

AUG 1

**CA RICH CONSULTANTS, INC.**  
CERTIFIED GROUND-WATER AND  
ENVIRONMENTAL SPECIALISTS

August 11, 1998

**NYSDEC**

Division of Hazardous Waste Remediation  
50 Wolf Road  
Albany, New York

Attention: Jeffrey Trad, P.E.

Re: **Remedial Action Final Report - Data Validation Report**  
**Tishcon Corporation, Site No.: 130043C**  
**125 State Street**  
**Agreement Index No.: W1-0757-95-05**

Dear Mr. Trad:

Attached is a copy of the data validation report for the end-point samples collected as part of the Remedial Action of Storm Drain SD-1. Please note the following with respect to this Report.

- Sample SS-SD6EP is a duplicate of sample SS-SD1EP. The data validator was not aware of this during her review.
- The laboratory analyzed the VOC field and trip blanks using a heated purge procedure. As such, these samples were rejected during the validation review. Since there were no detections in the end-point sample analyses, the rejected blank analyses should not affect these results.

A copy of our Field Quality Control check list is also included for your review. If there are any questions regarding this Report, please do not hesitate to call our office.

Sincerely,

**CA RICH CONSULTANTS, INC.**

Eric A. Weinstock  
Associate

Attachments

Comax C:\1-ew-98\tishcon\dv-rpt.doc

CA RICH CONSULTANTS, INC.  
Field Quality Control Checks

Date: 5/13/98

By: Chris Coates

Check List

Were the following performed  
(Yes or No)

- **Field Measurements** - To verify the quality of data collected using field instrumentation, at least one duplicate measurement will be obtained per day and reported for all field analytical measurements.
- **Equipment Calibration** - Meters should be calibrated within 24-hours prior to use.
- **Equipment Decon** - Sampling equipment should be deconed as stated in the Sampling & Analysis Plan
- **Sample Containers** - Certified-clean sample containers in accordance with Exhibit I of the NYSDEC ASP (Dec. 1991) will be supplied by the NEI.
- **Field Duplicates** - Field duplicates will be collected to check reproducibility of the sampling methods. Field duplicates will be prepared as discussed in the FSP. In general, field duplicates will be analyzed at a five percent frequency (every 20 samples). Table 1 provides an estimated number of field duplicates for each applicable parameter and matrix.
- **Field Rinse Blanks** - Field rinse blanks are used to monitor the cleanliness of the sampling equipment and the effectiveness of the cleaning procedures. Laboratory-demonstrated, analyte-free water shall be passed through or over the sampling equipment being used on that particular day. The water shall be collected in the laboratory-cleaned containers at a frequency of one per sampling day and analyzed for the same parameters as the field samples. Table 1 provides an estimated number of rinse blanks collected during the field work.
- **Trip Blanks** - Trip blanks will be used to assess whether site samples have been exposed to non-site-related volatile constituents during storage and transport. Trip blanks will be analyzed at a frequency of once per day, and will be analyzed for volatile organic constituents. A trip blank will consist of a container filled with analyte-free water (supplied by the laboratory) which remains unopened with field samples throughout the sampling event. Trip blanks will only be analyzed for volatile organic constituents. Table 1 provides an estimated number of trip blanks collected for each matrix and parameter during the field activities.

Yes

Yes

Yes

Yes

Yes

Yes

Yes

DATA VALIDATION REPORT

ORGANIC/INORGANIC ANALYSIS  
VOLATILES  
RCRA METALS

For Samples Collected on May 11, 1998 at Tishcon - State Street, Westbury, NY


SAMPLE DELIVERY GROUP NUMBER : 186468

SUBMITTED TO

C.A. Rich Consultants  
404 Glen Cove Avenue  
Sea Cliff, NY 11579

JULY 1998

PREPARED BY

LORI A. BEYER   
L.A.B. VALIDATION CORP.  
14 WEST POINT DRIVE  
EAST NORTHPORT, NY 11731

Tishcon - State Street, Westbury, NY

Data Validation Report: Volatile and RCRA Metals Analysis

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## INTRODUCTION:

A validation was performed on 2 soil samples and the associated quality control samples for organic (volatile) analyses and RCRA Metals analyses for Sample Delivery Group # 186468. The samples were collected on May 11, 1998.

The samples were analyzed by Severn-Trent Envirotech Laboratories (NY Cert. # 10142), utilizing the New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP) 1995. The analytical testing consisted of TCL volatile organic analyses by purge and trap GC/MS utilizing NYSDEC 95 protocols and for RCRA metals analyses using the same document.

The data were evaluated in accordance with the United States Environmental Protection Agency (USEPA) Region II Data Validation Checklists, CLP Functional Guidelines for Data Validation and NYSDEC ASP Guidelines, where applicable and relevant.

The Validation Report pertains to the following samples:

SS-SD6EP

SS-SD1EP

The data summary forms (Form I's) included in Appendix A include all usable (qualified) results for the samples. Note that the laboratory identified and reported sample SS-SD1EP as SS-SDIEP on all applicable reporting forms. See Appendix F for an updated narrative statement from the laboratory to indicate this error in sample identification.

### 1.0 Volatile Organics by GC/MS

The following method criteria were reviewed: holding times, SMCs, MS, MSD, MSB, blanks, tunes, calibrations, internal standards, target and non target component identification, quantitation, reported quantitation limits and overall system performance. The volatile results were considered to be valid and usable with the appropriate qualifiers for the soil samples. The water QC samples; field and trip blank results were rejected due to non compliant initial calibration as noted on the data summary forms in Appendix A and within the following text:

#### 1.1 HOLDING TIME

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the technical holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimates, "J". The non-detects (sample quantitation limits) are required to be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

ALL SAMPLES WERE ANALYZED WITHIN SEVEN DAYS OF VALIDATED TIME OF SAMPLE RECEIPT AT THE LABORATORY AND NO QUALIFICATIONS WERE APPLIED BASED UPON HOLDING TIME CRITERIA.

Additionally, technical holding times are validated based on proper preservation of samples. The aqueous QC samples were properly preserved with HCL and HNO<sub>3</sub> as required. There is no indication in the SDG Narrative or the sample records that there was a problem with the samples (i.e. received or not maintained at 4 degrees celcius) for volatile organics and, consequently, the integrity of the volatile samples has been assumed to be good. The data user should use caution since there is no documentation that samples were maintained at 4 degrees celcius for this particular analysis.

#### 1.2 SYSTEM MONITORING COMPOUND (SURROGATE) RECOVERY

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measure of surrogate concentrations were outside contract specifications, qualifications are required to be applied to associated samples and analytes.

ALL SYSTEM MONITORING COMPOUND RECOVERIES (%R) WERE FOUND TO BE GENERATED WITHIN ACCEPTABLE LIMITS FOR THE THREE SURROGATE COMPOUNDS.

#### 1.3 MATRIX SPIKE (MS), MATRIX SPIKE DUPLICATE (MSD) & MATRIX SPIKE BLANK (MSB)

The MS/MSD data are generated to determine the long term precision and accuracy of the analytical method in various matrices. Sample SS-SD1EP was analyzed for MS/MSD analysis for the volatile organics as requested on the chain of custody document. The MSB was performed as required by the NYSDEC ASP.

ALL SPIKE RECOVERIES (%R) AND RELATIVE PERCENT DIFFERENCES (RPDs) MET THE REQUIREMENTS OF THE ANALYTICAL METHOD AND NO QUALIIFICATIONS ARE REQUIRED.

#### 1.4 BLANK CONTAMINATION

Quality assurance (QA) blanks; i.e., method, trip, field and storage blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field blanks measure cross-contamination of samples during field operations. Storage blanks measure cross-contamination

of samples during storage at the laboratory.

