RUST

100966

Quality • Integrity • Creativity • Responsiveness

SKINNER LANDFILL

West Chester, Butler County, Ohio

Remedial Design

Groundwater Design Investigation

Volume III of III

November 9, 1995

Prepared by:

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APPENDIX IX

SDG Narrative

00001

NARRATIVE DISCUSSION
VOLATILES - 22571,22587

SDG No.: SKIN6

INTRODUCTION

This narrative covers the analysis of twelve (12) samples in accordance with protocols based on USEPA CLP (3/90).

HOLDING TIMES

The analytical holding time for this analysis was met.

CALIBRATIONS

All required minimum RRFs and maximum % RSD initial calibration requirements have been met in accordance with the Method.

All required minimum RRFs and maximum % D continuing calibration requirements have been met in accordance with the Method.

METHOD BLANKS

The method blanks associated with these samples met all method requirements.

SURROGATES

All surrogate recoveries met QC criteria.

MATRIX SPIKES

Sample GW5001 was utilized in the MS/MSD series. All spike recoveries fell within the advisory QC limits. Two (2) out of five (5) RPD values fell outside advisory QC limits.

INTERNAL STANDARDS

All area responses and retention times fell within acceptable ranges.

SAMPLE COMMENTS

The concentration of Benzene exceeded the highest calibration standard in sample GW5101. The second sample vial was utilized for a diluted analysis. Results yielded a concentration of Benzene lower than expected.

The TICs identified as "Unknown Siloxane" are most probably due to column degradation and not sample constituency.

No further analytical problems were encountered.

NARRATIVE DISCUSSION
SEMIVOLATILES - 22571, 22587

SDG NO. SKIN6

INTRODUCTION

This narrative covers the analysis of ten (10) samples in accordance with protocols based on USEPA CLP (3/90).

HOLDING TIMES

The extraction and analytical holding times for this analysis were met.

CALIBRATIONS

Required minimum RRFs and maximum %RSD initial calibration requirements have been met in accordance with the method.

Required minimum RRFs and maximum %D continuing calibration requirements have been met in accordance with the method.

METHOD BLANKS

No target or non-target analytes were detected in the method blank.

SURROGATES

All samples met surrogate QC criteria.

MATRIX SPIKES

Sample GW5001 was utilized in the MS/MSD series. Eight (8) of twenty two (22) spike recoveries fell above advisory QC limits. All RPD values fell within QC limits.

INTERNAL STANDARDS

All area responses and retention times fell within an acceptable range.

SAMPLE COMMENTS

No analytical problems were encountered.

NON-CONFORMANCE SUMMARY
(Case Narrative)

Login No.: 22571, 22587

The samples were analyzed according to the required protocols.
No problems were encountered.

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 has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Remo Gigante, Exec. VP

Volatile Organic Data Validation Summary
Skinner Landfill Site
Remedial Design Investigation
West Chester, Ohio
Analytical Laboratory: NYTEST Environmental, Inc.
Sample Delivery Group SKIN6

Analytical results for eight (8) groundwater samples with matrix QC, one (1) field duplicate, one (1) field blank and two (2) trip blanks from the Skinner Landfill site were reviewed to evaluate the data quality. Data were assessed in accordance with the United States Environmental Protection Agency (USEPA) **National Functional Guidelines for Organic Data Review** (Draft 12/90, Revised 6/91). Where applicable, the USEPA Region II checklist for "CLP Organics Data Review and Preliminary Review" (SOP NO. HW-6, Revision #8, 1992) This validation pertains to the following samples collected by Rust Environment & Infrastructure (RUST) personnel on November 17 and 18, 1994.

SK-GW50-01	**SK-GW53-01**	**SK-GWFD-01**
SK-GW50-01 MS	**SK-GW54-01**	**SK-GWFB-01**
SK-GW50-01 MSD	**SK-GW55-01**	**TB 11/17/94**
SK-GW51-01	**SK-GW56-01**	**TB 11/18/94**
SK-GW52-01	**SK-GW57-01**	

The following items/criteria applicable to the samples listed above were reviewed:

- Deliverable Requirements
- Case Narrative
- Holding Times
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Data
- Blank Summary and Data
- GC/MS Instrument Performance Check
- Target Compound Identification/Quantitation
- EPA/NIH Mass Spectral Library Search for TICs
- Quantitation Reports and Mass Spectral Data
- Initial and Continuing Calibration Data
- Internal Standard Areas and Retention Times
- Field Duplicate Data

The above items were in compliance with USEPA OLM01.0 laboratory QC criteria with the exception of the items discussed in the following text. The data have been validated according to the above procedures and qualified as described on the attached definitions list.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results

Sample SKGW50-01 was selected for MS/MSD analysis. All MS and MSD spike results were within QC limits. However, two (2) of the ten (10) Relative Percent Difference (RPD) values between the MS and MSD exceeded QC limits. MS/MSD criteria are advisory only and no data are qualified based on MS/MSD data alone. Since no other data indicated a need for data qualification, no data were qualifed based on the RPD exceedences

Blank Summary and Data

The compound methylene chloride, a common laboratory contaminant, was detected in both the laboratory method blanks (VBLK28 and VBLK29) associated with the samples in this SDG. All sample methylene chloride results were less than ten times the laboratory method blank methylene chloride value. In accordance with USEPA validation criteria, the methylene chloride sample results have been reported as non-detect at the contract required quantitation limit (CRQL) and are considered to be laboratory derived and not site related.

The compound xylene also was detected in method blank VBLK28. All sample xylene results associated with method blank VBLK28 were less than five times the method blank value. In accordance with USEPA validation criteria, the xylene sample results have been reported as non-detect at the CRQL and are considered laboratory derived and not site related.

Acetone was detected in four samples (4) at concentrations below or slightly above the CRQL. Acetone is also a common laboratory contaminant. Although acetone was not detected in any of the associated laboratory method blanks, acetone results near the CRQL may be laboratory related. Sample acetone results have been flagged with an "S" and are considered suspect.

Method blank methylene chloride and xylene results and associated sample results (prior to application of any dilution factors) are summarized below:

Method Blank/Sample ID	**Methylene chloride (ug/L)**	**Xylene (ug/L)**
Method Blank VBLK28	1.0	3.0
Associated Samples		
SKFB01	3.0	3.0
SKFD-01	2.0	3.0
SKGW50-01	2.0	3.0

Associated Samples	Methylene Chloride (ug/L)	Xylene (ug/L)
SKGW51-01	2	3
SKGW52-01	3	3
SKGW53-01	3	3
SKGW54-01	3	3
SKGW55-01	3	3
SKGW56-01	2	3
SKGW57-01	2	3
SKGW50-01MS	3	4
Method Blank VBLK29	18	
Associated Samples		
SKGW51DL	20	
SKGW50-01MSD	3	

Continuing Calibration Data

The percent difference (%D) values between the initial calibration and the continuing calibration performed on 11/21/94 for methylene chloride (40.8), acetone (-64.1), carbon disulfide (30), 2-butanone (-57.1), 4-methyl-2-pentanone (-61.8) and 2-hexanone (-85.5) exceeded the National Functional Guidelines data review QC criteria of 25%. In accordance with the National Functional Guidelines validation criteria, both positive and non-detect values for these compounds in the associated samples (SKFB-01,SKFD-01, SKGW50-01, SKGW50-01MSD, SKGW51-01, SKGW52-01, SKGW53-01, SKGW54-01, SKGW55-01, SKGW56-01, SKGW57-01) have been flagged with a "V" and are considered estimated.

The %D values between the initial calibration and the continuing calibration performed on 11/22/94 for chloromethane (-30.7), 4-methyl-2-pentanone (-42.5) and 2-hexanone (-51.9) exceeded the validation criteria of 25 %. However, with the exception of the dilution analysis of sample SKGW51-01 and the matrix spike duplicate analysis of sample SKGW50-01, no samples were associated with this calibration. None of the results for compounds exhibiting poor % D values were applicable to either the SKGW51-01 dilution analysis or the SKGW50-01 MSD analysis, therefore no data were qualified based on the 11/22/94 continuing calibration data.

Target Compound Quantitaion/Identification

The original undiluted analysis of sample SKGW51-01 exhibited a benzene concentration that exceeded the instrument calibration range. The sample was re-analyzed at a five fold dilution. The benzene result from the initial, undiluted analysis has been rejected. The benzene result from the five fold dilution is considered valid and usable, no other compound results from the diluted analysis are considered valid. All other compound results are to be obtained from the undiluted analysis.

Field Duplicate Data

Sample SKFD-01 is a field duplicate of sample SKGW53-01. Relative percent difference (RPD) values between SKFD-01 and SKGW53-01 results are summarized below. Field duplicate RPD values less than 40 percent are generally considered an indication of acceptable sampling and analytical variability.

Compound	SKFD-01(ug/L)	SKGW53 (ug/L)	RPD
Chloroethane	6	5	18.2
1,1-Dichloroethane	2	2	0
1,2-Dichloroethene	1	1	0
Benzene	20	12	50

The duplicate analytical results generally indicate acceptable sampling and analytical variability. With the exception of benzene, all RPDs were less than 40 percent, indicating acceptable sampling and analytical precision.

Summary

In summary, based on 264 sample data points, 40 of which were qualified as estimated and none as unusable and since estimated data are considered valid and usable, the usability of this data package is 100 percent.

Ed Fukenbop — 1-6-95

Reviewed By — Date

Anthony M. Doce — 6 JANUARY 94

Approved By — Date

Volatile Organic Analytical Data

Skinner Landfill Site
West Chester, Ohio

Sampling Dates: November 17 and 18, 1994
Remedial Design Investigation

Sample ID / Compound	SK-GW50-01	SK-GW51-01	SKSK-GW52	SK-GW53-01	SKFD-01	SKSK-GW54	SK-GW55-01	SK-GW56-01	SK-GW57-01	SKFB-01	TRIPBLK
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	**25**	10 U	**6 J**	**5 J**	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	**3 JBV**	**7 JBV**
Acetone	**8 JSV**	10 UV	**10 SV**	10 UV	10 UV	**17 SV**	**6 JSV**	10 UV	10 UV	10 UV	10 UV
Carbon Disulfide	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	**1 J**	10 U	**2 J**	**2 J**	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	10 U	**5 J**	10 U	**1 J**	**1 J**	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	**1 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	**77 D**	10 U	**20**	**12**	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	10 UV	10 UV	10 UV	10 UV	10 UV	**1 JV**	10 UV	10 UV	10 UV	10 UV	10 UV
2-Hexanone	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV	10 UV
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10 U	**4 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	**2 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	**11**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**3 JB**	**3 JB**

All results expressed in ug/L.
Standard Organic Data Qualifiers have been used.
Sample SK-GWFD-01 is a field duplicate of sample SK-GW53-01.
Sample SK-SWFB-01 is a field blank.

YES NO N/A

PART A: VOA ANALYSES

1.0 Traffic Reports and Laboratory Narrative

1.1 Are the Traffic Report Forms present for all samples? [✓] ___ ___

ACTION: If no, contact lab for replacement of missing or illegible copies.

1.2 Do the Traffic Reports or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data? [✓] [ ] ___

ACTION: If any sample analyzed as a soil, other than TCLP, contains 50%-90% water, all data should be flagged as estimated (J). If a soil sample other than TCLP contains more than 90% water, all data should be qualified as unusable (R).

1. Sample GW5101 1st analysis benzene > cal.b. Second analysis diluted lower than expected

ACTION: If samples were not iced upon receipt at the laboratory, flag all positive results "J" and all Non-Detects "UJ".

ACTION: If both VOA vials for a sample have air bubbles or the VOA vial analyzed had air bubbles, flag all positive results "J" and all non-detects "R".

YES NO N/A

2.0 Holding Times

2.1 Have any VOA technical holding times, determined from date of collection to date of analysis, been exceeded? ___ ✓ ___

If unpreserved, aqueous samples maintained at 4°C which are to be analyzed for aromatic hydrocarbons must be analyzed within 7 days of collection. If preserved with HCl (pH<2) and stored at 4°C, then aqueous samples must be analyzed within 14 days of collection. If uncertain about preservation, contact sampler to determine whether or not samples were preserved.

The holding time for soils is 10 days.

Table of Holding Time Violations

			(See Traffic Report)		
Sample ID	Sample Matrix	Preserved?	Date Sampled	Date Lab Received	Date Analyzed

ON: If technical holding times are exceeded, flag all positive results as estimated ("J") and sample quantitation limits as estimated ("UJ"), and document in the narrative that holding times were exceeded. If analyses were done more than 14 days beyond holding time, either on the first analysis or upon re-analysis, the reviewer must use professional judgement to determine the reliability of the data and the effects of additional storage on the sample results. At a minimum, all results must be qualified "J", but the reviewer may determine that non-detect data are unusable (R). If holding times are exceeded by more than 28 days, all non detect data are unusable (R).

	YES	NO	N/A

3.0 System Monitoring Compound (SMC) Recovery (Form II)

3.1 Are the VOA SMC Recovery Summaries (Form II) present for each of the following matrices:

a. Low Water	[✓]	—	—
b. Low Soil	[ ]	—	✓
c. Med Soil	[ ]	—	✓

3.2 Are all the VOA samples listed on the appropriate System Monitoring Compound Recovery Summary for each of the following matrices:

a. Low Water	[✓]	—	—
b. Low Soil	[ ]	—	✓
c. Med Soil	[ ]	—	✓

ACTION: Call lab for explanation/ resubmittals. If missing deliverables are unavailable, document effect in data assessments.

Were outliers marked correctly with an asterisk?	[ ]	—	✓

ACTION: Circle all outliers in red.

Was one or more VOA system monitoring compound recovery outside of contract specifications for any sample or method blank?	—	[✓]	—
yes, were samples re-analyzed?	[ ]	—	✓
e method blanks re-analyzed?	[ ]	—	✓

YES NO N/A

ACTION: If recoveries are > 10% but 1 or more compounds fail to meet SOW specifications:

1. All positive results are qualified as estimated (J).
2. Flag all non-detects as estimated detection limits ("UJ") where recovery is less than the lower acceptance limit.
3. If SMC recoveries are above allowable levels, do not qualify non-detects.

If any system monitoring compound recovery is <10% :

1. Flag all positive results as estimated ("J").
2. Flag all non-detects as unusable ("R").

Professional judgement should be used to qualify data that only have method blank SMC recoveries out of specification in both original and re-analyses. Check the internal standard areas.

3.5 Are there any transcription/calculation errors between raw data and Form II? ___ [✓] ___

ACTION: If large errors exist, call lab for explanation/resubmittal, make any necessary corrections and note errors in the data assessment.

4.0 Matrix Spikes (Form III)

4.1 s the Matrix Spike/Matrix Spike Duplicate ecovery Form (Form III) present? [✓] ___ ___

	YES	NO	N/A

4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices:

a. Low Water	[✓]	—	—
b. Low Soil	[ ]	—	✓
c. Med Soil	[ ]	—	✓

ACTION: If any matrix spike data are missing, take the action specified in 3.2 above.

4.3 How many VOA spike recoveries are outside QC limits?

Water	Soils
0 out of 10	NA out of 10

4.4 How many RPD's for matrix spike and matrix spike duplicate recoveries are outside QC limits?

RPD
Toluene 14* (13)
Chlorobenzene 15* (13)

Water	Soils
1 out of 5	NA out of 5

ACTION: No action is taken based on MS/MSD data alone. However, using informed professional judgement, the MS/MSD results may be used in conjunction with other QC criteria to determine the need for qualification of the data.

5.0 Blanks (Form IV)

5. s the Method Blank Summary (Form IV) esent?	[✓]	—	—
5.2 quency of Analysis: for the analysis VOA TCL compounds, has a reagent/method k been analyzed for each SDG or every amples of similar matrix (low water, oil, medium soil), whichever is more ent?	[✓]	—	—

	YES	NO	N/A

5.3 Has a VOA method/instrument blank been analyzed at least once every twelve hours for each concentration level and GC/MS system used? [✓] ___ ___

ACTION: If any method blank data are missing, call lab for explanation/ resubmittal. If method blank data are not available, reject (R) all associated positive data. However, using professional judgement, the data reviewer may substitute field blank or trip blank data for missing method blank data.

5.4 Chromatography: review the blank raw data - chromatograms (RICs), quant reports or data system printouts and spectra.

VBLK 28
1,35
ac 3,11
TRP
SKFR01 3,3
S 3
57 3,3
FD 2,3
6W56 2,3
57 3,3
51 3,3
50 2,3
55 3,3
53 3,3

Is the chromatographic performance (baseline stability) for each instrument acceptable for VOAs? [✓] ___ ___

ACTION: Use professional judgement to determine the effect on the data.

6.0 Contamination

NOTE: "Water blanks", "drill blanks", and distilled water blanks" are validated like any other sample, and are not used to qualify data. Do not confuse them with the other QC blanks discussed below.

VBLK 29
Meth 18
SIDL 20
50MSD3

6.1 Do any method/instrument/reagent blanks have positive results (TCL and/or TIC) for VOAs? When applied as described below, the contaminant concentration in these blanks are multiplied by the sample dilution factor and corrected for % moisture when necessary. ✓ [ ] ___

6.2 any field/trip/rinse blanks have positive results (TCL and/or TIC)? ✓ [ ] ___

ACTION: Prepare a list of the samples associated with any ~~effect~~ of the contaminated blanks. (Attach a seperate sheet.)

Siloxanes
6W5001 TIC
rejected

YES NO N/A

NOTE: All field blank results associated to a particular group of samples (may exceed one per case) must be used to qualify data. Trip blanks are used to qualify only those samples with which they were shipped and are not required for non-aqueous matrices. Blanks may not be qualified because of contamination in another blank. Field Blanks & Trip Blanks must be qualified for system monitoring compound, instrument performance criteria, spectral or calibration QC problems.

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks. If any blanks are grossly contaminated, all associated data should be qualified as unusable (R).

	Sample conc > CRQL but < 10x blank value	Sample conc < CRQL & <10x blank value	Sample conc > CRQL & >10x blank value
Methylene Chloride Acetone Toluene 2-Butanone	Flag sample result with a "U;	Report CRQL & qualify "U"	No qualification is needed

	Sample conc > CRQL but < 5x blank	Sample conc < CRQL & is < 5x blank value	Sample conc > CRQL value & > 5x blank value
Other Contaminants	Flag sample result with a "U"	Report CRQL & qualify "U"	No qualification is needed

NOTE: Analytes qualified "U" for blank contamination are still considered as "hits" when qualifying for calibration criteria.

		YES	NO	N/A
ACTION:	For TIC compounds, if the concentration in the sample is less than five times the concentration in the most contaminated associated blank, flag the sample data "R" (unusable).			
6.3	Are there field/rinse/equipment blanks associated with every sample?	✓		
ACTION:	For low level samples, note in data assessment that there is no associated field/rinse/equipment blank. Exception: samples taken from a drinking water tap do not have associated field blanks.			
7.0	GC/MS Instrument Performance Check (Form V)			
7.1	Are the GC/MS Instrument Performance Check Forms (Form V) present for Bromofluorobenzene (BFB)?	✓		
7.2	Are the enhanced bar graph spectrum and mass/charge (m/z) listing for the BFB provided for each twelve hour shift?	✓		
7.3	Has an instrument performance compound been analyzed for every twelve hours of sample analysis per instrument?	✓		

	YES	NO	N/A

ACTION: List date, time, instrument ID, and sample analysis for which no associated GC/MS tuning data are available.

DATE	TIME	INSTRUMENT	SAMPLE NUMBERS

ACTION: If lab cannot provide missing data, reject ("R") all data generated outside an acceptable twelve hour calibration interval.

7.4 Have the ion abundances been normalized to m/z 95? ☑ ___ ___

ACTION: If mass assignment is in error, qualify all associated data as unusable (R).

7.5 Have the ion abundance criteria been met for each instrument used? ☑ ___ ___

ACTION: List all data which do not meet ion abundance criteria (attach a separate sheet).

ACTION: If ion abundance criteria are not met, the Region II TPO must be notified.

7.6 e there any transcription/calculation errors : tween mass lists and Form Vs? (Check at least t values but if errors are found, check m: :.) ___ ☑ ___

	YES	NO	N/A
7.7 Have the appropriate number of significant figures (two) been reported?	☑		
ACTION: If large errors exist, call lab for explanation/resubmittal, make necessary corrections and document effect in data assessments.			
7.8 Are the spectra of the mass calibration compound acceptable?	☑		
ACTION: Use professional judgement to determine whether associated data should be accepted, qualified, or rejected.			

8.0 Target Compound List (TCL) Analytes

8.1 Are the Organic Analysis Data Sheets (Form I VOA) present with required header information on each page, for each of the following:			
a. Samples and/or fractions as appropriate	☑		
b. Matrix spikes and matrix spike duplicates	☑		
c. Blanks	☑		
8.2 Are the VOA ~~Reconstructed~~ Total Ion Chromatograms, the mass spectra for the identified compounds, and the data system printouts (Quant Reports) included in the sample package for each of the following?			
a. Samples and/or fractions as appropriate	☑		
Matrix spikes and matrix spike duplicates (Mass spectra not required)	☑		
c Blanks	☑		
ACTION: If any data are missing, take action specified in 3.2 above.			

		YES	NO	N/A
8.3	Are the response factors shown in the Quant Report?	[ ]	✓	
8.4	Is chromatographic performance acceptable with respect to:			
	Baseline stability?	[✓]		
	Resolution?	[✓]		
	Peak shape?	[✓]		
	Full-scale graph (attenuation)?	[✓]		
	Other: _____	[ ]		✓

ACTION: Use professional judgement to determine the acceptability of the data.

8.5	Are the lab-generated standard mass spectra of the identified VOA compounds present for each sample?	[✓]		

ACTION: If any mass spectra are missing, take action specified in 3.2 above. If lab does not generate their own standard spectra, make note in "Contract Problems/Non-compliance".

8.	Is the RRT of each reported compound within 0.06 RRT units of the standard RRT in the continuing calibration?	[✓]		
8.7	e all ions present in the standard mass ectrum at a relative intensity greater n 10% also present in the sample mass ctrum?	[✓]		

	YES	NO	N/A
8.8 Do sample and standard relative ion intensities agree within 20%?	[✓]	___	___

ACTION: Use professional judgement to determine acceptability of data. If it is determined that incorrect identifications were made, all such data should be rejected (R), flagged "N" (presumptive evidence of the presence of the compound) or changed to not detected (U) at the calculated detection limit. In order to be positively identified, the data must comply with the criteria listed in 8.6, 8.7, and 8.8.

ACTION: When sample carry-over is a possibility, professional judgement should be used to determine if instrument cross-contamination has affected any positive compound identification.

9.0 Tentatively Identified Compounds (TIC)

9.1 Are all Tentatively Identified Compound Forms (Form I Part B) present; and do listed TICs include scan number or retention time, estimated concentration and "JN" qualifier?	[✓]	___	___
Are the mass spectra for the tentatively identified compounds and associated "best match" spectra included in the sample package for each of the following:			
Samples and/or fractions as appropriate	[✓]	___	___
Blanks	[✓]	___	___

ACTION: If any TIC data are missing, take action specified in 3.2 above.

ACTION: Add "JN" qualifier if missing.

	YES	NO	N/A
9.3 Are any TCL compounds (from any fraction) listed as TIC compounds (example: 1,2-dimethylbenzene is xylene- a VOA TCL analyte - and should not be reported as a TIC)?		✓	
ACTION: Flag with "R" any TCL compound listed as a TIC.			
9.4 Are all ions present in the reference mass spectrum with a relative intensity greater than 10% also present in the sample mass spectrum?	✓		
9.5 Do TIC and "best match" standard relative ion intensities agree within 20%?	✓		

ACTION: Use professional judgement to determine acceptability of TIC identifications. If it is determined that an incorrect identification was made, change identification to "unknown" or to some less specific identification (example: "C3 substituted benzene") as appropriate.

Also, when a compound is not found in any blank, but is detected in a sample and is a suspected artifact of a common laboratory contaminant, the result should be qualified as unusable (R). (i.e. Common Lab Contaminants: CO_2 (M/E 44), Siloxanes (M/E 73) Hexane, Aldol Condensation Products, Solvent Preservatives, and related by products - see Functional Guidelines for more guidance).

	YES	NO	N/A

10.0 Compound Quantitation and Reported Detection Limits

10.1 Are there any transcription/calculation errors in Form I results? Check at least two positive values. Verify that the correct internal standard, quantitation ion, and RRF were used to calculate Form I result. Were any errors found? — [✓] —

10.2 Are the CRQLs adjusted to reflect sample dilutions and, for soils, sample moisture? [✓] — —

ACTION: If errors are large, call lab for explanation/resubmittal, make any necessary corrections and note errors under "Conclusions".

ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQL data from the diluted sample analysis). Replace concentrations that exceed the calibration range in the original analysis by crossing out the "E" and its associated value on the original Form I and substituting the data from the analysis of the diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form I's that should not be used, including any in the summary package.

11.0 Standards Data (GC/MS)

11.1 Are the Reconstructed Ion Chromatograms, and data system printouts (Quant. Reports) present for initial and continuing calibration? [✓] — —

ACTION: If any calibration standard data are missing, take action specified in 3.2 above.

	YES	NO	N/A

12.0 GC/MS Initial Calibration (Form VI)

12.1 Are the Initial Calibration Forms (Form VI) present and complete for the volatile fraction at concentrations of 10, 20, 50, 100, 200 ug/l? Are there separate calibrations for low water/med soils and low soil samples? [✓] ___ ___

ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.

12.2 Were all low level soil standards, blanks and samples analyzed by heated purge? [ ] ___ ___ ✓

ACTION: If low level soil samples were not heated during purge, qualify positive hits "J" and non-detects "R".

12.3 Are response factors stable for VOA's over the concentration range of the calibration (%Relative Standard Deviation (%RSD) <30.0%)? [✓] ___ ___

extract meds - already rejected / re due to blank contamination

ACTION: Circle all outliers in red.

NOTE: Although 11 VOA compounds have a minimum RRF and no maximum %RSD, the technical criteria are the same for all analytes.

ACTION: If %RSD > 30.0%, qualify associated positive results for that analyte "J" and non-detects using professional judgement. When RSD > 90%, flag all non-detects for that analyte R (unusable).

NOTE: Analytes previously qualified "U" for blank contamination are still considered as "hits" when qualifying for initial calibration criteria.

12.4 Are the RRFs above 0.05? [✓] ___ ___

Action: Circle all outliers in red.
Action: If any RRF are < 0.05, qualify associated non-detects (R) and flag associated positive data as estimated (J).

	YES	NO	N/A
12.5 Are there any transcription/calculation errors in the reporting of average response factors (RRF) or %RSD? (Check at least 2 values, but if errors are found, check more.)		[✓]	

13.0 GC/MS Continuing Calibration (Form VII)

13.1 Are the Continuing Calibration Forms (Form VII) present and complete for the volatile fraction?	[✓]		
13.2 Has a continuing calibration standard been analyzed for every twelve hours of sample analysis per instrument?	[✓]		

ACTION: List below all sample analyses that were not within twelve hours of the previous continuing calibration analysis.

_____

_____

_____

ACTION: If any forms are missing or no continuing calibration standard has been analyzed within twelve hours of every sample analysis, call lab for explanation/resubmittal. If continuing calibration data are not available, flag all associated sample data as unusable ("R").

13.3 Do any volatile compounds have a % Difference (% D) between the initial and continuing RRF which exceeds the ± 25% criteria?	✓	[ ]	11-21-97

11-22-97
chloromethane -30.7
4-methyl-2-pentanone -42.5
2-hexanone -51.9

methylene chloride 40.8
Acetone -64.1
Carbon disulfide 30
2-butanone -57.4
4-methyl-2-pentanone -61.8
2-hexanone -85.5

ACTION: Circle all outliers in red.

ACTION: Qualify both positive results and non-detects for the outlier compound(s) as estimated. When % D is above 90%, reject all non-detects for that analyte (R) unusable.

	YES	NO	N/A
13.4 Do any volatile compounds have a RRF <0.05?	[ ]	✓	

ACTION: Circle all outliers in red.

ACTION: If the RRF <0.05, qualify associated non-detects as unusable (R) and "J" associated positive values.

13.5 Are there any transcription/calculation errors in the reporting of average response factors (RRF) or %difference (%D) between initial and continuing RRFs? (Check at least two values but if errors are found, check more.)		✓	

ACTION: Circle errors in red.

ACTION: If errors are large, call lab for explanation/resubmittal, make any necessary corrections and note errors under "Conclusions".

14.0 Internal Standard (Form VIII)

14.1 Are the internal standard areas (Form VIII) of every sample and blank within the upper and lower limits (-50% to + 100%) for each continuing calibration?	✓		

ACTION: List all the outliers below.

Sample #	Internal Std	Area	Lower Limit	Upper Limit

(Attach additional sheets if necessary.)

	YES	NO	N/A

ACTION: 1. If the internal standard area count is outside the upper or lower limit, flag with "J" all positive results quantitated with this internal standard.

2. Non-detects associated with IS area counts > 100% should not be qualified.

3. If IS area is below the lower limit (< 50%), qualify all associated non-detects (U values) "J". If extremely low area counts are reported, (< 25%) or if performance exhibits a major abrupt drop off, flag all associated non-detects as unusable ("R").

14.2 Are the retention times of the internal standards within 30 seconds of the associated calibration standard? [✓] ___ ___

ACTION: Professional judgement should be used to qualify data if the retention times differ by more than 30 seconds.

15.0 Field Duplicates

15.1 Were any field duplicates submitted for VOA analysis? [✓] ___ ___

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

ACTION: Any gross variation between duplicate results must be addressed in the reviewer narrative. However, if large differences exist, identification of field duplicates should be confirmed by contacting the sampler.

Semivolatile Organic Data Validation Summary
Skinner Landfill Site
West Chester, Ohio
Analytical Laboratory: NYTEST Environmental, Inc.
Sample Delivery Group SKIN6

Analytical results for eight (8) groundwater samples with matrix QC, one (1) field duplicate and one (1) field blank from the Skinner Landfill site were reviewed to evaluate the data quality. Data were assessed in accordance with the United States Environmental Protection Agency (USEPA) **National Functional Guidelines for Organic Data Review** (Draft 12/90, Revised 6/91) and the USEPA Region II document **CLP Organics Data Review and Preliminary Review** (SOP No. HW-6, Revision No. 8, January, 1992), where applicable. This validation pertains to the following samples collected by Rust Environment & Infrastructure (RUST) personnel on November 17 and 18, 1994.

SK-GW50-01	**SK-GW54-01**
SK-GW50-01 MS	**SK-GW55-01**
SK-GW50-01 MSD	**SK-GW56-01**
SK-GW51-01	**SK-GW57-01**
SK-GW52-01	**SK-GWFD-01**
SK-GW53-01	**SK-GWFB-01**

The following items/criteria applicable to the samples listed above were reviewed:

- Deliverable Requirements
- Case Narrative
- Holding Times
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Blank Summary and Data
- GC/MS Instrument Performance Check
- Target Compound Identification/Quantitation
- EPA/NIH Mass Spectral Library Search for TICs
- Quantitation Reports and Mass Spectral Data
- Initial and Continuing Calibration Data
- Internal Standard Areas and Retention Times
- Field Duplicate Data

The above items were in compliance with USEPA QC criteria with the exception of the items discussed in the following text. The data have been validated according to the above procedures and qualified as described on the attached definitions list.

