10-110)  
S5 (2FP) = 2-Fluorophenol                      (21-110)  
S6 (TBP) = 2,4,6-Tribromophenol                      (10-123)

# Column to be used to flag recovery values  
\* Values outside of contract required QC limits  
D Surrogate diluted out

## WATER SEMIVOLATILE LAB CONTROL SAMPLE RECOVERY

SLCSWZ

Lab Name: COMPUCHEM ENV. CORP. Contract: 500957

Lab Code: COMPU Case No.: 33352 SAS No.: SDG No.: 83561

Lab Sample ID: 879114 LCS Lot No.: 46539

Lab File ID: GH079114A66.D Date Extracted: 12/29/97

LCS Aliquot: 1000 (uL) Date Analyzed: 12/29/97

Concentrated Extract Volume: 1000 (uL) Dilution Factor: 1.0

injection Volume: 1.0 (uL) pH: \_\_\_\_\_

COMPOUND	AMOUNT ADDED (ug/L)	AMOUNT RECOVERED (ug/L)	%REC #	QC LIMITS
Pyridine	20.00	7.33	37	1-200
1,4-Dichlorobenzene	20.00	11.29	56	20-124
2-Methylphenol	20.00	11.52	58	1-200
3-Methylphenol	40.00	9.61	24	1-200
4-Methylphenol	40.00	9.61	24	1-200
Hexachloroethane	20.00	11.13	56	40-113
Nitrobenzene	20.00	13.36	67	35-180
Hexachlorobutadiene	20.00	11.72	59	24-116
2,4,6-Trichlorophenol	20.00	9.89	49	37-144
2,4,5-Trichlorophenol	20.00	10.49	52	37-144
2,4-Dinitrotoluene	20.00	13.12	66	39-139
Hexachlorobenzene	20.00	12.54	63	1-152
Pentachlorophenol	20.00	8.20	41	14-176

# Column to be used to flag LCS recovery with an asterisk.

\* Values outside of QC limits.

LCS Recovery: 0 outside limits out of 13 total.

COMMENTS: \_\_\_\_\_

FORM III

4B  
SEMIVOLATILE METHOD BLANK SUMMARY

SAMPLE NO.

SBLKWZ

Lab Name: COMPUCHEM ENV. CORP.      Contract: 500957

Lab Code: COMPU      Case No.: 33352      SAS No.:      SDG No.: 83561

Lab File ID: GH079113A66.D      Lab Sample ID: 879113

Instrument ID: 5972HP66      Date Extracted: 12/29/97

Matrix: (soil/water) WATER      Date Analyzed: 12/29/97

Level: (low/med) LOW      Time Analyzed: 0957

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

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	SLCSWZ	879114	GH079114A66.D	12/29/97
02	STC-LEX	879000	GH079000A66.D	12/29/97
03	TCLPBLKWY	879112	GH079112A66.D	12/29/97
04				
05				
06				
07				
08				
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28				
29				
30				

COMMENTS:

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**COMPUCHEM  
ENVIRONMENTAL**

a division of Liberty Analytical Corp.

*Received 1/6/98  
282*

05/JAN/98

TRIAD ENGINEERING INC.  
ATTN: ROSS CREIGHTON  
325 E CHICAGO STREET  
SUITE 400  
MILWAUKEE, WI 53202

Subject: Report of Data - Account Number# 500957 Order# 33352

ATTN: ROSS CREIGHTON

Enclosed are the results of analytical work performed in accordance with the referenced account number.

This report covers 1 sample(s) appearing on the attached listing.

Thank you for selecting CompuChem Environmental for your sample analysis. If you should have questions or require additional analytical services please contact your representative at 1-800-833-5097.

Sincerely,

CompuChem Environmental  
a division of Liberty Analytical

Attachment



**COMPUCHEM  
ENVIRONMENTAL**

a division of Liberty Analytical Corp.

05/JAN/98

TRIAD ENGINEERING INC.  
ATTN: ROSS CREIGHTON  
325 E CHICAGO STREET  
SUITE 400  
MILWAUKEE, WI 53202

ACCOUNT #: 500957

CC#	SAMPLE-ID	RECEIPT DATE
879000	STC-LEX	12/23/97

TOTAL NUMBER OF SAMPLES = 1

**INORGANIC CASE SUMMARY NARRATIVE**  
**CASE # 33352 SDG # 83561**  
**PROTOCOL #SW-846**

The indicated Sample Delivery Group (SDG) consisting of one (1) soil sample was received into the laboratory management system (LIMS) on December 23, 1997 intact and in good condition with Chain of Custody (COC) records in order. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed for the eight TCLP leachate metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver) using analytical methods delineated in SW-846 (3rd edition) or EPA accepted CLP related modifications of those methods.

**SAMPLE IDs:**

The following customer IDs are associated with this SDG:

STC-LEX

**INSTRUMENTAL QUALITY CONTROL:**

All calibration verification solutions (ICV & CCV), blanks (ICB, CCB) and interference check samples (ICSA & ICSAB) associated with this data were confirmed to be within SW-846 allowable limits.