The following table was utilized to qualify TCL results due to contamination. The largest value from all the associated blanks is required to be utilized:

For:	Flag Sample Result with a "U" when:	Report CRQL & Qualify "U" when:	No Qualification is needed when:
Methylene Chloride, Acetone, Toluene & 2-Butanone	Sample Conc. Is >CRQL, but $\leq 10x$ blank value	Sample Conc. Is < CRQL and $\leq 10x$ blank value	Sample Conc. Is > CRQL and $>10x$ blank value
Other Contaminants	Sample Conc. Is > CRQL, but $\leq 5x$ blank value	Sample Conc. Is < CRQL and $\leq 5x$ blank value	Sample Conc. Is > CRQL and $>5x$ blank value

Below is a summary of the compounds in the samples and the associated qualifications that have been applied:

#### A) Method Blank Contamination

No target analytes were detected in the associated method blank, VBLK044 applicable to this analysis and therefore no qualifications are required.

#### B) Field Blank Contamination

No target analytes were detected in the associated field blank and therefore no qualifications are required based on the criteria above. It should be noted that the laboratory did not correctly perform the analysis for the field blank (i.e. analyzed utilizing a heated purge) and therefore it is possible that no analytes were detected as a result of the heating. All results for the field blank analysis are consequently rejected. See discussion under Section 1.6 of this report.

#### C) Trip Blank Contamination

No target analytes were detected in the associated trip blank and therefore no qualifications are required based on the criteria above. It should be noted that the laboratory did not correctly

perform the analysis for the trip blank (i.e. analyzed utilizing a heated purge) and therefore it is possible that no analytes were detected as a result of the heating. All results for the trip blank analysis are consequently rejected. See discussion under Section 1.6 of this report.

#### D) Storage Blank Contamination

The laboratory did not submit the required storage blank with the initial data package. As part of the resubmission response, the laboratory provided the "refrigerator blank" results, however, this analysis was performed by a different method (502/503). Additionally, it should be noted that the refrigerator blank was analyzed prior to the transfer of the samples to the volatile laboratory and is consequently not a valid storage blank per NYSDEC ASP Method 95-1. Exhibit D-II-16, Section 8.2.4 of NYSDEC ASP Method 95-1 states, "Storage blanks shall be stored with samples until all samples are analyzed." The acetone concentrations reported in soil samples SS-SD1EP and SS-SD6EP must be qualified as "J" estimated and should be considered suspect since it can not be concluded if the acetone was picked up as part of the storage of the samples in the laboratory's refrigerator. Since the concentrations were reported less than the CRQL they were previously qualified as "J", estimated as required.

### 1.5 GC/MS INSTRUMENT PERFORMANCE CHECK

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is Bromofluorobenzene (BFB).

**INSTRUMENT PERFORMANCE WAS GENERATED WITHIN ACCEPTABLE LIMITS AND FREQUENCY FOR BROMOFLUOROBENZENE (BFB).**

### 1.6 INITIAL AND CONTINUING CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.



Exhibit D-II-22, Section 9.3.3.4 of the NYSDEC ASP Method 95-1 requires that "Separate initial and continuing calibrations must be performed for water samples and low level soil/sediment samples (unheated purge vs. heated purge)." The laboratory did not correctly perform the method and consequently the results for the field blank and trip blank analysis are invalid. The data summary forms are qualified, "R", unusable.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be 0.05 in both initial and continuing calibrations. A value <0.05 indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be rejected, "R".

ALL THE RESPONSE FACTORS WERE FOUND TO BE WITHIN ACCEPTABLE LIMITS (<0.05), FOR INITIAL AND CONTINUING CALIBRATION.

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentrations. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be <30% and %D must be <25%. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria, non-detects data may be qualified, "R", unusable.

Initial Calibration: The initial calibration provided and the %RSD were within acceptable limit (30%) for all compounds.

Continuing Calibration: The following compounds - positive results are qualified as estimated, "J" and non-detects are qualified as "UJ" due to exceedence of Percent Difference (%D) - limit 25%:

Acetone (39.4%), 2-Hexanone (27.9%)

Acetone was previously qualified "J" due to the lack of certainty of presence as a result of the storage blank (see Section 1.4 - D; above).

Non-detects for all samples analyzed under the continuing calibration on 5/19/98 for 2-Hexanone

have been qualified, "UJ" as required.

Please note that the laboratory was method compliant based upon %D criteria. The evaluation criteria for data validation uses different criteria than method compliance for initial calibration. Also, acetone and 2-hexanone can be identified as "poor responders" (poor purge efficiency) and qualifications are not a result of non compliance by the laboratory.

### 1.7 INTERNAL STANDARDS

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than +/-30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to +100%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, professional judgement will be used to determine either partial or total rejection of the data for that sample fraction.

ALL INTERNAL STANDARDS WERE GENERATED WITHIN ACCEPTABLE SPECIFICATIONS FOR AREA COUNTS AND RETENTION TIME VARIATION.

NOTE: The primary ion should be used for all sample quantitation and corresponding internal standard responses unless interferences are present, in which case, a secondary ion may be used. It should be noted that the laboratory used m/e 49 (secondary ion) to quantitate area responses for internal standard Bromochloromethane for all sample and calibration runs. The laboratory should be using m/e 128 (primary ion). No qualifications were performed based on this deviation.

### 1.8 TARGET COMPOUND LIST (TCL) IDENTIFICATION

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within +/-0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound.

GC/MS QUALITATIVE ANALYSIS ARE CONSIDERED TO BE ACCEPTABLE.  
RETENTION TIMES AND MASS SPECTRA WERE GENERATED WITHIN REQUIRED

SPECIFICATION.

1.9 TENTATIVELY IDENTIFIED COMPOUNDS (ticS)

TICs were generated in accordance with protocol requirements. Copies of the Form I's are included in Appendix A. 1-Propanol was identified in soil samples SS-SD1EP and SS-SD6EP and has been qualified, "N" indicating presumptive evidence. Since no calibration standard is required to be analyzed for TICs the qualitative identification of this component is tentative. The review of the spectrum indicates that m/e 31 is not present (most likely because the MS is required to start scanning at 35 amu).

NO ADDITIONAL QUALIFICATIONS ARE REQUIRED BECAUSE THIS TIC WAS NOT DETECTED IN ANY OF THE CORRESPONDING BLANKS.

1.10 COMPOUND QUANTITATION & REPORTED DETECTION LIMITS

GC/MS quantitative analysis are considered to be acceptable. Correct internal standards and response factors were used to calculate Form I results. As indicated in Section 1.7 of this report the laboratory did not use the correct primary ion to quantitate area responses for Bromochloromethane. The reported concentrations for acetone could be affected, however, no additional qualifications were applied since the acetone hits have already been determined to be estimated.

1.11 FIELD DUPLICATES

Field duplicate samples were not collected for Volatile Organic analysis.

1.12 SYSTEM PERFORMANCE

Acceptable system performance was maintained throughout the analysis of all the samples. Good resolution and chromatographic performance were observed.

Validator's Signature

*Louis A. Bey*

## 2.0 RCRA Metals Analysis

The following method criteria were reviewed: holding times, calibration, CRDL standards for ICP, blanks, ICP Interference Check, MS, laboratory duplicates, LCS, ICP Serial Dilution, IDLs and sample result verification. The metals results were considered to be valid and usable with the appropriate qualifiers, as noted on the data summary forms in Appendix A and within the following text:

### 2.1 HOLDING TIME

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holdint time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

ALL HOLDING TIMES WERE MET WITHIN THE ACCEPTABLE TIME FRAME FROM VALIDATED TIME OF SAMPLE RECEIPT (VTSR) UNTIL ANALYSIS FOR METALS (180 DAYS; EXCEPT MERCURY 28 DAYS).

### 2.2 CALIBRATION

Satisfactory instrument calibration is established to ensure that the instruments are capable of producing acceptable quantitative data. An initial calibration demonstrates that the instruments are capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instruments are giving satisfactory sequenceal performance.