Deliverable Requirements

The laboratory incorrectly reported the area, upper limit and lower limit on the Semivolatile Internal Standard Area and RT Summary (Form VIII) for the internal standard compounds 1,4-dichlorobenzene-d4 and chrysene-d12 for the continuing calibration standard analyzed on 12/23/94. These errors were corrected during validation, and it was verified that each of

SK-GW53-01 and at 48 ug/L in the field duplicate. Although there are no QC limits for field duplicate relative percent difference (RPD) data, RUST considers an RPD of 40 or less indicative of acceptable sampling and analytical precision. The RPD for the bis(2-chloroethyl)ether results reported for samples SK-GW53-01 and SK-GWFD-01 is 18.2, which is indicative of acceptable sampling and analytical precision.

Summary

In summary, based on 576 sample data points, 21 of which were qualified as estimated, and none qualified as unusable, and since estimated data are considered valid and usable, the usability of this data package is 100%.

Anthony M. Noce — 10 JANUARY 95
Reviewed By — Date

Ed F. Ahrendt — 1-16-95
Approved By — Date

Semivolatile Organic Analytical Data

Skinner Landfill Site
West Chester, Ohio

Sampling Dates: November 17 and 18, 1994
Remedial Design Investigation

Sample ID / Compound	SK-GW50-01	SK-GW51-01	SK-GW52-01	SK-GW53-01	SK-GWFD-01	SK-GW54-01	SK-GW55-01	SK-GW56-01	SK-GW57-01	SK-GWFB-01
Phenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)Ether	10 U	**38**	10 U	**40**	**48**	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-oxybis(1-Chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Nitrophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U

Semivolatile Organic Analytical Data

Skinner Landfill Site
West Chester, Ohio

Sampling Dates: November 17 and 18, 1994
Remedial Design Investigation

Sample ID / Compound	SK-GW50-01	SK-GW51-01	SK-GW52-01	SK-GW53-01	SK-GWFD-01	SK-GW54-01	SK-GW55-01	SK-GW56-01	SK-GW57-01	SK-GWFB-01
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1 J
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 UV	10 U	10 UV	10 UV	10 UV	10 UV	10 U	10 UV	10 UV	10 U
Hexachlorobenzene	10 UV	10 U	10 UV	10 UV	10 UV	10 UV	10 U	10 UV	10 UV	10 U
Pentachlorophenol	25 UV	25 U	25 UV	25 UV	25 UV	25 UV	25 U	25 UV	25 UV	25 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	10 U	1 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

All results expressed in ug/L.
Standard Organic Data Qualifiers have been used.
Sample SK-GWFD-01 is a field duplicate of sample SK-GW53-01.
Sample SK-SWFB-01 is a field blank.

SKINNER LANDFILL RD1
SDG: SKIN6

	YES	NO	N/A

PART B: BNA ANALYSES

1.0 Traffic Reports and Laboratory Narrative

1.1 Are the Traffic Report Forms present for all samples? [✓] ___ ___

ACTION: If no, contact lab for replacement of missing or illegible copies.

1.2 Do the Traffic Reports or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special notations affecting the quality of the data? ___ [✓] ___

ACTION: If any sample analyzed as a soil, other than TCLP, contains 50%-90% water, all data should be flagged as estimated ("J"). If a soil sample, other than TCLP, contains more than 90% water, all data should be qualified as unusable (R).

ACTION: If samples were not iced upon receipt at the laboratory, flag all positive results "J" and all non-detects "UJ".

2.0 Holding Times

2.1 Have any BNA technical holding times, determined from date of collection to date of extraction, been exceeded? ___ [✓] ___

Continuous extraction of water samples for BNA analysis must be started within seven days of the date of collection. Soil/ sediment samples must be extracted within 7 days of collection. Extracts must be analyzed within 40 days of the date of extraction.

YES NO N/A

Table of Holding Time Violations

(See Traffic Report)

Sample	Sample Matrix	Date Sampled	Date Lab Received	Date Extracted	Date Analyzed

ACTION: If technical holding times are exceeded, flag all positive results as estimated ("J") and sample quantitation limits as estimated ("UJ"), and document in the narrative that holding times were exceeded.

If analyses were done more than 14 days beyond holding time, either on the first analysis or upon reanalysis, the reviewer must use professional judgement to determine the reliability of the data and the effects of additional storage on the sample results. At a minimum, all results should be qualified "J", but the reviewer may determine that non-detect data are unusable ("R"). If holding times are exceeded by more than 28 days, all non detect data are unusable (R).

3.0 Surrogate Recovery (Form II)

3.1 Are the BNA Surrogate Recovery Summaries (Form II) present for each of the following matrices:

a.	Low Water	[✓]	___	___
b.	Low Soil	[ ]	___	✓
c.	Med Soil	[ ]	___	✓

	YES	NO	N/A
3.2 Are all the BNA samples listed on the appropriate Surrogate Recovery Summaries for each of the following matrices:			
a. Low Water	[√]	___	___
b. Low Soil	[ ]	___	√
c. Low Soil	[ ]	___	√

ACTION: Call lab for explanation/resubmittals. If missing deliverables are unavailable, document effect in data assessments.

3.3 Were outliers marked correctly with an asterisk?	[√]	___	___

ACTION: Circle all outliers in red.

3.4 Were two or more base-neutral <u>OR</u> acid surrogate recoveries out of specification for any sample or method blank?	[ ]	√	___
If yes, were samples reanalyzed?	[ ]	___	√
Were method blanks reanalyzed?	[ ]	___	√

ACTION: If all BNA surrogate recoveries are > 10% but two within the base-neutral or acid fraction do not meet SOW specifications, <u>for the affected fraction only (i.e. base-neutral or acid compounds)</u>:

1. Flag all positive results as estimated ("J").
2. Flag all non-detects as estimated detection limits ("UJ") when recoveries are less than the lower acceptance limit.
3. If recoveries are greater than the upper acceptance limit, do not qualify non-detects.

	YES	NO	N/A

If any base-neutral or acid surrogate has a recovery of <10%:

1. Positive results for the fraction with <10% surrogate recovery are qualified with "J".

2. Non-detects for that fraction should be qualified as unusable (R) .

Professional judgement should be used to qualify data that have method blank surrogate recoveries out of specification in both original and reanalyses. Check the internal standard areas.

3.5 Are there any transcription/calculation errors between raw data and Form II? [√] ___ ___

ACTION: If large errors exist, call lab for explanation/resubmittal, make any necessary corrections and document effect in data assessments.

4.0 Matrix Spikes (Form III)

4.1 Is the Matrix Spike/Matrix Spike Duplicate Recovery Form (Form III) present? [√] ___ ___

4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices:

a. Low Water	[√]	___	___
b. Low Soil	[ ]	___	√
c. Med Soil	[ ]	___	√

ACTION: If any matrix spike data are missing, take the action specified in 3.2 above.

	YES	NO	N/A

4.3 How many BNA spike recoveries are outside QC limits?

Water	Soils
8 out of 22	N/A out of 22

4.4 How many RPD's for matrix spike and matrix spike duplicate recoveries are outside QC limits?

Water	Soils
0 out of 11	N/A out of 11

ACTION: No action is taken on MS/MSD data alone. However, using informed professional judgement, the data reviewer may use the matrix spike and matrix spike duplicate results in conjunction with other QC criteria and determine the need for some qualification of the data.

5.0 Blanks (Form IV)

5.1 Is the Method Blank Summary (Form IV) present? [✓] ___ ___

5.2 Frequency of Analysis:

Has a reagent/method blank analysis been reported per 20 samples of similar matrix, or concentration level, and for each extraction batch? [✓] ___ ___

5.3 Has a BNA method blank been analyzed for each GC/MS system used? [✓] ___ ___
(See SOW p. D - 59/SV, Section 8.7)

ACTION: If any method blank data are missing, call lab for explanation/resubmittal. If not available, use professional judgement to determine if the associated sample data should be qualified.

	YES	NO	N/A

5.4 Chromatography: review the blank raw data - chromatograms (RICs), quant reports or data system printouts and spectra.

Is the chromatographic performance (baseline stability) for each instrument acceptable for BNAs? [√] ___ ___

ACTION: Use professional judgement to determine the effect on the data.

6.0 Contamination

Note: "Water blanks", "drill blanks" and "distilled water blanks" are validated like any other sample and are not used to qualify the data. Do not confuse them with the other QC blanks discussed below.

6.1 Do any method/instrument/reagent blanks have positive results (TCL and/or TIC) for BNAs? When applied as described below, the contaminant concentration in these blanks are multiplied by the sample dilution factor and corrected for % moisture where necessary. ___ [√] ___

6.2 Do any field/rinse/ blanks have positive BNA results (TCL and/or TIC)? √ [ ] ___

ACTION: Prepare a list of the samples associated with each of the contaminated blanks. (Attach a separate sheet.)

Note: All field blank results associated to a particular group of samples (may exceed one per case) must be used to qualify data. Blanks may not be qualified because of contamination in another blank . Field Blanks must be qualified for surrogate, spectral, instrument performance or calibration QC problems.

YES NO N/A

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks. If gross contamination exists, all data in the associated samples should be qualified as unusable (R).

Sample conc > CRQL but < 10x blank	Sample conc <CRQL & is< 10x blank value	Sample conc > CRQL value & >10x blank
Common Phthalate Esters		
Flag sample result with a "U";	Report CRQL & qualify "U"	No qualification is needed
Sample conc > CRQL but < 5x blank	Sample conc < CRQL & is < 5x blank value	Sample conc > CRQL value & >5 blank value
Other Contaminants		
Flag sample result with a "U";	Report CRQL & qualify "U"	No qualification is needed

NOTE: Analytes qualified "U" for blank contamination are still considered as "hits" when qualifying for calibration criteria.

ACTION: For TIC compounds, if the concentration in the sample is less than five times the concentration in the most contaminated associated blank, flag the sample data "R" (unusable).

6.3 Are there field/rinse/equipment blanks associated with every sample? [√] ___ ___

ACTION: For low level samples, note in data assessment that there is no associated field/rinse/equipment blank. Exception: samples taken from a drinking water tap do not have associated field blanks.

YES NO N/A

7.0 GC/MS Instrument Performance Check

7.1 Are the GC/MS Instrument Performance Check Forms (Form V) present for Decafluorotriphenylphosphine (DFTPP)? [✓] ___ ___

7.2 Are the enhanced bar graph spectrum and mass/charge (m/z) listing for the DFTPP provided for each twelve hour shift? [✓] ___ ___

7.3 Has an instrument performance check solution been analyzed for every twelve hours of sample analysis per instrument? [✓] ___ ___

ACTION: List date, time, instrument ID, and sample analyses for which no associated GC/MS tuning data are available.

DATE	TIME	INSTRUMENT	SAMPLE NUMBERS

ACTION: If lab cannot provide missing data, reject ("R") all data generated outside an acceptable twelve hour calibration interval.

ACTION: If mass assignment is in error, flag all associated sample data as unusable (R).

7.4 Have the ion abundances been normalized to m/z 198? [✓] ___ ___

		YES	NO	N/A
7.5	Have the ion abundance criteria been met for each instrument used?	[√]	___	___
	ACTION: List all data which do not meet ion abundance criteria (attach a separate sheet).			
	ACTION: If ion abundance criteria are not met, the Region II TPO must be notified.			
7.6	Are there any transcription/calculation errors between mass lists and Form Vs? (Check at least two values but if errors are found, check more.)	___	[√]	___
7.7	Have the appropriate number of significant figures (two) been reported?	[√]	___	___
	ACTION: If large errors exist, call lab for explanation/resubmittal, make necessary corrections and document effect in data assessments.			
7.8	Are the spectra of the mass calibration compound acceptable?	[√]	___	___
	ACTION: Use professional judgement to determine whether associated data should be accepted, qualified, or rejected.			
8.0	Target Compound List (TCL) Analytes			
8.1	Are the Organic Analysis Data Sheets (Form I BNA) present with required header information on each page, for each of the following:			
	a. Samples and/or fractions as appropriate	[√]	___	___
	b. Matrix spikes and matrix spike duplicates	[√]	___	___
	c. Blanks	[√]	___	___

		YES	NO	N/A
8.2	Has GPC cleanup been performed on all soil/ sediment sample extracts?	[ ]	___	[✓]
	ACTION: If data suggests that GPC was not performed, use professional judgement. Make note in "Contract Problems/Non-Compliance".			
8.3	Are the BNA Reconstructed Ion Chromatograms, the mass spectra for the identified compounds, and the data system printouts (Quant Reports) included in the sample package for each of the following?			
	a. Samples and/or fractions as appropriate	[✓]	___	___
	b. Matrix spikes and matrix spike duplicates (Mass spectra not required)	[✓]	___	___
	c. Blanks	[✓]	___	___
	ACTION: If any data are missing, take action specified in 3.2 above.			
8.4	Are the response factors shown in the Quant Report?	[✓]	___	___
8.5	Is chromatographic performance acceptable with respect to:			
	Baseline stability?	[✓]	___	___
	Resolution?	[✓]	___	___
	Peak shape?	[✓]	___	___
	Full-scale graph (attenuation)?	[✓]	___	___
	Other:_____	[ ]	___	[✓]
	ACTION: Use professional judgement to determine the acceptability of the data.			

	YES	NO	N/A
8.6 Are the lab-generated standard mass spectra of identified BNA compounds present for each sample?	[✓]	___	___
ACTION: If any mass spectra are missing, take action specified in 3.2 above. If lab does not generate their own standard spectra, make note in "Contract Problems/ Non-compliance". If spectra are missing, reject all positive data.			
8.7 Is the RRT of each reported compound within 0.06 RRT units of the standard RRT in the continuing calibration?	[✓]	___	___
8.8 Are all ions present in the standard mass spectrum at a relative intensity greater than 10% also present in the sample mass spectrum?	[✓]	___	___
8.9 Do sample and standard relative ion intensities agree within 20%?	[✓]	___	___
ACTION: Use professional judgement to determine acceptability of data. If it is determined that incorrect identifications were made, all such data should be rejected (R), flagged "N" (Presumptive evidence of the presence of the compound) or changed to not detected (U) at the calculated detection limit. In order to be positively identified, the data must comply with the criteria listed in 8.7, 8.8, and 8.9.			
ACTION: When sample carry-over is a possibility, professional judgement should be used to determine if instrument cross-contamination has affected any positive compound identification.			
9.0 Tentatively Identified Compounds (TIC)			
9.1 Are all Tentatively Identified Compound Forms (Form I, Part B) present; and do listed TICs include scan number or retention time, estimated concentration and "JN" qualifier?	[✓]	___	___

	YES	NO	N/A
9.2 Are the mass spectra for the tentatively identified compounds and associated "best match" spectra included in the sample package for each of the following:			
a. Samples and/or fractions as appropriate	[√]	—	—
b. Blanks	[√]	—	—

ACTION: If any TIC data are missing, take action specified in 3.2 above.

ACTION: Add "JN" qualifier if missing.

9.3 Are any TCL compounds (from any fraction) listed as TIC compounds (example: 1,2-dimethylbenzene is xylene a VOA TCL - and should not be reported as a TIC)?	—	[√]	—

ACTION: Flag with "R" any TCL compound listed as a TIC.

9.4 Are all ions present in the reference mass spectrum with a relative intensity greater than 10% also present in the sample mass spectrum?	[√]	—	—
9.5 Do TIC and "best match" standard relative ion intensities agree within 20%?	[√]	—	—

ACTION: Use professional judgement to determine acceptability of TIC identifications. If it is determined that an incorrect identification was made, change identification to "unknown" or to some less specific identification (example: "C3 substituted benzene") as appropriate. Also, when a compound is not found in any blank, but is a suspected artifact of a common laboratory contaminant, the result should be qualified as unusable (R).

	YES	NO	N/A

10.0 Compound Quantitation and Reported Detection Limits

10.1 Are there any transcription/calculation errors in Form I results? Check at least two positive values. Verify that the correct internal standard, quantitation ion, and RRF were used to calculate Form I result. Were any errors found? ✓ [✓] ___ (AMM 7 JAN 95)

10.2 Are the CRQLs adjusted to reflect sample dilutions and, for soils, sample moisture? [ ] ___ ✓ (BIS(2-CHLOROETHYL)ETHER SK-GW51-01)

ACTION: If errors are large, call lab for explanation/resubmittal, make any necessary corrections and document effect in data assessments.

ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQL data from the diluted sample analysis). Replace concentrations that exceed the calibration range in the original analysis by crossing out the "E" and it's associated value on the original Form I and substituting the data from the analysis of the diluted sample. Specify which Form I is to be used, then draw a red " X" across the entire page of all Form I's that should not be used, including any in the summary package.

11.0 Standards Data (GC/MS)

11.1 Are the Reconstructed Ion Chromatograms, and data system printouts (Quant, Reports) present for initial and continuing calibration? [✓] ___ ___

ACTION: If any calibration standard data are missing, take action specified in 3.2 above.

YES NO N/A

12.0 GC/MS Initial Calibration (Form VI)

12.1 Are the Initial Calibration Forms (Form VI) present and complete for the BNA fraction? [√] ___ ___

ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.

12.2 Are response factors stable for BNAs over the concentration range of the calibration? (% Relative standard deviation (%RSD) < 30.0%) [√] ___ ___

ACTION: Circle all outliers in red.

NOTE: Although 20 BNA compounds have a minimum RRF and no maximum %RSD, the technical criteria are the same for all analytes.

ACTION: If the % RSD is > 30.0%, qualify positive results for that analyte "J" and non-detects using professional judgement. When RSD > 90%, flag all non-detect results for that analyte R (unusable).

NOTE: Analytes previously qualified "U" due to blank contamination are still considered as "hits" when qualifying for calibration criteria.

12.3 Are all BNA compound $\overline{RRF}$s > 0.05? [√] ___ ___

ACTION: Circle all outliers in red.

ACTION: If any RRF < 0.05
1. "R" all non-detects.
2. "J" all positive results.

12.4 Are there any transcription/calculation errors in the reporting of average response factors (RRF) or % RSD? (Check at least two values but if errors are found, check more.) ___ [√] ___

ACTION: Circle Errors in red.

YES NO N/A

ACTION: If errors are large, call lab for explanation/resubmittal, make any necessary corrections and note errors in data assessments.

13.0 GC/MS Continuing Calibration (Form VII)

13.1 Are the Continuing Calibration Forms (Form VII) present and complete for the BNA fraction? [√] ___ ___

13.2 Has a continuing calibration standard been analyzed for every twelve hours of sample analysis per instrument? [√] ___ ___

ACTION: List below all sample analyses that were not within twelve hours of a continuing calibration analysis for each instrument used.

_____

_____

_____

ACTION: If any forms are missing or no continuing calibration standard has been analyzed within twelve hours of every sample analysis, call lab for explanation/ resubmittal. If continuing calibration data are not available, flag all associated sample data as unusable ("R").

13.3 Do any semivolatile compounds have a % Difference (% D) between the initial and continuing RRF which exceeds the + 25.0% criteria? √ [ ] ___

ACTION: Circle all outliers in red.

ACTION: Qualify both positive results and non-detects for the outlier compound(s) as estimated (J). When %D is above 90%, reject all non-detects for that analyte (R) unusable.

YES NO N/A

13.4 Do any semivolatile compounds have a RRF <0.05? ___ [√] ___

ACTION: Circle all outliers in red.

ACTION: If RRF <0.05, qualify as unusable (R) associated non-detects and "J" associated positive values.

13.5 Are there any transcription/calculation errors in the reporting of average response factors (RRF) or % difference (%D) between initial and continuing RRFs? (Check at least two values but if errors are found, check more). ___ [√] ___

ACTION: Circle errors in red.

ACTION: If errors are large, call lab for explanation/resubmittal, make any necessary corrections and document effect in data assessments.

14.0 Internal Standards (Form VIII)

14.1 Are the internal standard areas (Form VIII) of every sample and blank within the upper and lower limits (-50% to + 100%) for each continuing calibration? [√] ___ ___

ACTION: List all the outliers below.

Sample #	Internal Std	Area	Lower Limit	Upper Limit

(Attach additional sheets if necessary.)

ACTION: 1. If the internal standard area count is outside the upper or lower limit, flag with "J" all positive results and non-detects (U values) quantitated with this internal standard.

YES NO N/A

2. Non-detects associated with IS areas > 100% should not be qualified.

3. If the IS area is below the lower limit (<50%), qualify all associated non-detects (U-values) "J". If extremely low area counts are reported (<25%) or if performance exhibits a major abrupt drop off, flag all associated non-detects as unusable (R).

14.2 Are the retention times of the internal standards within 30 seconds of the associated calibration standard? [✓] ___ ___

ACTION: Professional judgement should be used to qualify data if the retention times differ by more than 30 seconds.

15.0 Field Duplicates

15.1 Were any field duplicates submitted for BNA analysis? [✓] ___ ___

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

ACTION: Any gross variation between field duplicate results must be addressed in the reviewer narrative. However, if large differences exist, identification of field duplicates should be confirmed by contacting the sampler.

Organic Data Qualifiers

U - The compound was analyzed for but not detected at or above the quantitation limit indicated.

J - The compound was analyzed for and determined to be present in the sample because the mass spectrum of the compound meets the identification criteria of the method. The concentration reported is an estimated value, less than the practical quantitation limit for the sample.

B - The compound is also found in an associated blank.

V - The reported value is considered estimated due to variance from quality control criteria

S - The reported value is suspected to be due to laboratory contamination.

R - The reported value is unusable and rejected due to variance from quality control criteria.

D - The reported value is taken from the analysis of a diluted sample.

E - The reported value exceeds the calibration range of the instrument.

N - Indicates presumptive evidence for compound identification.

A - Indicates that the compound is an aldol condensation product.

C - Compound identification has been qualitatively confirmed by GC/MS.

P - Indicates that the percent difference between the results from the two analytical columns is greater than 25%.

Inorganic Data Validation Summary
Skinner Landfill Site
West Chester, Ohio
Analytical Laboratory: NYTEST Environmental, Inc.
Sample Delivery Group SKIN6

Analytical results for six (6) groundwater samples with matrix QC, one (1) field duplicate and one (1) field blank from the Skinner Landfill site were reviewed to evaluate the data quality. Data were assessed in accordance with the United States Environmental Protection Agency (USEPA) United States Environmental Protection Agency (USEPA) **Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analysis** (October 1987 Revision) and the USEPA Region II **Checklist for Evaluation of Metals Data for the Contract Laboratory Program, Appendix A.1**, where applicable. This validation pertains to the following samples collected by Rust Environment & Infrastructure (RUST) personnel on November 17 and 18, 1994.

SK-GW50-01	**SK-GW53-01**
SK-GW50-01 Dup	**SK-GW56-01**
SK-GW50-01 Spike	**SK-GW57-01**
SK-GW51-01	**SK-GWFD-01**
SK-GW52-01	**SK-GWFB-01**

The following items/criteria applicable to the samples listed above were reviewed:

- Deliverable Requirements
- Case Narrative
- Holding Times and Sample Preparation
- Initial and Continuing Calibration Data
- CRDL Standards for AA and ICP
- Instrument and Preparation Blank Summary and Data
- ICP Interference Check Sample
- Spiked Sample Recovery Data
- Laboratory Duplicate Data
- Laboratory Control Samples (LCS)
- ICP Serial Dilution Data
- Graphite Furnace Atomic Absorption (GFAA) QC Analysis
- Method of Standard Addition (MSA) Results
- Verification of Instrument Parameters
- Field Duplicate Data

The above items were in compliance with USEPA QC criteria with the exception of the items discussed in the following text. The data have been validated according to the above procedures and qualified as described on the attached definitions list.

Deliverable Requirements

The selenium results for samples SK-GW56-01 and SK-GW57-01 were incorrectly reported as non-detect at 5.0 ug/L. Both of these samples should have been reported as non-detect at 50.0 ug/L.

The selenium result for sample SK-GW52-01 was incorrectly reported as non-detect at 50.0 ug/L rather than non-detect at 5.0 ug/L and flagged with a "W" to indicate that the GFAA analytical spike was out of the 85-115% control limit while the sample absorbance was less than 50% of the spike absorbance.

Furthermore, the arsenic result for sample SK-GW52-01 was qualified with an "S" to indicate that the reported value was determined by the method of standard additions (MSA). The arsenic result for this sample should have been flagged with a "+" indicating that the correlation coefficient for the MSA is less than 0.995.

Revised Inorganic Analyses Data Sheets (Form I) for samples SK-GW52-01, SK-GW56-01 and SK-GW57-01 were submitted upon request.

It was noted during review of the cyanide data that on one or more occasions more than ten samples were analyzed between CCV/CCB pairs. The laboratory apparently did not consider the prep blank or laboratory control sample to count towards the ten sample limit between CCV/CCB pairs. No data have been qualified based upon this nonconformance, however, because the quality of the cyanide results was not affected. The nature of this nonconformance has been discussed with laboratory personnel so that it will not be repeated in the future.

CRDL Standard for AA and ICP

A CRDL standard must exhibit a percent recovery between 80 and 120 to be considered within QC limits. The final CRDL standard for ICP exhibited a low percent recovery for cadmium (60.8%). The associated cadmium results have been flagged with a "V" and are considered estimated with a potential low bias.

Spiked Sample Recovery Data

Spiked sample analysis was requested for sample SK-GW50-01. The aluminum, iron, manganese, selenium, silver and thallium recoveries were outside of QC limits (75-125%).

The aluminum (672.8%), iron (2462.5%) and manganese (138.1%) recoveries were all high. No data have been qualified based upon these elevated recoveries, however, because each of these analytes are present in the sample at a level greater than four times the amount of spike added.

The selenium (63.0%), silver (74.4) and thallium (41.0%) recoveries were all low. The associated selenium, silver and thallium results have been flagged with a "V" and are considered estimated with a potential low bias.

ICP Serial Dilution Data

ICP Serial Dilution analysis was performed on both sample SK-GW50-01 and sample SK-GW52-01. The serial dilution analysis for sample SK-GW50-01 met all applicable QC

criteria. The zinc result for sample SK-GW52-01 is greater than ten (10) times the instrument detection limit (IDL) and the percent difference for the serial dilution analysis is 14.3. In accordance with EPA data validation criteria, the associated zinc result has been flagged with a "V" and is considered estimated.

Graphite Furnace Atomic Absorption (GFAA) QC Analysis

Table 1 summarizes GFAA analytical spike recoveries which were outside of QC limits (85-115%). In accordance with EPA validation criteria, the affected sample results have been flagged with a "V" and are considered estimated. No data have been qualified based upon high recoveries if the applicable analyte was not detected in the associated sample.

Method of Standard Additions

As noted in the **Deliverable Requirements** section, the arsenic result for sample SK-GW52-01 was determined by the method of standard additions (MSA) and the correlation coefficient on 0.9939 for the MSA is less than the 0.995 specified in the SOW. In accordance with EPA data validation criteria, the arsenic result for sample SK-GW52-01 has been flagged with a "V" and is considered estimated.

Field Duplicate Analysis

Table 2 summarizes the relative percent difference (RPD) between sample SK-GW53-01 and the field duplicate SK-GWFD-01. Although there are no established QC limits for field duplicate RPD data, RUST considers RPD values of 40% or less an indication of acceptable sampling and analytical precision. The aluminum, arsenic, chromium, cobalt, copper, iron, lead, vanadium and zinc results for both the SK-GW53-01 and SK-GWFD-01 have been flagged with a "V" and are considered estimated due to elevated RPD values.

It should be noted that elevated RPD values for results between the IDL and the CRDL are not unexpected and are not necessarily indicative of poor sampling and/or analytical precision. The arsenic, cobalt, copper and vanadium results are considered estimated, however, because of the elevated RPD values for the other analytes.

The laboratory notes that both sample SK-GW53-01 and its field duplicate were turbid samples. Sediment present in a sample will have metal ions both sorbed to its surface and as an integral component of the sediment itself. When sediment-laden samples are preserved with acid in the field (per standard protocol), and especially when samples are prepared in the laboratory via hot acid digestion (also per standard protocol), metals will be desorbed from the sediment matrix, resulting in reported groundwater metals concentrations that are higher than is actually dissolved in the groundwater. Since different samples are likely to contain differing amounts of sediment, the elevated RPD values may be at least partially due to differing sediment loads.

Summary

In summary, based on 168 sample data points, 39 of which were qualified as estimated, and none qualified as unusable, and since estimated data are considered valid and usable, the usability of this package is 100%.

Anthony M. Noce — Reviewed By — 9 JANUARY 95 — Date

Approved By — 1-10-95 — Date

Table 1
GFAA QC Analysis Exceedance Summary

Sample ID	Analyte	Analytical Spike Recovery
SK-GW50-01	Se	65.0%
	Tl	52.0%
SK-GW50-01D	Se	69.0%
	Tl	52.0%
SK-GW51-01	Se	72.0%
	Tl	55.5%
SK-GW52-01	Se	47.0%
	Tl	57.5%
SK-GW53-01	As	83.0%
	Tl	56.5%
SK-GWFD-01	Tl	57.5%
SK-GW56-01	Tl	49.5%
SK-GW57-01	Tl	52.0%

Table 2
RPD Calculations - Field Duplicate Analysis

Analyte	SK-GW53-01	SK-GWFD-01	RPD
Aluminum	5050	9180	58.0%
Arsenic	6.3 BW	9.7 B	42.5%
Barium	428	522	19.8%
Calcium	481000	659000	31.2%
Chromium	13.4	21.5	46.4%
Cobalt	7.4 B	12.3 B	49.7%
Copper	11.2 B	29.7	90.5%
Iron	22500	38800	53.2%
Lead	13.4	28	70.5%
Magnesium	103000	143000	32.5%
Manganese	2400	3390	34.2%
Nickel	34.4 B	40.9	17.3%
Potassium	20000	20300	1.5%
Silver	29.1	36.1	21.5%
Sodium	35700	36500	2.2%
Vanadium	19 B	35 B	59.3%
Zinc	57	95.8	50.8%

Results expressed in ug/L.
Standard Inorganic Data Qualifiers have been applied.

Inorganic Analytical Data

Skinner Landfill Site
West Chester, Ohio

Sampling Dates: November 17 and 18, 1994
Remedial Design Investigation

Sample ID / Analyte	SK-GW50-01	SK-GW51-01	SK-GW52-01	SK-GW53-01	SK-GWFD-01	SK-GW56-01	SK-GW57-01	SK-GWFB-01
Aluminum	17200 V	967	26200	5050 V	9180 V	10900	13400	57 U
Antimony	38 U	38 U	38 U	38 U	38 U	38 U	42.3 B	38 U
Arsenic	8.6 B	18.1	16.8 V	6.3 BV	9.7 BV	5 U	5 U	5 U
Barium	1060	444	770	428	522	126 B	93.4 B	11 U
Beryllium	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Cadmium	2 UV	2 UV	2 UV	2 UV	2 UV	2 UV	2 UV	2 UV
Calcium	440000	391000	513000	481000	659000	388000	437000	1390 U
Chromium	33.6	5 U	46.5	13.4 V	21.5 V	18.4	26.4	5 U
Cobalt	26.5 B	6 U	33.2 B	7.4 BV	12.3 BV	12.9 B	15.4 B	6 U
Copper	53	10.2 B	68.8	11.2 BV	29.7 V	19.5 B	25.1	5 U
Iron	52900	11000	62900	22500 V	38800 V	24000	32400	16 U
Lead	45.9	6.6	41.1	13.4 V	28 V	12.2	16.5	3 U
Magnesium	105000	125000	110000	103000	143000	107000	109000	1550 U
Manganese	2580	899	2930	2400	3390	3290	1390	2 U
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	64.9	26 U	65	34.4 B	40.9	34.4 B	34.5 B	26 U
Potassium	10200	15900	28300	20000	20300	29500	12000	840 U
Selenium	5 UV	5 UV	5 UV	50 U	50 U	5 U	5 U	5 U
Silver	5 UV	5 U	5 U	29.1	36.1	5 U	5 U	5 U
Sodium	69500	56800	35300	35700	36500	142000	92900	463 U
Thallium	5 UV	5 UV	5 UV	50 UV	50 UV	5 UV	5 UV	5 U
Vanadium	53.2	17 U	62.6	19 BV	35 BV	29.6 B	37.3 B	17 U
Zinc	155	12 B	212 V	57 V	95.8 V	66.5	83.8	5 U
Cyanide	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

All results expressed in ug/L.
Standard Inorganic Data Qualifiers have been used.
Sample SK-GWFD-01 is a field duplicate of sample SK-GW53-01.
Sample SK-SWFB-01 is a field blank.