**SAMPLE PREPARATION QUALITY CONTROL:**

The sample preparation procedure verifications (LCSW & PBW) were found to be within acceptable ranges. All field samples were prepared and analyzed within the contract specified holding times.

**MATRIX RELATED QUALITY CONTROL:**

The sample matrix spike, 879007 (STC-LEXS) outside control limits for lead. The reported concentrations for these analytes are flagged with an "N" on all associated Form 1 and on Form 5a.

The sample matrix spike duplicate, 879008 (STC-LEXS) was found to be inside control limits for the requested analytes.

An "N" indicates a matrix-related interference in the sample preparation procedure &/or analysis for the flagged analyte. This is normally the consequence of a relatively high anionic content in the sample or (for some sediments) an inconsistent sample matrix relative to that analyte.

SW-846 control limits for matrix spike recoveries are set at 80% to 120% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more; in this case effected analytes are not flagged even if recoveries fall outside percentage recovery control limits.

The sample matrix duplicate, 879010 (STC-LEXD) was inside control limits for the requested analytes.

SW-846 control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

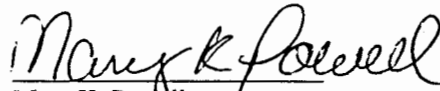
A four-fold serial dilution of sample, 879000 (STC-LEXL) was performed in accordance with SW-846 requirements for ICP analysis.

The adjusted sample concentrations were inside control limits for all requested analytes.

SW-846 control limits for serial dilution are defined as a deviation less than or equal to 10% in the dilution-adjusted concentrations from the original values for all analyte concentrations with values greater than fifty (50) times their respective Instrument Detection Limit (IDL) in the original sample.

This SDG package was processed using the Ward Scientific software. This software package has a seven character limitation on the Forms 13 and 14 -- any sample ID's which exceed seven characters are truncated from left to right on these forms.

Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.



Mary K. Powell  
Inorganic Case Auditor  
January 5, 1998

Note: This report is paginated for reference and accountability.

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

b Name: COMPUCHEM\_ENV.\_CORP.\_\_\_\_\_ Contract: SW-846\_\_\_\_\_

Lab Code: COMPU\_ Case No.: 33352 SAS No.: \_\_\_\_\_ SDG No.: 83561\_

SOW No.: ILM03.0

EPA Sample No.	Lab Sample ID
LEACHBLK_____	879112_____
STC-LEX_____	879000_____
STC-LEXD_____	879010_____
STC-LEXS_____	879008_____
STC-LEXS_____	879007_____
_____	_____
_____	_____
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Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO\_

Comments:

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I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Mary K Powell Name: Carol Yandel

Date: January 5, 1998 Title: Inorganic Manager

U.S. EPA - CLP

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

LEACHBLK

Lab Name: COMPUCHEM\_ENV.\_CORP.\_\_\_\_\_ Contract: SW-846\_\_\_\_\_

Lab Code: COMPU\_ Case No.: 33352\_ SAS No.: \_\_\_\_\_ SDG No.: 83561\_

Matrix (soil/water): WATER Lab Sample ID: 879112

Level (low/med): LOW\_ Date Received: 12/26/97

† Solids: \_\_\_\_\_ 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L\_

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	1.2	B		P
7440-43-9	Cadmium	0.50	U		P
7440-47-3	Chromium	2.2	B		P
7439-92-1	Lead	2.2	U		P
7439-97-6	Mercury				NR
7782-49-2	Selenium	11.8			P
7440-22-4	Silver	0.70	U		P

Color Before: COLORLESS Clarity Before: CLEAR\_ Texture: \_\_\_\_\_

Color After: COLORLESS Clarity After: CLEAR\_ Artifacts: \_\_\_\_\_

Comments:

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1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

STC-LEX

Lab Name: COMPUCHEM\_ENV.\_CORP.\_\_\_\_\_ Contract: SW-846\_\_\_\_\_

Lab Code: COMPU\_ Case No.: 33352\_ SAS No.: \_\_\_\_\_ SDG No.: 83561\_

Matrix (soil/water): WATER Lab Sample ID: 879000

Level (low/med): LOW\_ Date Received: 12/23/97

☉ Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L\_

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic_	3.7	B		P
7440-39-3	Barium	2080			P
7440-43-9	Cadmium	12.7			P
7440-47-3	Chromium_	2.7	B		P
7439-92-1	Lead	2390			P
7439-97-6	Mercury	0.10	U		CV
7782-49-2	Selenium_	13.5			P
7440-22-4	Silver_	0.70	U		P

Color Before: COLORLESS Clarity Before: CLEAR\_ Texture: \_\_\_\_\_

Color After: COLORLESS Clarity After: CLEAR\_ Artifacts: \_\_\_\_\_

Comments:

Duplicate\_(STC-LEXD) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



Chain-of-Custody

00404 A

ATTN: DIANE ELLMORE

CompuChem  
 501 Madison Avenue  
 Cary, NC 27513  
 Phone Number: 1-800-833-5097  
 Fax Number: (919) 379-4050