THE INSTRUMENTS WERE CALIBRATED PROPERLY. INITIAL AND CONTINUING CALIBRATIONS WERE PERFORMED WITHIN ACCEPTABLE LIMITS OF 90-110% FOR ICP AND AA. MERCURY FELL WITHIN THE CONTROL LIMITS OF 80-120% AS REQUIRED.

### 2.3 CRDL STANDARD FOR ICP

Satisfactory instrument performance near the Contract Required Detection Limit (CRDL) must be demonstrated by analyzing a CRDL standard at the beginning and end of the analytical run.

THE CRDL (CRA) SOLUTION WAS PREPARED AT THE CORRECT LEVELS AND ANALYZED AT THE REQUIRED FREQUENCY AT THE BEGINNING AND END OF

EACH ANALYTICAL RUN FOR ICP. THE CRDL (CRI) SOLUTION WAS PREPARED AT THE CORRECT LEVELS AND ANALYZED AT THE REQUIRED FREQUENCY AT THE BEGINNING OF EACH SAMPLE ANALYSIS RUN FOR AA ANALYSES. SPECIFIC ACCEPTANCE CRITERIA HAVE NOT BEEN ESTABLISHED BY NYSDEC.

#### 2.4 BLANKS

Quality assurance (QA) blanks, i.e. preparation, field or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Preparation blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations.

ALL INITIAL CALIBRATION BLANK (ICB) AND CONTINUING CALIBRATION BLANKS (CCBS) WERE GENERATED WITHIN ACCEPTABLE CRITERIA. THE ABSOLUTE VALUES OF THESE BLANKS DID NOT EXCEED THE CRDLs. PREPARATION BLANK RESULTS WERE GENERATED IN ACCORDANCE WITH ACCEPTABLE CRITERIA.

It should be noted that the laboratory reported on the Form III lead was listed as 33 ug/l for CCB3. Review of the raw data indicates that this value should be listed as 0.33 ug/l (or 1.0U). Sample results that are >IDL but <5 times the amount in any blank should be qualified, "U". No qualifications are required based upon blank results.

#### 2.5 ICP INTERFERENCE CHECK

The Interference Check Sample (ICS) verifies the laboratory's interelement and background correction factors. The ICS consists of two solutions A and AB. Solution A consists of interference, and solution AB consists of the analytes mixed with interferents.

THE RECOVERIES FOR THE ICP INTERFERENCE CHECK SAMPLES WERE WITHIN THE ACCEPTABLE 80-120% LIMIT.

#### 2.6 SPIKED SAMPLE RECOVERY

The spike data are generated to determine the long term precision and accuracy of the analytical method in various matrices.

THE MATRIX SPIKE RECOVERIES FOR THE MATRIX SPIKE SAMPLE WERE FOUND TO BE WITHIN THE ACCEPTABLE LIMITS OF 75-125% EXCLUDING LEAD WHICH WAS RECOVERED AT 125.6%. SINCE SAMPLE RESULTS ARE >IDL, LEAD RESULTS IN SAMPLES SS-SD1EP AND SS-SD6EP MUST BE QUALIFIED, "J", ESTIMATED.

## 2.7 LABORATORY DUPLICATES

The laboratory uses duplicate sample determinations to demonstrate acceptable method precision at the time of analysis. Duplicate analyses are also performed to generate data in order to determine the long-term precision of the analytical method on various matrices.

PRECISION AS DEFINED BY RELATIVE PERCENT DIFFERENCE (RPD) WAS FOUND TO BE WITHIN ACCEPTABLE LIMITS EXCLUDING CHROMIUM. DETECTED CONCENTRATIONS FOR CHROMIUM IN BOTH SOIL SAMPLES MUST BE CONSIDERED, ESTIMATED, "J".

## 2.8 FIELD DUPLICATES

Field duplicate samples were not collected for Metals analysis.

## 2.9 LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Aqueous and solid Laboratory Control Samples shall be analyzed for each analyte utilizing the same sample preparation, analytical methods, and QA/QC procedures as employed for the sample.

THE LCS RESULTS GENERATED WERE WITHIN THE ACCEPTABLE LIMITS.

## 2.10 SERIAL DILUTION ANALYSIS

The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to sample matrix. An ICP serial dilution analysis must be performed on a sample for each group of samples with a similar matrix type and concentration, or for each Sample Delivery Group (SDG) whichever is more frequent.

PERCENT DIFFERENCE (%D) WAS FOUND TO BE WITHIN ACCEPTABLE LIMITS FOR ICP SERIAL DILUTION ANALYSIS EXCEPT CHROMIUM (100%). THEREFORE, CHROMIUM RESULTS THAT WERE REPORTED AT GREATER THAN THE CRDL WERE QUALIFIED AS ESTIMATED, "J".

## 2.11 SYSTEM PERFORMANCE

Acceptable system performance was maintained throughout the analysis of all the samples. Good resolution and chromatographic performance was observed.

Validator's Signature

Louie A. Bey

APPENDIX A: DATA SUMMARY FORMS

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client ID: SS-SDIEP  
 EnviroTest Lab No.: 186468-01  
 Client Name: CA Rich Consultants, Inc.  
 Project Name: Tishcon  
 % Solid: 97  
 Matrix: Soil  
 Sample Wt/Vol.: 5 g  
 Level: Low  
 Soil Extract Volume:

Date Collected: 5/11/98  
 Date Received: 5/12/98  
 Date Extracted:  
 Date Analyzed: 5/19/98  
 Report Date: 7/7/98  
 Column: DB-624  
 Lab File ID: X0398.D  
 Dilution Factor: 1  
 Soil Aliquot Volume:

CAS No.	Compound	Detection Limit ug/kg	Conc ug/kg
74-87-3	Chloromethane	10.0	U
74-83-9	Bromomethane	10.0	U
75-01-4	Vinyl Chloride	10.0	U
75-00-3	Chloroethane	10.0	U
75-09-2	Methylene Chloride	10.0	U
67-64-1	Acetone	10.0	4.0 J
75-15-0	Carbon Disulfide	10.0	U
75-35-4	1,1-Dichloroethene	10.0	U
75-34-3	1,1-Dichloroethane	10.0	U
540-59-0	1,2-Dichloroethene, Total	10.0	U
67-66-3	Chloroform	10.0	U
107-06-2	1,2-Dichloroethane	10.0	U
78-93-3	2-Butanone	10.0	U
71-55-6	1,1,1-Trichloroethane	10.0	U
56-23-5	Carbon Tetrachloride	10.0	U
75-27-4	Bromodichloromethane	10.0	U
78-87-5	1,2-Dichloropropane	10.0	U
10061-01-5	cis-1,3-Dichloropropene	10.0	U
79-01-6	Trichloroethene	10.0	U
124-48-1	Dibromochloromethane	10.0	U
79-00-5	1,1,2-Trichloroethane	10.0	U
71-43-2	Benzene	10.0	U
10061-02-6	trans-1,3-Dichloropropene	10.0	U
75-25-2	Bromoform	10.0	U
108-10-1	4-Methyl-2-Pentanone	10.0	U
591-78-6	2-Hexanone	10.0	U J
127-18-4	Tetrachloroethene	10.0	U
108-88-3	Toluene	10.0	U
79-34-5	1,1,2,2-Tetrachloroethane	10.0	U
108-90-7	Chlorobenzene	10.0	U
100-41-4	Ethylbenzene	10.0	U
100-42-5	Styrene	10.0	U
1330-20-7	Xylenes, Total	10.0	U

FORM I - VOA

*sent 7/31/98*





1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SS-SDIEP

Lab Name: Severn Trent Envirotest      Contract: #####

Lab Code: 10142      Case No.: #####      SAS No.: #####      SDG No.: CA468

Matrix: (soil/water) SOIL      Lab Sample ID: 186468-01

Sample wt/vol: 5.00 (g/ml) G      Lab File ID: X0398

Level: (low/med) LOW      Date Received: 5/12/98

% Moisture: not dec. 3      Date Analyzed: 5/19/98

GC Column: DB-624      ID: 0.25 (mm)      Dilution Factor: 1.0

Soil Extract Volume: 0 (uL)      Soil Aliquot Volume: 0 (uL)