SKINNER LANDFILL RDI
SDG: SKIN6

Title: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.1: Data Assessment - Contract Compliance (Total Review)

Date: Jan. 1992
Number: HW-2
Revision: 11

	YES	NO	N/A
.1 Contract Compliance Screening Report (CCS) - Present?	[ ]	___	✓
ACTION: If no, contact RSCC.			
.2 Record of Communication (from RSCC) - Present?	[ ]	___	✓
ACTION: If no, request from RSCC.			
.3 Trip Report - Present and complete?	[ ]	___	✓
ACTION: If no, contact RSCC for trip report.			
.4 Sample Traffic Report - Present?	[✓]	___	___
Legible?	[✓]	___	___
ACTION: If no, request from Regional Sample Control Center (RSCC).			
.5 Cover Page - Present?	[✓]	___	___
Is cover page properly filled in and signed by the lab manager or the manager's designee?	[✓]	___	___
ACTION: If no, prepare Telephone Record Log, and contact laboratory.			
Do numbers of samples correspond to numbers on Record of Communication?	GMM 8JAN95 [✓]	___	✓
Do sample numbers on cover page agree with sample numbers on:			
(a) Traffic Report Sheet?	[✓]	___	___
(b) Form I's?	[✓]	___	___
ACTION: If no for any of the above, contact RSCC for clarification.			

1.6	Form I to IX	Yes	No	N/A
1.6.1	Are all the Form I through Form IX labeled with:			
	Laboratory name?	[✓]	___	___
	Case/SAS number?	[✓]	___	___
	EPA sample No.?	[✓]	___	___
	SDG No.?	[✓]	___	___
	Contract No.?	[✓]	___	___
	Correct units?	[✓]	___	___
	Matrix?	[✓]	___	___

ACTION: If no for any of the above, note under Contract Problem/Non-Compliance section of the "Data Assessment Narrative".

1.6.2 Do any computation/transcription errors exceed 10% of reported values on Forms I-IX for:

(NOTE: Check all forms against raw data.)

(a) all analytes analyzed by ICP?	[✓]	✓	___
(b) all analytes analyzed by GFAA?	[✓]	✓	___
(c) all analytes analyzed by AA Flame?	[___]	___	✓
(d) Mercury?	[___]	✓	___
(e) Cyanide?	[___]	✓	___

ACTION: If yes, prepare Telephone Log, contact laboratory for corrected data and correct errors with red pencil and initial.

:le: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.1: Data Assessment - Contract Compliance (Total Review)

Date: Jan. 1992
Number: HW-2
Revision: 11

		YES	NO	N/A
:.7	Raw Data			
:.7.1	Digestion Log* for flame AA/ICP (Form XIII) present?	[✓]	___	___
	Digestion Log for furnace AA Form XIII present?	[✓]	___	___
	Distillation Log for mercury Form XIII present?	[✓]	___	___
	Distillation Log for cyanides Form XIII present?	[✓]	___	___
	Are pH values (pH<2 for all metals, pH>12 for cyanide) present?	[✓]	___	___
	*Weights, dilutions and volumes used to obtain values.			
	Percent solids calculation present for soils/sediments?	[___]	___	✓
	Are p- -ation dates present on sample preparation logs sheets?	[✓]	___	___
.2	Measu- -nt read out record present? ICP	[✓]	___	___
	Flame AA	[___]	___	✓
	Furnace AA	[✓]	___	___
	Mercury	[✓]	___	___
	Cyanides	[✓]	___	___
:.7.3	Are all raw data to support all sample analyses and QC operations present?	[✓]	___	___
	Legible?	[✓]	___	___
	Properly Labeled?	[✓]	___	___

ACTION: If no for any of the above questions in sections A.1.7.1 through A.1.7.3, write Telephone Record Log and contact laboratory for resubmittals.

		YES	NO	N/A
1.8	Holding Times - (aqueous and soil samples)			
	(Examine sample traffic reports and digestion/distillation logs.)			
	Mercury analysis (28 days). . . . . exceeded?	___	[✓]	___
	Cyanide distillation (14 days). . . . . exceeded?	___	[✓]	___
	Other Metals analysis (6 months). . . . exceeded?	___	[✓]	___
	NOTE: Prepare a list of all samples and analytes for which holding times have been exceeded. Specify the number of days from date of collection to the date of preparation (from raw data). Attach to checklist.			
	ACTION: If yes, reject (red-line) values less than Instrument Detection Limit (IDL) and flag as estimated (J) the values above IDL even though sample(s) was preserved properly.			
....2	Is pH of aqueous samples for: Metals Analysis >2?	___	[✓]	___
	Cyanides Analysis <12?	___	[✓]	___
	Action: If yes, flag the associated metals and cyanides data as estimated.			
..9	Form I (Final Data)			
..9.1	Are all Form I's present and complete?	[✓]	___	___
	ACTION: If no, prepare telephone record log and contact laboratory for submittal.			
..9.2	Are correct units (ug/l for waters and mg/kg for soils) indicated on Form I's?	[✓]	___	___
	Are soil sample results for each parameter corrected for percent solids?	[___]	___	✓
	Are all "less than IDL" values properly coded with "U"?	[✓]	___	___

		YES	NO	N/A
	Are the correct concentration qualifiers used with final data?	[ ]	[✓] SEE "DELIVERABLE REQUIREMENTS"	—
	ACTION: If no for any of the above, prepare Telephone Record Log, and contact laboratory for corrected data.			
1.9.3	Are EPA sample # s and corresponding laboratory sample ID # s the same as on the Cover Page, Form I's and in the raw data?	[✓]	—	—
	Was a brief physical description of samples given on Form I's?	[✓]	—	—
	Was the dilution of any sample diluted beyond the requirements of the contract noted on Form I or Form XIV?	✓	[ ]	—
	ACTION: If no for any of the above, note under Contract-Problem/Non-Compliance of the "Data Assessment Narrative".			
1.10	**Calibration**			
1.10.1	Is record of at least 2 point calibration present for ICP analysis?	[✓]	—	—
	Is record of 5 point calibration present for Hg analysis?	[✓]	—	—
	Is record of 4 point calibration present for:			
	Flame AA?	[ ]	—	✓
	Furnace AA?	[✓]	—	—
	Cyanides?	[✓]	—	—
	Is one calibration standard at the CRDL level for all AA (except Hg) and cyanides analyses?	[✓]	—	—

ACTION: If no for any of the above, write in the Contract Problem/Non-Compliance section of the "Data Assessment Narrative".

		YES	NO	N/A
.1.10.2	Is correlation coefficient less than 0.995 for:			
	Mercury Analysis?	___	[✓]	___
	Cyanide Analysis?	___	[✓]	___
	Atomic Absorption Analysis?	___	[✓]	___

ACTION: If yes, flag the associated data as estimated.

NOTE: The data validator shall calculate the correlation coefficient using concentrations of the standards and the corresponding instrument response (e.g. absorbance, peak area, peak height, etc.).

.1.10.3	In the instance where less than 4 standards are measured in absorbance (or peak area, peak height, etc.) mode, are the remaining standards analyzed in concentration mode immediately after calibration within ±10% of the true values?	[___]	___	✓

ACTION: If no, flag the associated data as estimated if standards are not within ±10% of true values. Do not flag the data as estimated in linear range indicated by good recovery of standard(s).

.1.11 Form II A (Initial and Continuing Calibration Verification)-

.1.11.1	Present and complete for every metal and cyanide?	[✓]	___	___
	Present and complete for AA and ICP when both are used for the same analyte?	[___]	___	✓

ACTION: If no for any of the above, prepare Telephone Record Log and contact laboratory.

.1.11.2	Circle on each Form IIA all percent recoveries that are outside the contract windows. Are all calibration standards (initial and continuing) within control limits:			
	Metals- 90-110%R?	[✓]	___	___
	Hg - 80-120%R?	[✓]	___	___
	Cyanides- 85-115%R?	[✓]	___	___

	YES	NO	N/A
ACTION: Flag as estimated (J) all positive data (not flagged with a "U") analyzed between a calibration standard with %R between 75-89% (65-79% for Hg; 70-84% for CN) or 111-125% (121-135% for Hg; 116-130% for CN) recovery and nearest good calibration standard. Qualify results <IDL as estimated (UJ) if the ICV or CCV %R is 75-89% (CN, 70-84% ; HG, 65-79%). Reject (red-line) as unacceptable data if recovery of the ICV or CCV is outside the range 75-125% (CN, 70-130%; Hg, 65-135%). Qualify five samples on either side of verification standard out of control limits.			
1.11.3 Was continuing calibration performed every 10 samples or every 2 hours?	[✓]	CN ✓	—
Was ICV for cyanides distilled?	[✓]	—	—
ACTION: If no for any of the above, write in the Contract-Problem/Non-Compliance section of the "Data Assessment Narrative".			
1.12 **Form II B (CRDL Standards for AA and ICP)** -			
1.12.1 Was a CRDL standard (CRA) analyzed after initial calibration for all AA metals (except Hg)?	[✓]	—	—
Was a mid-range calib. verification standard distilled and analyzed for cyanide analysis?	[✓]	—	—
Was a 2xCRDL (or 2xIDL when IDL>CRDL) analyzed (CRI) for each ICP run? (Note: CRI for AL,Ba,Ca,Fe,Mg,Na,or K is not required.)	[✓]	—	—
ACTION: If no for any of the above, flag as estimated all data falling within the affected ranges. The affected ranges are: AA Analysis - **True Value ± CRDL; ICP Analysis - **True Value ± 2CRDL; CN Analysis - **True Value ± 0.5 x True Value.			

e value of CRA, CRI or mid-range standard. Substitute IDL for CRDL when IDL > CRDL.
mpute the concentration of the missing mid-range standard from the calibration range.

		YES	NO	N/A
..1.12.2	Was CRI analyzed after ICV/ICB and before the final CCV/CCB, and twice every eight hours of ICP run?	[✓]	___	___
	ACTION: If no, write in Contract Problem/Non-Compliance Section of the "Data Assessment Narrative".			
..12.3	Circle on each Form IIB all the percent recoveries that are outside the acceptance windows.			
	Are CRA and CRI standards within control limits:			
	Metals 80 - 120%R?	[✓]	___	___
	Is mid-range standard within control limits:			
	Cyanide 80 - 120%R?	[✓]	___	___
	ACTION: Flag as estimated all sample results within the affected range if the recovery of the standard is between 50-79%; flag only positive data within the affected range if the recovery is between 121-150%; reject all data within the affected range if the recovery is less than 50%; reject only positive data within the affected range if the recovery is greater than 150%. Qualify 50% of the samples on either side of CRI standard outside the control limits.			
	Note: Flag or reject the final results only when sample raw data are within the affected ranges and the CRDL standards are outside the acceptance windows.			
.1.13	Form III (Initial and Continuing Calibration Blanks)			
.1.13.1	Present and complete?	[✓]	___	___
	For both AA and ICP when both are used for the same analyte?	[___]	___	✓
	Was an initial calibration blank analyzed?	[✓]	___	___
	Was a continuing calibration blank analyzed after every 10 samples or every 2 hours (which ever is more frequent)?	[✓]	CN ✓	___

		YES	NO	N/A
	ACTION: If no, prepare Telephone Record Log, contact laboratory and write in the Contract-Problems/ Non-Compliance section of the "Data Assessment Narrative".			
1.13.2	Circle on each Form III all calibration blank values that are above CRDL (or 2 x IDL when IDL > CRDL).			
	Are all calibration blanks (when IDL<CRDL) less than or equal to the Contract Required Detection Limits (CRDLs)?	[✓]	___	___
	Are all calibration blanks less than two times Instrument Detection Limit (when IDL>CRDL)?	[___]	___	✓
	ACTION: If no for any of the above, flag as estimated (J) positive sample results when raw sample value is less than or equal to calibration blank value analyzed between calibration blank with value over CRDL (or 2xIDL) and nearest good calibration blank. Flag five samples on either side of the calibration blank outside the control limits.			
1.14	FORM III (Preparation Blank) - (Note: The preparation blank for mercury is the same as the calibration blank.)			
1.14.1	Was one prep. blank analyzed for:			
	each Sample Delivery Group (SDG)?	[✓]	___	___
	each batch of digested samples?	[✓]	___	___
	each matrix type?	[✓]	___	___
	both AA and ICP when both are used for the same analyte?	[___]	___	✓
	ACTION: If no for any of the above, flag as estimated (J) all the associated positive data <10 x IDLs for which prep. blank was not analyzed.			
	NOTE: If only one blank was analyzed for more than 20 samples, then first 20 samples analyzed do not have to be flagged as estimated (J).			

		YES	NO	N/A
A.1.14.2	Is concentration of prep. blank value greater than the CRDL when IDL is less than or equal to CRDL?	___	[✓]	___
	If yes, is the concentration of the sample with the least concentrated analyte less than 10 times the prep.blank?	___	[___]	✓
	ACTION: If yes, reject (red-line) all associated data greater than CRDL concentration but less than ten times the prep. blank value.			
A.1.14.3	Is concentration of prep. blank value (Form III) less than two times IDL, when IDL is greater than CRDL?	[___]	___	✓
	ACTION: If no, reject (red-line) all positive sample results when sample raw data are less than 10 times the prep. blank value.			
A.1.14.4	Is concentration of prep. blank below the negative CRDL?	___	[✓]	___
	ACTION: If yes, reject (red-line) all associated sample results less than 10xCRDL.			
A.1.15	Form IV (ICP Interference Check Sample)			
A.1.15.1	Present and complete?	[✓]	___	___
	(NOTE: Not required for furnace AA, flame AA, mercury, cyanide and Ca, Mg, K and Na.)			
	Was ICS analyzed at beginning and end of run (or at least twice every 8 hours)?	[✓]	___	___
	ACTION: If no, flag as estimated (J) all the samples for which Al, Ca, Fe, or Mg is higher than in ICS.			
A.1.15.2	Circle all values on each Form IV that are more than ± 20% of true or established mean value.			
	Are all Interference Check Sample results inside the control limits (± 20%)?	[✓]	___	___
	If no, is concentration of Al, Ca, Fe, or Mg lower than the respective concentration in ICS?	[___]	___	✓

		YES	NO	N/A
	ACTION: If no, flag as estimated (J) those positive results for which ICS recovery is between 121-150%; flag all sample results as estimated if ICS recovery falls within 50-79%; reject (red-line) those sample results for which ICS recovery is less than 50%; if ICS recovery is above 150%, reject positive results only (not flagged with a "U").			
1.16	Form V A (Spiked Sample Recovery - Pre-Digestion/Pre-Distillation)- (Note: Not required for Ca, Mg, K, and Na (both matrices), Al, and Fe (soil only.)			
1.16.1	Present and complete for: each SDG?	[✓]	___	___
	each matrix type?	[✓]	___	___
	each conc. range (i.e. low, med., high)?	[✓]	___	___
	For both AA and ICP when both are used for the same analyte?	[___]	___	✓
	ACTION: If no for any of the above, flag as estimated (J) all the positive data less than four times the spiking levels specified in SOW for which spiked sample was not analyzed.			
	NOTE: If one spiked sample was analyzed for more than 20 samples, then first 20 samples analyzed do not have to be flagged as estimated (J).			
1.16.2	Was field blank used for spiked sample?	___	[✓]	___
	ACTION: If yes, flag all positive data less than 4 x spike added as estimated (J) for which field blank was used as spiked sample.			
1.16.3	Circle on each Form VA all spike recoveries that are outside control limits (75% to 125%).			
	Are all recoveries within control limits?	[___]	✓	___
	If no, is sample concentration greater than or equal to four times spike concentration?	Al, Fe, Mn [✓]	Se, Ag, Tl ✓	___

	YES	NO	N/A
ACTION: If yes, disregard spike recoveries for analytes whose concentrations are greater than or equal to four times spike added. If no, circle those analytes on Form V for which sample concentration is less than four times the spike concentration.			
Are results outside the control limits (75-125%) flagged with "N" on Form I's and Form VA?	[✓]	___	___
ACTION: If no, write in the Contract - Problem/Non - Compliance section of "Data Assessment Narrative".			
1.16.4 Aqueous			
Are any spike recoveries:			
(a) less than 30%?	___	[✓]	___
(b) between 30-74%?	✓	[___]	___
(c) between 126-150%?	✓ 4x	[___]	___
(d) greater than 150%?	✓ 4x	[___]	___
ACTION: If less than 30%, reject all associated aqueous data; if between 30-74%, flag all associated aqueous data as estimated (J); if between 126-150%, flag as estimated (J) all associated aqueous data not flagged with a "U"; if greater than 150%, reject (red-line) all associated aqueous data not flagged with a "U".			
1.16.5 Soil/Sediment			
Are any spike recoveries:			
(a) less than 10%?	___	[___]	✓
(b) between 10-74%?	___	[___]	✓
(c) between 126-200%?	___	[___]	✓
(d) greater than 200%?	___	[___]	✓

		YES	NO	N/A
	ACTION: If less than 10%, reject all associated data; if between 10-74%, flag all associated data as estimated; if between 126-200%, flag as estimated all associated data was not flagged with a "U"; if greater than 200%, reject all associated data not flagged with a "U".			
A.1.17	Form VI (Lab Duplicates)			
A.1.17.1	Present and complete for: each SDG?	[✓]	___	___
	each matrix type?	[✓]	___	___
	each concentration range (i.e. low, med., high)?	[✓]	___	___
	both AA and ICP when both are used for the same analyte?	[___]	___	✓
	ACTION: If no for any the above, flag as estimated (J) all the data ≥CRDL* for which duplicate sample was not analyzed.			
	Note: 1. If one duplicate sample was analyzed for more than 20 samples, then first 20 samples do not have to be flagged as estimated.			
	2. If percent solids for soil sample and its duplicate differ by more than 1%, prepare a Form VI for each duplicate pair, report concentrations in ug/L on wet weight basis and calculate RPD or Difference for each analyte.			
A.1.17.2	Was field blank used for duplicate analysis?	___	[✓]	___
	ACTION: If yes, flag all data ≥CRDL* as estimated (J) for which field blank was used as duplicate.			
A.1.17.3	Are all values within control limits (RPD 20% or difference ≤ ±CRDL)?	[___]	✓	___
	If no, are all results outside the control limits flagged with an * on Form I's and VI?	[✓]	___	___
	ACTION: If no, write in the Contract - Problems/Non-Compliance section of "Data Assessment Narrative".			

* Substitute IDL for CRDL when IDL > CRDL.

	YES	NO	N/A

NOTE: 1. RPD is not calculable for an analyte of the sample - duplicate pair when both values are less than IDL.
2. If the result of lab duplicate analyzed by GFAA is rejectable due to coefficient of correlation of MSA, analytical spike recovery, or duplicate injections criteria, do not apply precision criteria to metals analyzed by GFAA.

1.17.4 Aqueous

Circle on each Form VI all values that are:

RPD > 50%, or
Difference > CRDL*

Is any RPD greater than 50% where sample and duplicate are both greater than or equal to 5 times *CRDL? ___ [✓] ___

Is any difference** between sample and duplicate greater than *CRDL where sample and/or duplicate is less than 5 times *CRDL? ___ [✓] ___

ACTION: If yes, flag the associated data as estimated.

1.17.5 Soil/Sediment

Circle on each Form VI all values that are:

RPD > 100%, or

Difference > 2 x CRDL*

Is any RPD (where sample and duplicate are both greater than or equal to 5 times *CRDL) :

> 100%? ___ [___] ✓

Is any **difference between sample and duplicate (where sample and/or duplicate is less than 5x*CRDL) :

> 2x*CRDL? ___ [___] ✓

* Substitute IDL for CRDL when IDL > CRDL.
** Use absolute values of sample and duplicate to calculate the difference.

	YES	NO	N/A

ACTION: If yes, flag the associated data as estimated.

18 **Field Duplicates**

..18.1 Were field duplicates analyzed? [✓] ___ ___

ACTION: If yes, prepare a Form VI for each aqueous field duplicate pair. Prepare a Form VI for each soil duplicate pair, if percent solids for sample and its duplicate differ by more than 1%; report concentrations of soils in ug/l on wet weight basis and calculate RPDs or Difference for each analyte.

NOTE: 1. Do not calculate RPD when both values are less than IDL.
2. Flag all associated data only for field duplicate pair.

.8.2 **Aqueous**

Circle all values on self prepared Form VI for field duplicates that are:

RPD > ~~50%~~ 40%, or
Difference > CRDL*

Is any RPD greater than ~~50%~~ 40% where sample and duplicate are both greater than or equal to 5 times *CRDL? ✓ [___] ___

Is any **difference between sample and duplicate greater than *CRDL where sample and/or duplicate is less than 5 times *CRDL? ___ [✓] ___

ACTION: If yes, flag the associated data as estimated.

* Substitute IDL for CRDL when IDL > CRDL.
** Use absolute values of sample and duplicate to calculate the difference.

	YES	NO	N/A
1.18.3 **Soil/Sediment**			

Circle all values on self prepared Form VI for field duplicates that are:

RPD >100%, or

Difference > 2 x CRDL*

Is any RPD (where sample and duplicate are both greater than 5 times *CRDL) :

>100%? ___ [___] ✓

Is any **difference between sample and duplicate (where sample and/or duplicate is less than 5x *CRDL):

>2x *CRDL? ___ [___] ✓

ACTION: If yes, flag the associated data as estimated.

1.19 **Form VII (Laboratory Control Sample)** (Note: LCS - not required for aqueous Hg and cyanide analyses.)

1.19.1 Was one LCS prepared and analyzed for:

each SDG? [✓] ___ ___

each batch samples digested/distilled? [✓] ___ ___

both AA and ICP when both are used for the same analyte? [___] ___ ✓

ACTION: If no for any of the above, prepare Telephone Record Log and contact laboratory for submittal of results of LCS. Flag as estimated (J) all the data for which LCS was not analyzed.

NOTE: If only one LCS was analyzed for more than 20 samples, then first 20 samples close to LCS do not have to be flagged as estimated.

*Substitute IDL for CRDL when IDL > CRDL.
**Use absolute values of sample and duplicate to calculate the difference.

		YES	NO	N/A
1.19.2	**Aqueous LCS**			
	Circle on each Form VII the LCS percent recoveries outside control limits (80 - 120%) except for aqueous Ag and Sb.			
	Is any LCS recovery: less than 50%?	___	[✓]	___
	between 50% and 79%?	___	[✓]	___
	between 121% and 150%?	___	[✓]	___
	greater than 150%?	___	[✓]	___
	ACTION: Less than 50%, reject (red-line) all data; between 50% and 79%, flag all associated data as estimated (J); between 121% and 150%, flag all positive (not flagged with a "U") results as estimated; greater than 150%, reject all positive results.			
1.19.3	**Solid LCS**			
	NOTE: 1. If "Found" value of LCS is rejectable due to duplicate injections or analytical spike recovery criteria, regardless of LCS recovery, flag the associated data as estimated (J). 2. If IDL of an analyte is equal to or greater than true value of LCS, disregard the "Action" below even though LCS is out of control limits.			
	Is LCS "Found" value higher than the control limits on Form VII?	___	[___]	✓
	ACTION: If yes, qualify all associated positive data as estimated.			
	Is LCS "Found" value lower than the Control limits on Form VII?	___	[___]	✓
	ACTION: If yes, qualify all associated data as estimated.			

		YES	NO	N/A
.1.20	**Form IX (ICP Serial Dilution) -**			
	NOTE: Serial dilution analysis is required only for initial concentrations equal to or greater than 10 x IDL.			
.1.20.1	Was Serial Dilution analysis performed for: each SDG?	[✓]	___	___
	each matrix type?	[✓]	___	___
	each concentration range (i.e. low, med.)?	[✓]	___	___
	ACTION: If no for any of the above, flag as estimated all the positive data ≥ 10xIDLs or ≥ CRDL when 10xIDL ≤ CRDL for which Serial Dilution Analysis was not performed.			
.1.20.2	Was field blank(s) used for Serial Dilution Analysis?	___	[✓]	___
	ACTION: If yes, flag all associated data ≥ 10 x IDL as estimated (J). If 10xIDL ≤ CRDL, flag all data ≥ CRDL.			
.1.20.3	Are results outside control limit flagged with an "E" on Form I's and Form IX when initial concentration on Form IX is equal to 50 times IDL or greater.	[___]	___	✓
	ACTION: If no, write in the Contract-Problem/Non-Compliance section of the "Data Assessment Narrative".			
.1.20.4	Circle on each Form IX all percent difference that are outside the control limits for initial concentrations equal to or greater than 10 x IDLs only.			
	Are any % difference values:			
	> 10%?	✓ AR, GW52	[___]	___
	≥ 100%?	___	[✓]	___

		YES	NO	N/A
	ACTION: Flag as estimated (J) all the associated sample data ≥ 10xIDLs (or ≥ CRDL when 10xIDL ≤ CRDL) for which percent difference is greater than 10% but less than 100%. Reject (red-line) all the associated sample results equal to or greater than 10xIDLs (or ≥ CRDL when 10xIDL ≤ CRDL) for which PD is greater than or equal to 100%.			
	Note: Flag or reject on Form I's only the sample results whose associated raw data are ≥ 10xIDL (or ≥ CRDL when 10xIDL≤ CRDL)			
1.21	**Furnace Atomic Absorption (AA) QC Analysis**			
1.21.1	Are duplicate injections present in furnace raw data (except during full Method of Standard Addition) for each sample analyzed by GFAA?	[✓]	___	___
	ACTION: If no, reject the data on Form I's for which duplicate injections were not performed.			
1.21.2	Do the duplicate injection readings agree within 20% Relative Standard Deviation (RSD) or Coefficient of Variation (CV) for concentration greater than CRDL?	[✓]	___	___
	Was a dilution analyzed for sample with analytical spike recovery less than 40%?	[✓]	___	___
	ACTION: If no for any of the above, flag all the associated data as estimated.			
1.21.3	Is *analytical spike recovery outside the control limits (85-115%) for any sample?	✓	[___]	___
	ACTION: If yes, flag the affected sample results if the recovery is between 10-84%; if the recovery is between 115-200%, flag the associated positive sample results as estimated; reject the associated sample results if the recovery is less than 10%; reject positive sample results if the recovery is greater than 200%.			

*Analytical spike is not required on the pre-digestion spiked sample.

		YES	NO	N/A
	NOTE: Reject or flag the data only when the affected sample(s) was not subsequently analyzed by Method of Standard Addition.			
1.22	Form VIII (Method of Standard Addition Results)			
1.22.1	Present?	[✓]	___	___
	If no, is any Form I result coded with "S" or a "+"?	___	[___]	✓
	ACTION: If yes, write request on Telephone Record Log and contact laboratory for submittal of Form VIII.			
.1.22.2	Is coefficient of correlation for MSA less than 0.990 for any sample?	___	[✓]	___
	ACTION: If yes, reject (red-line) the affected data.			
22.3	Was *MSA required for any sample but not performed?	___	[✓]	___
	Is coefficient of correlation for MSA less than 0.995?	✓	[___]	___
	Are MSA calculations outside the linear range of the calibration curve generated at the beginning of the analytical run?	___	[✓]	___
	ACTION: If yes for any of the above, flag all the associated data as estimated (J).			
.1.22.4	Was proper quantitation procedure followed correctly as outlined in the SOW on page E-23?	[___]	✓ SK-GW32-01, Sc	___
	ACTION: If no, note exception under Contract Problem/ Non-Compliance section of the "Data Assessment Narrative", and prepare a separate list.			

* MSA is not required on LCS and prep. blank.

		YES	NO	N/A
1.23	**Dissolved/Total or Inorganic/Total Analytes** -			
1.23.1	Were any analyses performed for dissolved as well as total analytes on the same sample(s).	___	[___]	✓
	Were any analyses performed for inorganic as well as total (organic + inorganic) analytes on the same sample(s)?	___	[___]	✓
	NOTE: 1. If yes, prepare a list comparing differences between all dissolved (or inorganic) and total analytes. Compute the differences as a percent of the total analyte only when dissolved concentration is greater than CRDL as well as total concentration. 2. Apply the following questions only if inorganic (or dissolved) results are (i) above CRDL, and (ii) greater than total constituents. 3. At least one preparation blank, ICS, and LCS should be analyzed in each analytical run.			
1.23.2	Is the concentration of any dissolved (or inorganic) analyte greater than its total concentration by more than 10%?	___	[___]	✓
1.23.3	Is the concentration of any dissolved (or inorganic) analyte greater than its total concentration by more than 50%?	___	[___]	✓
	ACTION: If more than 10%, flag both dissolved (or inorganic) and total values as estimated (J); if more than 50%, reject (red-line) the data for both values.			
1.24	**Form I (Field Blank)** -			
	(Note: Designate "Field Blank" as such on Form I.)			
1.24.1	Circle all field blank values on Form I that are greater than CRDL, (or 2 x IDL when IDL > CRDL).			
	Is field blank concentration less than CRDL (or 2 x IDL when IDL > CRDL) for all parameters of associated aqueous and soil samples?	[✓]	___	___

	YES	NO	N/A
If no, was field blank value already rejected due to other QC criteria?	[ ]	___	✓

ACTION: If no, reject (except field blank results) all associated positive sample data less than or equal to five times the field blank value. Reject on Form I's the soil sample results that when converted to ug/L on wet basis are less than or equal to five times the field blank value in ug/L.

.1.25 Form X, XI, XII (Verification of Instrumental Parameters).

.1.25.1 Is verification report present for:

Instrument Detection Limits (quarterly)?	[✓]	___	___
ICP Interelement Correction Factors (annually)?	[✓]	___	___
ICP Linear Ranges (quarterly)?	[✓]	___	___

ACTION: If no, contact TPO of the lab.

.1.25.2 Form X (Instrument Detection Limits) - (Note: IDL is not required for Cyanide.)

.1.25.2.1 Are IDLs present for: all the analytes?	[✓]	___	___
all the instruments used?	[✓]	___	___
For both AA and ICP when both are used for the same analyte?	[ ]	___	✓

ACTION: If no for any of the above, prepare Telephone Record Log and contact laboratory.

.1.25.2.2 Is IDL greater than CRDL for any analyte?	___	[✓]	___
If yes, is the concentration on Form I of the sample analyzed on the instrument whose IDL exceeds CRDL, greater than 5 x IDL.	[ ]	___	✓

	YES	NO	N/A
Action : If no, flag as estimated all values less than five times IDL of the instrument whose IDL exceeds CRDL.			
A.1.25.3 **Form XI (Linear Ranges)**			
A.1.25.3.1 Was any sample result higher than high linear range of ICP.	✓	[ ]	—
Was any sample result higher than the highest calibration standard for non-ICP parameters?	✓	[ ]	—
If yes for any of the above, was the sample diluted to obtain the result on Form I?	[✓]	—	—
ACTION: If no, flag the result reported on Form I as estimated(J).			
A.1.26 **Percent Solids of Sediments**			
A.1.26.1 Are percent solids in sediment(s): < 50%?	—	[ ]	✓
< 10%?	—	[ ]	✓
ACTION: If yes, qualify as estimated all the results of a sample that has per cent solids between 10%-50% (i.e. moisture content between 50%-90%). Reject all the results of a sample that has per cent solids less than 10% (i.e. moisture content greater than 90%).			
NOTE: Reject or flag(J) only the sample results that were not previously rejected or flaged due to other QC criteria.			