Project Name: Chrysler Corp.  
 Site Location: Kenosha, Wisconsin  
 Site Code:  
 RFA Number: YGQP9700835-836  
 Chrysler PM: DIANE ELLMORE

Consultant: Triad Engineering Pro.  
 Address: 325 E. Chicago Street  
 Milwaukee, Wisconsin 53202  
 Consultant PM: Ross Creighton  
 Phone: (414) 291-8840 Fax: (414) 291-8841

Turn-around Time Request:  
 24 calendar hrs.  
 48 calendar hrs.  
 10 days  
 28 days

Data Package Deliverables: (circle)  
 Chrysler Level 1  
 Chrysler Level 2  
 Other (specify):

Compound List-Parameter/Method/Bottle Type/Preservative

Matrix Codes

S - Soil SW - Surface Water  
 GW - Groundwater A - Air  
 Sed. - Sediment  
 O - Other (specify)

Lab Use Only

Volatiles pH < 2  
 Metals pH < 2  
 Cyanide pH > 12  
 Other

PROTOCOL B  
 (no preserv.)

Field Sample Identification	Date Collected	Time Collected	Grab (G) or Composite (C)	Matrix Code	Total # of Containers	Compound List-Parameter/Method/Bottle Type/Preservative	Matrix Codes	Lab Use Only	Remarks
STC-LEX	12/19/97	1430	G	S	6				

Sampler(s) <i>ARK, JMR</i>	Bottles Relinquished under Airbill No.				Samples Relinquished under Airbill No.				Temperature (corrected) _____ C	
	Relinquished by: <i>Jarvis</i>	Date: 12/22/97	Time: 1145	Received by:	Date:	Time:	Custody Seal Intact?	Yes No		
	Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Custody Seal Intact?	Yes No		
Cooler ID #	Relinquished by:	Date:	Time:	Received for Laboratory by:	Date:	Time:	Custody Seal Intact?	Yes No		
Is RFA sampling complete? Yes No	Relinquished by:	Date:	Time:	Received for Laboratory by:	Date:	Time:	Custody Seal Intact?	Yes No		



Quanterra Incorporated  
4101 Shuffel Drive, NW  
North Canton, Ohio 44720

330 497-9396 Telephone  
330 497-0772 Fax

## **ANALYTICAL REPORT**

**PROJECT NO. RFA 835/836**

**Lot #: A8A020109**

**Cathy Dover**

**Compuchem Environmental**

**QUANTERRA INCORPORATED**

**Jeffrey C. Smith**  
Project Manager

**January 20, 1998**

## **CASE NARRATIVE**

The following report contains the analytical results for one solid sample submitted to Quanterra-North Canton by Compuchem Environmental from project number RFA 835/836. The sample was received January 2, 1998, according to documented sample acceptance procedures.

Quanterra-North Canton utilizes only USEPA approved methods and instrumentation in all analytical work. The samples presented in this report were analyzed for the parameters listed on the method reference page in accordance with the methods indicated. Preliminary results were provided by facsimile transmission to Cathy Dover on January 19, 1998.

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with laboratory protocol.

### **SUPPLEMENTAL QC INFORMATION**

#### **SAMPLE RECEIVING**

The sample was received at the laboratory at a temperature of 5.3° C.

# ANALYTICAL METHODS SUMMARY

ABA020109

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Method for Chlorine in Coal	ASTM D 2361-91
Specific Gravity	SM18 2710 F
Total Residue as Percent Solids	MCAWW 160.3 MOD

## References:

- ASTM      Annual Book Of ASTM Standards.
- MCAWW     "Methods for Chemical Analysis of Water and Wastes",  
EPA-600/4-79-020, March 1983 and subsequent revisions.
- SM18      "Standard Methods for the Examination of Water and  
Wastewater", 18th Edition, 1992.

# SAMPLE SUMMARY

A8A020109

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
CEQQ1	001	STC-LEX	12/19/97	00:00

**NOTE(S) :**

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

COMPUHEM ENVIRONMENTAL

Client Sample ID: STC-LEX

General Chemistry

Lot-Sample #....: A8A020109-001    Work Order #....: CEQQ1    Matrix.....: SOLID  
 Date Sampled....: 12/19/97 00:00    Date Received...: 01/02/98  
 % Moisture.....: 13

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Percent Solids	87.4	0.10	%	MCAWW 160.3 MOD	01/05-01/06/98	8005117
	Dilution Factor: 1					
Specific Gravity	1.2		No Units	SM18 2710 F	01/15/98	8015150
	Dilution Factor: 1					
Total Halogens	ND	0.10	%	ASTM D 2361-91	01/09-01/12/98	8009181
	Dilution Factor: 1					

**NOTE(S) :**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

**QUALITY CONTROL SECTION**

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #....: A8A020109

Matrix.....: SOLID

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Halogens	90	(75 - 125)	ASTM D 2361-91	01/09-01/12/98	8009181

Work Order #: CEV0V102 LCS Lot-Sample#: A8A090000-181  
Dilution Factor: 1

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A8A020109

Matrix.....: SOLID

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>PREP</u> <u>BATCH #</u>
Percent Solids	ND	0.10	%	MCAWW 160.3 MOD	01/05-01/06/98	8005117
		Dilution Factor: 1				
Total Halogens	ND	0.10	%	ASTM D 2361-91	01/09-01/12/98	8009181
		Dilution Factor: 1				

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.



SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #....: A8A020109

Work Order #....: CEKK5-SMP  
CEKK5-DUP

Matrix.....: SOLID

Date Sampled....: 12/13/97 10:50

Date Received...: 12/16/97

\* Moisture.....: 4.7

<u>PARAM</u>	<u>RESULT</u>	<u>DUPLICATE</u>	<u>UNITS</u>	<u>RPD</u>	<u>RPD</u>	<u>METHOD</u>	<u>PREPARATION-</u>	<u>PREP</u>
		<u>RESULT</u>		<u>RPD</u>	<u>LIMIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH #</u>
Total Halogens						SD Lot-Sample #: A7L170124-004		
	ND	ND	%	0	(0-20)	ASTM D 2361-91	01/09-01/12/98	8009181

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #....: A8A020109

Work Order #....: CEQLG-SMP  
CEQLG-DUP

Matrix.....: SOLID

Date Sampled....: 12/29/97 10:00 Date Received...: 12/31/97

% Moisture.....: 12

<u>PARAM</u>	<u>RESULT</u>	<u>DUPLICATE</u> <u>RESULT</u>	<u>UNITS</u>	<u>RPD</u>	<u>RPD</u> <u>LIMIT</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>PREP</u> <u>BATCH #</u>
Percent Solids	87.6	88.8	%	1.4	(0-20)	SD Lot-Sample #: A7L310132-018 MCAWW 160.3 MOD	01/05-01/06/98	8005117

Dilution Factor: 1

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

SAMPLE DUPLICATE EVALIATION REPORT

General Chemistry

Client Lot #....: A8A020109      Work Order #....: CEQQ1-SMP      Matrix.....: SOLID  
CEQQ1-DUP

Date Sampled....: 12/19/97 00:00      Date Received...: 01/02/98

% Moisture.....: 13

<u>PARAM</u>	<u>RESULT</u>	<u>DUPLICATE</u>	<u>UNITS</u>	<u>RPD</u>	<u>RPD</u>	<u>METHOD</u>	<u>PREPARATION-</u>	<u>PREP</u>
		<u>RESULT</u>		<u>RPD</u>	<u>LIMIT</u>		<u>ANALYSIS DATE</u>	<u>BATCH #</u>
Percent Solids						SD Lot-Sample #: A8A020109-001		
87.4		89.8	%	2.7	(0-20)	MCAWW 160.3 MOD	01/05-01/06/98	8005117

Dilution Factor: 1

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

**SAMPLE DUPLICATE EVALUATION REPORT**

**General Chemistry**

Client Lot #....: A8A020109

Work Order #....: CEQQ4-SMP  
CEQQ4-DUP

Matrix.....: SOLID

Date Sampled....: 12/29/97 00:00

Date Received...: 01/02/98

% Moisture.....: 20

<u>PARAM</u>	<u>RESULT</u>	<u>DUPLICATE</u> <u>RESULT</u>	<u>UNITS</u>	<u>RPD</u> <u>RPD</u>	<u>LIMIT</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>PREP</u> <u>BATCH #</u>
Specific Gravity	1.8	1.8	No Units	0.57	(0-20)	SD Lot-Sample #: A8A020111-001 SM18 2710 F	01/15/98	8015150
			Dilution Factor: 1					
Percent Solids	80.5	79.1	%	1.7	(0-20)	SD Lot-Sample #: A8A020111-001 MCAWW 160.3 MOD	01/05-01/06/98	8005122
			Dilution Factor: 1					

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.



**CHAIN-OF-CUSTODY RECORD**

No. 00843

4600 Silicon Drive  
Durham, NC 27703  
1-800-833-5097

Ship to: <i>Quartana</i>	Project Name: <i>REA 835/8.36</i>	Field Point-of-Contact:
Carrier: Airbill No.:	Sampler Name:	Telephone No.:
	Sampler Signature:	Sampling for project complete? Y or N (See Note 1)
		Project-specific (PS) or Batch (B) QC: _____

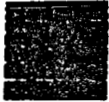
<b>BOX #1</b> 1. Surface Water 6. Trip Blank 2. Ground Water 7. Oil 3. Leachate 8. Waste 4. Rinsate 9. Other _____ 5. Soil / Sediment / Sludge	<b>Box #2:</b> A. HCl E. Ice Only B. HNO <sub>3</sub> O. Other _____ C. NaHSO <sub>4</sub> N. Not Preserved D. Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	<b>Box #3:</b> F. Filtered U. Unfiltered	<b>Box #4:</b> C. CLP 3/90 R. Radiological S. SW-846 T. TCLP W. CWA 600-series O. Other <i>Other</i> L. Low Conc. CLP	<b>Box #5:</b> H. - High M. - Medium L. - Low
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Sample ID <small>(Organics 9 characters max Inorganics 6 characters max See Note 2)</small>	Date Year 19 <i>97</i>	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered/Unfiltered	Box #4 Method	Box #5 Expect Conc.	No. of Bottles	Use for Lab QC (MS or DUP)	Organic Analysis Inorganics Other													Remarks / Comments	
										VOA-GC/MS	SV-GC/MS	Pest/PCB-GC	Herb-GC	VOA-GC	Metals	Mercury	Cyanides	Radiologicals	TOC/TOX	O&G/TPH	Phenols	Other		
<i>STC-LEY</i>	<i>12/24</i>			<i>1</i>	<i>U</i>	<i>S</i>		<i>1</i>																<i>This is additional vol. w/d @ Sample originally sent Quartana on 12/24/97.</i>
																								<i>Wisc. cert. required.</i>