Number TICs Found: 1      CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 71-23-8	1-Propanol	13.17	31.	JN
2.				
3.				
4.				
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FORM I VOA-TIC

3/90



000019

315 Fullerton Avenue  
Newburgh, NY 12550  
Tel: (914) 552-0800  
Fax: (914) 552-0841

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client ID: SS-SD6EP  
 EnviroTest Lab No.: 186468-02  
 Client Name: CA Rich Consultants, Inc.  
 Project Name: Tishcon  
 % Solid: 95  
 Matrix: Soil  
 Sample Wt/Vol.: 5 g  
 Level: Low  
 Soil Extract Volume:

Date Collected: 5/11/98  
 Date Received: 5/12/98  
 Date Extracted:  
 Date Analyzed: 5/19/98  
 Report Date: 7/7/98  
 Column: DB-624  
 Lab File ID: X0399.D  
 Dilution Factor: 1  
 Soil Aliquot Volume:

CAS No.	Compound	Detection Limit ug/kg	Conc ug/kg
74-87-3	Chloromethane	11.0	U
74-83-9	Bromomethane	11.0	U
75-01-4	Vinyl Chloride	11.0	U
75-00-3	Chloroethane	11.0	U
75-09-2	Methylene Chloride	11.0	U
67-64-1	Acetone	11.0	7.0 <i>UJ</i>
75-15-0	Carbon Disulfide	11.0	U
75-35-4	1,1-Dichloroethene	11.0	U
75-34-3	1,1-Dichloroethane	11.0	U
540-59-0	1,2-Dichloroethene, Total	11.0	U
67-66-3	Chloroform	11.0	U
107-06-2	1,2-Dichloroethane	11.0	U
78-93-3	2-Butanone	11.0	U
71-55-6	1,1,1-Trichloroethane	11.0	U
56-23-5	Carbon Tetrachloride	11.0	U
75-27-4	Bromodichloromethane	11.0	U
78-87-5	1,2-Dichloropropane	11.0	U
10061-01-5	cis-1,3-Dichloropropene	11.0	U
79-01-6	Trichloroethene	11.0	U
124-48-1	Dibromochloromethane	11.0	U
79-00-5	1,1,2-Trichloroethane	11.0	U
71-43-2	Benzene	11.0	U
10061-02-6	trans-1,3-Dichloropropene	11.0	U
75-25-2	Bromoform	11.0	U
108-10-1	4-Methyl-2-Pentanone	11.0	U
591-78-6	2-Hexanone	11.0	U <i>J</i>
127-18-4	Tetrachloroethene	11.0	U
108-88-3	Toluene	11.0	U
79-34-5	1,1,2,2-Tetrachloroethane	11.0	U
108-90-7	Chlorobenzene	11.0	U
100-41-4	Ethylbenzene	11.0	U
100-42-5	Styrene	11.0	U
1330-20-7	Xylenes, Total	11.0	U

FORM I - VOA

*Long*  
7/31/98



1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SS-SD6EP

Lab Name: Severn Trent Envirotest      Contract: #####  
 Lab Code: 10142      Case No.: #####      SAS No.: #####      EDG No.: CA468  
 Matrix: (soil/water) SOIL      Lab Sample ID: 186468-02  
 Sample wt/vol: 5.00 (g/ml) G      Lab File ID: X0399  
 Level: (low/med) LOW      Date Received: 5/12/98  
 % Moisture: not dec. 5      Date Analyzed: 5/19/98  
 GC Column: DB-624      ID: 0.25 (mm)      Dilution Factor: 1.0  
 Soil Extract Volume: 0 (uL)      Soil Aliquot Volume: 0 (uL)

Number TICs Found: 1      CONCENTRATION UNITS:  
 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.71-23-8	1-Propanol	13.17	13.	JN
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FORM I VOA-TIC

3/90



000027

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client ID: Field Blank  
 EnviroTest Lab No.: 186468-03  
 Client Name: CA Rich Consultants, Inc.  
 Project Name: Tishcon  
 % Solid:  
 Matrix: Water  
 Sample Wt/Vol.: 5 ml  
 Level: Low  
 Soil Extract Volume:

Date Collected: 5/11/98  
 Date Received: 5/12/98  
 Date Extracted:  
 Date Analyzed: 5/19/98  
 Report Date: 7/7/98  
 Column: DB-624  
 Lab File ID: X0400.D  
 Dilution Factor: 1  
 Soil Aliquot Volume:

CAS No.	Compound	Detection Limit ug/l	Conc ug/l
74-87-3	Chloromethane	10.0	U
74-83-9	Bromomethane	10.0	U
75-01-4	Vinyl Chloride	10.0	U
75-00-3	Chloroethane	10.0	U
75-09-2	Methylene Chloride	10.0	U
67-64-1	Acetone	10.0	U
75-15-0	Carbon Disulfide	10.0	U
75-35-4	1,1-Dichloroethene	10.0	U
75-34-3	1,1-Dichloroethane	10.0	U
540-59-0	1,2-Dichloroethene, Total	10.0	U
67-66-3	Chloroform	10.0	U
107-06-2	1,2-Dichloroethane	10.0	U
78-93-3	2-Butanone	10.0	U
71-55-6	1,1,1-Trichloroethane	10.0	U
56-23-5	Carbon Tetrachloride	10.0	U
75-27-4	Bromodichloromethane	10.0	U
78-87-5	1,2-Dichloropropane	10.0	U
10061-01-5	cis-1,3-Dichloropropene	10.0	U
79-01-6	Trichloroethene	10.0	U
124-48-1	Dibromochloromethane	10.0	U
79-00-5	1,1,2-Trichloroethane	10.0	U
71-43-2	Benzene	10.0	U
10061-02-6	trans-1,3-Dichloropropene	10.0	U
75-25-2	Bromoform	10.0	U
108-10-1	4-Methyl-2-Pentanone	10.0	U
591-78-6	2-Hexanone	10.0	U
127-18-4	Tetrachloroethene	10.0	U
108-88-3	Toluene	10.0	U
79-34-5	1,1,2,2-Tetrachloroethane	10.0	U
108-90-7	Chlorobenzene	10.0	U
100-41-4	Ethylbenzene	10.0	U
100-42-5	Styrene	10.0	U
1330-20-7	Xylenes, Total	10.0	U

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FORM I - VOA

*80-56 7/31/98*



1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FIELD BLANK

Lab Name: Severn Trent Envirotest      Contract: #####  
 Lab Code: 10142      Case No.: #####      SAS No.: #####      SDG No.: CA468  
 Matrix: (soil/water) WATER      Lab Sample ID: 186468-03  
 Sample wt/vol: 5.00 (g/ml) G      Lab File ID: X0400  
 Level: (low/med) LOW      Date Received: 5/12/98  
 % Moisture: not dec.      Date Analyzed: 5/19/98  
 GC Column: DB-624      ID: 0.25 (mm)      Dilution Factor: 1.0  
 Soil Extract Volume: 0 (uL)      Soil Aliquot Volume: 0 (uL)

Number TICs Found: 0      CONCENTRATION UNITS:  
 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

3/90



000035

315 Fullerton Avenue  
 Newburgh, NY 12550  
 Tel: (914) 862-0080  
 Fax: (914) 582-0041

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client ID: Trip Blank  
 EnviroTest Lab No.: 186468-04  
 Client Name: CA Rich Consultants, Inc.  
 Project Name: Tishcon  
 % Solid:  
 Matrix: Water  
 Sample Wt/Vol.: 5 ml  
 Level: Low  
 Soil Extract Volume:

Date Collected: 5/11/98  
 Date Received: 5/12/98  
 Date Extracted:  
 Date Analyzed: 5/19/98  
 Report Date: 7/7/98  
 Column: DB-624  
 Lab File ID: X0401.D  
 Dilution Factor: 1  
 Soil Aliquot Volume:

CAS No.	Compound	Detection Limit ug/l	Conc ug/l
74-87-3	Chloromethane	10.0	U
74-83-9	Bromomethane	10.0	U
75-01-4	Vinyl Chloride	10.0	U
75-00-3	Chloroethane	10.0	U
75-09-2	Methylene Chloride	10.0	U
67-64-1	Acetone	10.0	U
75-15-0	Carbon Disulfide	10.0	U
75-35-4	1,1-Dichloroethene	10.0	U
75-34-3	1,1-Dichloroethane	10.0	U
540-59-0	1,2-Dichloroethene, Total	10.0	U
67-66-3	Chloroform	10.0	U
107-06-2	1,2-Dichloroethane	10.0	U
78-93-3	2-Butanone	10.0	U
71-55-6	1,1,1-Trichloroethane	10.0	U
56-23-5	Carbon Tetrachloride	10.0	U
75-27-4	Bromodichloromethane	10.0	U
78-87-5	1,2-Dichloropropane	10.0	U
10061-01-5	cis-1,3-Dichloropropene	10.0	U
79-01-6	Trichloroethene	10.0	U
124-48-1	Dibromochloromethane	10.0	U
79-00-5	1,1,2-Trichloroethane	10.0	U
71-43-2	Benzene	10.0	U
10061-02-6	trans-1,3-Dichloropropene	10.0	U
75-25-2	Bromoform	10.0	U
108-10-1	4-Methyl-2-Pentanone	10.0	U
591-78-6	2-Hexanone	10.0	U
127-18-4	Tetrachloroethene	10.0	U
108-88-3	Toluene	10.0	U
79-34-5	1,1,2,2-Tetrachloroethane	10.0	U
108-90-7	Chlorobenzene	10.0	U
100-41-4	Ethylbenzene	10.0	U
100-42-5	Styrene	10.0	U
1330-20-7	Xylenes, Total	10.0	U

R

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FORM I - VOA

for B  
7/31/98



1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP BLANK

Lab Name: Severn Trent Envirotest      Contract: #####  
 Lab Code: 10142      Case No.: #####      SAS No.: #####      SDG No.: CA468  
 Matrix: (soil/water) WATER      Lab Sample ID: 186468-04  
 Sample wt/vol: 5.00 (g/ml) ML      Lab File ID: X0401  
 Level: (low/med) LOW      Date Received: 5/12/98  
 % Moisture: not dec.      Date Analyzed: 5/19/98  
 GC Column: DB-624      ID: 0.25 (mm)      Dilution Factor: 1.0  
 Soil Extract Volume: 0 (uL)      Soil Aliquot Volume: 0 (uL)

Number TICs Found: 0  
 CONCENTRATION UNITS:  
 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

3/90



NYSDOH 10142

NJDEP 73018

CTDOHS PH-0664

EPA NY040

PA 88-378

M-NY048

315 Fullerton Avenue  
 Newburgh, NY 12550  
 Tel: (914) 582-0890  
 Fax: (914) 582-0841

000041

ENVIROFORMS/INORGANIC CLP

SAMPLE NO.

1  
INORGANIC ANALYSIS DATA SHEET

SS-SDIEP

Lab Name: SEVERN TRENT ENVIROTEST

Contract:

Lab Code: 10142

Case No.:

SAS No.:

SDG No.: CAR468

Matrix (soil/water): WATER SOIL

Lab Sample ID: 186468-01

Level (low/med): LOW

Date Received: 05/12/98

‡ Solids: 96.5

7/31/98

Concentration Units (ug/L or mg/kg dry weight) MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	0.83	B		F
7440-39-3	Barium	16.4	B		P
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	0.97	U		P
7440-70-2	Calcium				NR
7440-47-3	Chromium	2.9		J	P
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	2.9		N J	F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.43	B	W	F
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before:

Clarity Before:

Texture:

Color After:

Clarity After:

Artifacts:

Comments:

7/31/98



FORM I - IN

000089

918 Fullerton Avenue  
Newburgh, NY 12560  
Tel: (914) 562-0890  
Fax: (914) 562-0841



ENVIROFORMS/INORGANIC CLP

SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

SS-SD6EP

Lab Name: SEVERN TRENT ENVIROTEST

Contract:

Lab Code: 10142

Case No.:

SAS No.:

SDG No.: CAR468

Matrix (soil/water): SOIL

Lab Sample ID: 186468-02 *re 7/1/98*

Level (low/med): LOW

Date Received: 05/12/98

% Solids: 94.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	0.64	B		F
7440-39-3	Barium	3.6	B		P
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	0.99	U		P
7440-70-2	Calcium				NR
7440-47-3	Chromium	2.6		J	P
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	2.9		N J	F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.80	B		F
7440-22-4	Silver	0.63	U		P
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

*for B 7/31/98*

Color Before:

Clarity Before:

Texture:

Color After:

Clarity After:

Artifacts:

Comments:

FORM I - IN



ENVIROFORMS/INORGANIC CLP

SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

Field Blank

Lab Name: SEVERN TRENT ENVIROTEST

Contract:

Lab Code: 10142

Case No.:

SAS No.:

SDG No.: CAR468

Matrix (soil/water): WATER

Lab Sample ID: 186468-03

Level (low/med): LOW

Date Received: 05/12/98

% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	1.8	U		F
7440-39-3	Barium	0.42	U		P
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	0.94	U		P
7440-70-2	Calcium				NR
7440-47-3	Chromium	1.5	U		P
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	1.0	U	N	F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	2.9	B		F
7440-22-4	Silver	0.60	U		P
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before:

Clarity Before:

Texture:

Color After:

Clarity After:

Artifacts:

Comments:



FORM I - IN

315 Fullerton Avenue  
Newburgh, NY 12550  
Tel: (914) 562-0890  
Fax: (914) 562-0841

APPENDIX B: QUALIFIERS

## DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the national qualifiers assigned to results in the data review process. If the Regions choose to use additional qualifiers, a complete explanation of those qualifiers should accompany the data review.

- U** - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J** - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- N** - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
- NJ** - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ** - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R** - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

## DATA REPORTING QUALIFIERS

Data qualifiers are used in the analytical report for organics and inorganics. The qualifiers are equivalent to those used by the USEPA in its Contract Laboratory Program.

### ORGANIC QUALIFIERS

- U - Indicates that the compound was analyzed for but not detected. The sample detection limit is corrected for dilution and percent moisture. This detection limit is not necessarily the instrument detection limit.
- J - Indicates an estimated value. This qualifier is used when mass spectral data indicates the presence of a compound that meets the identification criteria and the result is less than the specified detection limit but greater than zero.
- B - Indicates that the analyte was found in both the sample and its associated laboratory blank. It indicates possible/probable blank contamination and warns the data user to take appropriate action.
- C - This qualifier applies to pesticide parameters where the identification has been confirmed by gas chromatography/mass spectrometry.
- E - This qualifier indicates compounds whose concentrations exceed the calibration range of the instrument for the specific analysis.
- D - Indicates all compounds identified in an analysis at a secondary dilution factor.
- DL - This suffix indicates a diluted sample and is appended to the sample number on the result form.
- N - Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search. It is applied to all TIC results.
- P - This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentration between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with an "P".
- A - This flag indicates that a TIC is a suspected aldol-condensation product.
- RE - This suffix indicates a re-analyzed sample and is appended to the sample number on the result form.
- RR - This suffix indicates a re-extracted and re-analyzed sample and is appended to the sample number on the result form.



## DATA REPORTING QUALIFIERS

Page 2

### INORGANICS

#### Concentration Qualifiers (C)

- U - Indicates that the analyte was analyzed for but not detected.
- B - The reported value is less than the Contract Required Detection Limit (CRDL), but greater than the Instrument Detection Limit (IDL).