Inorganic Data Qualifiers

U - Indicates analyte result less than the instrument detection limit (IDL) indicated.

B - Indicates analyte result between the IDL and the contract required detection limit (CRDL).

V - The reported value is considered estimated due to variance from quality control criteria

R - The reported value is unusable and rejected due to variance from quality control criteria.

W - Indicates GFAA analytical spike was out of 85-115 percent control limit, while sample absorbance was less than 50% of spike absorbance.

S - The reported value was determined by the method of standard additions (MSA).

+ - Indicates that the correlation coefficient for MSA is less than 0.995.

M - Indicates that GFAA duplicate injection precision criteria was not met.

E - The reported value is considered estimated due to matrix interference.

N - Indicates that the spiked sample recovery was not within control limits.

* - Indicates that the laboratory duplicate analysis was not within control limits.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5001

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258705

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1038.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	JB
67-64-1	Acetone	8	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	3	JB

00008

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

GW5001

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258705

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1038.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 3

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN SILOXANE	12.230	11	J
2.		UNKNOWN SILOXANE	17.085	43	J
3.		UNKNOWN SILOXANE	21.214	19	J
4.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5101

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258708

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1036.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	25	
75-09-2	Methylene Chloride	3	JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	1	J
540-59-0	1,2-Dichloroethene (total)	5	J
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	1	J
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	220	E
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	4	J
108-90-7	Chlorobenzene	2	J
100-41-4	Ethylbenzene	11	
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	8	JB

00010

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW5101

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258708

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1036.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.300	8	J
2.		UNKNOWN AROMATIC	20.765	10	J
3.		UNKNOWN AROMATIC	21.261	9	J
4.		UNKNOWN AROMATIC	22.739	16	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5101DL

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258708

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1047.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/22/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 5.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	50	U
74-83-9	Bromomethane	50	U
75-01-4	Vinyl Chloride	50	U
75-00-3	Chloroethane	20	JD
75-09-2	Methylene Chloride	22	JBD
67-64-1	Acetone	50	U
75-15-0	Carbon Disulfide	50	U
75-35-4	1,1-Dichloroethene	50	U
75-34-3	1,1-Dichloroethane	50	U
540-59-0	1,2-Dichloroethene (total)	50	U
67-66-3	Chloroform	50	U
107-06-2	1,2-Dichloroethane	50	U
78-93-3	2-Butanone	50	U
71-55-6	1,1,1-Trichloroethane	50	U
56-23-5	Carbon Tetrachloride	50	U
75-27-4	Bromodichloromethane	50	U
78-87-5	1,2-Dichloropropane	50	U
10061-01-5	cis-1,3-Dichloropropene	50	U
79-01-6	Trichloroethene	50	U
124-48-1	Dibromochloromethane	50	U
79-00-5	1,1,2-Trichloroethane	50	U
71-43-2	Benzene	77	D
10061-02-6	trans-1,3-Dichloropropene	50	U
75-25-2	Bromoform	50	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	50	U
79-34-5	1,1,2,2-Tetrachloroethane	50	U
108-88-3	Toluene	50	U
108-90-7	Chlorobenzene	50	U
100-41-4	Ethylbenzene	50	U
100-42-5	Styrene	50	U
1330-20-7	Xylene (total)	50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW5101DL

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258708

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1047.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/22/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 5.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKGW52

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2257101

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1030.D

Level: (low/med) LOW Date Received: 11/18/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

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

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SKGW52

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2257101

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1030.D

Level: (low/med) LOW Date Received: 11/18/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5301

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258701

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1032.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

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

00014

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

GW5301

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258701

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1032.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKGW54

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2257102

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1031.D

Level: (low/med) LOW Date Received: 11/18/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	JB
67-64-1	Acetone	17	
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	1	J
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	3	JB

00028

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SKGW54

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2257102

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1031.D

Level: (low/med) LOW Date Received: 11/18/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5501

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258710

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1037.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

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

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

GW5501

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258710

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1037.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5601

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258703

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1034.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

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

00018

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

GW5601

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258703

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1034.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.031	63	J
2.		UNKNOWN	6.738	120	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
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00019

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5701

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258704

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1035.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

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

00020

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

GW5701

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258704

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1035.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.031	69	J
2.		UNKNOWN	6.738	110	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
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30.					

00021

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

SKFD01

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258702

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1033.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

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

00024

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SKFD01

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258702

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1033.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
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30.					

00025

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKFB01

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258709

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1028.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

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

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SKFB01

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258709

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1028.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
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29.					
30.					

00023

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLK

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2257103

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1029.D

Level: (low/med) LOW Date Received: 11/18/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

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

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRPBLK

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258711

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1027.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRPBLK

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258711

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: M1027.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: not dec. _____ Date Analyzed: 11/21/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5001

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258705

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2122.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

AMM 7JAN95

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5001

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258705

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2122.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

Clm 7 JAN 95

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

GW5001

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258705

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2122.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 4 /

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	18.693	3	J
2.		UNKNOWN	21.215	7	J
3.		UNKNOWN	23.441	4	J
4.		UNKNOWN	25.545	2	J
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1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW5101

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258708

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2154.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 11/23/94 ✓

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/23/94 ✓

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
108-95-2	Phenol		10	U
111-44-4	bis(2-Chloroethyl)Ether		38 ✓ ~~41~~	
95-57-8	2-Chlorophenol		10	U
541-73-1	1,3-Dichlorobenzene		10	U
106-46-7	1,4-Dichlorobenzene		10	U
95-50-1	1,2-Dichlorobenzene		10	U
95-48-7	2-Methylphenol		10	U
108-60-1	2,2'-oxybis(1-Chloropropane)		10	U
106-44-5	4-Methylphenol		10	U
621-64-7	N-Nitroso-di-n-propylamine		10	U
67-72-1	Hexachloroethane		10	U
98-95-3	Nitrobenzene		10	U
78-59-1	Isophorone		10	U
88-75-5	2-Nitrophenol		10	U
105-67-9	2,4-Dimethylphenol		10	U
120-83-2	2,4-Dichlorophenol		10	U
120-82-1	1,2,4-Trichlorobenzene		10	U
91-20-3	Naphthalene		10	U
106-47-8	4-Chloroaniline		10	U
87-68-3	Hexachlorobutadiene		10	U
111-91-1	bis(2-Chloroethoxy)methane		10	U
59-50-7	4-Chloro-3-Methylphenol		10	U
91-57-6	2-Methylnaphthalene		10	U
77-47-4	Hexachlorocyclopentadiene		10	U
88-06-2	2,4,6-Trichlorophenol		10	U
95-95-4	2,4,5-Trichlorophenol		25	U
91-58-7	2-Chloronaphthalene		10	U
88-74-4	2-Nitroaniline		25	U
131-11-3	Dimethylphthalate		10	U
208-96-8	Acenaphthylene		10	U
606-20-2	2,6-Dinitrotoluene		10	U
99-09-2	3-Nitroaniline		25	U
83-32-9	Acenaphthene		10	U

GMM 7 JAN 95

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5101

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258708

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2154.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/23/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
51-28-5	2,4-Dinitrophenol		25	U	
100-02-7	4-Nitrophenol		25	U	
132-64-9	Dibenzofuran		10	U	
121-14-2	2,4-Dinitrotoluene		10	U	
84-66-2	Diethylphthalate		10	U	
7005-72-3	4-Chlorophenyl-phenylether		10	U	
86-73-7	Fluorene		10	U	
100-01-6	4-Nitroaniline		25	U	
534-52-1	4,6-Dinitro-2-methylphenol		25	U	
86-30-6	N-Nitrosodiphenylamine (1)		10	U	
101-55-3	4-Bromophenyl-phenylether		10	U	
118-74-1	Hexachlorobenzene		10	U	
87-86-5	Pentachlorophenol		25	U	
85-01-8	Phenanthrene		10	U	
120-12-7	Anthracene		10	U	
86-74-8	Carbazole		10	U	
84-74-2	Di-n-butylphthalate		10	U	
206-44-0	Fluoranthene		10	U	
129-00-0	Pyrene		10	U	
85-68-7	Butylbenzylphthalate		10	U	
91-94-1	3,3'-Dichlorobenzidine		10	U	
56-55-3	Benzo(a)anthracene		10	U	
218-01-9	Chrysene		10	U	
117-81-7	bis(2-Ethylhexyl)phthalate	/	1	J	S
117-84-0	Di-n-octylphthalate		10	U	
205-99-2	Benzo(b)fluoranthene		10	U	
207-08-9	Benzo(k)fluoranthene		10	U	
50-32-8	Benzo(a)pyrene		10	U	
193-39-5	Indeno(1,2,3-cd)pyrene		10	U	
53-70-3	Dibenz(a,h)anthracene		10	U	
191-24-2	Benzo(g,h,i)perylene		10	U	

(1) - Cannot be separated from Diphenylamine

Cmn 7JAN95

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

GW5101

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258708

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2154.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/23/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	3.720	28	J
2.		UNKNOWN	3.929	73	J
3.		UNKNOWN	5.685	31	J
4.		UNKNOWN	6.920	29	J
5.		UNKNOWN	7.076	29	J
6.		UNKNOWN	7.928	88	J
7.		UNKNOWN	8.155	29	J
8.		UNKNOWN	10.415	35	J
9.		UNKNOWN	10.607	86	J
10.		UNKNOWN	10.763	52	J
11.		UNKNOWN	11.024	320	J
12.		UNKNOWN	11.094	110	J
13.		UNKNOWN	11.320	51	J
14.		UNKNOWN	11.528	31	J
15.		UNKNOWN	13.685	50	J
16.		UNKNOWN	13.789	27	J
17.		UNKNOWN	16.189	20	J
18.		UNKNOWN AROMATIC	18.502	45	J
19.		UNKNOWN AROMATIC	19.198	910	J
20.		UNKNOWN AROMATIC	19.824	140	J
21.					
22.					
23.					
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1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SKGW52

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2257101

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2116.D

Level: (low/med) LOW Date Received: 11/18/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

CMM 7 JAN 95

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKGW52

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2257101

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2116.D

Level: (low/med) LOW Date Received: 11/18/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

GMM 7JAN95

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1F

EPA SAMPLE NO.

SKGW52

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2257101

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2116.D

Level: (low/med) LOW Date Received: 11/18/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 9 /

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.252	2	J
2.		UNKNOWN	10.330	3	J
3.		UNKNOWN	10.591	3	J
4.		UNKNOWN	18.087	4	J
5.		UNKNOWN	18.261	10	J
6.		UNKNOWN	20.800	2	J
7.		UNKNOWN	23.061	4	J
8.		UNKNOWN	25.234	4	J
9.		UNKNOWN	28.382	2	J
10.					
11.					
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amn 7 JAN 95

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5301

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258701

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2118.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 11/23/94 ✓

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/20/94 ✓

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
108-95-2	Phenol		10	U
111-44-4	bis(2-Chloroethyl)Ether	✓	40	
95-57-8	2-Chlorophenol		10	U
541-73-1	1,3-Dichlorobenzene		10	U
106-46-7	1,4-Dichlorobenzene		10	U
95-50-1	1,2-Dichlorobenzene		10	U
95-48-7	2-Methylphenol		10	U
108-60-1	2,2'-oxybis(1-Chloropropane)		10	U
106-44-5	4-Methylphenol		10	U
621-64-7	N-Nitroso-di-n-propylamine		10	U
67-72-1	Hexachloroethane		10	U
98-95-3	Nitrobenzene		10	U
78-59-1	Isophorone		10	U
88-75-5	2-Nitrophenol		10	U
105-67-9	2,4-Dimethylphenol		10	U
120-83-2	2,4-Dichlorophenol		10	U
120-82-1	1,2,4-Trichlorobenzene		10	U
91-20-3	Naphthalene		10	U
106-47-8	4-Chloroaniline		10	U
87-68-3	Hexachlorobutadiene		10	U
111-91-1	bis(2-Chloroethoxy)methane		10	U
59-50-7	4-Chloro-3-Methylphenol		10	U
91-57-6	2-Methylnaphthalene		10	U
77-47-4	Hexachlorocyclopentadiene		10	U
88-06-2	2,4,6-Trichlorophenol		10	U
95-95-4	2,4,5-Trichlorophenol		25	U
91-58-7	2-Chloronaphthalene		10	U
88-74-4	2-Nitroaniline		25	U
131-11-3	Dimethylphthalate		10	U
208-96-8	Acenaphthylene		10	U
606-20-2	2,6-Dinitrotoluene		10	U
99-09-2	3-Nitroaniline		25	U
83-32-9	Acenaphthene		10	U

CMM 7JAN95

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5301

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258701

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2118.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

Cinn 7 JAN 95

00051

1F

EPA SAMPLE NO.

GW5301

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258701

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2118.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 20 ✓

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.278	6	J
2.		UNKNOWN	4.869	9	J
3.		UNKNOWN	5.078	12	J
4.		UNKNOWN	8.000	6	J
5.		UNKNOWN	9.669	27	J
6.		UNKNOWN	9.791	37	J
7.		UNKNOWN	9.843	11	J
8.		UNKNOWN	10.086	19	J
9.		UNKNOWN	10.208	9	J
10.		UNKNOWN	10.382	45	J
11.		UNKNOWN	10.643	24	J
12.		UNKNOWN	12.695	7	J
13.		UNKNOWN	12.747	5	J
14.		UNKNOWN AROMATIC	17.617	78	J
15.		UNKNOWN AROMATIC	18.312	1100	J
16.		UNKNOWN AROMATIC	18.904	14	J
17.		UNKNOWN AROMATIC	19.478	9	J
18.		UNKNOWN AROMATIC	20.678	17	J
19.		UNKNOWN	21.356	12	J
20.		UNKNOWN	23.443	12	J
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKGW54

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2257102

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2117.D

Level: (low/med) LOW Date Received: 11/18/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

CLMN 7JAN95

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKGW54

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2257102

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2117.D

Level: (low/med) LOW Date Received: 11/18/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

GMN 7JAN95

1F

EPA SAMPLE NO.

SKGW54

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2257102

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2117.D

Level: (low/med) LOW Date Received: 11/18/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 20 ✓

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.902	10	J
2.		UNKNOWN	4.971	6	J
3.		UNKNOWN	5.093	20	J
4.		UNKNOWN	6.067	24	J
5.		UNKNOWN	6.380	49	J
6.		UNKNOWN	9.667	18	J
7.		UNKNOWN	9.858	6	J
8.		UNKNOWN	10.084	62	J
9.		UNKNOWN	10.171	60	J
10.		UNKNOWN	10.449	260	J
11.		UNKNOWN	10.675	15	J
12.		UNKNOWN	13.249	210	J
13.		UNKNOWN	14.293	5	J
14.		UNKNOWN	14.780	9	J
15.		UNKNOWN	14.971	7	J
16.		UNKNOWN	15.962	14	J
17.		UNKNOWN	17.632	24	J
18.		UNKNOWN	18.223	330	J
19.		UNKNOWN AROMATIC	19.493	14	J
20.		UNKNOWN	20.693	8	J
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
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Qmn 7JAN95

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5501

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258710

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2156.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 11/23/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/23/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

GMM 7JAN95

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5501

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258710

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2156.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/23/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

CMN 7 JAN 95

1F

EPA SAMPLE NO.

GW5501

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258710

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2156.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/23/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 16 ✓

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN AROMATIC	5.861	2	J
2.		UNKNOWN	13.983	6	J
3.		UNKNOWN	16.261	2	J
4.		UNKNOWN	16.644	8	J
5.		UNKNOWN	19.357	2	J
6.		UNKNOWN	19.531	21	J
7.		UNKNOWN	21.548	3	J
8.		UNKNOWN	21.687	2	J
9.		UNKNOWN	22.070	27	J
10.		UNKNOWN	23.843	2	J
11.		UNKNOWN	23.983	2	J
12.		UNKNOWN	24.261	2	J
13.		UNKNOWN	24.348	10	J
14.		UNKNOWN	26.556	2	J
15.		UNKNOWN	26.904	3	J
16.		UNKNOWN	31.061	3	J
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
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29.					
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CLM 7JAN95

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5601

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258703

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2120.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

CLMN 7 JAN 95

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5601

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258703

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2120.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

GMM 7JAN95

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

GW5601

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258703

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2120.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 20/

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.235	4	J
2.		UNKNOWN	8.052	7	J
3.		UNKNOWN	10.122	4	J
4.		UNKNOWN	11.948	4	J
5.		UNKNOWN	12.226	6	J
6.		UNKNOWN	12.591	22	J
7.		UNKNOWN	15.183	6	J
8.		UNKNOWN	15.896	82	J
9.		UNKNOWN	18.365	5	J
10.		UNKNOWN	18.800	220	J
11.		UNKNOWN	18.887	16	J
12.		UNKNOWN	20.313	4	J
13.		UNKNOWN	21.356	360	J
14.		UNKNOWN	21.669	4	J
15.		UNKNOWN	23.565	250	J
16.		UNKNOWN	24.661	4	J
17.		UNKNOWN	25.652	17	J
18.		UNKNOWN	25.826	32	J
19.		UNKNOWN	28.904	13	J
20.		UNKNOWN	33.165	5	J
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5701

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258704

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2121.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 11/23/94 ✓

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/20/94 ✓

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	✓ 2	J
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

CMN 7 JAN 95

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW5701

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258704

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2121.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

amn 7 JAN95

1F

EPA SAMPLE NO.

GW5701

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258704

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2121.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	8.067	9	J
2.		UNKNOWN	10.067	3	J
3.		UNKNOWN	10.259	4	J
4.		UNKNOWN	11.980	3	J
5.		UNKNOWN	12.241	7	J
6.		UNKNOWN	12.606	10	J
7.		UNKNOWN	15.911	52	J
8.		UNKNOWN	16.137	4	J
9.		UNKNOWN	18.415	6	J
10.		UNKNOWN	18.815	150	J
11.		UNKNOWN	18.902	9	J
12.		UNKNOWN	20.328	3	J
13.		UNKNOWN	21.372	290	J
14.		UNKNOWN	21.702	8	J
15.		UNKNOWN	22.606	3	J
16.		UNKNOWN	23.580	220	J
17.		UNKNOWN	25.650	16	J
18.		UNKNOWN	25.841	30	J
19.		UNKNOWN	28.936	8	J
20.		UNKNOWN	33.180	5	J
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

00124

GMN 7JAN95

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKFD01

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258702

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2119.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	48	
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

7 JAN 95

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SKFD01

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258702

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2119.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

CMM 7JAN95

00150

1F

EPA SAMPLE NO.

SKFD01

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258702

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2119.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/20/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 20✓

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.262	7	J
2.		UNKNOWN	4.870	9	J
3.		UNKNOWN	5.062	11	J
4.		UNKNOWN	6.018	8	J
5.		UNKNOWN	8.001	7	J
6.		UNKNOWN	9.653	31	J
7.		UNKNOWN	9.792	49	J
8.		UNKNOWN	9.844	10	J
9.		UNKNOWN	10.070	21	J
10.		UNKNOWN	10.192	17	J
11.		UNKNOWN	10.366	55	J
12.		UNKNOWN	10.627	26	J
13.		UNKNOWN	12.662	8	J
14.		UNKNOWN	12.731	6	J
15.		UNKNOWN AROMATIC	17.096	6	J
16.		UNKNOWN AROMATIC	17.618	93	J
17.		UNKNOWN AROMATIC	18.331	1300	J
18.		UNKNOWN AROMATIC	18.905	28	J
19.		UNKNOWN AROMATIC	19.479	8	J
20.		UNKNOWN AROMATIC	20.661	18	J
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKFB01

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258709

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2155.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 11/23/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/23/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

Amn 7JAN95

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKFB01

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258709

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2155.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 12/23/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	1	J
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

amn 7 JAN 95

1F

EPA SAMPLE NO.

SKFB01

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix: (soil/water) WATER Lab Sample ID: 2258709

Sample wt/vol: 1000 (g/mL) ML Lab File ID: R2155.D

Level: (low/med) LOW Date Received: 11/19/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:11/23/94

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/23/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.0

Number TICs found: 1 ✓

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	3.757	8	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
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27.					
28.					
29.					
30.					

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GW5001

Lab Name: NYTEST_ENV_INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix (soil/water): WATER Lab Sample ID: 258705

Level (low/med): LOW Date Received: 11/19/94

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	17200		*	P	V
7440-36-0	Antimony	38.0	U		P	
7440-38-2	Arsenic	8.6	B		F	
7440-39-3	Barium	1060			P	
7440-41-7	Beryllium	2.0	U		P	
7440-43-9	Cadmium	2.0	U		P	V
7440-70-2	Calcium	440000			P	
7440-47-3	Chromium	33.6			P	
7440-48-4	Cobalt	26.5	B		P	
7440-50-8	Copper	53.0			P	
7439-89-6	Iron	52900			P	
7439-92-1	Lead	45.9		S	F	
7439-95-4	Magnesium	105000			P	
7439-96-5	Manganese	2580			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	64.9			P	
7440-09-7	Potassium	10200			P	
7782-49-2	Selenium	5.0	U	WN	F	V
7440-22-4	Silver	5.0	U	N	P	V
7440-23-5	Sodium	69500			P	
7440-28-0	Thallium	5.0	U	WN	F	V
7440-62-2	Vanadium	53.2			P	
7440-66-6	Zinc	155			P	
5955-70-0	Cyanide	10.0	U		AS	

CMM 8JAN95

Color Before: BROWN Clarity Before: TURBID Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GW5101

Lab Name: NYTEST_ENV_INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix (soil/water): WATER Lab Sample ID: 258708

Level (low/med): LOW Date Received: 11/19/94

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	967		*	P	
7440-36-0	Antimony	38.0	U		P	
7440-38-2	Arsenic	18.1			F	
7440-39-3	Barium	444			P	
7440-41-7	Beryllium	2.0	U		P	
7440-43-9	Cadmium	2.0	U		P	V
7440-70-2	Calcium	391000			P	
7440-47-3	Chromium	5.0	U		P	
7440-48-4	Cobalt	6.0	U		P	
7440-50-8	Copper	10.2	B		P	
7439-89-6	Iron	11000			P	
7439-92-1	Lead	6.6			F	
7439-95-4	Magnesium	125000			P	
7439-96-5	Manganese	899			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	26.0	U		P	
7440-09-7	Potassium	15900			P	
7782-49-2	Selenium	5.0	U	WN	F	V
7440-22-4	Silver	5.0	U	N	P	
7440-23-5	Sodium	56800			P	
7440-28-0	Thallium	5.0	U	WN	F	V
7440-62-2	Vanadium	17.0	U		P	
7440-66-6	Zinc	12.0	B		P	
5955-70-0	Cyanide	10.0	U		AS	

CMM 8 JAN 95

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SKGW52

Lab Name: NYTEST_ENV_INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: _____ SDG No.: SKIN6

Matrix (soil/water): WATER Lab Sample ID: 257101

Level (low/med): LOW Date Received: 11/18/94

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	26200		*	P	
7440-36-0	Antimony	38.0	U		P	
7440-38-2	Arsenic	16.8		S+	F	V
7440-39-3	Barium	770			P	
7440-41-7	Beryllium	2.0	U		P	
7440-43-9	Cadmium	2.0	U		P	V
7440-70-2	Calcium	513000			P	
7440-47-3	Chromium	46.5			P	
7440-48-4	Cobalt	33.2	B		P	
7440-50-8	Copper	68.8			P	
7439-89-6	Iron	62900			P	
7439-92-1	Lead	41.1			F	
7439-95-4	Magnesium	110000			P	
7439-96-5	Manganese	2930			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	65.0			P	
7440-09-7	Potassium	28300			P	
7782-49-2	Selenium	5.0 ~~50.0~~	U	NW	F	V
7440-22-4	Silver	5.0	U	N	P	
7440-23-5	Sodium	35300			P	
7440-28-0	Thallium	5.0	U	WN	F	V
7440-62-2	Vanadium	62.6			P	
7440-66-6	Zinc	212			P	V
5955-70-0	Cyanide	10.0	U		AS	

Clm 8JAN95

Color Before: BROWN Clarity Before: TURBID Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

CA_AT_A_2X_DILUTION.

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GW5301

Lab Name: NYTEST_ENV_INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix (soil/water): WATER Lab Sample ID: 258701

Level (low/med): LOW Date Received: 11/19/94

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5050		*	P	N
7440-36-0	Antimony	38.0	U		P	
7440-38-2	Arsenic	6.3	B	W	F	N
7440-39-3	Barium	428			P	
7440-41-7	Beryllium	2.0	U		P	
7440-43-9	Cadmium	2.0	U		P	N
7440-70-2	Calcium	481000			P	
7440-47-3	Chromium	13.4			P	N
7440-48-4	Cobalt	7.4	B		P	N
7440-50-8	Copper	11.2	B		P	N
7439-89-6	Iron	22500			P	N
7439-92-1	Lead	13.4			F	N
7439-95-4	Magnesium	103000			P	
7439-96-5	Manganese	2400			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	34.4	B		P	
7440-09-7	Potassium	20000			P	
7782-49-2	Selenium	50.0	U	N	F	
7440-22-4	Silver	29.1		N	P	
7440-23-5	Sodium	35700			P	
7440-28-0	Thallium	50.0	U	WN	F	N
7440-62-2	Vanadium	19.0	B		P	N
7440-66-6	Zinc	57.0			P	N
5955-70-0	Cyanide	10.0	U		AS	

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Color Before: BROWN Clarity Before: TURBID Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

CA_AT_A_2X_DILUTION.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GW5601

Lab Name: NYTEST_ENV_INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: _____ SDG No.: SKIN6

Matrix (soil/water): WATER Lab Sample ID: 258703

Level (low/med): LOW Date Received: 11/19/94

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	10900		*	P	
7440-36-0	Antimony	38.0	U		P	
7440-38-2	Arsenic	5.0	U		F	
7440-39-3	Barium	126	B		P	
7440-41-7	Beryllium	2.0	U		P	
7440-43-9	Cadmium	2.0	U		P	V
7440-70-2	Calcium	388000			P	
7440-47-3	Chromium	18.4			P	
7440-48-4	Cobalt	12.9	B		P	
7440-50-8	Copper	19.5	B		P	
7439-89-6	Iron	24000			P	
7439-92-1	Lead	12.2			F	
7439-95-4	Magnesium	107000			P	
7439-96-5	Manganese	3290			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	34.4	B		P	
7440-09-7	Potassium	29500			P	
7782-49-2	Selenium	~~5.0~~ 50.0	U	N	F	
7440-22-4	Silver	5.0	U	N	P	
7440-23-5	Sodium	142000			P	
7440-28-0	Thallium	5.0	U	WN	F	V
7440-62-2	Vanadium	29.6	B		P	
7440-66-6	Zinc	66.5			P	
5955-70-0	Cyanide	10.0	U		AS	

GMN 8 JAN 95

Color Before: BROWN Clarity Before: TURBID Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
GW5701

Lab Name: NYTEST_ENV_INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix (soil/water): WATER Lab Sample ID: 258704

Level (low/med): LOW Date Received: 11/19/94

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13400		*	P
7440-36-0	Antimony	42.3	B		P
7440-38-2	Arsenic	5.0	U		F
7440-39-3	Barium	93.4	B		P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	437000			P
7440-47-3	Chromium	26.4			P
7440-48-4	Cobalt	15.4	B		P
7440-50-8	Copper	25.1			P
7439-89-6	Iron	32400			P
7439-92-1	Lead	16.5			F
7439-95-4	Magnesium	109000			P
7439-96-5	Manganese	1390			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	34.5	B		P
7440-09-7	Potassium	12000			P
7782-49-2	Selenium	~~5.0~~ 50.0	U	N	F
7440-22-4	Silver	5.0	U	N	P
7440-23-5	Sodium	92900			P
7440-28-0	Thallium	5.0	U	WN	F
7440-62-2	Vanadium	37.3	B		P
7440-66-6	Zinc	83.8			P
5955-70-0	Cyanide	10.0	U		AS

AMN 8 JAN 95

Color Before: BROWN Clarity Before: TURBID Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SKFD01

Lab Name: NYTEST_ENV_INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix (soil/water): WATER Lab Sample ID: 258702

Level (low/med): LOW Date Received: 11/19/94

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9180		*	P
7440-36-0	Antimony	38.0	U		P
7440-38-2	Arsenic	9.7	B		F
7440-39-3	Barium	522			P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	659000			P
7440-47-3	Chromium	21.5			P
7440-48-4	Cobalt	12.3	B		P
7440-50-8	Copper	29.7			P
7439-89-6	Iron	38800			P
7439-92-1	Lead	28.0			F
7439-95-4	Magnesium	143000			P
7439-96-5	Manganese	3390			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.9			P
7440-09-7	Potassium	20300			P
7782-49-2	Selenium	50.0	U	N	F
7440-22-4	Silver	36.1		N	P
7440-23-5	Sodium	36500			P
7440-28-0	Thallium	50.0	U	WN	F
7440-62-2	Vanadium	35.0	B		P
7440-66-6	Zinc	95.8			P
5955-70-0	Cyanide	10.0	U		AS

AMM 8JAN95

Color Before: BROWN Clarity Before: TURBID Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

CA_AT_A_2X_DILUTION.

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SKFB01

Lab Name: NYTEST_ENV_INC Contract: 9421375

Lab Code: NYTEST Case No.: 22571 SAS No.: SDG No.: SKIN6

Matrix (soil/water): WATER Lab Sample ID: 258709

Level (low/med): LOW Date Received: 11/19/94

% Solids: 0.0

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

GMM 8JAN95

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	57.0	U	*	P
7440-36-0	Antimony	38.0	U		P
7440-38-2	Arsenic	5.0	U		F
7440-39-3	Barium	11.0	U		P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	1390	U		P
7440-47-3	Chromium	5.0	U		P
7440-48-4	Cobalt	6.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	16.0	U		P
7439-92-1	Lead	3.0	U		F
7439-95-4	Magnesium	1550	U		P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	26.0	U		P
7440-09-7	Potassium	840	U		P
7782-49-2	Selenium	5.0	U	N	F
7440-22-4	Silver	5.0	U	N	P
7440-23-5	Sodium	463	U		P
7440-28-0	Thallium	5.0	U	N	F
7440-62-2	Vanadium	17.0	U		P
7440-66-6	Zinc	5.0	U		P
5955-70-0	Cyanide	10.0	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN 3/90

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APPENDIX X

NARRATIVE DISCUSSION
VOLATILES - 22258

INTRODUCTION

This narrative covers the analysis of nine (9) samples in accordance with protocols based on USEPA CLP (3/90).

HOLDING TIMES

The analytical holding time for this analysis was met.

CALIBRATIONS

All required minimum RRFs and maximum %RSD initial calibration requirements have been met in accordance with the Method.

All required minimum RRFs and maximum %D continuing calibration requirements have been met in accordance with the Method.

METHOD BLANKS

The method blank associated with these samples did not contain any target compounds at or above QC limits.

SURROGATES (SYSTEM MONITORING COMPOUNDS)

All surrogate recoveries met QC criteria.

MATRIX SPIKES

Sample SKSW50 was utilized in the MS/MSD series.

All spike recoveries and RPD values fell within the advisory QC limits.

INTERNAL STANDARDS

All area responses and retention times fell within acceptable ranges.

SAMPLE COMMENTS

The TICs identified as "Unknown Siloxane" are most probably due to column degradation and not sample constituency.