Client's Special Instructions:

Lab: Received In Good Condition? Y or N	Describe Problems, If Any:					
#1 Relinquished By: (Sig.) <i>Diane Ellmore</i>	Date: <i>12/31/97</i>	#2 Relinquished By: (Sig.)	Date:	#3 Relinquished By: (Sig.)	Date:	Sample storage time requested? (In days, see Note 3)
Company Name: <i>CompuChem</i>	Time: <i>2:30pm</i>	Company Name:	Time:	Company Name:	Time:	
#1 Received By: (Sig.) <i>Diane Ellmore</i>	Date: <i>1/1/98</i>	#2 Received By: (Sig.)	Date:	#3 Received By: (Sig.)	Date:	DESTROY or RETURN data after five years of archival? (Circle choice; see Note 4)
Company Name: <i>Quartana</i>	Time: <i>1:00</i>	Company Name:	Time:	Company Name:	Time:	

**Note (1):** If "N" lab will hold samples to await remainder of project-maximizing batch size and minimizing QC ratio; if "Y" lab will begin processing batches now. **Note (2):** If CLP Inorganics diskette required, ID limited to maximum of six characters. **Note (3):** Samples stored 60 days after date report mailed at no extra charge. **Note (4):** All lab copies of data destroyed after five years unless client requests and pays for return of copies; annual storage fee billed in January of year six.



**COMPUCHEM  
ENVIRONMENTAL**

a division of Liberty Analytical Corp.

*Received 1/5/98  
2 of 2*

02/JAN/98

TRIAD ENGINEERING INC.  
ATTN: ROSS CREIGHTON  
325 E CHICAGO STREET  
SUITE 400  
MILWAUKEE, WI 53202

Subject: Report of Data - Account Number# 500957 Order# 33352

ATTN: ROSS CREIGHTON

Enclosed are the results of analytical work performed in accordance with the referenced account number.

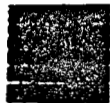
This report covers 2 sample(s) appearing on the attached listing.

Thank you for selecting CompuChem Environmental for your sample analysis. If you should have questions or require additional analytical services please contact your representative at 1-800-833-5097.

Sincerely,

CompuChem Environmental  
a division of Liberty Analytical

Attachment



**COMPUCHEM**  
**ENVIRONMENTAL**

a division of Liberty Analytical Corp.

02/JAN/98

TRIAD ENGINEERING INC.  
ATTN: ROSS CREIGHTON  
325 E CHICAGO STREET  
SUITE 400  
MILWAUKEE, WI 53202

ACCOUNT #: 500957

CC#	SAMPLE-ID	RECEIPT DATE
879011	STC-LEX	12/23/97
879029	METHANBLNK	12/23/97

TOTAL NUMBER OF SAMPLES = 2

CompuChem  
a division of Liberty Analytical Corp.  
501 Madison Avenue  
Cary, North Carolina 27513

SDG NARRATIVE

CASE: 33352  
SDG: 83564

SAMPLE IDENTIFICATION: STC-LEX

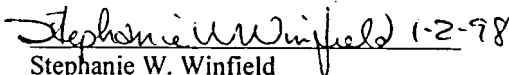
The one (1) soil sample listed above was received intact, properly refrigerated, with proper chain-of-custody (COC) documentation on December 23, 1997. The sample was prepared and analyzed following SW846 Method 8081 protocol for the PCB fraction.

PCBs

Extraction and analysis holding time requirements were met for this sample. The PCB target analyte Aroclor 1260 was confirmed by dual column analysis at a concentration above the reporting limit in STC-LEX.

All of the surrogates met recovery and retention time criteria in the analysis of this sample. The associated method blank met all quality control criteria. No PCB target analytes were detected in the method blank. The associated Laboratory Control Sample (LCS) met all quality control.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than conditions listed above. Release of the data contained in the hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the signature below.