#### Quality Qualifiers (Q)

- E - Indicates an estimated value because of the presence of interference.
- M - Duplicate injection precision not met.
- N - Spiked sample recovery not within control limits.
- S - The reported value was determined by the Method of Standard Additions (MSA).
- W - Post digestion spike for furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance.
- \* - Duplicate analysis not within control limits.
- + - Correlation coefficient for the MSA is less than 0.995.

#### Method Qualifiers (M)

- P - for ICP.
- A - for Flame AA.
- F - for Furnace AA.
- PM - for ICP when Microwave Digestion is used.
- AM - for Flame AA when Microwave Digestion is used.
- FM - for Furnace AA when Microwave Digestion is used.
- CV - for Manual Cold Vapor AA.
- AV - for Automated Cold Vapor AA.
- AS - for Semi-Automated Spectrophotometric
- C - for Manual Spectrophotometric
- T - for Titrimetric.
- NR - if the analyte is not required to be analyzed.

APPENDIX C: NYSDEC ASP SUMMARY SHEETS

NEW YORK DEPARTMENT OF CONSERVATION  
SAMPLE PREPARATION AND ANALYSIS SUMMARY  
VOLATILE ANALYSIS

Laboratory Sample ID	Matrix	Date Collected	Date Received at Laboratory	Date Analyzed
186468-01	Soil	5/11/98	5/12/98	5/19/98
186468-02	Soil	5/11/98	5/12/98	5/19/98
186468-03	Soil	5/11/98	5/12/98	5/19/98
186468-04	Water	5/11/98	5/12/98	5/19/98

000002





NEW YORK DEPARTMENT OF CONSERVATION  
 SAMPLE PREPARATION AND ANALYSIS SUMMARY  
 INORGANIC ANALYSES

Laboratory Sample ID	Matrix	Metals Requested	Date Received at Laboratory	Date Analyzed
186468-01	Soil	Ba, Cd, Cr, Ag As Pb Se Hg % Solid	5/12/98	6/12/98 5/27/98 5/26/98 5/28/98 5/15/98 5/12/98
186468-02	Soil	Ba, Cd, Cr, Ag As Pb Se Hg % Solid	5/12/98	6/12/98 5/27/98 5/26/98 5/28/98 5/15/98 5/12/98
186468-03	Water	Ba, Cd, Cr, Ag As Pb Se Hg	5/12/98	6/12/98 5/27/98 5/26/98 5/28/98 5/15/98



000003

APPENDIX D: CASE NARRATIVE

**CASE NARRATIVE**

**Client:** CA Rich Consultants

**Date:** 7/7/98

**STE Lab No.:** 186468

**Page 1 of 1**

**Volatiles**

No comments necessary.

**Inorganics**

**Spike Recovery**

The spike recovery for lead in sample number SS-SDIEP (186468-01S) is outside the established control limit with a percent recovery of 125.6%. The data is qualified accordingly.

**Other**

Due to a typographical error, client Id. SS-SD1EP (186468-01) was inadvertently typed as SS-SDIEP (186468-01) on several forms throughout the data package.



000001

APPENDIX E: CHAIN OF CUSTODY



# CHAIN OF CUSTODY

315 Fullerton Avenue  
Newburgh, NY 12550  
TEL (914) 562-0890  
FAX (914) 562-0841

CUSTOMER NAME: Ch Rich Consultants Inc.  
 ADDRESS: 404 Glen Cove Ave  
 CITY, STATE, ZIP: Sea Cliff NY 11579 (516) 674-3888  
 NAME OF CONTACT: Eric Weinstock PHONE NO.  
 PROJECT LOCATION: Tiaden Stak Street Westbury NY  
 PROJECT NUMBER / PO NO.

REPORT TYPE: STANDARD  ISRA  NYASP A  B  CLP  OTHER: \_\_\_\_\_  
 TURNAROUND:  NORMAL \_\_\_\_\_  QUICK \_\_\_\_\_  VERBAL NOAS DUE 5/20

REPORT # (Lab Use Only): 150-158  
 TEMPIBLANK BY: \_\_\_\_\_  
 PH CHECK BY: \_\_\_\_\_  
 REVIEWED BY: OMP  
 NY PUBLIC WATER SUPPLIES: SOURCE ID \_\_\_\_\_ ELRP TYPE \_\_\_\_\_ FEDERAL ID \_\_\_\_\_

STE#	SAMPLING DATE	TIME	AM	PM	GRAB	MATRIX	CLIENT I.D.	Total Number of Containers	40ml Glass	HCL	Liter Amber Sulfuric Acid	Liter Amber Organic Washed	Liter Plastic Nitric Acid	Liter Plastic Sodium Hydroxide	Liter Plastic Sulfuric Acid	250ml Plastic	125ml Plastic Sterile	250ml Amber	2 oz. Orpak	ANALYSIS REQUESTED
01	5/11/98	2:30		PM	✓	Soil	55-501EP	2												95-1, REPA Metals, PSOL
02	5/11/98	2:30		PM	✓	Soil	55-504EP	2												95-1, REPA Metals, PSOL
*03	5/11/98	2:30		PM	✓	Soil	MS/MSD	2												95-1, REPA Metals
03	5/11/98					Water	Field Blank	3			1									95-1, REPA Metals
04	5/11/98					Water	Trip Blank	2												95-1
LAB																				000004

RELINQUISHED BY: [Signature] COMPANY: STL DATE: 5/22/98 TIME: \_\_\_\_\_  
 RELINQUISHED BY: [Signature] COMPANY: Ch Rich Consultants DATE: 5/19/98 TIME: 5:00  
 RELINQUISHED BY: [Signature] COMPANY: STL DATE: 5/12/98 TIME: \_\_\_\_\_

COMMENTS: NYSD&C Category B, ASP Deliverables  
 \* EXTRA SAMPLE REQUESTED FOR MS/MSD

APPENDIX F: LABORATORY RESUBMISSIONS

L.A.B. Validation Corp. 14 West Point Drive East Northport, NY 11731

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July 19, 1998

Severn Trent Envirotest  
315 Fullerton Avenue  
Newburgh, NY 12550

Attention: Mr. Ronald Bayer  
Subject : Site Number 186468

Dear Mr. Bayer;

I am in the process of validating the above referenced data package which was generated by your laboratory. There are a few minor deficiencies that require laboratory resubmissions and/or clarifications in order to complete the validation report for our mutual client. The items are summarized below.

- 1) The NYSDEC Sample Prep and Analysis Summary for Volatile Analysis lists sample 18646803 as a soil. When cross referenced to the chain of custody document this sample should be the field blank. Please resubmit this form to indicate the correct matrix.
- 2) All of the VOA TIC forms list the number of TICs as 16. In addition the forms require the "N" qualifier where 1-Propanol was reported. Please resubmit.
- 3) Please submit the results (Form I is sufficient) for the required storage blank pertaining to the volatile analysis.
- 4) Please resubmit page 16 of the volatile package to reflect the correct concentration for the continuing calibration.
- 5) Bromochloromethane has been quantitated for all analyses (including standards) utilizing the secondary ion m/e 49. Why?
- 6) For the metals analysis, sample SS-SD1EP was reported on the Form I in units of ug/l. Please correct and resubmit. Also, please verify the reported concentrations for this sample.
- 7) Page 112 of the metals package indicates that the IDLs were performed on 1/12/98. Please resubmit this form with the correct quarterly IDLs and verify that the correct limits are reported on the Form I's.

I appreciate your help on these items. Resubmissions can be faxed to (516) 757-0467. Manual edits are acceptable. Thanks again.

Sincerely,

  
Lori A. Beyer  
L.A.B. Validation Corp.



**Severn Trent Envirotest**  
315 Fullerton Avenue  
Newburgh  
NY 12550  
Tel: (914) 562-0890  
Fax: (914) 562-0841

July 24, 1998

Lori A Beyer  
L.A.B. Validation Corp.  
14 West Point Drive  
East Northport, New York 11731

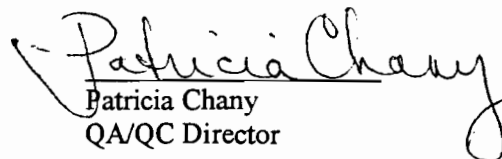
Dear Ms. Beyer:

As a result of the data validation process conducted by L.A.B. Validation Corp. for Severn Trent Envirotest laboratory number 186468, a subsequent review of the analytical data was conducted. The following comments specifically address the subsequent data review.