No analytical problems were encountered.

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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 has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Remo Gigante, Exec. VP

NARRATIVE DISCUSSION
SEMIVOLATILES - 22258

SDG: SKIN1

INTRODUCTION

This narrative covers the analysis of eight (8) samples in accordance with protocols based on USEPA CLP (3/90).

HOLDING TIMES

The extraction and analytical holding times for this analysis were met.

CALIBRATION

All required minimum RRFs and maximum % RSD initial calibration requirements have been met in accordance with the method.
All required minimum RRFs and maximum %D continuing calibration requirements have been met in accordance with the method.

METHOD BLANK

The Method blank associated with these samples did not contain any target compounds at or above QC limits.

Five (5) TICs were detected in method blank SBLK40.

SURROGATES

All surrogate recoveries met QC criteria.

MATRIX SPIKE BLANK

The recoveries for the matrix spike blank were within QC limits.

MATRIX SPIKES

Sample SKSW50 was utilized in the MS/MSD series.

Nineteen (19) out of twenty-two (22) matrix spike recoveries and all RPD values were within QC limits.

SEMIVOLATILE (continued)

INTERNAL STANDARD

All area responses and retention times fell within acceptable ranges.

SAMPLE COMMENTS

No analytical problems were encountered.

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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 has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Remo Gigante, Exec. VP

NARRATIVE DISCUSSION
PESTICIDE/PCBs - 22258

INTRODUCTION

This narrative covers the analysis of 6 aqueous samples in accordance with protocols based on EPA Method 3/90.

HOLDING TIMES

Samples SKSWFB and SKSWFD were reextracted outside the allowable holding time. All other analytical holding times for this analysis were met.

CALIBRATIONS

The initial and continuing calibrations associated with these sample analyses met all QC criteria.

METHOD BLANKS

No target compounds were detected in the method blank associated with these analyses.

SURROGATES

Samples SKSWFB and SKSWFD have TCX below advisory QC limits on both columns. TCX was not recovered on RTX-1701 column for sample SKSWFB. Reextration was performed outside the allowable holding time and will be submitted under seperate cover.

Sample SKSW53 has TCX recovery slightly below advisory QC limits on DB-608 column.

Samples SKSW50, SKSW51, SKSW52, SKSW53 and SKSW50MSD have DCB recovery below advisory QC limits on both columns.

All other surrogate recoveries met QC criteria.

MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

Sample SKSW50 was utilized for the MS/MSD. Four (4) out of twelve (12) spike recoveries and all RPD values were outside QC limits for the MS/MSD.

SAMPLES COMMENTS

All compounds reported were confirmed by second column analysis.

No further analytical problems were encountered.

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 has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Remo Gigante, Exec. VP

NON-CONFORMANCE SUMMARY
(Case Narrative)

Login No.: 22258

The samples were analyzed according to the required protocols.
No problems were encountered.

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 has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Remo Gigante, Exec. VP

Volatile Organic Data Validation Summary
Skinner Landfill Site
West Chester, Ohio
Analytical Laboratory: NYTEST Environmental, Inc.
Sample Delivery Group SKIN1

Analytical results for four (4) surface water samples with matrix QC, one (1) field duplicate, one (1) field blank and one (1) trip blank from the Skinner Landfill site were reviewed to evaluate the data quality. Data were assessed in accordance with the United States Environmental Protection Agency (USEPA) **National Functional Guidelines for Organic Data Review** (Draft 12/90, Revised 6/91) and the USEPA Region II document **CLP Organics Data Review and Preliminary Review** (SOP No. HW-6, Revision No. 8, January, 1992), where applicable. This validation pertains to the following samples collected by Rust Environment & Infrastructure (RUST) personnel on October 10, 1994.

SK-SW50-01	**SK-SW53-01**
SK-SW50-01 MS	**SK-SWFD-01**
SK-SW50-01 MSD	**SK-SWFB-01**
SK-SW51-01	**Trip Blank**
SK-SW52-01	

The following items/criteria applicable to the samples listed above were reviewed:

- Deliverable Requirements
- Case Narrative
- Holding Times
- System Monitoring Compound (SMC) Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Blank Summary and Data
- GC/MS Instrument Performance Check
- Target Compound Identification/Quantitation
- EPA/NIH Mass Spectral Library Search for TICs
- Quantitation Reports and Mass Spectral Data
- Initial and Continuing Calibration Data
- Internal Standard Areas and Retention Times
- Field Duplicate Data

The above items were in compliance with USEPA laboratory QC criteria with the exception of the items discussed in the following text. The data have been validated according to the above procedures and qualified as described on the attached definitions list.

Blank Summary and Data

The compound methylene chloride, a common laboratory contaminant, was detected in the method blank, field blank (sample SK-SWFB-01) and the trip blank associated with the samples in this SDG. In accordance with USEPA validation criteria, the methylene chloride sample results have been reported as non-detect at the contract required quantitation limit (CRQL) or the result reported, whichever is greater, and are considered to be laboratory derived and not site related.

Acetone, another common laboratory contaminant, was detected in sample SK-SW52-01 at a concentration of 12 ug/L. Although acetone was not detected in any of the associated blanks, this acetone result has been flagged with an "S" and is suspected to be laboratory derived and not site related.

EPA/NIH Mass Spectral Library Search for TICs

Each of the samples in this SDG exhibited one or more non-target compounds identified as siloxanes. Siloxanes are common column degradation products and are considered to be laboratory derived and not site related. In accordance with EPA validation criteria, the unknown siloxanes reported as TICs in these samples have been rejected and the data is considered unusable.

Please note that the rejection of this data for non-target compounds does not affect the results reported for the target compounds in any of these samples.

Field Duplicate Data

Sample SK-SWFD-01 is a field duplicate of sample SK-SW52-01. With the exceptions of methylene chloride and acetone, both of which have been discussed above, no volatile organic compounds were detected in either sample SK-SW52-01 or its field duplicate. Therefore, the field duplicate data is indicative of acceptable sampling and analytical precision.

Summary

No reasons were found during data validation to qualify any of the volatile organic results reported. In summary, based on 165 sample data points, none of which were qualified as estimated, and none qualified as unusable, the usability of this data package is 100%.

Anthony M. Noce — Reviewed By — 19 DECEMBER 94 — Date

Carl Fuhrmann — Approved By — 12-20-94 — Date

Volatile Organic Analytical Data

Skinner Landfill Site
West Chester, Ohio

Sampling Date: October 10, 1994
Remedial Design Investigation

Sample ID / Compound	SK-SW50-01		SK-SW51-01		SK-SW52-01		SK-SWFD-01		SK-SW53-01		SK-SWFB-01		Trip Blank	
Chloromethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Bromomethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Vinyl Chloride	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride	26	U	26	U	10	U	28	U	28	U	**26**	**B**	**2**	**JB**
Acetone	10	U	10	U	**12**	**S**	10	U	10	U	10	U	10	U
Carbon Disulfide	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1-Dichloroethene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1-Dichloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloroethene (total)	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chloroform	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Butanone	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1,1-Trichloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbon Tetrachloride	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Bromodichloromethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloropropane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
cis-1,3-Dichloropropene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Trichloroethene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dibromochloromethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1,2-Trichloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
trans-1,3-Dichloropropene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Bromoform	10	U	10	U	10	U	10	U	10	U	10	U	10	U
4-Methyl-2-Pentanone	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Tetrachloroethene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1,2,2-Tetrachloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Toluene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chlorobenzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Ethylbenzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Styrene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Xylene (total)	10	U	10	U	10	U	10	U	10	U	10	U	10	U

All results expressed in ug/L.
Standard Organic Data Qualifiers have been used.
Sample SK-SWFD-01 is a field duplicate of sample SK-SW52-01.
Sample SK-SWFB-01 is a field blank.

SKINNER LANDFILL RDI
SDG SKIN1

STANDARD OPERATING PROCEDURE
Date: January 1992
Revision: 8

	YES	NO	N/A

PART A: VOA ANALYSES

1.0 Traffic Reports and Laboratory Narrative

1.1 Are the Traffic Report Forms present for all samples?	√		
ACTION: If no, contact lab for replacement of missing or illegible copies.			
1.2 Do the Traffic Reports or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data?		√	
ACTION: If any sample analyzed as a soil, other than TCLP, contains 50%-90% water, all data should be flagged as estimated (J). If a soil sample other than TCLP contains more than 90% water, all data should be qualified as unusable (R).			
ACTION: If samples were not iced upon receipt at the laboratory, flag all positive results "J" and all Non-Detects "UJ".			
ACTION: If both VOA vials for a sample have air bubbles or the VOA vial analyzed had air bubbles, flag all positive results "J" and all non-detects "R".			

YES NO N/A

2.0 Holding Times

2.1 Have any VOA technical holding times, determined from date of collection to date of analysis, been exceeded? ___ I/1 ___

If unpreserved, aqueous samples maintained at 4°C which are to be analyzed for aromatic hydrocarbons must be analyzed within 7 days of collection. If preserved with HCl (pH<2) and stored at 4°C, then aqueous samples must be analyzed within 14 days of collection. If uncertain about preservation, contact sampler to determine whether or not samples were preserved.

The holding time for soils is 10 days.

Table of Holding Time Violations

			(See Traffic Report)		
Sample ID	Sample Matrix	Preserved?	Date Sampled	Date Lab Received	Date Analyzed

ACTION: If technical holding times are exceeded, flag all positive results as estimated ("J") and sample quantitation limits as estimated ("UJ"), and document in the narrative that holding times were exceeded. If analyses were done more than 14 days beyond holding time, either on the first analysis or upon re-analysis, the reviewer must use professional judgement to determine the reliability of the data and the effects of additional storage on the sample results. At a minimum, all results must be qualified "J", but the reviewer may determine that non-detect data are unusable (R). If holding times are exceeded by more than 28 days, all non detect data are unusable (R).

	YES	NO	N/A

3.0 System Monitoring Compound (SMC) Recovery (Form II)

3.1 Are the VOA SMC Recovery Summaries (Form II) present for each of the following matrices:

a. Low Water	[√]	—	—
b. Low Soil	[ ]	—	√
c. Med Soil	[ ]	—	√

3.2 Are all the VOA samples listed on the appropriate System Monitoring Compound Recovery Summary for each of the following matrices:

a. Low Water	[√]	—	—
b. Low Soil	[ ]	—	√
c. Med Soil	[ ]	—	√

ACTION: Call lab for explanation/ resubmittals. If missing deliverables are unavailable, document effect in data assessments.

3.3 Were outliers marked correctly with an asterisk? [ ] — √

ACTION: Circle all outliers in red.

3.4 Was one or more VOA system monitoring compound recovery outside of contract specifications for any sample or method blank? — [√] —

If yes, were samples re-analyzed? [ ] — √

Were method blanks re-analyzed? [ ] — √

	YES	NO	N/A

ACTION: If recoveries are > 10% but 1 or more compounds fail to meet SOW specifications:

1. All positive results are qualified as estimated (J).
2. Flag all non-detects as estimated detection limits ("UJ") where recovery is less than the lower acceptance limit.
3. If SMC recoveries are above allowable levels, do not qualify non-detects.

If any system monitoring compound recovery is <10% :

1. Flag all positive results as estimated ("J").
2. Flag all non-detects as unusable ("R").

Professional judgement should be used to qualify data that only have method blank SMC recoveries out of specification in both original and re-analyses. Check the internal standard areas.

3.5 Are there any transcription/calculation errors between raw data and Form II? ___ [√] ___

ACTION: If large errors exist, call lab for explanation/resubmittal, make any necessary corrections and note errors in the data assessment.

4.0 Matrix Spikes (Form III)

4.1 Is the Matrix Spike/Matrix Spike Duplicate Recovery Form (Form III) present? [√] ___ ___

	YES	NO	N/A

4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices:

a. Low Water	[✓]	___	___
b. Low Soil	[ ]	___	✓
c. Med Soil	[ ]	___	✓

ACTION: If any matrix spike data are missing, take the action specified in 3.2 above.

4.3 How many VOA spike recoveries are outside QC limits?

Water	Soils
Ø out of 10	N/A out of 10

4.4 How many RPD's for matrix spike and matrix spike duplicate recoveries are outside QC limits?

Water	Soils
Ø out of 5	N/A out of 5

ACTION: No action is taken based on MS/MSD data alone. However, using informed professional judgement, the MS/MSD results may be used in conjunction with other QC criteria to determine the need for qualification of the data.

5.0 Blanks (Form IV)

5.1 Is the Method Blank Summary (Form IV) present?	[✓]	___	___
5.2 Frequency of Analysis: for the analysis of VOA TCL compounds, has a reagent/method blank been analyzed for each SDG or every 20 samples of similar matrix (low water, low soil, medium soil), whichever is more frequent?	[✓]	___	___

	YES	NO	N/A

5.3 Has a VOA method/instrument blank been analyzed at least once every twelve hours for each concentration level and GC/MS system used? [√] ___ ___

ACTION: If any method blank data are missing, call lab for explanation/ resubmittal. If method blank data are not available, reject (R) all associated positive data. However, using professional judgement, the data reviewer may substitute field blank or trip blank data for missing method blank data.

5.4 Chromatography: review the blank raw data - chromatograms (RICs), quant reports or data system printouts and spectra.

Is the chromatographic performance (baseline stability) for each instrument acceptable for VOAs? [√] ___ ___

ACTION: Use professional judgement to determine the effect on the data.

6.0 Contamination

NOTE: "Water blanks", "drill blanks", and distilled water blanks" are validated like any other sample, and are not used to qualify data. Do not confuse them with the other QC blanks discussed below.

6.1 Do any method/instrument/reagent blanks have positive results (TCL and/or TIC) for VOAs? When applied as described below, the contaminant concentration in these blanks are multiplied by the sample dilution factor and corrected for % moisture when necessary. ___ [√] ___

6.2 Do any field/trip/rinse blanks have positive VOA results (TCL and/or TIC)? ___ [√] ___

ACTION: Prepare a list of the samples associated with each of the contaminated blanks. (Attach a separate sheet.)

YES NO N/A

NOTE: All field blank results associated to a particular group of samples (may exceed one per case) must be used to qualify data. Trip blanks are used to qualify only those samples with which they were shipped and are not required for non-aqueous matrices. Blanks may not be qualified because of contamination in another blank. Field Blanks & Trip Blanks must be qualified for system monitoring compound, instrument performance criteria, spectral or calibration QC problems.

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks. If any blanks are grossly contaminated, all associated data should be qualified as unusable (R).

	Sample conc > CRQL but < 10x blank value	Sample conc < CRQL & <10x blank value	Sample conc > CRQL & >10x blank value
Methylene Chloride Acetone Toluene 2-Butanone	Flag sample result with a "U;	Report CRQL & qualify "U"	No qualification is needed

	Sample conc > CRQL but < 5x blank	Sample conc < CRQL & is < 5x blank value	Sample conc > CRQL value & > 5x blank value
Other Contam-inants	Flag sample result with a "U"	Report CRQL & qualify "U"	No qualification is needed

NOTE: Analytes qualified "U" for blank contamination are still considered as "hits" when qualifying for calibration criteria.

		YES	NO	N/A
ACTION:	For TIC compounds, if the concentration in the sample is less than five times the concentration in the most contaminated associated blank, flag the sample data "R" (unusable).			
6.3	Are there field/rinse/equipment blanks associated with every sample?	[√]	___	___
ACTION:	For low level samples, note in data assessment that there is no associated field/rinse/equipment blank. Exception: samples taken from a drinking water tap do not have associated field blanks.			
7.0	GC/MS Instrument Performance Check (Form V)			
7.1	Are the GC/MS Instrument Performance Check Forms (Form V) present for Bromofluorobenzene (BFB)?	[√]	___	___
7.2	Are the enhanced bar graph spectrum and mass/charge (m/z) listing for the BFB provided for each twelve hour shift?	[√]	___	___
7.3	Has an instrument performance compound been analyzed for every twelve hours of sample analysis per instrument?	[√]	___	___

	YES	NO	N/A

ACTION: List date, time, instrument ID, and sample analysis for which no associated GC/MS tuning data are available.

DATE	TIME	INSTRUMENT	SAMPLE NUMBERS

ACTION: If lab cannot provide missing data, reject ("R") all data generated outside an acceptable twelve hour calibration interval.

7.4 Have the ion abundances been normalized to m/z 95? [√] ___ ___

ACTION: If mass assignment is in error, qualify all associated data as unusable (R).

7.5 Have the ion abundance criteria been met for each instrument used? [√] ___ ___

ACTION: List all data which do not meet ion abundance criteria (attach a separate sheet).

ACTION: If ion abundance criteria are not met, the Region II TPO must be notified.

7.6 Are there any transcription/calculation errors between mass lists and Form Vs? (Check at least two values but if errors are found, check more.) ___ [√] ___

		YES	NO	N/A
7.7	Have the appropriate number of significant figures (two) been reported?	[✓]	___	___
	ACTION: If large errors exist, call lab for explanation/resubmittal, make necessary corrections and document effect in data assessments.			
7.8	Are the spectra of the mass calibration compound acceptable?	[✓]	___	___
	ACTION: Use professional judgement to determine whether associated data should be accepted, qualified, or rejected.			
8.0	Target Compound List (TCL) Analytes			
8.1	Are the Organic Analysis Data Sheets (Form I VOA) present with required header information on each page, for each of the following:			
	a. Samples and/or fractions as appropriate	[✓]	___	___
	b. Matrix spikes and matrix spike duplicates	[✓]	___	___
	c. Blanks	[✓]	___	___
8.2	Are the VOA Reconstructed Ion Chromatograms, the mass spectra for the identified compounds, and the data system printouts (Quant Reports) included in the sample package for each of the following?			
	a. Samples and/or fractions as appropriate	[✓]	___	___
	b. Matrix spikes and matrix spike duplicates (Mass spectra not required)	[✓]	___	___
	c. Blanks	[✓]	___	___
	ACTION: If any data are missing, take action specified in 3.2 above.			

		YES	NO	N/A
8.3	Are the response factors shown in the Quant Report?	[√]	___	___
8.4	Is chromatographic performance acceptable with respect to:			
	Baseline stability?	[√]	___	___
	Resolution?	[√]	___	___
	Peak shape?	[√]	___	___
	Full-scale graph (attenuation)?	[√]	___	___
	Other: _____	[ ]	___	√

ACTION: Use professional judgement to determine the acceptability of the data.

8.5	Are the lab-generated standard mass spectra of the identified VOA compounds present for each sample?	[√]	___	___

ACTION: If any mass spectra are missing, take action specified in 3.2 above. If lab does not generate their own standard spectra, make note in "Contract Problems/Non-compliance".

8.6	Is the RRT of each reported compound within 0.06 RRT units of the standard RRT in the continuing calibration?	[√]	___	___
8.7	Are all ions present in the standard mass spectrum at a relative intensity greater than 10% also present in the sample mass spectrum?	[√]	___	___

	YES	NO	N/A
8.8 Do sample and standard relative ion intensities agree within 20%?	[✓]	___	___

ACTION: Use professional judgement to determine acceptability of data. If it is determined that incorrect identifications were made, all such data should be rejected (R), flagged "N" (presumptive evidence of the presence of the compound) or changed to not detected (U) at the calculated detection limit. In order to be positively identified, the data must comply with the criteria listed in 8.6, 8.7, and 8.8.

ACTION: When sample carry-over is a possibility, professional judgement should be used to determine if instrument cross-contamination has affected any positive compound identification.

9.0 Tentatively Identified Compounds (TIC)

9.1 Are all Tentatively Identified Compound Forms (Form I Part B) present; and do listed TICs include scan number or retention time, estimated concentration and "JN" qualifier?	[✓]	___	___
9.2 Are the mass spectra for the tentatively identified compounds and associated "best match" spectra included in the sample package for each of the following:			
a. Samples and/or fractions as appropriate	[✓]	___	___
b. Blanks	[✓]	___	___

ACTION: If any TIC data are missing, take action specified in 3.2 above.

ACTION: Add "JN" qualifier if missing.

	YES	NO	N/A
9.3 Are any TCL compounds (from any fraction) listed as TIC compounds (example: 1,2-dimethylbenzene is xylene- a VOA TCL analyte - and should not be reported as a TIC)?	___	[✓]	___
ACTION: Flag with "R" any TCL compound listed as a TIC.			
9.4 Are all ions present in the reference mass spectrum with a relative intensity greater than 10% also present in the sample mass spectrum?	[✓]	___	___
9.5 Do TIC and "best match" standard relative ion intensities agree within 20%?	[✓]	___	___

ACTION: Use professional judgement to determine acceptability of TIC identifications. If it is determined that an incorrect identification was made, change identification to "unknown" or to some less specific identification (example: "C3 substituted benzene") as appropriate.

Also, when a compound is not found in any blank, but is detected in a sample and is a suspected artifact of a common laboratory contaminant, the result should be qualified as unusable (R). (i.e. Common Lab Contaminants: CO_2 (M/E 44), Siloxanes (M/E 73) Hexane, Aldol Condensation Products, Solvent Preservatives, and related by products - see Functional Guidelines for more guidance).

	YES	NO	N/A

10.0 Compound Quantitation and Reported Detection Limits

10.1 Are there any transcription/calculation errors in Form I results? Check at least two positive values. Verify that the correct internal standard, quantitation ion, and RRF were used to calculate Form I result. Were any errors found? — [✓] —

10.2 Are the CRQLs adjusted to reflect sample dilutions and, for soils, sample moisture? [✓] — —

ACTION: If errors are large, call lab for explanation/resubmittal, make any necessary corrections and note errors under "Conclusions".

ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQL data from the diluted sample analysis). Replace concentrations that exceed the calibration range in the original analysis by crossing out the "E" and its associated value on the original Form I and substituting the data from the analysis of the diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form I's that should not be used, including any in the summary package.

11.0 Standards Data (GC/MS)

11.1 Are the Reconstructed Ion Chromatograms, and data system printouts (Quant. Reports) present for initial and continuing calibration? [✓] — —

ACTION: If any calibration standard data are missing, take action specified in 3.2 above.

	YES	NO	N/A

12.0 GC/MS Initial Calibration (Form VI)

12.1 Are the Initial Calibration Forms (Form VI) present and complete for the volatile fraction at concentrations of 10, 20, 50, 100, 200 ug/l? Are there separate calibrations for low water/med soils and low soil samples? [✓] ___ ___

ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.

12.2 Were all low level soil standards, blanks and samples analyzed by heated purge? [ ] ___ ✓

ACTION: If low level soil samples were not heated during purge, qualify positive hits "J" and non-detects "R".

12.3 Are response factors stable for VOA's over the concentration range of the calibration (%Relative Standard Deviation (%RSD) <30.0%)? [✓] ___ ___

ACTION: Circle all outliers in red.

NOTE: Although 11 VOA compounds have a minimum RRF and no maximum %RSD, the technical criteria are the same for all analytes.

ACTION: If %RSD > 30.0%, qualify associated positive results for that analyte "J" and non-detects using professional judgement. When RSD > 90%, flag all non-detects for that analyte R (unusable).

NOTE: Analytes previously qualified "U" for blank contamination are still considered as "hits" when qualifying for initial calibration criteria.

12.4 Are the RRFs above 0.05? [✓] ___ ___

Action: Circle all outliers in red.
Action: If any RRF are < 0.05, qualify associated non-detects (R) and flag associated positive data as estimated (J).

	YES	NO	N/A
12.5 Are there any transcription/calculation errors in the reporting of average response factors (RRF) or %RSD? (Check at least 2 values, but if errors are found, check more.)	___	[✓]	___

13.0 GC/MS Continuing Calibration (Form VII)

13.1 Are the Continuing Calibration Forms (Form VII) present and complete for the volatile fraction?	[✓]	___	___
13.2 Has a continuing calibration standard been analyzed for every twelve hours of sample analysis per instrument?	[✓]	___	___

ACTION: List below all sample analyses that were not within twelve hours of the previous continuing calibration analysis.

_____

_____

_____

ACTION: If any forms are missing or no continuing calibration standard has been analyzed within twelve hours of every sample analysis, call lab for explanation/resubmittal. If continuing calibration data are not available, flag all associated sample data as unusable ("R").

13.3 Do any volatile compounds have a % Difference (% D) between the initial and continuing RRF which exceeds the ± 25% criteria?	___	[✓]	___

ACTION: Circle all outliers in red.

ACTION: Qualify both positive results and non-detects for the outlier compound(s) as estimated. When % D is above 90%, reject all non-detects for that analyte (R) unusable.

	YES	NO	N/A
13.4 Do any volatile compounds have a RRF <0.05?	[√]	___	___

ACTION: Circle all outliers in red.

ACTION: If the RRF <0.05, qualify associated non-detects as unusable (R) and "J" associated positive values.

13.5 Are there any transcription/calculation errors in the reporting of average response factors (RRF) or %difference (%D) between initial and continuing RRFs? (Check at least two values but if errors are found, check more.)	___	[√]	___

ACTION: Circle errors in red.

ACTION: If errors are large, call lab for explanation/resubmittal, make any necessary corrections and note errors under "Conclusions".

14.0 Internal Standard (Form VIII)

14.1 Are the internal standard areas (Form VIII) of every sample and blank within the upper and lower limits (-50% to + 100%) for each continuing calibration?	[√]	___	___

ACTION: List all the outliers below.

Sample #	Internal Std	Area	Lower Limit	Upper Limit
_____	_____	____	_____	_____
_____	_____	____	_____	_____
_____	_____	____	_____	_____
_____	_____	____	_____	_____
_____	_____	____	_____	_____

(Attach additional sheets if necessary.)

	YES	NO	N/A

ACTION: 1. If the internal standard area count is outside the upper or lower limit, flag with "J" all positive results quantitated with this internal standard.

2. Non-detects associated with IS area counts > 100% should not be qualified.

3. If IS area is below the lower limit (< 50%), qualify all associated non-detects (U values) "J". If extremely low area counts are reported, (< 25%) or if performance exhibits a major abrupt drop off, flag all associated non-detects as unusable ("R").

14.2 Are the retention times of the internal standards within 30 seconds of the associated calibration standard? [√] ___ ___

ACTION: Professional judgement should be used to qualify data if the retention times differ by more than 30 seconds.

15.0 Field Duplicates

15.1 Were any field duplicates submitted for VOA analysis? [√] ___ ___

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

ACTION: Any gross variation between duplicate results must be addressed in the reviewer narrative. However, if large differences exist, identification of field duplicates should be confirmed by contacting the sampler.

Organic Data Qualifiers

U - The compound was analyzed for but not detected at or above the quantitation limit indicated.

J - The compound was analyzed for and determined to be present in the sample because the mass spectrum of the compound meets the identification criteria of the method. The concentration reported is an estimated value, less than the practical quantitation limit for the sample.

B - The compound is also found in an associated blank.

V - The reported value is considered estimated due to variance from quality control criteria

S - The reported value is suspected to be due to laboratory contamination.

R - The reported value is unusable and rejected due to variance from quality control criteria.

D - The reported value is taken from the analysis of a diluted sample.

E - The reported value exceeds the calibration range of the instrument.

N - Indicates presumptive evidence for compound identification.

A - Indicates that the compound is an aldol condensation product.

C - Compound identification has been qualitatively confirmed by GC/MS.

P - Indicates that the percent difference between the results from the two analytical columns is greater than 25%.

Semivolatile Organic Data Validation Summary
Skinner Landfill Site
West Chester, Ohio
Analytical Laboratory: NYTEST Environmental, Inc.
Sample Delivery Group SKIN1

Analytical results for four (4) surface water samples with matrix QC, one (1) field duplicate and one (1) field blank from the Skinner Landfill site were reviewed to evaluate the data quality. Data were assessed in accordance with the United States Environmental Protection Agency (USEPA) **National Functional Guidelines for Organic Data Review** (Draft 12/90, Revised 6/91) and the USEPA Region II document **CLP Organics Data Review and Preliminary Review** (SOP No. HW-6, Revision No. 8, January, 1992), where applicable. This validation pertains to the following samples collected by Rust Environment & Infrastructure (RUST) personnel on October 10, 1994.

SK-SW50-01	**SK-SW52-01**
SK-SW50-01 MS	**SK-SW53-01**
SK-SW50-01 MSD	**SK-SWFD-01**
SK-SW51-01	**SK-SWFB-01**

The following items/criteria applicable to the samples listed above were reviewed:

- Deliverable Requirements
- Case Narrative
- Holding Times
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Blank Summary and Data
- GC/MS Instrument Performance Check
- Target Compound Identification/Quantitation
- EPA/NIH Mass Spectral Library Search for TICs
- Quantitation Reports and Mass Spectral Data
- Initial and Continuing Calibration Data
- Internal Standard Areas and Retention Times
- Field Duplicate Data

The above items were in compliance with USEPA QC criteria with the exception of the items discussed in the following text. The data have been validated according to the above procedures and qualified as described on the attached definitions list.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Data

MS/MSD data which fails to meet QC criteria is summarized in the table below. No data have been qualified based upon this data, however, because MS/MSD data are only advisory and other data does not indicate the need to qualify the results.

Compound	MS %R	MSD %R	RPD	QC LIMITS RPD	QC LIMITS %R
4-Nitrophenol	91*	93*	2	50	10-80
2,4-Dinitrotoluene	94	98*	4	38	24-96

** Indicates value outside of QC limits.*

Blank Summary and Data

Five (5) tentatively identified compounds (TIC) were detected in method blank SBLK40 and seven (7) TICs were detected in the field blank (SK-SWFB-01). Results for these TICs in the associated samples have been rejected and are considered unusable. Please note that this has no effect on the usability of the data for the target compounds reported.

Initial and Continuing Calibration Data

The percent relative standard deviation (%RSD) for the compounds acenaphthylene (20.6), 4-chlorophenyl-phenylether (24.8), fluorene (25.3) and chrysene (28.1) exceeded the QC limit of 20.5%RSD specified in the Statement of Work (SOW). The SOW allows for up to four (4) semivolatile compounds in an initial calibration to fail to meet specifications, however, and this initial calibration is fully compliant and usable.

Target Compound Identification/Quantitation

Diethylphthalate, a common laboratory contaminant, was detected at a concentration below the contract required quantitation limit (CRQL) in sample SK-SW53-01. This result has been flagged with an "S" as suspect and is most likely laboratory derived and not site related.

The compound benzyl alcohol, although not a target compound, had been calibrated for and was detected in sample SK-SW53-01 at an estimated concentration of 6 ug/L. Since the instrument was calibrated for this compound it was not reported as a TIC.

Field Duplicate Data

Sample SK-SWFD-01 is a field duplicate of sample SK-SW52-01. No semivolatile organic target compounds were detected in either sample SK-SW52-01 or its field duplicate. Therefore, the field duplicate data is indicative of acceptable sampling and analytical precision.

Summary

No reasons were found during data validation to qualify any of the results reported as estimated. In summary, based on 320 sample data points, none of which were qualified as estimated, and none qualified as unusable, the usability of this data package is 100%.

Anthony M. Noel
Reviewed By

19 DEC 94
Date

Ed Fitzsimmons
Approved By

12-20-94
Date

Semivolatile Organic Analytical Data

Skinner Landfill Site
West Chester, Ohio

Sampling Date: October 10, 1994
Remedial Design Investigation

Sample ID / Compound	SK-SW50-01	SK-SW51-01	SK-SW52-01	SK-SWFD-01	SK-SW53-01	SK-SWFB-01
Phenol	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)Ether	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-oxybis(1-Chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	**2 J**	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	25 U	25 U	25 U	25 U	25 U	25 U
4-Nitrophenol	25 U	25 U	25 U	25 U	25 U	25 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	**4 JS**	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U

Semivolatile Organic Analytical Data

Skinner Landfill Site
West Chester, Ohio

Sampling Date: October 10, 1994
Remedial Design Investigation

Sample ID / Compound	SK-SW50-01	SK-SW51-01	SK-SW52-01	SK-SWFD-01	SK-SW53-01	SK-SWFB-01
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U

All results expressed in ug/L.
Standard Organic Data Qualifiers have been used.
Sample SK-SWFD-01 is a field duplicate of sample SK-SW52-01.
Sample SK-SWFB-01 is a field blank.