  
Stephanie W. Winfield  
Technical Reviewer  
January 2, 1998

01  
EB  
1/2/98



FORM 1  
 PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

STC-LEX

Lab Name: COMPUCHEM Contract: 500957  
 Lab Code: COMPU Case No.: 33352 SAS No.: SDG No.: 83564  
 Matrix: (soil/water) SOIL Lab Sample ID: 879011  
 Sample wt/vol: 30.4 (g/mL) G Lab File ID: \_\_\_\_\_  
 % Moisture: 14 decanted: (Y/N) N Date Received: 12/23/97  
 Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/29/97  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/30/97  
 Injection Volume: 2.0 (uL) Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: \_\_\_\_\_ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
12674-11-2-----	Aroclor-1016	38	U	
11104-28-2-----	Aroclor-1221	77	U	
11141-16-5-----	Aroclor-1232	38	U	
53469-21-9-----	Aroclor-1242	38	U	
12672-29-6-----	Aroclor-1248	38	U	
11097-69-1-----	Aroclor-1254	38	U	
11096-82-5-----	Aroclor-1260	41		

FORM 3  
SOIL PESTICIDE METHOD SPIKE RECOVERY

Lab Name: COMPUCHEM

Contract: 500957

Lab Code: COMPU

Case No.: 33352

SAS No.:

SDG No.: 83564

Matrix Spike - Sample No.: PLCSWT

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	% REC #	QC. LIMITS REC.
Aroclor-1254	302.1	348.7	115	50-150

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

\* Values outside of QC limits

COMMENTS:

FORM 4  
PESTICIDE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

PBLKWT

Lab Name: COMPUCHEM Contract: 500957  
 Lab Code: COMPU Case No.: 33352 SAS No.: SDG No.: 83564  
 Lab Sample ID: 897047 Lab File ID: \_\_\_\_\_  
 Matrix (soil/water) SOIL Extraction:(SepF/Cont/Sonc) SONC  
 Sulfur Cleanup (Y/N) N Date Extracted: 12/29/97  
 Date Analyzed (1): 12/30/97 Date Analyzed (2):  
 Time Analyzed (1): 1456 Time Analyzed (2):  
 Instrument ID (1): VARIAN20 Instrument ID (2):  
 GC Column (1): RTX-1701 ID: 0.53(mm) GC Column (2): ID:

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

	SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	PLCSWT	879048	12/29/97	12/29/97
02	STC-LEX	879011	12/30/97	12/30/97
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: \_\_\_\_\_

FORM 1  
 PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

PBLKWT

Lab Name: COMPUCHEM Contract: 500957  
 Lab Code: COMPU Case No.: 33352 SAS No.: SDG No.: 83564  
 Matrix: (soil/water) SOIL Lab Sample ID: 897047  
 Sample wt/vol: 31.1 (g/mL) G Lab File ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ decanted: (Y/N) \_\_\_\_\_ Date Received: \_\_\_\_\_  
 Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/29/97  
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 12/30/97  
 Injection Volume: 2.0 (uL) Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: \_\_\_\_\_ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
12674-11-2-----	Aroclor-1016	32	U	
11104-28-2-----	Aroclor-1221	65	U	
11141-16-5-----	Aroclor-1232	32	U	
53469-21-9-----	Aroclor-1242	32	U	
12672-29-6-----	Aroclor-1248	32	U	
11097-69-1-----	Aroclor-1254	32	U	
11096-82-5-----	Aroclor-1260	32	U	

CompuChem  
A Division of Liberty Analytical Corp.  
501 Madison Avenue  
Cary, NC 27513

December 31, 1997

*Received 1/6/97  
JBJ*

Mr. Ross Creighton  
Triad Engineering Inc.  
325 E. Chicago Street  
Suite 400  
Milwaukee, WI 53202

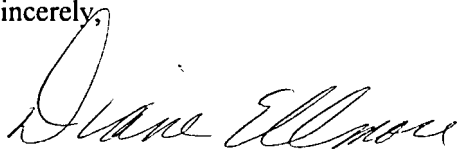
Dear Mr. Creighton:

We at CompuChem are pleased to provide our report for the analysis you requested.  
Data for the following samples are enclosed:

Client ID Number	CompuChem ID Number	Analysis Code	Case Number	Description of Work Requested
STC-LEX	879016	3030 1317	33352. 83562	Paint Filter Corrosivity by pH Total Solids

Thank you for selecting CompuChem Environmental for your sample analysis.  
If you have any questions concerning this report or the analytical methods employed,  
please contact your Sales Representative at 919-379-4100.

Sincerely,



Project Manager

ANALYTICAL REPORT OF DATA - CASE # 33352. 83562

SUBMITTED TO:  
Mr. Ross Creighton  
Triad Engineering Inc.  
325 E. Chicago Street  
Suite 400  
Milwaukee, WI 53202

LABORATORY CHRONICLE - PAINT FILTER ANALYSIS

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	DATE SAMPLE RECEIVED	DATE ANALYSIS COMPLETED
1.	STC-LEX	879016	12/23/97	12/26/97

ANALYTICAL REPORT OF DATA - CASE # 33352. 83562

SUBMITTED TO:  
Mr. Ross Creighton  
Triad Engineering Inc.  
325 E. Chicago Street  
Suite 400  
Milwaukee, WI 53202

LABORATORY CHRONICLE - CORROSIVITY BY PH ANALYSIS

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	DATE SAMPLE RECEIVED	DATE ANALYSIS COMPLETED
1.	STC-LEX	879016	12/23/97	12/31/97