1. The matrix for sample number 186468-03 on the NYSDEC Sample Prep and Analysis Summary for Volatile Analysis was inadvertently listed as a soil. This form was modified to indicate the correct sample matrix.
2. The VOA TIC FORM I's listed the number of TICS for each sample as 16. The forms have been modified to indicate the number of TICS reported.
3. The "N" qualifier for 1-Propanol was inadvertently omitted from the TIC FORM I's. The VOA TIC FORM I has been corrected.
4. The concentration of the continuing calibration standard on Volatile Organic Instrument Performance Check form (page 16) was inadvertently listed as VSTD10. The standard concentration has been modified to reflect the true concentration of the standard analyzed (VSTD50).
5. The secondary ion is used for quantitation because it is the ion with the greatest abundance when reviewing the spectrum for bromochloromethane.
6. The units have been corrected to mg/kg.
7. According to the protocol, the IDL must be performed at least semi-annually. The IDL's submitted appear to meet this protocol.

Please insert the modified pages as indicated by the page number. If you have any questions, or require any further information, please do not hesitate to contact me.

Sincerely,

  
Patricia Chany  
QA/QC Director

a part of  
**Severn Trent Plc**

**Other Laboratory Locations:**

- Westfield Executive Park, 53 Southampton Road,  
Westfield, MA 01085  
Tel: (413) 572-4000 Fax: (413) 572-3707



NEW YORK DEPARTMENT OF CONSERVATION  
SAMPLE PREPARATION AND ANALYSIS SUMMARY  
VOLATILE ANALYSIS

Laboratory Sample ID	Matrix	Date Collected	Date Received at Laboratory	Date Analyzed
186468-01	Soil	5/11/98	5/12/98	5/19/98
186468-02	Soil	5/11/98	5/12/98	5/19/98
186468-03	Water	5/11/98	5/12/98	5/19/98
186468-04	Water	5/11/98	5/12/98	5/19/98



000002

5A  
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK  
BROMOFLUOROBENZENE (BFB)

Lab Name: Severn Trent Envirotest      Contract: #####  
 Lab Code: 10142      Case No.: #####      SAS No.: #####      SDG No.: CA468  
 Lab File ID: TUN043      BFB Injection Date: 5/19/98  
 Instrument ID: MS3      BFB Injection Time: 0901  
 GC Column: db-624      ID: 0.25 (mm)      Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.1
75	30.0 - 60.0% of mass 95	44.9
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.0
173	Less than 2.0% of mass 174	0.0 ( 0.0) 1
174	Greater than 50% of mass 95	80.9
175	5.0 - 9.0% of mass 174	5.2 ( 6.4) 1
176	95.0 - 101.0% of mass 174	78.5 ( 97.0) 1
177	5.0 - 9.0% of mass 176	5.3 ( 6.7) 2

1-Value is % mass 174

2-Value is % mass 176

7/7/98 dg

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD50	VSTD 50	XS065	5/19/98	1200
02	VBLK044	VBLK044	X0397	5/19/98	1244
03	SS-SDIEP	186468-01	X0398	5/19/98	1329
04	SS-SD6EP	186468-02	X0399	5/19/98	1414
05	FIELD BLANK	186468-03	X0400	5/19/98	1503
06	TRIP BLANK	186468-04	X0401	5/19/98	1544
07	VBSPK19	VBSPK19	X0402	5/19/98	1626
08	SS-SDIEPMS	186468-01MS	X0403	5/19/98	1708
09	SS-SDIEPMSD	186468-01MSD	X0404	5/19/98	1750
10					
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22					



1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SS-SDIEP

Lab Name: Severn Trent Envirotest      Contract: #####  
 Lab Code: 10142      Case No.: #####      SAS No.: #####      SDG No.: CA468  
 Matrix: (soil/water) SOIL      Lab Sample ID: 186468-01  
 Sample wt/vol: 5.00 (g/ml) G      Lab File ID: X0398  
 Level: (low/med) LOW      Date Received: 5/12/98  
 % Moisture: not dec. 3      Date Analyzed: 5/19/98  
 GC Column: DB-624      ID: 0.25 (mm)      Dilution Factor: 1.0  
 Soil Extract Volume: 0 (uL)      Soil Aliquot Volume: 0 (uL)

Number TICs Found: 1      CONCENTRATION UNITS:  
 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 71-23-8	1-Propanol	13.17	31.	JN
2.				
3.				
4.				
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000019

315 Fullerton Avenue  
 Newburgh, NY 12550  
 Tel: (914) 562-0890  
 Fax: (914) 562-0841

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SS-SD6EP

Lab Name: Severn Trent Envirotest      Contract: #####  
 Lab Code: 10142      Case No.: #####      SAS No.: #####      SDG No.: CA468  
 Matrix: (soil/water) SOIL      Lab Sample ID: 186468-02  
 Sample wt/vol: 5.00 (g/ml) G      Lab File ID: X0399  
 Level: (low/med) LOW      Date Received: 5/12/98  
 % Moisture: not dec. 5      Date Analyzed: 5/19/98  
 GC Column: DB-624      ID: 0.25 (mm)      Dilution Factor: 1.0  
 Soil Extract Volume: 0 (uL)      Soil Aliquot Volume: 0 (uL)

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

Number TICs Found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 71-23-8	1-Propanol	13.17	13.	JN
2.				
3.				
4.				
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VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FIELD BLANK

Lab Name: Severn Trent Envirotest      Contract: #####

Lab Code: 10142      Case No.: #####      SAS No.: #####      SDG No.: CA468

Matrix: (soil/water) WATER      Lab Sample ID: 186468-03

Sample wt/vol: 5.00 (g/ml) G      Lab File ID: X0400

Level: (low/med) LOW      Date Received: 5/12/98

% Moisture: not dec.      Date Analyzed: 5/19/98

GC Column: DB-624      ID: 0.25 (mm)      Dilution Factor: 1.0

Soil Extract Volume: 0 (uL)      Soil Aliquot Volume: 0 (uL)

Number TICs Found: 0 CONCENTRATION UNITS:  
7/24/98 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
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000035

315 Fullerton Avenue  
Newburgh, NY 12550  
Tel: (914) 562-0890  
Fax: (914) 562-0841

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP BLANK

Lab Name: Severn Trent Envirotest      Contract: #####

Lab Code: 10142      Case No.: #####      SAS No.: #####      SDG No.: CA468

Matrix: (soil/water) WATER      Lab Sample ID: 186468-04

Sample wt/vol: 5.00 (g/ml) ML      Lab File ID: X0401

Level: (low/med) LOW      Date Received: 5/12/98

% Moisture: not dec.      Date Analyzed: 5/19/98

GC Column: DB-624      ID: 0.25 (mm)      Dilution Factor: 1.0

Soil Extract Volume: 0 (uL)      Soil Aliquot Volume: 0 (uL)

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

Number TICs Found: 0  
*7/24/98*

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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3.				
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1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK044

Lab Name: Severn Trent Envirotest      Contract: #####

Lab Code: 10142      Case No.: #####      SAS No.: #####      SDG No.: CA468

Matrix: (soil/water) SOIL      Lab Sample ID: VBLK044

Sample wt/vol: 5.00 (g/ml) G      Lab File ID: X0397

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

% Moisture: not dec. 0      Date Analyzed: 5/19/98

GC Column: DB-624      ID: 0.25 (mm)      Dilution Factor: 1.0

Soil Extract Volume: 0 (uL)      Soil Aliquot Volume: 0 (uL)

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

Number TICs Found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
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000071