SKINNER LANDFILL RDI
SDGSKIN1

YES NO N/A

PART B: BNA ANALYSES

1.0 Traffic Reports and Laboratory Narrative

1.1 Are the Traffic Report Forms present for all samples? [√] ___ ___

ACTION: If no, contact lab for replacement of missing or illegible copies.

1.2 Do the Traffic Reports or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special notations affecting the quality of the data? ___ [√] ___

ACTION: If any sample analyzed as a soil, other than TCLP, contains 50%-90% water, all data should be flagged as estimated ("J"). If a soil sample, other than TCLP, contains more than 90% water, all data should be qualified as unusable (R).

ACTION: If samples were not iced upon receipt at the laboratory, flag all positive results "J" and all non-detects "UJ".

2.0 Holding Times

2.1 Have any BNA technical holding times, determined from date of collection to date of extraction, been exceeded? ___ [√] ___

Continuous extraction of water samples for BNA analysis must be started within seven days of the date of collection. Soil/ sediment samples must be extracted within 7 days of collection. Extracts must be analyzed within 40 days of the date of extraction.

YES NO N/A

Table of Holding Time Violations

Sample	Sample Matrix	Date Sampled	Date Lab Received (See Traffic Report)	Date Extracted	Date Analyzed

ACTION: If technical holding times are exceeded, flag all positive results as estimated ("J") and sample quantitation limits as estimated ("UJ"), and document in the narrative that holding times were exceeded.

If analyses were done more than 14 days beyond holding time, either on the first analysis or upon reanalysis, the reviewer must use professional judgement to determine the reliability of the data and the effects of additional storage on the sample results. At a minimum, all results should be qualified "J", but the reviewer may determine that non-detect data are unusable ("R"). If holding times are exceeded by more than 28 days, all non detect data are unusable (R).

3.0 Surrogate Recovery (Form II)

3.1 Are the BNA Surrogate Recovery Summaries (Form II) present for each of the following matrices:

		YES	NO	N/A
a.	Low Water	[✓]		
b.	Low Soil	[ ]		✓
c.	Med Soil	[ ]		✓

	YES	NO	N/A
3.2 Are all the BNA samples listed on the appropriate Surrogate Recovery Summaries for each of the following matrices:			
a. Low Water	[✓]	___	___
b. Low Soil	[ ]	___	✓
c. Low Soil	[ ]	___	✓

ACTION: Call lab for explanation/resubmittals. If missing deliverables are unavailable, document effect in data assessments.

3.3 Were outliers marked correctly with an asterisk?	[ ]	___	✓

ACTION: Circle all outliers in red.

3.4 Were two or more base-neutral <u>OR</u> acid surrogate recoveries out of specification for any sample or method blank?	[ ]	✓	___
If yes, were samples reanalyzed?	[ ]	___	✓
Were method blanks reanalyzed?	[ ]	___	✓

ACTION: If all BNA surrogate recoveries are > 10% but two within the base-neutral or acid fraction do not meet SOW specifications, <u>for the affected fraction only (i.e. base-neutral or acid compounds)</u>:

1. Flag all positive results as estimated ("J").
2. Flag all non-detects as estimated detection limits ("UJ") when recoveries are less than the lower acceptance limit.
3. If recoveries are greater than the upper acceptance limit, do not qualify non-detects.

	YES	NO	N/A

If any base-neutral or acid surrogate has a recovery of <10%:

1. Positive results for the fraction with <10% surrogate recovery are qualified with "J".

2. Non-detects for that fraction should be qualified as unusable (R) .

Professional judgement should be used to qualify data that have method blank surrogate recoveries out of specification in both original and reanalyses. Check the internal standard areas.

3.5 Are there any transcription/calculation errors between raw data and Form II? [✓] [ ] — (1111)

OK - INSIGNIFICANT ERRORS ONLY
16 DEC 92

ACTION: If large errors exist, call lab for explanation/resubmittal, make any necessary corrections and document effect in data assessments.

4.0 Matrix Spikes (Form III)

4.1 Is the Matrix Spike/Matrix Spike Duplicate Recovery Form (Form III) present? [✓] — —

4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices:

a. Low Water [✓] — —

b. Low Soil [ ] — ✓

c. Med Soil [ ] — ✓

ACTION: If any matrix spike data are missing, take the action specified in 3.2 above.

YES NO N/A

4.3 How many BNA spike recoveries are outside QC limits?

Water	Soils
3 out of 22	N/A out of 22

4.4 How many RPD's for matrix spike and matrix spike duplicate recoveries are outside QC limits?

Water	Soils
Ø out of 11	N/A out of 11

ACTION: No action is taken on MS/MSD data alone. However, using informed professional judgement, the data reviewer may use the matrix spike and matrix spike duplicate results in conjunction with other QC criteria and determine the need for some qualification of the data.

5.0 Blanks (Form IV)

5.1 Is the Method Blank Summary (Form IV) present? [√] ___ ___

5.2 Frequency of Analysis:

Has a reagent/method blank analysis been reported per 20 samples of similar matrix, or concentration level, and for each extraction batch? [√] ___ ___

5.3 Has a BNA method blank been analyzed for each GC/MS system used? [√] ___ ___
(See SOW p. D - 59/SV, Section 8.7)

ACTION: If any method blank data are missing, call lab for explanation/resubmittal. If not available, use professional judgement to determine if the associated sample data should be qualified.

	YES	NO	N/A

5.4 Chromatography: review the blank raw data - chromatograms (RICs), quant reports or data system printouts and spectra.

Is the chromatographic performance (baseline stability) for each instrument acceptable for BNAs? [√] ___ ___

ACTION: Use professional judgement to determine the effect on the data.

6.0 Contamination

Note: "Water blanks", "drill blanks" and "distilled water blanks" are validated like any other sample and are not used to qualify the data. Do not confuse them with the other QC blanks discussed below.

6.1 Do any method/instrument/reagent blanks have positive results (TCL and/or TIC) for BNAs? When applied as described below, the contaminant concentration in these blanks are multiplied by the sample dilution factor and corrected for % moisture where necessary. ___ [√] ___

6.2 Do any field/rinse/ blanks have positive BNA results (TCL and/or TIC)? ___ [√] ___

ACTION: Prepare a list of the samples associated with each of the contaminated blanks. (Attach a separate sheet.)

Note: All field blank results associated to a particular group of samples (may exceed one per case) must be used to qualify data. Blanks may not be qualified because of contamination in another blank . Field Blanks must be qualified for surrogate, spectral, instrument performance or calibration QC problems.

YES NO N/A

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks. If gross contamination exists, all data in the associated samples should be qualified as unusable (R).

Sample conc > CRQL but < 10x blank	Sample conc <CRQL & is< 10x blank value	Sample conc > CRQL value & >10x blank
Common Phthalate Esters		
Flag sample result with a "U";	Report CRQL & qualify "U"	No qualification is needed

Sample conc > CRQL but < 5x blank	Sample conc < CRQL & is < 5x blank value	Sample conc > CRQL value & >5 blank value
Other Contaminants		
Flag sample result with a "U";	Report CRQL & qualify "U"	No qualification is needed

NOTE: Analytes qualified "U" for blank contamination are still considered as "hits" when qualifying for calibration criteria.

ACTION: For TIC compounds, if the concentration in the sample is less than five times the concentration in the most contaminated associated blank, flag the sample data "R" (unusable).

6.3 Are there field/rinse/equipment blanks associated with every sample? 1/1 ___ ___

ACTION: For low level samples, note in data assessment that there is no associated field/rinse/equipment blank. Exception: samples taken from a drinking water tap do not have associated field blanks.

	YES	NO	N/A

7.0 GC/MS Instrument Performance Check

7.1 Are the GC/MS Instrument Performance Check Forms (Form V) present for Decafluorotriphenylphosphine (DFTPP)? [✓] ___ ___

7.2 Are the enhanced bar graph spectrum and mass/charge (m/z) listing for the DFTPP provided for each twelve hour shift? [✓] ___ ___

7.3 Has an instrument performance check solution been analyzed for every twelve hours of sample analysis per instrument? [✓] ___ ___

ACTION: List date, time, instrument ID, and sample analyses for which no associated GC/MS tuning data are available.

DATE	TIME	INSTRUMENT	SAMPLE NUMBERS
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

ACTION: If lab cannot provide missing data, reject ("R") all data generated outside an acceptable twelve hour calibration interval.

ACTION: If mass assignment is in error, flag all associated sample data as unusable (R).

7.4 Have the ion abundances been normalized to m/z 198? [✓] ___ ___

	YES	NO	N/A
7.5 Have the ion abundance criteria been met for each instrument used?	[✓]		

ACTION: List all data which do not meet ion abundance criteria (attach a separate sheet).

ACTION: If ion abundance criteria are not met, the Region II TPO must be notified.

7.6 Are there any transcription/calculation errors between mass lists and Form Vs? (Check at least two values but if errors are found, check more.)		[✓]	
7.7 Have the appropriate number of significant figures (two) been reported?	[✓]		

ACTION: If large errors exist, call lab for explanation/resubmittal, make necessary corrections and document effect in data assessments.

7.8 Are the spectra of the mass calibration compound acceptable?	[✓]		

ACTION: Use professional judgement to determine whether associated data should be accepted, qualified, or rejected.

8.0 Target Compound List (TCL) Analytes

8.1 Are the Organic Analysis Data Sheets (Form I BNA) present with required header information on each page, for each of the following:			
a. Samples and/or fractions as appropriate	[✓]		
b. Matrix spikes and matrix spike duplicates	[✓]		
c. Blanks	[✓]		

		YES	NO	N/A
8.2	Has GPC cleanup been performed on all soil/ sediment sample extracts?	[ ]	—	✓
	ACTION: If data suggests that GPC was not performed, use professional judgement. Make note in "Contract Problems/Non-Compliance".			
8.3	Are the BNA Reconstructed Ion Chromatograms, the mass spectra for the identified compounds, and the data system printouts (Quant Reports) included in the sample package for each of the following?			
	a. Samples and/or fractions as appropriate	[✓]	—	—
	b. Matrix spikes and matrix spike duplicates (Mass spectra not required)	[✓]	—	—
	c. Blanks	[✓]	—	—
	ACTION: If any data are missing, take action specified in 3.2 above.			
8.4	Are the response factors shown in the Quant Report?	[✓]	—	—
8.5	Is chromatographic performance acceptable with respect to:			
	Baseline stability?	[✓]	—	—
	Resolution?	[✓]	—	—
	Peak shape?	[✓]	—	—
	Full-scale graph (attenuation)?	[✓]	—	—
	Other:_____	[ ]	—	✓
	ACTION: Use professional judgement to determine the acceptability of the data.			

	YES	NO	N/A

8.6 Are the lab-generated standard mass spectra of identified BNA compounds present for each sample? [✓] ___ ___

ACTION: If any mass spectra are missing, take action specified in 3.2 above. If lab does not generate their own standard spectra, make note in "Contract Problems/ Non-compliance". If spectra are missing, reject all positive data.

8.7 Is the RRT of each reported compound within 0.06 RRT units of the standard RRT in the continuing calibration? [✓] ___ ___

8.8 Are all ions present in the standard mass spectrum at a relative intensity greater than 10% also present in the sample mass spectrum? [✓] ___ ___

8.9 Do sample and standard relative ion intensities agree within 20%? [✓] ___ ___

ACTION: Use professional judgement to determine acceptability of data. If it is determined that incorrect identifications were made, all such data should be rejected (R), flagged "N" (Presumptive evidence of the presence of the compound) or changed to not detected (U) at the calculated detection limit. In order to be positively identified, the data must comply with the criteria listed in 8.7, 8.8, and 8.9.

ACTION: When sample carry-over is a possibility, professional judgement should be used to determine if instrument cross-contamination has affected any positive compound identification.

9.0 Tentatively Identified Compounds (TIC)

9.1 Are all Tentatively Identified Compound Forms (Form I, Part B) present; and do listed TICs include scan number or retention time, estimated concentration and "JN" qualifier? [✓] ___ ___

	YES	NO	N/A
9.2 Are the mass spectra for the tentatively identified compounds and associated "best match" spectra included in the sample package for each of the following:			
a. Samples and/or fractions as appropriate	[√]	___	___
b. Blanks	[√]	___	___
ACTION: If any TIC data are missing, take action specified in 3.2 above.			
ACTION: Add "JN" qualifier if missing.			
9.3 Are any TCL compounds (from any fraction) listed as TIC compounds (example: 1,2-dimethylbenzene is xylene a VOA TCL - and should not be reported as a TIC)?	___	[√]	___
ACTION: Flag with "R" any TCL compound listed as a TIC.			
9.4 Are all ions present in the reference mass spectrum with a relative intensity greater than 10% also present in the sample mass spectrum?	[√]	___	___
9.5 Do TIC and "best match" standard relative ion intensities agree within 20%?	[√]	___	___
ACTION: Use professional judgement to determine acceptability of TIC identifications. If it is determined that an incorrect identification was made, change identification to "unknown" or to some less specific identification (example: "C3 substituted benzene") as appropriate. Also, when a compound is not found in any blank, but is a suspected artifact of a common laboratory contaminant, the result should be qualified as unusable (R).			

	YES	NO	N/A

10.0 Compound Quantitation and Reported Detection Limits

10.1 Are there any transcription/calculation errors in Form I results? Check at least two positive values. Verify that the correct internal standard, quantitation ion, and RRF were used to calculate Form I result. Were any errors found? ___ [✓] ___

10.2 Are the CRQLs adjusted to reflect sample dilutions and, for soils, sample moisture? [✓] ___ ___

ACTION: If errors are large, call lab for explanation/resubmittal, make any necessary corrections and document effect in data assessments.

ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQL data from the diluted sample analysis). Replace concentrations that exceed the calibration range in the original analysis by crossing out the "E" and it's associated value on the original Form I and substituting the data from the analysis of the diluted sample. Specify which Form I is to be used, then draw a red " X" across the entire page of all Form I's that should not be used, including any in the summary package.

11.0 Standards Data (GC/MS)

11.1 Are the Reconstructed Ion Chromatograms, and data system printouts (Quant, Reports) present for initial and continuing calibration? [✓] ___ ___

ACTION: If any calibration standard data are missing, take action specified in 3.2 above.

	YES	NO	N/A

12.0 GC/MS Initial Calibration (Form VI)

12.1 Are the Initial Calibration Forms (Form VI) present and complete for the BNA fraction? [✓] ___ ___

ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.

12.2 Are response factors stable for BNAs over the concentration range of the calibration? (% Relative standard deviation (%RSD) < 30.0%) [✓] ___ ___

ACTION: Circle all outliers in red.

NOTE: Although 20 BNA compounds have a minimum RRF and no maximum %RSD, the technical criteria are the same for all analytes.

ACTION: If the % RSD is > 30.0%, qualify positive results for that analyte "J" and non-detects using professional judgement. When RSD > 90%, flag all non-detect results for that analyte R (unusable).

NOTE: Analytes previously qualified "U" due to blank contamination are still considered as "hits" when qualifying for calibration criteria.

12.3 Are all BNA compound RRFs > 0.05? [✓] ___ ___

ACTION: Circle all outliers in red.

ACTION: If any RRF < 0.05
1. "R" all non-detects.
2. "J" all positive results.

12.4 Are there any transcription/calculation errors in the reporting of average response factors (RRF) or % RSD? (Check at least two values but if errors are found, check more.) ___ [✓] ___

ACTION: Circle Errors in red.

	YES	NO	N/A

ACTION: If errors are large, call lab for explanation/resubmittal, make any necessary corrections and note errors in data assessments.

13.0 GC/MS Continuing Calibration (Form VII)

13.1 Are the Continuing Calibration Forms (Form VII) present and complete for the BNA fraction? [✓] ___ ___

13.2 Has a continuing calibration standard been analyzed for every twelve hours of sample analysis per instrument? [✓] ___ ___

ACTION: List below all sample analyses that were not within twelve hours of a continuing calibration analysis for each instrument used.

_____

_____

_____

ACTION: If any forms are missing or no continuing calibration standard has been analyzed within twelve hours of every sample analysis, call lab for explanation/ resubmittal. If continuing calibration data are not available, flag all associated sample data as unusable ("R").

13.3 Do any semivolatile compounds have a % Difference (% D) between the initial and continuing RRF which exceeds the ± 25.0% criteria? ___ [✓] ___

ACTION: Circle all outliers in red.

ACTION: Qualify both positive results and non-detects for the outlier compound(s) as estimated (J). When %D is above 90%, reject all non-detects for that analyte (R) unusable.

	YES	NO	N/A
13.4 Do any semivolatile compounds have a RRF <0.05?	___	[✓]	___

ACTION: Circle all outliers in red.

ACTION: If RRF <0.05, qualify as unusable (R) associated non-detects and "J" associated positive values.

13.5 Are there any transcription/calculation errors in the reporting of average response factors (RRF) or % difference (%D) between initial and continuing RRFs? (Check at least two values but if errors are found, check more).	___	[✓]	___

ACTION: Circle errors in red.

ACTION: If errors are large, call lab for explanation/resubmittal, make any necessary corrections and document effect in data assessments.

14.0 Internal Standards (Form VIII)

14.1 Are the internal standard areas (Form VIII) of every sample and blank within the upper and lower limits (-50% to + 100%) for each continuing calibration?	[✓]	___	___

ACTION: List all the outliers below.

Sample #	Internal Std	Area	Lower Limit	Upper Limit
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

(Attach additional sheets if necessary.)

ACTION: 1. If the internal standard area count is outside the upper or lower limit, flag with "J" all positive results and non-detects (U values) quantitated with this internal standard.

YES NO N/A

2. Non-detects associated with IS areas > 100% should not be qualified.

3. If the IS area is below the lower limit (<50%), qualify all associated non-detects (U-values) "J". If extremely low area counts are reported (<25%) or if performance exhibits a major abrupt drop off, flag all associated non-detects as unusable (R).

14.2 Are the retention times of the internal standards within 30 seconds of the associated calibration standard? [√] ___ ___

ACTION: Professional judgement should be used to qualify data if the retention times differ by more than 30 seconds.

15.0 Field Duplicates

15.1 Were any field duplicates submitted for BNA analysis? [√] ___ ___

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

ACTION: Any gross variation between field duplicate results must be addressed in the reviewer narrative. However, if large differences exist, identification of field duplicates should be confirmed by contacting the sampler.

Organic Data Qualifiers

U - The compound was analyzed for but not detected at or above the quantitation limit indicated.

J - The compound was analyzed for and determined to be present in the sample because the mass spectrum of the compound meets the identification criteria of the method. The concentration reported is an estimated value, less than the practical quantitation limit for the sample.

B - The compound is also found in an associated blank.

V - The reported value is considered estimated due to variance from quality control criteria

S - The reported value is suspected to be due to laboratory contamination.

R - The reported value is unusable and rejected due to variance from quality control criteria.

D - The reported value is taken from the analysis of a diluted sample.

E - The reported value exceeds the calibration range of the instrument.

N - Indicates presumptive evidence for compound identification.

A - Indicates that the compound is an aldol condensation product.

C - Compound identification has been qualitatively confirmed by GC/MS.

P - Indicates that the percent difference between the results from the two analytical columns is greater than 25%.

Pesticide/PCB Data Validation Summary
Skinner Landfill Site
West Chester, Ohio
Analytical Laboratory: NYTEST Environmental, Inc.
Sample Delivery Group SKIN1

Analytical results for four (4) surface water samples with matrix QC, one (1) field duplicate and one (1) field blank from the Skinner Landfill site were reviewed to evaluate the data quality. Data were assessed in accordance with the United States Environmental Protection Agency (USEPA) **National Functional Guidelines for Organic Data Review** (Draft 12/90, Revised 6/91) and the USEPA Region II document **CLP Organics Data Review and Preliminary Review** (SOP No. HW-6, Revision No. 8, January, 1992), where applicable. This validation pertains to the following samples collected by Rust Environment & Infrastructure (RUST) personnel on October 10, 1994.

SK-SW50-01	**SK-SW52-01**
SK-SW50-01 MS	**SK-SW53-01**
SK-SW50-01 MSD	**SK-SWFD-01**
SK-SW51-01	**SK-SWFB-01**

The following items/criteria applicable to the samples listed above were reviewed:

- Deliverable Requirements
- Case Narrative
- Holding Times
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Method Blank Summary and Data
- Calibration and GC Performance
- Analyte Resolution Check
- Analytical Sequence
- Cleanup Efficiency
- Pesticide/PCB Identification
- Compound Quantitation and Reported Detection Limits
- Chromatogram Quality
- Field Duplicate Data

The above items were compliant with USEPA QC criteria with the exception of the items discussed in the following text. The data have been validated according to the above procedures and qualified as described on the attached definitions list.

Surrogate Recoveries

The samples in this SDG which exhibited low recoveries for the surrogate compounds tetrachloro-m-xylene (TCX) and decachlorobiphenyl (DCB) which are summarized below:

Sample ID	TCX DB-608	TCX RTX-1701	DCB DB-608	DCB RTX-1701
SK-SW50-01	64	66	56*	54*
SK-SW50-01 MS	86	87	90	86
SK-SW50-01 MSD	68	70	45*	42*
SK-SW51-01	70	72	58*	56*
SK-SW52-01	72	73	56*	53*
SK-SW53-01	57*	61	29*	27*
SK-SWFD-01	3*	2*	64	62
SK-SWFB-01	2*	0*	84	81

** Values outside of advisory QC limits (60-150%).*

No data have been qualified for samples SK-SW50-01, SK-SW50-01 MSD, SK-SW51-01 or SK-SW52-01 based upon these low surrogate recoveries, however, because the TCX and DCB QC limits are only advisory. Furthermore, at least one of the surrogates recovered within QC limits on each analytical column.

Each of the results for sample SK-SW53-01 have been flagged with a "V" and are considered estimated due to the low surrogate recoveries exhibited on each analytical column.

Each of the results for samples SK-SWFD-01 or SK-SWFB-01 have been flagged with a "V" and are considered estimated due to the extremely low (<10%) TCX recoveries exhibited. It should be noted that these results have not been considered unusable because it is suspected that TCX was not added to these samples. The DCB recoveries were within QC limits for both samples, and examination of the chromatograms does not reveal any matrix interference or instrument problem which would account for the low recoveries. Furthermore, sample SK-SWFD-01 is a field duplicate of sample SK-SW52-01, which exhibited acceptable recoveries for TCX on both columns, and sample SK-SWFB-01 is a field blank.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results

Four (4) matrix spike compounds recovered outside of QC limits for the MS analysis. These recoveries are summarized below. The relative percent difference (RPD) between the MS and MSD recoveries exceeded the maximum RPD specified for each of the spike compounds. The RPD values are also summarized below.

No data have been qualified based upon this data, however, because MS/MSD data are only advisory and other data does not indicate the need to further qualify the results.

Compound	MS %R	MSD %R	RPD	QC Limits RPD	QC Limits %R
gamma-BHC (Lindane)	51*	81	45*	15	56-123
Heptachlor	42	61	37*	20	40-131
Aldrin	37*	55	39*	22	40-120
Dieldrin	50*	83	50*	18	52-126
Endrin	44*	84	62*	21	56-121
4,4'-DDT	45	71	45*	27	38-127

** Values outside of QC limits.*

Calibration and GC Performance

The percent relative standard deviation (%RSD) for the compound alpha-BHC in the initial calibration for the analytical column DB-608 was 24.4%, which exceeds the maximum %RSD of 20.0 specified in the Statement of Work (SOW). The %RSD for the compounds alpha-BHC and endrin aldehyde in the initial calibration for the analytical column RTX-1701 were 20.7% and 22.7%, respectively. These %RSD also exceed the maximum %RSD specified in the SOW. No data have been qualified based upon these non-conformances, however, because the SOW allows up to two (2) target compounds to have a %RSD greater than 20.0% but less than 30.0%. Therefore, this initial calibration is fully compliant and usable.

Field Duplicate Data

Sample SK-SWFD-01 is a field duplicate of sample SK-SW52-01. No pesticide/PCB target compounds were detected in either sample SK-SW52-01 or its field duplicate. Therefore, the field duplicate data is indicative of acceptable sampling and analytical precision.

Summary

In summary, based on 140 sample data points, 84 of which were qualified as estimated, and none qualified as unusable, and since estimated data are considered valid and usable, the usability of this package is 100%.

Anthony M. Nocl — Reviewed By

20 DEC 94 — Date

Ed Johnston — Approved By

12-20-94 — Date

Pesticide/PCB Analytical Data

Skinner Landfill Site
West Chester, Ohio

Sampling Date: October 10, 1994
Remedial Design Investigation

Sample ID / Compound	SK-SW50-01	SK-SW51-01	SK-SW52-01	SK-SWFD-01	SK-SW53-01	SK-SWFB-01
alpha-BHC	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
beta-BHC	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
delta-BHC	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-BHC (Lindane)	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Aldrin	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor epoxide	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan I	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dieldrin	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan II	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDD	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan sulfate	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDT	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Methoxychlor	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Endrin ketone	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin aldehyde	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
alpha-Chlordane	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-Chlordane	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Toxaphene	5 U	5 U	5 U	5 U	5 U	5 U
Aroclor-1016	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1221	2 U	2 U	2 U	2 U	2 U	2 U
Aroclor-1232	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1242	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1248	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1254	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1260	1 U	1 U	1 U	1 U	1 U	1 U

All results expressed in ug/L.
Standard Organic Data Qualifiers have been used.
Sample SK-SWFD-01 is a field duplicate of sample SK-SW52-01.
Sample SK-SWFB-01 is a field blank.

SKINNER LANDFILL RDI
SDG SKIN1

	YES	NO	N/A

PART C: PESTICIDE/PCB ANALYSIS

1.0 Traffic Reports and Laboratory Narrative

		YES	NO	N/A
1.1	Are Traffic Report Forms present for all samples?	√		
	ACTION: If no, contact lab for replacement of missing or illegible copies.			
1.2	Do the Traffic Reports or SDG Narrative indicate any problems with sample receipt, condition of the samples, analytical problems or special circumstances affecting the quality of the data?		√	
	ACTION: If any sample analyzed as a soil, other than TCLP, contains 50%-90% water, all data should be qualified as estimated (J). If a soil sample, other than TCLP, contains more than 90% water, all data should be qualified as unusable (R).			
	ACTION: If samples were not iced upon receipt at the laboratory, flag all positive results "J" and all non-detects "UJ".			

2.0 Holding Times

		YES	NO	N/A
2.1	Have any PEST/PCB technical holding times, determined from date of collection to date of extraction, been exceeded?		√	
	Water and soil samples for PEST/PCB analysis must be extracted within 7 days of the date of collection. Extracts must be analyzed within 40 days of the date extraction.			

	YES	NO	N/A

ACTION: If technical holding times are exceeded, flag all positive results as estimated (J) and sample quantitation limits (UJ) and document in the narrative that holding times were exceeded. If analyses were done more than 14 days beyond holding time, either on the first analysis or upon re-analysis, the reviewer must use professional judgement to determine the reliability of the data and the effects of additional storage on the sample results. At a minimum, all the data should at least be qualified "J", but the reviewer may determine that non-detects are unusable (R).

3.0 Surrogate Recovery (Form II)

		YES	NO	N/A
3.1	Are the PEST/PCB Surrogate Recovery Summaries (Form II) present for each of the following matrices?			
	a. Low Water	[✓]	—	—
	b. Soil	[ ]	—	✓
3.2	Are all the PEST/PCB samples listed on the appropriate Surrogate Recovery Summary for each of the following matrices?			
	a. Low Water	[✓]	—	—
	b. Soil	[ ]	—	✓

ACTION: Call lab for explanation/resubmittals. If missing deliverables are unavailable, document effect in data assessments.

3.3	Were outliers marked correctly with an asterisk?	[✓]	—	—

ACTION: Circle all outliers in red.

3.4	Were surrogate recoveries of TCX or DCB outside of the contract specification for any sample or blank? (60-150%)	✓	[ ]	—

	YES	NO	N/A

ACTION: No qualification is done if surrogates are diluted out. If recovery for <u>both</u> surrogates is below the contract limit, but above 10%, flag all results for that sample 'J". If recovery is < 10% for either surrogate, qualify positive results 'J" and flag non-detects "R". If recovery is above the contract advisory limits for <u>both</u> surrogates qualify positive values "J".

3.5 Were surrogate retention times (RT) within the windows established during the initial 3-point analysis of Individual Standard Mixture A? [/] ___ ___

ACTION: If the RT limits are not met, the analysis may be qualified unusable (R) for that sample on the basis of professional judgement.

3.6 Are there any transcription/calculation errors between raw data and Form II? ___ [√] ___

ACTION: If large errors exist, call lab for explanation/resubmittal. Make any necessary corrections and document effect in data assessments.

4.0 <u>Matrix Spikes (Form III)</u>

4.1 Is the Matrix Spike/Matrix Spike Duplicate Recovery Form (Form III) present? [√] ___ ___

4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices? (1 MS/MSD must be performed for every 20 samples of similar matrix or concentration level)

a. Low Water [√] ___ ___

b. Soil [ ] ___ √

ACTION: If any matrix spike data are missing, take the action specified in 3.2 above.

YES NO N/A

4.3 How many PEST/PCB spike recoveries are outside QC limits?

Water	Soil
4 out of 12	N/A out of 12

4.4 How many RPD's for matrix spike and matrix spike duplicate recoveries are outside QC limits?

Water	Soil
6 out of 6	N/A out of 6

ACTION: No action is taken on MS/MSD data alone. However, using informed professional judgement, the data reviewer may use the matrix spike and matrix spike duplicate results in conjunction with other QC criteria and determine the need for some qualification of the data.

5.0 Blanks (Form IV)

5.1 Is the Method Blank Summary (Form IV) present? [✓] ___ ___

5.2 Frequency of Analysis: For the analysis of Pesticide/PCB TCL compounds, has a reagent/ method blank been analyzed for each SDG or every 20 samples of similar matrix or concentration or each extraction batch, whichever is more frequent? [✓] ___ ___

ACTION: If any blank data are missing, take the action specified above in 3.2. If blank data is not available, reject (R) all associated positive data. However, using professional judgement, the data reviewer may substitute field blank data for missing method blank data.

5.3 Has a PEST/PCB instrument blank been analyzed at the beginning of every 12 hr. period following the initial calibration sequence? (minimum contract requirement)

YES NO N/A

ACTION: If any blank data are missing, call lab for explanation/resubmittals. If missing deliverables are unavailable, document the effect in data assessments.

5.4 Chromatography: review the blank raw data - chromatograms, quant reports or data system printouts.

Is the chromatographic performance (baseline stability) for each instrument acceptable for PEST/PCBs? [√] ___ ___

ACTION: Use professional judgement to determine the effect on the data.

6.0 Contamination

NOTE: "Water blanks", "distilled water blanks" and "drilling water blanks" are validated like any other sample and are not used to qualify the data. Do not confuse them with the other QC blanks discussed below.