ANALYTICAL REPORT OF DATA - CASE # 33352. 83562

SUBMITTED TO:  
Mr. Ross Creighton  
Triad Engineering Inc.  
325 E. Chicago Street  
Suite 400  
Milwaukee, WI 53202

LABORATORY CHRONICLE - TOTAL SOLIDS ANALYSIS

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	DATE SAMPLE RECEIVED	DATE ANALYSIS COMPLETED
1.	STC-LEX	879016	12/23/97	12/31/97



PAINT FILTER ANALYSIS

SUMMARY REPORT

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	RESULT	REPORTING LIMIT
1.	STC-LEX	879016	No	Yes / No

BRL = BELOW REPORTING LIMIT

NWR = NOT WITHIN RANGE

Reviewed by/ID#: S. Zulema / \_\_\_\_\_

Date: 2326

CORROSIVITY BY PH ANALYSIS

SUMMARY REPORT

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	CONCENTRATION (units)	REPORTING LIMIT (units)
1.	STC-LEX	879016	7.99	0.00

BRL = BELOW REPORTING LIMIT

NWR = NOT WITHIN RANGE

Reviewed by/ID#: S. Beulom 12326

Date: 12/31/97

TOTAL SOLIDS ANALYSIS

SUMMARY REPORT

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	RESULT	REPORTING LIMIT
1.	STC-LEX	879016	86.6	0.00

BRL = BELOW REPORTING LIMIT

NWR = NOT WITHIN RANGE

Reviewed by/ID#: S Benlem / 2326

Date: 12/31/97

CORROSIVITY BY PH ANALYSIS

QUALITY CONTROL REPORT

CASE: 33352. 83562  
 MATRIX: SOIL

Analyst:2285  
 Date Analyzed: 12/31/97

BLANK SPIKE (BS) COMPUCHEM #: LCS		
SPIKE ADDED (units)	BS CONC. (units)	BS % RECOVERY
9.070	8.875	98.00

ORIG. SAMPLE COMPUCHEM #: 879016 DUPLICATE (DUP.) COMPUCHEM #: 879016D			
SAMPLE CONC. (units)	DUP. CONC. (units)		RPD
7.987	8.002		0.000

The reporting limit for Corrosivity by pH is 0 units

BRL = BELOW REPORTING LIMIT

RPD = RELATIVE PERCENT DIFFERENCE

NWR = NOT WITHIN RANGE

**COMPUCHEM ENVIRONMENTAL CORP.  
PAINT FILTER FREE LIQUIDS TEST**

-219

QUEUE #114

EXT. NAME: Carl 4200

EMP. ID #: 1727

DATE STARTED: 12/26/97

	SAMPLE NUMBER	CLIENT ID #	BOTTLE #	FREE LIQUIDS (Yes/No)	COMMENTS
1	879016	STC-LEX	1 of 1	NO	
2			of		
3			of		
4			of		
5			of		
6			of		
7			of		
8			of		
9			of		
10			of		
11			of		
12			of		
13			of		
14			of		
15			of		
16			of		
17			of		
18			of		
19			of		
20			of		

FILTRATION COMPLETED: CH

SUPERVISOR REVIEWED: CH

**pH Determination Run Log**

Fisher Scientific Model #50

Operator: Kim Davis

Page 1 of 1

Date: 12-31-97

SDG: 33352.83562  
33351.83782

#	CompuChem Number	Customer ID	Reagent Reference #	pH	Temperature (°C)
NA	4.0	<del>KD Davis</del>	7M2-217-2	4.9001	20.6
NA	7.0	<del>12-31-97</del>	7M2-219-16	7.002	20.8
NA	10.0	<del>12-31-97</del>	7M2-219-15	10.001	21.2
1	LCS ERA 99MB	T=9.07	7M2-222-5	8.875	21.7
2	879016 OR	STC-LEX	<del>KD Davis</del>	7.987	22.4
3	879019 dup	↓	<del>12-31-97</del>	8.002	22.3
4	879291 OR	PROTOCOLB	<del>12-31-97</del>	8.582	21.8
5	879295 dup	↓	<del>12-31-97</del>	8.589	22.0
	Chl Std 7.00	<del>12-31-97</del>	7M2-219-16	6.998	21.5
<del>KD Davis 12-31-97</del>					

Buffer	Slope	Efficiency
4.00	59.76	101.0
7.00	60.96	103.0
10.00	NA	NA

Reviewed By S. Barlem

Date: 12/31/97

TOTAL SOLIDS ANALYSIS

QUALITY CONTROL REPORT

CASE: 33352. 83562

MATRIX: SOIL

Analyst:2285

Date Analyzed: 12/31/97

ORIG. SAMPLE COMPUCHEM #: 879016		
DUPLICATE (DUP.) COMPUCHEM #: 879016D		
SAMPLE CONC.	DUP. CONC.	RPD
86.60	85.81	1.000

The reporting limit for Total Solids is 0 %

BRL = BELOW REPORTING LIMIT

RPD = RELATIVE PERCENT DIFFERENCE

NWR = NOT WITHIN RANGE

**COMPUCHEM ENVIRONMENTAL CORP.**  
**UNDECANTED DRY WEIGHT WORKSHEET**

QUEUE #113

-143 / -190 (in red #'s)