315 Fullerton Avenue  
Newburgh, NY 12550  
Tel: (914) 562-0890  
Fax: (914) 562-0841

1  
INORGANIC ANALYSIS DATA SHEET

SS-SDIEP

Lab Name: SEVERN TRENT ENVIROTEST

Contract:

Lab Code: 10142

Case No.:

SAS No.:

SDG No.: CAR468

Matrix (soil/water): ~~WATER~~ SOIL

Lab Sample ID: 186468-01

Level (low/med): LOW

*80-17/31/98*

Date Received: 05/12/98

% Solids: 96.5

Concentration Units (ug/L or mg/kg dry weight) :MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	0.83	B		F
7440-39-3	Barium	16.4	B		P
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	0.97	U		P
7440-70-2	Calcium				NR
7440-47-3	Chromium	2.9			P
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	2.9		N	F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium	0.43	B	W	F
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before:

Clarity Before:

Texture:

Color After:

Clarity After:

Artifacts:

Comments:





Quantitation Report

Data File : J:\HPCHEM\5\DATA\A1356.D  
 Acq On : 12 May 98 09:15 PM  
 Sample : REF BLANK  
 Misc : 4/7/98  
 Quant Time: May 12 22:06 1998

Vial: 163  
 Operator:  
 Inst : GC#4  
 Multiplr: 1.00

Method : E:\HPCHEM\5\METHODS\503.M  
 Title : EPA 502/503  
 Last Update : Mon Jul 20 14:19:19 1998  
 Response via : Single Level Calibration

Volume Inj. : 5 ml  
 Signal Phase : RTX-502.2  
 Signal Info : 0.53 mm

Compound	R.T.	Response	Conc Units
-----			
System Monitoring Compounds			
15) s SURR#1	17.70	251573173	6.706 UG/L
		Recovery =	67.06%
37) s SURR #2	37.01	125240288	6.312 UG/L
		Recovery =	63.12%
Target Compounds			
20) TCE	21.71	40833137	0.437 UG/L

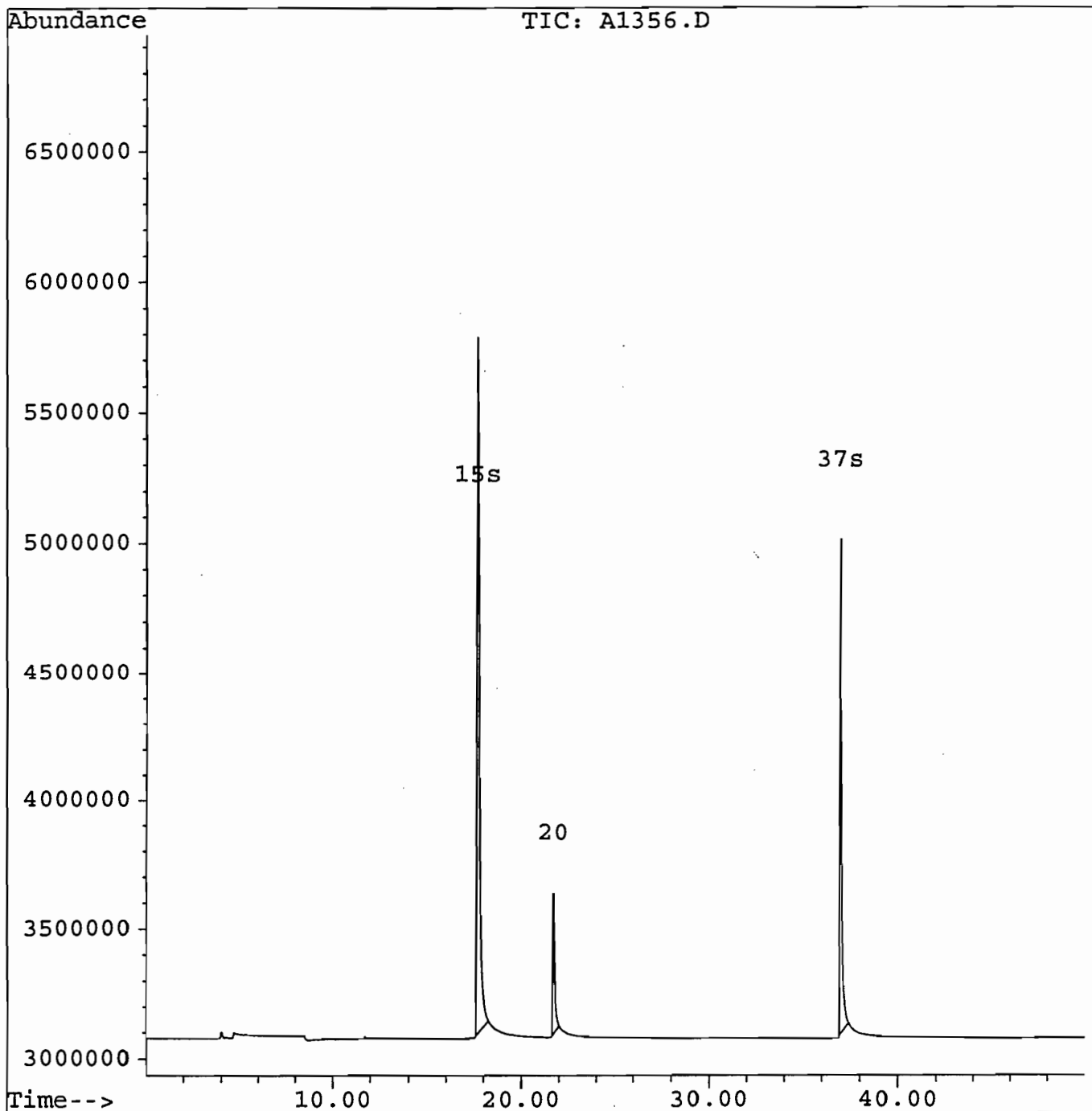
Quantitation Report

Data File : J:\HPCHEM\5\DATA\A1356.D  
Acq On : 12 May 98 09:15 PM  
Sample : REF BLANK  
Misc : 4/7/98  
Quant Time: May 12 22:06 1998

Vial: 163  
Operator:  
Inst : GC#4  
Multiplr: 1.00

Method : E:\HPCHEM\5\METHODS\503.M  
Title : EPA 502/503  
Last Update : Mon Jul 20 14:19:19 1998  
Response via : Single Level Calibration

Volume Inj. : 5 ml  
Signal Phase : RTX-502.2  
Signal Info : 0.53 mm



Quantitation Report

Data File : J:\HPCHEM\5\DATA\A1355.D  
 Acq On : 12 May 98 09:15 PM  
 Sample : REF BLANK  
 Misc : 4/7/98  
 Quant Time: May 12 22:07 1998

Vial: 163  
 Operator:  
 Inst : GC#4  
 Multiplr: 1.00

Method : E:\HPCHEM\5\METHODS\503.M  
 Title : EPA 502/503  
 Last Update : Mon Jul 20 14:19:19 1998  
 Response via : Single Level Calibration

Volume Inj. : 5 ml  
 Signal Phase : RTX-502.2  
 Signal Info : 0.53 mm

Compound	R.T.	Response	Conc Units
-----			
System Monitoring Compounds			
12) s SURR #2	37.00	584127427	10.041 UG/L
		Recovery =	100.41%
Target Compounds			
3) TCE	21.69	33397019	0.735 UG/L

Quantitation Report

Data File : J:\HPCHEM\5\DATA\A1355.D  
Acq On : 12 May 98 09:15 PM  
Sample : REF BLANK  
Misc : 4/7/98  
Quant Time: May 12 22:07 1998

Vial: 163  
Operator:  
Inst : GC#4  
Multiplr: 1.00

Method : E:\HPCHEM\5\METHODS\503.M  
Title : EPA 502/503  
Last Update : Mon Jul 20 14:19:19 1998  
Response via : Single Level Calibration

Volume Inj. : 5 ml  
Signal Phase : RTX-502.2  
Signal Info : 0.53 mm