6.1 Do any method/instrument/reagent/cleanup blanks have positive results for PEST/PCBs? When applied as described below, the contaminant concentration in these blanks are multiplied by the sample Dilution Factor and corrected for % moisture when necessary. ___ [√] ___

6.2 Do any field/rinse blanks have positive PEST/PCB results? ___ [√] ___

ACTION: Prepare a list of the samples associated with each of the contaminated blanks. (Attach a separate sheet)

NOTE: All field blank results associated to a particular group of samples (may exceed one per case or one per day) may be used to qualify data. Blanks may not be qualified because of contamination in another blank. Field blanks must be qualified for surrogate, or calibration QC problems.

	YES	NO	N/A

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks.

Sample conc > CRQL but < 5x blank	Sample conc < CRQL & is < 5x blank value	Sample conc > CRQL & > 5x blank value
Flag sample result with a "U";	Report CRQL & qualify "U"	No qualification is needed

NOTE: If gross blank contamination exists, all data in the associated samples should be qualified as unusable (R).

6.3 Are there field/rinse/equipment blanks associated with every sample? [✓] ___ ___

ACTION: For low level samples, note in data assessment that there is no associated field/rinse/equipment blank. Exception: samples taken from a drinking water tap do not have associated field blanks.

7.0 Calibration and GC Performance

7.1 Are the following Gas Chromatograms and Data Systems Printouts for both columns present for all samples, blanks, MS/MSD?

a. peak resolution check	[✓]	___	___
b. performance evaluation mixtures	[✓]	___	___
c. aroclor 1016/1260	[✓]	___	___
d. aroclors 1221, 1232, 1242, 1248, 1254	[✓]	___	___
e. toxaphene	[✓]	___	___
f. low points individual mixtures A & B	[✓]	___	___
g. med points individual mixtures A & B	[✓]	___	___
h. high points individual mixtures A & B	[✓]	___	___

		YES	NO	N/A
	i. instrument blanks	[✓]	___	___
	ACTION: If no, take action specified in 3.2 above.			
7.2	Are Forms VI - PEST 1-4 present and complete for each column and each analytical sequence?	[✓]	___	___
	ACTION: If no, take action specified in 3.2 above.			
7.3	Are there any transcription/calculation errors between raw data and Forms VI?	___	[✓]	___
	ACTION: If large errors exist, call lab for explanation/resubmittal, make necessary corrections and document effect in data assessments.			
7.4	Do all standard retention times, including each pesticide in each level of Individual Mixtures A & B, fall within the windows established during the initial calibration analytical sequence? (For Initial Calibration Standards, Form VI - PEST - 1).	[✓]	___	___
	ACTION: If no, all samples in the entire analytical sequence are potentially affected. Check to see if the chromatograms contain peaks within an expanded window surrounding the expected retention times. If no peaks are found and the surrogates are visible, non-detects are valid. If peaks are present and cannot be identified through pattern recognition or using a revised RT window, qualify all positive results and non-detects as unusable (R). For aroclors, RT may be outside the RT window, but the aroclor may still be identified from the individual pattern.			
7.5	Are the linearity criteria for the initial analyses of Individual Standards A & B within limits for both columns? (% RSD must be < 20.0% for all analytes except for the 2 surrogates, which must not exceed 30.0 % RSD). See Form VI PEST - 2.	[✓]	___	___

	YES	NO	N/A

ACTION: If no, qualify all associated positive results generated during the entire analytical sequence "J" and all non-detects "UJ". When RSD >90%, flag all non-detect results for that analyte R (unusable).

7.6 Is the resolution between any two adjacent peaks in the Resolution Check Mixture > 60.0% for both columns? (Form VI-PEST - 4) [√] ___ ___

ACTION: If no, positive results for compounds that were not adequately resolved should be qualified "J". Use professional judgement to determine if non-detects which elute in areas affected by co-eluting peaks should be qualified "N" as presumptive evidence of presence or unusable (R).

7.7 Is Form VII - Pest-1 present and complete for each Performance Evaluation Mixture analyzed during the analytical sequence for both columns? [√] ___ ___

ACTION: If no, take action as specified in 3.2 above.

7.8 Has the individual % breakdown exceeded 20.0% on either column. ___ [√] ___

- for 4,4' - DDT? ___ [√] ___

- for endrin? ___ [√] ___

Has the combined % breakdown for 4,4'- DDT/ Endrin exceeded 30.0% on either column? (required in all instances) ___ [√] ___

ACTION: 1. If any % breakdown has failed the QC criteria in either PEM in steps 2 and 17 in the initial calibration sequence (p. D-38/Pest SOW 3/90), qualify all sample analyses in the entire analytical sequence as described below.

YES NO N/A

2. If any % breakdown has failed the QC criteria in a PEM Verification calibration, review data beginning with the samples which followed the last in-control standard until the next acceptable PEM & qualify the data as described below.

a. 4,4'-DDT Breakdown: If 4,4'-DDT breakdown is greater than 20.%:

   i. Qualify all positive results for DDT with 'J". If DDT was not detected, but DDD and DDE are positive, then qualify the quantitation limit for DDT as unusable (R).

   ii. Qualify positive results for DDD and/or DDE as presumptively present at an approximated quantity (NJ).

b. Endrin Breakdown: If endrin breakdown is greater than 20.0%:

   i. Qualify all positive results for endrin with "J". If endrin was not detected, but endrin aldehyde and endrin ketone are positive, then qualify the quantitation limit for endrin as unusable (R).

   ii. Qualify positive results for endrin ketone and endrin aldehyde as presumptively present at an approximated quantity (NJ).

c. Combined Breakdown: If the combined 4,4'-DDT and endrin breakdown is greater than 30.0%:

   i. Qualify all positive results for DDT and endrin with "J". If endrin was not detected, but endrin aldehyde and endrin ketone are positive, then qualify the quantitation limit for endrin as unusable (R). If DDT was not detected, but DDD and DDE are positive, then qualify the quantitation limit for DDT as unusable (R).

	YES	NO	N/A

ii. Qualify positive results for endrin ketone and endrin aldehyde as presumptively present at an approximated quantity (NJ). Qualify positive results for DDD and/or DDE as presumptively present at an approximated quantity (NJ).

7.9 Are the relative percent difference (RPD) values for all PEM analytes <25.0%? (Form VII-PEST-1) [√] ___ ___

ACTION: If no, qualify all associated positive results generated during the analytical sequence "J" and sample quantitation limits "UJ".

NOTE: If the failing PEM is part of the initial calibration. all samples are potentially affected. If the offending standard is a verification calibration, the associated samples are those which followed the last in-control standard until the next passing standard.

7.10 Have all samples been injected within a 12 hr. period beginning with the injection of an Instrument Blank? [√] ___ ___

ACTION: If no, use professional judgement to determine the severity of the effect on the data and qualify accordingly.

7.11 Is Form VII - Pest-2 present and complete for each INDA and INDB Verification Calibration analyzed? [√] ___ ___

ACTION: If no, take action specified in 3.2 above.

7.12 Are there any transcription/calculation errors between raw data and Form VII - Pest-2? ___ [√] ___

ACTION: If large errors exists, call lab for explanation/resubmittal, make any necessary corrections and document effect in data assessments. under "Conclusions".

	YES	NO	N/A

7.13 Do all standard retention times for each INDA and INDB Verification Calibration fall within the windows established by the initial calibration sequence? [√] ___ ___

ACTION: If no, beginning with the samples which followed the last in-control standard, check to see if the chromatograms contain peaks within an expanded window surrounding the expected retention times. If no peaks are found and the surrogates are visible, non-detects are valid. If peaks are present and cannot be identified through pattern recognition or using a revised RT window, qualify all positive results and non-detects as unusable (R).

7.14 Are RPD values for all verification calibration standard compounds < 25.0%? [√] ___ ___

ACTION: If the RPD is >25.0% for the compound being quantitated, qualify all associated positive results "J" and non-detects "UJ". The "associated samples" are those which followed the last in-control standard up to the next passing standard containing the analyte which failed the criteria. If the RPD is >90%, flag all non-detects for that analyte R (unusable).

8.0 Analytical Sequence Check (Form VIII-PEST)

8.1 Is Form VIII present and complete for each column and each period of analyses? [√] ___ ___

ACTION: If no, take action specified in 3.2 above.

8.2 Was the proper analytical sequence followed for each initial calibration and subsequent analyses? (see CLP SOW p. D-39 & D-41/PEST) [√] ___ ___

ACTION: If no, use professional judgement to determine the severity of the effect on the data and qualify it accordingly. Generally, the effect is negligible unless the sequence was grossly altered or the calibration was also out of limits.

	YES	NO	N/A

9.0 Cleanup Efficiency Verification (Form IX)

9.1 Is Form IX - Pest-1 present and complete for each lot of Florisil Cartridges used? (Florisil Cleanup is required for all Pest/PCB extracts.) [✓] ___ ___

ACTION: If no, take action specified in 3.2 above. If data suggests that florisil cleanup was not performed, make note in "Contract Problems/Non-Compliance".

9.2 Are all samples listed on the Pesticide Florisil Cartridge Check Form? [✓] ___ ___

ACTION: If no, take action specified in 3.2 above.

9.3 If GPC Cleanup was performed, (mandatory for all soil sample extracts) is Form IX - Pest-2 present? [ ] ___ ✓

ACTION: If no, take action specified in 3.2 above.

ACTION: If GPC was not performed when required, make note in" Contract Problems/Non-Compliance" section of data assessment.

9.4 Are percent recoveries (% R) of the pesticide and surrogate compounds used to check the efficiency of the cleanup procedures within QC limits:

80-120% for florisil cartridge check? [✓] ___ ___

80-110% for GPC calibration? [ ] ___ ✓

Qualify only the analyte(s) which fail the recovery criteria as follows:

ACTION: If % R are < 80%, qualify positive results "J" and quantitation limits "UJ". Non-detects should be qualified "R" if zero %R was obtained for pesticide compounds. Use professional judgement to qualify positive results if recoveries are greater than the upper limit.

	YES	NO	N/A

NOTE: Sample data should be evaluated for potential interferences if recovery of 2,4,5-trichlorophenol was > 5% in the Florisil Cartridge Performance Check analysis. Make note in Contract Problems/ Non-Compliance section of reviewer narrative.

NOTE: The raw data of the GPC Calibration Check analysis is evaluated for pattern similarity with previously run Aroclor standards.

10.0 Pesticide/PCB Identification

10.1 Is Form X complete for every sample in which a pesticide or PCB was detected? [√] ___ ___

ACTION: If no, take action specified in 3.2 above.

10.2 Are there any transcription/calculation errors between raw data and Forms 6E, 6G, 7E, 7D, 8D, 9A, B, 10A. ___ [√] ___

ACTION: If large errors exist, call lab for explanation/resubmittal, make necessary corrections and note error under "Conclusions".

10.3 Are retention times (RT) of sample compounds within the established RT windows for both analyses? [√] ___ ___

Was GC/MS confirmation provided when required (when compound concentration is > 10 ug/ml in final extract)? [ ] ___ √

Action: Use professional judgement to qualify positive results which were not confirmed by GC/MS. Qualify as unusable (R) all positive results which were not confirmed by second GC column analysis. Also qualify as unusable (R) all positive results not meeting RT window unless associated standard compounds are similarly biased. (see Functional Guidelines) The reviewer should use professional judgement to assign an appropriate quantitation limit.

	YES	NO	N/A
10.4 Is the percent difference (% D) calculated for the positive sample results on the two GC columns < 25.0%?	[√]		

ACTION: If the reviewer finds neither column shows interference for the positive hits, the data should be flagged as follows:

% Difference	Qualifier
25-50 %	J
50-90 %	JN
> 90 %	R

NOTE: The lower of the two values is reported on Form I. If using professional judgement, the reviewer determines that the higher result was more acceptable, the reviewer should replace the value and indicate the reason for the change in the data assessment.

10.5 Check chromatograms for false negatives, especially the multiple peak compounds toxaphene and PCBs. Were there any false negatives?		[√]	

ACTION: Use professional judgement to decide if the compound should be reported. If the appropriate PCB standards were not analyzed, qualify the data unusable (R).

11.0 Compound Quantitation and Reported Detection Limits

11.1 Are there any transcription/calculation errors in Form I results? Check at least two positive values. Were any errors found?		[√]	

NOTE: Single-peak pesticide results can be checked for rough agreement between quantitative results obtained on the two GC columns. The reviewer should use professional judgement to decide whethera much larger concentration obtained on one column versus the other indicates the presence of an interfering compound. If an interfering compound is indicated, the lower of the two values should be reported and qualified as presumptively present at an approximated quantity (NJ). This necessitates a determination of an estimated concentration on the confirmation column. The narrative should indicate that the presence of interferences has interfered with the evaluation of the second column confirmation.

	YES	NO	N/A
11.2 Are the CRQLs adjusted to reflect sample dilutions and, for soils, % moisture?	[ ]	___	✓

ACTION: If errors are large, call lab for explanation/resubmittal, make any necessary corrections and document effect in data assessments.

ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQL data from the diluted sample analysis). Replace concentrations that exceed the calibration range in the original analysis by crossing out the "E" value on the original Form I and substituting it with data from the analysis of diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form I's that should not be used, including any in the summary package.

ACTION: Quantitation limits affected by large, off-scale peaks should be qualified as unusable (R). If the interference is on-scale, the reviewer can provide an approximated quantitation limit (UJ) for each affected compound.

12.0 Chromatogram Quality

12.1 Were baselines stable?	[✓]	___	___
12.2 Were any electropositive displacement (negative peaks) or unusual peaks seen?	✓	[ ]	___

OK - DOES NOT AFFECT TARGET COMPOUND IDENTIFICATION/QUANTITATION
28 DEC 94

ACTION: Address comments under System Performance of data assessment.

	YES	NO	N/A

13.0 Field Duplicates

13.1 Were any field duplicates submitted for PEST/PCB analysis? [√] ___ ___

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

ACTION: Any gross variation between field duplicate results must be addressed in the reviewer narrative. However, if large differences exist, identification of field duplicates should be confirmed by contacting the sampler.

Organic Data Qualifiers

U - The compound was analyzed for but not detected at or above the quantitation limit indicated.

J - The compound was analyzed for and determined to be present in the sample because the mass spectrum of the compound meets the identification criteria of the method. The concentration reported is an estimated value, less than the practical quantitation limit for the sample.

B - The compound is also found in an associated blank.

V - The reported value is considered estimated due to variance from quality control criteria

S - The reported value is suspected to be due to laboratory contamination.

R - The reported value is unusable and rejected due to variance from quality control criteria.

D - The reported value is taken from the analysis of a diluted sample.

E - The reported value exceeds the calibration range of the instrument.

N - Indicates presumptive evidence for compound identification.

A - Indicates that the compound is an aldol condensation product.

C - Compound identification has been qualitatively confirmed by GC/MS.

P - Indicates that the percent difference between the results from the two analytical columns is greater than 25%.

Inorganic Data Validation Summary
Skinner Landfill Site
West Chester, Ohio
Analytical Laboratory: NYTEST Environmental, Inc.
Sample Delivery Group SKIN1

Analytical results for four (4) surface water samples with matrix QC, one (1) field duplicate and one (1) field blank from the Skinner Landfill site were reviewed to evaluate the data quality. Data were assessed in accordance with the United States Environmental Protection Agency (USEPA) **Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analysis** (October 1987 Revision) and the USEPA Region II **Checklist for Evaluation of Metals Data for the Contract Laboratory Program, Appendix A.1**, where applicable. This validation pertains to the following samples collected by Rust Environment & Infrastructure (RUST) personnel on October 10, 1994.

SK-SW50-01	**SK-SW52-01**
SK-SW50-01 Dup	**SK-SW53-01**
SK-SW50-01 Spike	**SK-SWFD-01**
SK-SW51-01	**SK-SWFB-01**

The following items/criteria applicable to the samples listed above were reviewed:

- Deliverable Requirements
- Case Narrative
- Holding Times and Sample Preparation
- Initial and Continuing Calibration Data
- CRDL Standards for AA and ICP
- Instrument and Preparation Blank Summary and Data
- ICP Interference Check Sample
- Spiked Sample Recovery Data
- Laboratory Duplicate Data
- Laboratory Control Samples (LCS)
- ICP Serial Dilution Data
- Graphite Furnace Atomic Absorption (GFAA) QC Analysis
- Method of Standard Addition (MSA) Results
- Verification of Instrument Parameters
- Field Duplicate Data

The above items were in compliance with USEPA QC criteria with the exception of the items discussed in the following text. The data have been validated according to the above procedures and qualified as described on the attached definitions list.

CRDL Standard for AA and ICP

A CRDL standard must exhibit a percent recovery between 80 and 120 to be considered within QC limits. The final CRDL standard for ICP exhibited a low percent recovery for antimony (73.6%). The associated antimony results have been flagged with a "V" and are considered estimated with a potential low bias.

Graphite Furnace Atomic Absorption (GFAA) QC Analysis

The GFAA analytical spike recovery for the thallium analysis of sample SK-SW53-01 was outside of QC limits (85-115%). The thallium analytical spike recovery was low (81.0%). In accordance with EPA validation criteria, the affected sample result has been flagged with a "V" and is considered estimated with a potential low bias.

Field Duplicate Analysis

Table 1 summarizes the RPD between sample SK-SW52-01 and the field duplicate SK-SWFD-01. Although there are no established QC limits for field duplicate RPD data, RUST considers RPD values of 40% or less an indication of acceptable sampling and analytical precision. Please note that higher RPD values near the IDL are not generally indicative of unacceptable precision and that the RPD values presented in Table 1 generally indicate acceptable sampling and analytical precision. The aluminum, iron and zinc results for both SK-SW52-01 and SK-SWFD-01 have been flagged with a "V" and are considered estimated due to the elevated RPD values.

Summary

In summary, based on 120 sample data points, twelve (12) of which were qualified as estimated, and none qualified as unusable, and since estimated data are considered valid and usable, the usability of this package is 100%.

Anthony M. Noce — Reviewed By — 28 DECEMBER 94 — Date

Approved By — 12-29-94 — Date

Table 1
RPD Calculations - Field Duplicate Analysis

Analyte	SK-SW52-01	SK-SWFD-01	RPD
Aluminum	64.7 B	102 B	44.8%
Antimony	38 U	38 U	0.0%
Arsenic	5 U	5 U	0.0%
Barium	78.6 B	74.4 B	5.5%
Beryllium	2 U	2 U	0.0%
Cadmium	2 U	2 U	0.0%
Calcium	126000	114000	10.0%
Chromium	5 U	5 U	0.0%
Cobalt	6 U	6 U	0.0%
Copper	5 U	5 U	0.0%
Iron	121	264	74.3%
Lead	3 U	3 U	0.0%
Magnesium	47400	42000	12.1%
Manganese	56.8	77.6	31.0%
Mercury	0.2 U	0.2 U	0.0%
Nickel	26 U	26 U	0.0%
Potassium	7980	7460	6.7%
Selenium	5 U	5 U	0.0%
Silver	5 U	5 U	0.0%
Sodium	50100	47700	4.9%
Thallium	5 U	5 U	0.0%
Vanadium	17 U	17 U	0.0%
Zinc	5 U	20.8	200.0%
Cyanide	10 U	10 U	0.0%

Inorganic Analytical Data

Skinner Landfill Site
West Chester, Ohio

Sampling Date: October 10, 1994
Remedial Design Investigation

Sample ID / Analyte	SK-SW50-01	SK-SW51-01	SK-SW52-01	SK-SWFD-01	SK-SW53-01	SK-SWFB-01
Aluminum	104 B	57 U	64.7 BV	102 BV	57 U	57 U
Antimony	38 UV	38 UV	38 UV	38 UV	48.2 BV	38 UV
Arsenic	5 U	5 U	5 U	5 U	5 U	5 U
Barium	89.8 B	109 B	78.6 B	74.4 B	115 B	11 U
Beryllium	2 U	2 U	2 U	2 U	2 U	2 U
Cadmium	2 U	2 U	2 U	2 U	2 U	2 U
Calcium	137000	174000	126000	114000	170000	2420 B
Chromium	5 U	5 U	5 U	5 U	5 U	5 U
Cobalt	6 U	6 U	6 U	6 U	6 U	6 U
Copper	5 U	5 U	5 U	5 U	5 U	5 U
Iron	141	16 U	121 V	264 V	373	16 U
Lead	3 U	3 U	3 U	3 U	3 U	3 U
Magnesium	49200	57300	47400	42000	61200	1550 U
Manganese	79.5	31.2	56.8	77.6	3910	2 U
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	26 U	26 U	26 U	26 U	26 U	26 U
Potassium	9410	10400	7980	7460	7780	840 U
Selenium	5 U	5 U	5 U	5 U	5 U	5 U
Silver	5 U	5 U	5 U	5 U	5 U	5 U
Sodium	51100	59500	50100	47700	32800	1750 B
Thallium	5 U	5 U	5 U	5 U	5 UV	5 U
Vanadium	17 U	17 U	17 U	17 U	17 U	17 U
Zinc	5 U	5 U	5 UV	20.8 V	23.9	5 U
Cyanide	10 U	57.6	10 U	10 U	10 U	10 U

All results expressed in ug/L.
Standard Inorganic Data Qualifiers have been used.
Sample SK-SWFD-01 is a field duplicate of sample SK-SW52-01.
Sample SK-SWFB-01 is a field blank.

SKINNER LANDFILL RD1
SDG SKIN1

Title: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.1: Data Assessment - Contract Compliance (Total Review)

Date: Jan. 1992
Number: HW-2
Revision: 11

	YES	NO	N/A
.1 Contract Compliance Screening Report (CCS) - Present?	[ ]	___	✓
ACTION: If no, contact RSCC.			
.2 Record of Communication (from RSCC) - Present?	[ ]	___	✓
ACTION: If no, request from RSCC.			
.3 Trip Report - Present and complete?	[ ]	___	✓
ACTION: If no, contact RSCC for trip report.			
.4 Sample Traffic Report - Present?	[✓]	___	___
Legible?	[✓]	___	___
ACTION: If no, request from Regional Sample Control Center (RSCC).			
.5 Cover Page - Present?	[✓]	___	___
Is cover page properly filled in and signed by the lab manager or the manager's designee?	[✓]	___	___
ACTION: If no, prepare Telephone Record Log, and contact laboratory.			
Do numbers of samples correspond to numbers on Record of Communication?	[✓]	___	___
Do sample numbers on cover page agree with sample numbers on:			
(a) Traffic Report Sheet?	[✓]	___	___
(b) Form I's?	[✓]	___	___
ACTION: If no for any of the above, contact RSCC for clarification.			

		YES	NO	N/A
.1.10.2	Is correlation coefficient less than 0.995 for:			
	Mercury Analysis?	___	[✓]	___
	Cyanide Analysis?	___	[✓]	___
	Atomic Absorption Analysis?	___	[✓]	___

ACTION: If yes, flag the associated data as estimated.

NOTE: The data validator shall calculate the correlation coefficient using concentrations of the standards and the corresponding instrument response (e.g. absorbance, peak area, peak height, etc.).

.1.10.3	In the instance where less than 4 standards are measured in absorbance (or peak area, peak height, etc.) mode, are the remaining standards analyzed in concentration mode immediately after calibration within ±10% of the true values?	[___]	___	✓

ACTION: If no, flag the associated data as estimated if standards are not within ±10% of true values. Do not flag the data as estimated in linear range indicated by good recovery of standard(s).

.1.11 Form II A (Initial and Continuing Calibration Verification)-

.1.11.1	Present and complete for every metal and cyanide?	[✓]	___	___
	Present and complete for AA and ICP when both are used for the same analyte?	[___]	___	✓

ACTION: If no for any of the above, prepare Telephone Record Log and contact laboratory.

.1.11.2	Circle on each Form IIA all percent recoveries that are outside the contract windows. Are all calibration standards (initial and continuing) within control limits:			
	Metals- 90-110%R?	[✓]	___	___
	Hg - 80-120%R?	[✓]	___	___
	Cyanides- 85-115%R?	[✓]	___	___

1.6	Form I to IX	Yes	No	N/A
1.6.1	Are all the Form I through Form IX labeled with:			
	Laboratory name?	[✓]	___	___
	Case/SAS number?	[✓]	___	___
	EPA sample No.?	[✓]	___	___
	SDG No.?	[✓]	___	___
	Contract No.?	[✓]	___	___
	Correct units?	[✓]	___	___
	Matrix?	[✓]	___	___

ACTION: If no for any of the above, note under Contract Problem/Non-Compliance section of the "Data Assessment Narrative".

1.6.2 Do any computation/transcription errors exceed 10% of reported values on Forms I-IX for:

(NOTE: Check all forms against raw data.)

(a) all analytes analyzed by ICP?	[✓]	___	___
(b) all analytes analyzed by GFAA?	[✓]	___	___
(c) all analytes analyzed by AA Flame?	[___]	___	✓
(d) Mercury?	[✓]	___	___
(e) Cyanide?	[✓]	___	___

ACTION: If yes, prepare Telephone Log, contact laboratory for corrected data and correct errors with red pencil and initial.

:le: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.1: Data Assessment - Contract Compliance (Total Review)

Date: Jan. 1992
Number: HW-2
Revision: 11

		YES	NO	N/A
:.7	Raw Data			
:.7.1	Digestion Log* for flame AA/ICP (Form XIII) present?	[✓]	—	—
	Digestion Log for furnace AA Form XIII present?	[✓]	—	—
	Distillation Log for mercury Form XIII present?	[✓]	—	—
	Distillation Log for cyanides Form XIII present?	[✓]	—	—
	Are pH values (pH<2 for all metals, pH>12 for cyanide) present?	[✓]	—	—
	*Weights, dilutions and volumes used to obtain values.			
	Percent solids calculation present for soils/sediments?	[ ]	—	✓
	Are p- -ation dates present on sample preparation logs sheets?	[✓]	—	—
.2	Meas- -nt read out record present? ICP	[✓]	—	—
	Flame AA	[ ]	—	✓
	Furnace AA	[✓]	—	—
	Mercury	[✓]	—	—
	Cyanides	[✓]	—	—
:.7.3	Are all raw data to support all sample analyses and QC operations present?	[✓]	—	—
	Legible?	[✓]	—	—
	Properly Labeled?	[✓]	—	—

ACTION: If no for any of the above questions in sections A.1.7.1 through A.1.7.3, write Telephone Record Log and contact laboratory for resubmittals.

tle: Evaluation of Metals for the Contract Laboratory Program
Appendix A.1: Data Assessment - Contract

Date: Jan. 1992
Number: HW-2
Revision: 11

Compliance (Total Review)

		YES	NO	N/A
..8	Holding Times - (aqueous and soil samples)			
	(Examine sample traffic reports and digestion/distillation logs.)			
	Mercury analysis (28 days). . . . . exceeded?	___	[✓]	___
	Cyanide distillation (14 days). . . . . exceeded?	___	[✓]	___
	Other Metals analysis (6 months). . . . exceeded?	___	[✓]	___
	NOTE: Prepare a list of all samples and analytes for which holding times have been exceeded. Specify the number of days from date of collection to the date of preparation (from raw data). Attach to checklist.			
	ACTION: If yes, reject (red-line) values less than Instrument Detection Limit (IDL) and flag as estimated (J) the values above IDL even though sample(s) was preserved properly.			
..8.2	Is pH of aqueous samples for: Metals Analysis >2?	___	[✓]	___
	Cyanides Analysis <12?	___	[✓]	___
	Action: If yes, flag the associated metals and cyanides data as estimated.			
..9	Form I (Final Data)			
..9.1	Are all Form I's present and complete?	[✓]	___	___
	ACTION: If no, prepare telephone record log and contact laboratory for submittal.			
..9.2	Are correct units (ug/l for waters and mg/kg for soils) indicated on Form I's?	[✓]	___	___
	Are soil sample results for each parameter corrected for percent solids?	[___]	___	✓
	Are all "less than IDL" values properly coded with "U"?	[✓]	___	___

		YES	NO	N/A
	Are the correct concentration qualifiers used with final data?	[✓]	___	___
	ACTION: If no for any of the above, prepare Telephone Record Log, and contact laboratory for corrected data.			
1.9.3	Are EPA sample # s and corresponding laboratory sample ID # s the same as on the Cover Page, Form I's and in the raw data?	[✓]	___	___
	Was a brief physical description of samples given on Form I's?	[✓]	___	___
	Was the dilution of any sample diluted beyond the requirements of the contract noted on Form I or Form XIV?	___	[___]	✓
	ACTION: If no for any of the above, note under Contract-Problem/Non-Compliance of the "Data Assessment Narrative".			
1.10	Calibration			
1.10.1	Is record of at least 2 point calibration present for ICP analysis?	[✓]	___	___
	Is record of 5 point calibration present for Hg analysis?	[✓]	___	___
	Is record of 4 point calibration present for:			
	Flame AA?	[___]	___	✓
	Furnace AA?	[✓]	___	___
	Cyanides?	[✓]	___	___
	Is one calibration standard at the CRDL level for all AA (except Hg) and cyanides analyses?	[✓]	___	___
	ACTION: If no for any of the above, write in the Contract Problem/Non-Compliance section of the "Data Assessment Narrative".			

	YES	NO	N/A
ACTION: Flag as estimated (J) all positive data (not flagged with a "U") analyzed between a calibration standard with %R between 75-89% (65-79% for Hg; 70-84% for CN) or 111-125% (121-135% for Hg; 116-130% for CN) recovery and nearest good calibration standard. Qualify results <IDL as estimated (UJ) if the ICV or CCV %R is 75-89% (CN, 70-84% ; Hg, 65-79%). Reject (red-line) as unacceptable data if recovery of the ICV or CCV is outside the range 75-125% (CN, 70-130%; Hg, 65-135%). Qualify five samples on either side of verification standard out of control limits.			
1.11.3 Was continuing calibration performed every 10 samples or every 2 hours?	[✓]	—	—
Was ICV for cyanides distilled?	[✓]	—	—
ACTION: If no for any of the above, write in the Contract-Problem/Non-Compliance section of the "Data Assessment Narrative".			
1.12 **Form II R (CRDL Standards for AA and ICP)** -			
1.12.1 Was a CRDL standard (CRA) analyzed after initial calibration for all AA metals (except Hg)?	[✓]	—	—
Was a mid-range calib. verification standard distilled and analyzed for cyanide analysis?	[✓]	—	—
Was a 2xCRDL (or 2xIDL when IDL>CRDL) analyzed (CRI) for each ICP run? (Note: CRI for AL,Ba,Ca,Fe,Mg,Na,or K is not required.)	[✓]	—	—
ACTION: If no for any of the above, flag as estimated all data falling within the affected ranges. The affected ranges are: AA Analysis - **True Value ± CRDL; ICP Analysis - **True Value ± 2CRDL; CN Analysis - **True Value ± 0.5 x True Value.			

...ue value of CRA, CRI or mid-range standard. Substitute IDL for CRDL when IDL > CRDL. ...pute the concentration of the missing mid-range standard from the calibration range.