DATE ASSIGNED: 12-31-97

ASSIGNED TO: Kim Davis

DATE COMPLETED: 12-31-97

EMP. ID #: 2285

60  
5.81  
52  
2.61

SAMPLE NUMBER	WEIGHT OF CONTAINER (0.00 g)	WEIGHT OF CONT. & WET SAMPLE(0.00 g)	WEIGHT OF CONT. & DRY SAMPLE(0.00 g)
1 879016 OR	76.9122	107.3411	103.2632
2 879016 Dup	76.4633	107.0766	102.7313
3 879291 OR	73.5317	103.8494	98.8527
4 879291 Dup	72.5013	102.5250	97.3032
5			
6			
7			
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25			

26.3510  
30.4299  
26.2680  
30.6123  
25.3210  
30.3177  
24.8019  
30.0237





CompuChem  
501 Madison Avenue  
Cary, NC 27513  
Phone Number: 1-800-833-5097  
Fax Number: (919) 379-4050

Project Name: Chrysler Corp.  
Site Location: Kenosha, Wisconsin  
Site Code:  
RFA Number: YGQP9700835-836  
Chrysler PM: DIANE ELLMORE

Consultant: TRIAD Engineering Inc.  
Address: 325 E. Chicago Street  
Milw. Wisconsin 53202  
Consultant PM: ROSS CREIGHTON  
Phone: (414) 291-8840 Fax: (414) 291-8841

Turn-around Time Request:  
24 calendar hrs.  
48 calendar hrs.  
10 days  
28 days

Data Package Deliverables: (circle)  
Chrysler Level 1  
Chrysler Level 2  
Other (specify):

Compound List-Parameter/Method/Bottle Type/Preservative	Matrix Codes
	S - Soil GW - Groundwater Sed. - Sediment O - Other (specify)
	SW - Surface Water A - Air
	Lab Use Only
	Volatiles pH < 2 Metals pH < 2 Cyanide pH > 12 Other

Field Sample Identification	Date Collected	Time Collected	Grab (G) or Composite (C)	Matrix Code	Total # of Containers	Compound List-Parameter/Method/Bottle Type/Preservative	Matrix Codes	Volatiles pH < 2	Metals pH < 2	Cyanide pH > 12	Other	Remarks
<u>STC-LEX</u>	<u>12/19/97</u>	<u>1430</u>	<u>G</u>	<u>S</u>	<u>6</u>	<u>PROTOCOL B</u> <u>(no preserv.)</u>						

Sampler(s)	Bottles Relinquished under Airbill No.	Samples Relinquished under Airbill No.	Temperature (corrected)
<u>ARK, JMK</u>			<u>F</u> C
	Relinquished by: <u>Jarvis</u> Date: <u>12/22/97</u> Time: <u>1145</u>	Received by:	Custody Seal Intact? Yes No
	Relinquished by:	Received by:	Custody Seal Intact? Yes No
	Relinquished by:	Received for Laboratory by: <u>Diane Ellmore</u> Date: <u>12/23/97</u> Time: <u>10:00</u>	Custody Seal Intact? Yes No

Chrysler Corporation 800 Chrysler Drive, CIMS 482-00-51, Auburn Hills, Michigan 48326-2757

Distribution: White copy: Data package Yellow : Retained by laboratory Pink: Retained by sampler



**APPENDIX B**

**Schedule**

# SOILPILE & DRUMMED SOIL WORK SCHEDULE

## CHRYSLER CORPORATION CHRYSLER KENOSHA MAIN PLANT

ID	Task Name	Duration	Start	Finish	September 1998					October 1998				
					8/16	8/23	8/30	9/6	9/13	9/20	9/27	10/4	10/11	
1	Building 52 - Soil Removal & Disposal	45 days	Mon 8/17/98	Fri 10/16/98	[Summary bar spanning from 8/17 to 10/16]									
2	Work Plan Preparation	17 days	Mon 8/17/98	Tue 9/8/98	[Progress bar from 8/17 to 9/8]									
3	Work Plan Submittal	0 days	Tue 9/8/98	Tue 9/8/98	[Milestone diamond at 9/8]									
4	Contracting/ Scheduling/ Permitting	2 days	Wed 9/9/98	Thu 9/10/98	[Task bar from 9/9 to 9/10]									
5	Fieldwork Coordination	1 day	Fri 9/11/98	Fri 9/11/98	[Task bar at 9/11]									
6	Summary Letter Report Preparation	1 wk	Mon 10/12/98	Fri 10/16/98	[Task bar from 10/12 to 10/16]									
7	Summary Letter Report Submittal	0 days	Fri 10/16/98	Fri 10/16/98	[Milestone diamond at 10/16]									

Date: Wed 9/9/98

Task		Summary	
Progress		Rolled Up Task	
Milestone		Rolled Up Milestone	
		Rolled Up Progress	
		Project Summary	
		Split	
		External Tasks	