		YES	NO	N/A
.1.12.2	Was CRI analyzed after ICV/ICB and before the final CCV/CCB, and twice every eight hours of ICP run?	[✓]	___	___
	ACTION: If no, write in Contract Problem/Non-Compliance Section of the "Data Assessment Narrative".			
.1.12.3	Circle on each Form IIB all the percent recoveries that are outside the acceptance windows.			
	Are CRA and CRI standards within control limits:			
	Metals 80 - 120%R?	[___]	5b ✓	___
	Is mid-range standard within control limits:			
	Cyanide 80 - 120%R?	[✓]	___	___
	ACTION: Flag as estimated all sample results within the affected range if the recovery of the standard is between 50-79%; flag only positive data within the affected range if the recovery is between 121-150%; reject all data within the affected range if the recovery is less than 50%; reject only positive data within the affected range if the recovery is greater than 150%. Qualify 50% of the samples on either side of CRI standard outside the control limits.			
	Note: Flag or reject the final results only when sample raw data are within the affected ranges and the CRDL standards are outside the acceptance windows.			
.1.13	Form III (Initial and Continuing Calibration Blanks)			
.1.13.1	Present and complete?	[✓]	___	___
	For both AA and ICP when both are used for the same analyte?	[___]	___	✓
	Was an initial calibration blank analyzed?	[✓]	___	___
	Was a continuing calibration blank analyzed after every 10 samples or every 2 hours (which ever is more frequent)?	[✓]	___	___

		YES	NO	N/A
	ACTION: If no, prepare Telephone Record Log, contact laboratory and write in the Contract-Problems/ Non-Compliance section of the "Data Assessment Narrative".			
1.13.2	Circle on each Form III all calibration blank values that are above CRDL (or 2 x IDL when IDL > CRDL).			
	Are all calibration blanks (when IDL<CRDL) less than or equal to the Contract Required Detection Limits (CRDLs)?	[✓]	—	—
	Are all calibration blanks less than two times Instrument Detection Limit (when IDL>CRDL)?	[ ]	—	✓
	ACTION: If no for any of the above, flag as estimated (J) positive sample results when raw sample value is less than or equal to calibration blank value analyzed between calibration blank with value over CRDL (or 2xIDL) and nearest good calibration blank. Flag five samples on either side of the calibration blank outside the control limits.			
1.14	FORM III (Preparation Blank) - (Note: The preparation blank for mercury is the same as the calibration blank.)			
1.14.1	Was one prep. blank analyzed for:			
	each Sample Delivery Group (SDG)?	[✓]	—	—
	each batch of digested samples?	[✓]	—	—
	each matrix type?	[✓]	—	—
	both AA and ICP when both are used for the same analyte?	[ ]	—	✓
	ACTION: If no for any of the above, flag as estimated (J) all the associated positive data <10 x IDLs for which prep. blank was not analyzed.			
	NOTE: If only one blank was analyzed for more than 20 samples, then first 20 samples analyzed do not have to be flagged as estimated (J).			

		YES	NO	N/A
.1.14.2	Is concentration of prep. blank value greater than the CRDL when IDL is less than or equal to CRDL?	___	[✓]	___
	If yes, is the concentration of the sample with the least concentrated analyte less than 10 times the prep.blank?	___	[___]	✓
	ACTION: If yes, reject (red-line) all associated data greater than CRDL concentration but less than ten times the prep. blank value.			
.1.14.3	Is concentration of prep. blank value (Form III) less than two times IDL, when IDL is greater than CRDL?	[___]	___	✓
	ACTION: If no, reject (red-line) all positive sample results when sample raw data are less than 10 times the prep. blank value.			
.1.14.4	Is concentration of prep. blank below the negative CRDL?	___	[✓]	___
	ACTION: If yes, reject (red-line) all associated sample results less than 10xCRDL.			
.1.15	Form IV (ICP Interference Check Sample)			
.1.15.1	Present and complete?	[✓]	___	___
	(NOTE: Not required for furnace AA, flame AA, mercury, cyanide and Ca, Mg, K and Na.)			
	Was ICS analyzed at beginning and end of run (or at least twice every 8 hours)?	[✓]	___	___
	ACTION: If no, flag as estimated (J) all the samples for which AL, Ca, Fe, or Mg is higher than in ICS.			
.1.15.2	Circle all values on each Form IV that are more than ± 20% of true or established mean value.			
	Are all Interference Check Sample results inside the control limits (± 20%)?	[✓]	___	___
	If no, is concentration of Al, Ca, Fe, or Mg lower than the respective concentration in ICS?	[___]	___	✓

		YES	NO	N/A
	ACTION: If no, flag as estimated (J) those positive results for which ICS recovery is between 121-150%; flag all sample results as estimated if ICS recovery falls within 50-79%; reject (red-line) those sample results for which ICS recovery is less than 50%; if ICS recovery is above 150%, reject positive results only (not flagged with a "U").			
1.16	Form V A (Spiked Sample Recovery - Pre-Digestion/Pre-Distillation)- (Note: Not required for Ca, Mg, K, and Na (both matrices), Al, and Fe (soil only.)			
1.16.1	Present and complete for: each SDG?	[✓]	___	___
	each matrix type?	[✓]	___	___
	each conc. range (i.e. low, med., high)?	[✓]	___	___
	For both AA and ICP when both are used for the same analyte?	[___]	___	✓
	ACTION: If no for any of the above, flag as estimated (J) all the positive data less than four times the spiking levels specified in SOW for which spiked sample was not analyzed.			
	NOTE: If one spiked sample was analyzed for more than 20 samples, then first 20 samples analyzed do not have to be flagged as estimated (J).			
1.16.2	Was field blank used for spiked sample?	___	[✓]	___
	ACTION: If yes, flag all positive data less than 4 x spike added as estimated (J) for which field blank was used as spiked sample.			
1.16.3	Circle on each Form VA all spike recoveries that are outside control limits (75% to 125%).			
	Are all recoveries within control limits?	[✓]	___	___
	If no, is sample concentration greater than or equal to four times spike concentration?	[___]	___	✓

	YES	NO	N/A
ACTION: If yes, disregard spike recoveries for analytes whose concentrations are greater than or equal to four times spike added. If no, circle those analytes on Form V for which sample concentration is less than four times the spike concentration.			
Are results outside the control limits (75-125%) flagged with "N" on Form I's and Form VA?	[ ]	___	✓
ACTION: If no, write in the Contract - Problem/Non - Compliance section of "Data Assessment Narrative".			
1.16.4 **Aqueous** Are any spike recoveries:			
(a) less than 30%?	___	[✓]	___
(b) between 30-74%?	___	[✓]	___
(c) between 126-150%?	___	[✓]	___
(d) greater than 150%?	___	[✓]	___
ACTION: If less than 30%, reject all associated aqueous data: if between 30-74%, flag all associated aqueous data as estimated (J); if between 126-150%, flag as estimated (J) all associated aqueous data not flagged with a "U"; if greater than 150%, reject (red-line) all associated aqueous data not flagged with a "U".			
1.16.5 **Soil/Sediment** Are any spike recoveries:			
(a) less than 10%?	___	[ ]	✓
(b) between 10-74%?	___	[ ]	✓
(c) between 126-200%?	___	[ ]	✓
(d) greater than 200%?	___	[ ]	✓

		YES	NO	N/A
	ACTION: If less than 10%, reject all associated data; if between 10-74%, flag all associated data as estimated; if between 126-200%, flag as estimated all associated data was not flagged with a "U"; if greater than 200%, reject all associated data not flagged with a "U".			
A.1.17	**Form VI (Lab Duplicates)**			
A.1.17.1	Present and complete for: each SDG?	[✓]	___	___
	each matrix type?	[✓]	___	___
	each concentration range (i.e. low, med., high)?	[✓]	___	___
	both AA and ICP when both are used for the same analyte?	[___]	___	✓
	ACTION: If no for any the above, flag as estimated (J) all the data ≥CRDL* for which duplicate sample was not analyzed.			
	Note: 1. If one duplicate sample was analyzed for more than 20 samples, then first 20 samples do not have to be flagged as estimated.			
	2. If percent solids for soil sample and its duplicate differ by more than 1%, prepare a Form VI for each duplicate pair, report concentrations in ug/L on wet weight basis and calculate RPD or Difference for each analyte.			
A.1.17.2	Was field blank used for duplicate analysis?	___	[✓]	___
	ACTION: If yes, flag all data ≥CRDL* as estimated (J) for which field blank was used as duplicate.			
A.1.17.3	Are all values within control limits (RPD 20% or difference ≤ ±CRDL)?	[✓]	___	___
	If no, are all results outside the control limits flagged with an * on Form I's and VI?	[___]	___	✓
	ACTION: If no, write in the Contract - Problems/Non-Compliance section of "Data Assessment Narrative".			

* Substitute IDL for CRDL when IDL > CRDL.

	YES	NO	N/A
NOTE: 1. RPD is not calculable for an analyte of the sample - duplicate pair when both values are less than IDL. 2. If the result of lab duplicate analyzed by GFAA is rejectable due to coefficient of correlation of MSA, analytical spike recovery, or duplicate injections criteria, do not apply precision criteria to metals analyzed by GFAA.			

1.17.4 Aqueous

Circle on each Form VI all values that are:

RPD > 50%, or
Difference > CRDL*

Is any RPD greater than 50% where sample and duplicate are both greater than or equal to 5 times *CRDL?	___	[✓]	___
Is any difference** between sample and duplicate greater than *CRDL where sample and/or duplicate is less than 5 times *CRDL?	___	[✓]	___

ACTION: If yes, flag the associated data as estimated.

1.17.5 Soil/Sediment

Circle on each Form VI all values that are:

RPD > 100%, or

Difference > 2 x CRDL*

Is any RPD (where sample and duplicate are both greater than or equal to 5 times *CRDL) : > 100%?	___	[___]	✓
Is any **difference between sample and duplicate (where sample and/or duplicate is less than 5x*CRDL) : > 2x*CRDL?	___	[___]	✓

* Substitute IDL for CRDL when IDL > CRDL.
** Use absolute values of sample and duplicate to calculate the difference.

	YES	NO	N/A
ACTION: If yes, flag the associated data as estimated.			
18 **Field Duplicates**			
..18.1 Were field duplicates analyzed? See TABLE 1	[✓]	—	—
ACTION: If yes, prepare a Form VI for each aqueous field duplicate pair. Prepare a Form VI for each soil duplicate pair, if percent solids for sample and its duplicate differ by more than 1%; report concentrations of soils in ug/l on wet weight basis and calculate RPDs or Difference for each analyte.			
NOTE: 1. Do not calculate RPD when both values are less than IDL. 2. Flag all associated data only for field duplicate pair.			
.8.2 **Aqueous**			
Circle all values on self prepared Form VI for field duplicates that are: RPD > 50%, or Difference > CRDL*			
Is any RPD greater than 50% where sample and duplicate are both greater than or equal to 5 times *CRDL?	—	[✓]	—
Is any **difference between sample and duplicate greater than *CRDL where sample and/or duplicate is less than 5 times *CRDL?	✓ FR	[—]	—
ACTION: If yes, flag the associated data as estimated.			

* Substitute IDL for CRDL when IDL > CRDL.
** Use absolute values of sample and duplicate to calculate the difference.

	YES	NO	N/A
1.18.3 **Soil/Sediment**			
Circle all values on self prepared Form VI for field duplicates that are:			
RPD >100%, or			
Difference > 2 x CRDL*			
Is any RPD (where sample and duplicate are both greater than 5 times *CRDL) : >100%?	___	[___]	✓
Is any **difference between sample and duplicate (where sample and/or duplicate is less than 5x *CRDL): >2x *CRDL?	___	[___]	✓
ACTION: If yes, flag the associated data as estimated.			
..19 **Form VII (Laboratory Control Sample)** (Note: LCS - not required for aqueous Hg and cyanide analyses.)			
1.19.1 Was one LCS prepared and analyzed for:			
each SDG?	[✓]	___	___
each batch samples digested/distilled?	[✓]	___	___
both AA and ICP when both are used for the same analyte?	[___]	___	✓
ACTION: If no for any of the above, prepare Telephone Record Log and contact laboratory for submittal of results of LCS. Flag as estimated (J) all the data for which LCS was not analyzed.			
NOTE: If only one LCS was analyzed for more than 20 samples, then first 20 samples close to LCS do not have to be flagged as estimated.			

Substitute IDL for CRDL when IDL > CRDL.
** Use absolute values of sample and duplicate to calculate the difference.

		YES	NO	N/A
1.19.2	**Aqueous LCS**			
	Circle on each Form VII the LCS percent recoveries outside control limits (80 - 120%) except for aqueous Ag and Sb.			
	Is any LCS recovery: less than 50%?	___	[✓]	___
	between 50% and 79%?	___	[✓]	___
	between 121% and 150%?	___	[✓]	___
	greater than 150%?	___	[✓]	___
	ACTION: Less than 50%, reject (red-line) all data; between 50% and 79%, flag all associated data as estimated (J); between 121% and 150%, flag all positive (not flagged with a "U") results as estimated; greater than 150%, reject all positive results.			
1.19.3	**Solid LCS**			
	NOTE: 1. If "Found" value of LCS is rejectable due to duplicate injections or analytical spike recovery criteria, regardless of LCS recovery, flag the associated data as estimated (J). 2. If IDL of an analyte is equal to or greater than true value of LCS, disregard the "Action" below even though LCS is out of control limits.			
	Is LCS "Found" value higher than the control limits on Form VII?	___	[___]	✓
	ACTION: If yes, qualify all associated positive data as estimated.			
	Is LCS "Found" value lower than the Control limits on Form VII?	___	[___]	✓
	ACTION: If yes, qualify all associated data as estimated.			

		YES	NO	N/A
.1.20	**Form IX (ICP Serial Dilution) -**			
	NOTE: Serial dilution analysis is required only for initial concentrations equal to or greater than 10 x IDL.			
.1.20.1	Was Serial Dilution analysis performed for: each SDG?	[✓]	___	___
	each matrix type?	[✓]	___	___
	each concentration range (i.e. low, med.)?	[✓]	___	___
	ACTION: If no for any of the above, flag as estimated all the positive data ≥ 10xIDLs or ≥ CRDL when 10xIDL ≤ CRDL for which Serial Dilution Analysis was not performed.			
.20.2	Was field blank(s) used for Serial Dilution Analysis?	___	[✓]	___
	ACTION: If yes, flag all associated data ≥ 10 x IDL as estimated (J). If 10xIDL ≤ CRDL, flag all data ≥ CRDL.			
.1.20.3	Are results outside control limit flagged with an "E" on Form I's and Form IX when initial concentration on Form IX is equal to 50 times IDL or greater.	[___]	___	/
	ACTION: If no, write in the Contract-Problem/Non-Compliance section of the "Data Assessment Narrative".			
.1.20.4	Circle on each Form IX all percent difference that are outside the control limits for initial concentrations equal to or greater than 10 x IDLs only.			
	Are any % difference values:			
	> 10%?	___	[✓]	___
	≥ 100%?	___	[✓]	___

		YES	NO	N/A
	ACTION: Flag as estimated (J) all the associated sample data ≥ 10xIDLs (or ≥ CRDL when 10xIDL ≤ CRDL) for which percent difference is greater than 10% but less than 100%. Reject (red-line) all the associated sample results equal to or greater than 10xIDLs (or ≥ CRDL when 10xIDL ≤ CRDL) for which PD is greater than or equal to 100%.			
	Note: Flag or reject on Form I's only the sample results whose associated raw data are ≥ 10xIDL (or ≥ CRDL when 10xIDL≤ CRDL)			
1.21	**Furnace Atomic Absorption (AA) QC Analysis**			
1.21.1	Are duplicate injections present in furnace raw data (except during full Method of Standard Addition) for each sample analyzed by GFAA?	[✓]	___	___
	ACTION: If no, reject the data on Form I's for which duplicate injections were not performed.			
1.21.2	Do the duplicate injection readings agree within 20% Relative Standard Deviation (RSD) or Coefficient of Variation (CV) for concentration greater than CRDL?	[✓]	___	___
	Was a dilution analyzed for sample with analytical spike recovery less than 40%?	[___]	___	✓
	ACTION: If no for any of the above, flag all the associated data as estimated.			
1.21.3	Is *analytical spike recovery outside the control limits (85-115%) for any sample?	✓	[___]	___
	ACTION: If yes, flag the affected sample results if the recovery is between 10-84%; if the recovery is between 115-200%, flag the associated positive sample results as estimated; reject the associated sample results if the recovery is less than 10%; reject positive sample results if the recovery is greater than 200%.			

*Analytical spike is not required on the pre-digestion spiked sample.

		YES	NO	N/A
	NOTE: Reject or flag the data only when the affected sample(s) was not subsequently analyzed by Method of Standard Addition.			
1.22	Form VIII (Method of Standard Addition Results)			
1.22.1	Present?	[✓]	___	___
	If no, is any Form I result coded with "S" or a "+"?	___	[___]	✓
	ACTION: If yes, write request on Telephone Record Log and contact laboratory for submittal of Form VIII.			
1.22.2	Is coefficient of correlation for MSA less than 0.990 for any sample?	___	[___]	✓
	ACTION: If yes, reject (red-line) the affected data.			
1.22.3	Was *MSA required for any sample but not performed?	___	[✓]	___
	Is coefficient of correlation for MSA less than 0.995?	___	[___]	✓
	Are MSA calculations outside the linear range of the calibration curve generated at the beginning of the analytical run?	___	[___]	✓
	ACTION: If yes for any of the above, flag all the associated data as estimated (J).			
1.22.4	Was proper quantitation procedure followed correctly as outlined in the SOW on page E-23?	[✓]	___	___
	ACTION: If no, note exception under Contract Problem/ Non-Compliance section of the "Data Assessment Narrative", and prepare a separate list.			

* MSA is not required on LCS and prep. blank.

		YES	NO	N/A
.23	Dissolved/Total or Inorganic/Total Analytes -			
1.23.1	Were any analyses performed for dissolved as well as total analytes on the same sample(s).	___	[___]	✓
	Were any analyses performed for inorganic as well as total (organic + inorganic) analytes on the same sample(s)?	___	[___]	✓
	NOTE: 1. If yes, prepare a list comparing differences between all dissolved (or inorganic) and total analytes. Compute the differences as a percent of the total analyte only when dissolved concentration is greater than CRDL as well as total concentration. 2. Apply the following questions only if inorganic (or dissolved) results are (i) above CRDL, and (ii) greater than total constituents. 3. At least one preparation blank, ICS, and LCS should be analyzed in each analytical run.			
1.23.2	Is the concentration of any dissolved (or inorganic) analyte greater than its total concentration by more than 10%?	___	[___]	✓
1.23.3	Is the concentration of any dissolved (or inorganic) analyte greater than its total concentration by more than 50%?	___	[___]	✓
	ACTION: If more than 10%, flag both dissolved (or inorganic) and total values as estimated (J); if more than 50%, reject (red-line) the data for both values.			
1.24	Form I (Field Blank) -			
	(Note: Designate "Field Blank" as such on Form I.)			
1.24.1	Circle all field blank values on Form I that are greater than CRDL, (or 2 x IDL when IDL > CRDL).			
	Is field blank concentration less than CRDL (or 2 x IDL when IDL > CRDL) for all parameters of associated aqueous and soil samples?	[✓]	___	___

		YES	NO	N/A
	If no, was field blank value already rejected due to other QC criteria?	[ ]		✓
	ACTION: If no, reject (except field blank results) all associated positive sample data less than or equal to five times the field blank value. Reject on Form I's the soil sample results that when converted to ug/L on wet basis are less than or equal to five times the field blank value in ug/L.			
.1.25	Form X, XI, XII (Verification of Instrumental Parameters).			
.1.25.1	Is verification report present for:			
	Instrument Detection Limits (quarterly)?	[✓]		
	ICP Interelement Correction Factors (annually)?	[✓]		
	ICP Linear Ranges (quarterly)?	[✓]		
	ACTION: If no, contact TPO of the lab.			
.1.25.2	Form X (Instrument Detection Limits) - (Note: IDL is not required for Cyanide.)			
.1.25.2.1	Are IDLs present for: all the analytes?	[✓]		
	all the instruments used?	[✓]		
	For both AA and ICP when both are used for the same analyte?	[ ]		✓
	ACTION: If no for any of the above, prepare Telephone Record Log and contact laboratory.			
.1.25.2.2	Is IDL greater than CRDL for any analyte?		[✓]	
	If yes, is the concentration on Form I of the sample analyzed on the instrument whose IDL exceeds CRDL, greater than 5 x IDL.	[ ]		✓

	YES	NO	N/A
Action : If no, flag as estimated all values less than five times IDL of the instrument whose IDL exceeds CRDL.			
1.25.3 **Form XI (Linear Ranges)**			
1.25.3.1 Was any sample result higher than high linear range of ICP.	___	[✓]	___
Was any sample result higher than the highest calibration standard for non-ICP parameters?	___	[✓]	___
If yes for any of the above, was the sample diluted to obtain the result on Form I?	[___]	___	✓
ACTION: If no, flag the result reported on Form I as estimated(J).			
1.26 **Percent Solids of Sediments**			
1.26.1 Are percent solids in sediment(s): < 50%?	___	[___]	✓
< 10%?	___	[___]	✓

ACTION: If yes, qualify as estimated all the results of a sample that has per cent solids between 10%-50% (i.e. moisture content between 50%-90%). Reject all the results of a sample that has per cent solids less than 10% (i.e. moisture content greater than 90%).

NOTE: Reject or flag(J) only the sample results that were not previously rejected or flaged due to other QC criteria.

Inorganic Data Qualifiers

U - Indicates analyte result less than the instrument detection limit (IDL) indicated.

B - Indicates analyte result between the IDL and the contract required detection limit (CRDL).

V - The reported value is considered estimated due to variance from quality control criteria

R - The reported value is unusable and rejected due to variance from quality control criteria.

W - Indicates GFAA analytical spike was out of 85-115 percent control limit, while sample absorbance was less than 50% of spike absorbance.

S - The reported value was determined by the method of standard additions (MSA).

+ - Indicates that the correlation coefficient for MSA is less than 0.995.

M - Indicates that GFAA duplicate injection precision criteria was not met.

E - The reported value is considered estimated due to matrix interference.

N - Indicates that the spiked sample recovery was not within control limits.

* - Indicates that the laboratory duplicate analysis was not within control limits.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW50

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225805

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: N9659.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: not dec. _____ Date Analyzed: 10/17/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

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

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SKSW50

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225805

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: N9659.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: not dec. _____ Date Analyzed: 10/17/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 3 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		~~UNKNOWN SILOXANE~~	~~12.060~~	~~5~~	~~J~~	R
2.		~~UNKNOWN SILOXANE~~	~~18.008~~	~~19~~	~~J~~	R
3.		~~UNKNOWN SILOXANE~~	~~22.173~~	~~10~~	~~J~~	R
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW51

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225801

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: N9655.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: not dec. _____ Date Analyzed: 10/17/94 ✓

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0 ✓

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

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

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SKSW51

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225801

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: N9655.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: not dec. _____ Date Analyzed: 10/17/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 2 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		~~UNKNOWN SILOXANE~~	~~12.007~~	~~7~~	~~J~~	R
2.		~~UNKNOWN SILOXANE~~	~~18.046~~	~~12~~	~~J~~	R
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW52

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225808

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: N9662.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: not dec. _____ Date Analyzed: 10/17/94 ✓

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0 ✓

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

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

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EPA SAMPLE NO.

SKSW52

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225808

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: N9662.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: not dec. _____ Date Analyzed: 10/17/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 3 Ø

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		~~UNKNOWN SILOXANE~~	~~12.858~~	~~13~~	~~J~~	R
2.		~~UNKNOWN SILOXANE~~	~~18.008~~	~~54~~	~~J~~	R
3.		~~UNKNOWN SILOXANE~~	~~22.170~~	~~24~~	~~J~~	R
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW53

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225802

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: N9656.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: not dec. _____ Date Analyzed: 10/17/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	28	~~B~~ U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

Qm17

16DEC94

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SKSW53

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225802

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: N9656.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: not dec. _____ Date Analyzed: 10/17/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 3 Ø

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		~~UNKNOWN SILOXANE~~	~~12.907~~	~~6~~	~~J~~	R
2.		~~UNKNOWN SILOXANE~~	~~18.027~~	~~12~~	~~J~~	R
3.		~~UNKNOWN SILOXANE~~	~~22.192~~	~~6~~	~~J~~	R
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16DEC94

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSWFB

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225804

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: N9658.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: not dec. _____ Date Analyzed: 10/17/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	26	B ~~B U~~ OK AMN 16DEC
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

AMN 16DEC94

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SKSWFB

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225804

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: N9658.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: not dec. _____ Date Analyzed: 10/17/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 1 Ø

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		~~UNKNOWN SILOXANE~~	~~10.017~~	~~15~~	~~J~~ R
2.					
3.					
4.					
5.					
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16 DEC 94

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSWFD

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225803

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: N9657.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: not dec. _____ Date Analyzed: 10/17/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	28	~~B~~ U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

16DEC94

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SKSWFD

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225803

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: N9657.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: not dec. _____ Date Analyzed: 10/17/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 1 ∅

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		~~UNKNOWN SILOXANE~~	~~10.027~~	~~13~~	~~J~~ R
2.					
3.					
4.					
5.					
6.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLK ✓

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225809

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: N9666.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: not dec. _____ Date Analyzed: 10/17/94 ✓

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0 ✓

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

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

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIPBLK

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225809

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: N9666.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: not dec. _____ Date Analyzed: 10/17/94

GC Column:CAP ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 3 /

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN SILOXANE /	12.877	8	J
2.		UNKNOWN SILOXANE /	18.008	97	J
3.		UNKNOWN SILOXANE /	22.174	33	J
4.					
5.					
6.					
7.					
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ALL 3 TIC'S ARE COLUMN DEGRADATION PRODUCTS

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16 DEC 94

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW50

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225805

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Q1432.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:10/13/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 11/10/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

16 DEC 94

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW50

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225805

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Q1432.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:10/13/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 11/10/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

16 DEC 94

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SKSW50

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225805

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Q1432.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:10/13/94

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/10/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICs found: ~~8~~ 3

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		~~UNKNOWN~~	~~6.671~~	~~3~~	~~JB~~ R
2.		~~UNKNOWN~~	~~6.792~~	~~3~~	~~JB~~ R
3.		~~UNKNOWN~~	~~6.861~~	~~3~~	~~JB~~ R
4.		~~UNKNOWN~~	~~7.035~~	~~6~~	~~JB~~ R
5.		~~UNKNOWN~~	~~17.752~~	~~2~~	~~J~~ R
6.		UNKNOWN	19.018	34	J
7.		UNKNOWN AROMATIC	21.758	8	J
8.		UNKNOWN AROMATIC	23.024	2	J
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW51

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225801

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Q1425.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:10/13/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 11/09/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

AMN 16DEC94

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW51

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225801

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Q1425.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:10/13/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 11/09/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

Amn 16 DEC 94

1F

EPA SAMPLE NO.

SKSW51

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225801

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Q1425.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:10/13/94

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/09/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICs found: ~~8~~ 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		~~UNKNOWN~~	~~6.703~~	~~3~~	~~JB~~	R
2.		~~UNKNOWN~~	~~6.807~~	~~4~~	~~JB~~	R
3.		~~UNKNOWN~~	~~6.877~~	~~3~~	~~JB~~	R
4.		~~UNKNOWN~~	~~7.050~~	~~5~~	~~JB~~	R
5.		UNKNOWN AROMATIC	21.791	13	J	
6.		UNKNOWN AROMATIC	22.398	88	J	
7.		UNKNOWN	22.432	34	J	
8.		UNKNOWN AROMATIC	23.056	4	J	
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Amn 16DEC94

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW52

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225808

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Q1435.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 10/13/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 11/10/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

Amm
16 DEC 94

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW52

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225808

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Q1435.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:10/13/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 11/10/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

AMM 16DEC94

1F

EPA SAMPLE NO.

SKSW52

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225808

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Q1435.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:10/13/94

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/10/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICs found: 6 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		~~UNKNOWN~~	~~6.669~~	~~2~~	~~JB~~	R
2.		~~UNKNOWN~~	~~6.791~~	~~2~~	~~JB~~	R
3.		~~UNKNOWN~~	~~6.860~~	~~2~~	~~JB~~	R
4.		~~UNKNOWN~~	~~7.016~~	~~4~~	~~JB~~	R
5.		UNKNOWN	19.000	2	J	
6.		UNKNOWN	22.312	20	J	
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16 DEC 94

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW53

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225802

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Q1426.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:10/13/94/

Concentrated Extract Volume: 1000(UL) Date Analyzed: 11/09/94✓

Injection Volume: 2.0(uL) Dilution Factor: 1.0✓

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	2	J
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

GMM
16DEC94

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW53

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225802

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Q1426.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:10/13/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 11/09/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
51-28-5	2,4-Dinitrophenol	25	U	
100-02-7	4-Nitrophenol	25	U	
132-64-9	Dibenzofuran	10	U	
121-14-2	2,4-Dinitrotoluene	10	U	
84-66-2	Diethylphthalate	4	J	S
7005-72-3	4-Chlorophenyl-phenylether	10	U	
86-73-7	Fluorene	10	U	
100-01-6	4-Nitroaniline	25	U	
534-52-1	4,6-Dinitro-2-methylphenol	25	U	
86-30-6	N-Nitrosodiphenylamine (1)	10	U	
101-55-3	4-Bromophenyl-phenylether	10	U	
118-74-1	Hexachlorobenzene	10	U	
87-86-5	Pentachlorophenol	25	U	
85-01-8	Phenanthrene	10	U	
120-12-7	Anthracene	10	U	
86-74-8	Carbazole	10	U	
84-74-2	Di-n-butylphthalate	10	U	
206-44-0	Fluoranthene	10	U	
129-00-0	Pyrene	10	U	
85-68-7	Butylbenzylphthalate	10	U	
91-94-1	3,3'-Dichlorobenzidine	10	U	
56-55-3	Benzo(a)anthracene	10	U	
218-01-9	Chrysene	10	U	
117-81-7	bis(2-Ethylhexyl)phthalate	10	U	
117-84-0	Di-n-octylphthalate	10	U	
205-99-2	Benzo(b)fluoranthene	10	U	
207-08-9	Benzo(k)fluoranthene	10	U	
50-32-8	Benzo(a)pyrene	10	U	
193-39-5	Indeno(1,2,3-cd)pyrene	10	U	
53-70-3	Dibenz(a,h)anthracene	10	U	
191-24-2	Benzo(g,h,i)perylene	10	U	

(1) - Cannot be separated from Diphenylamine

Qm7
16 DEC 94

1F

EPA SAMPLE NO.

SKSW53

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225802

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Q1426.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:10/13/94

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/09/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICs found: ~~14~~ 10

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.		~~UNKNOWN~~	~~6.687~~	~~3~~	~~JB~~	R
2.		~~UNKNOWN~~	~~6.809~~	~~3~~	~~JB~~	R
3.		~~UNKNOWN~~	~~6.878~~	~~3~~	~~JB~~	R
4.		~~UNKNOWN~~	~~7.051~~	~~6~~	~~JB~~	R
5.		UNKNOWN	12.271	2	J	
6.		UNKNOWN	18.237	4	J	
7.		UNKNOWN	18.341	2	J	
8.		UNKNOWN	18.913	2	J	
9.		UNKNOWN	19.052	2	J	
10.		UNKNOWN	19.260	3	J	
11.		UNKNOWN	20.075	8	J	
12.		UNKNOWN	20.196	9	J	
13.		UNKNOWN	20.890	4	J	
14.		UNKNOWN	21.462	3	J	
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSWFB

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225804

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Q1431.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 10/13/94✓

Concentrated Extract Volume: 1000(UL) Date Analyzed: 11/10/94✓

Injection Volume: 2.0(uL) Dilution Factor: 1.0✓

GPC Cleanup: (Y/N) N pH: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

GMM
16 DEC 94

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSWFB

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225804

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Q1431.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:10/13/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 11/10/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

amn
16DEC94

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

. SKSWFB

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225804

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Q1431.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:10/13/94

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/10/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 5.0

Number TICs found: 7

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.671	2	JB
2.		UNKNOWN	6.792	2	JB
3.		UNKNOWN	6.862	2	JB
4.		UNKNOWN	7.018	4	JB
5.		UNKNOWN	17.752	2	J
6.		UNKNOWN	32.267	6	J
7.		UNKNOWN	38.146	7	J
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FORM I SV-TIC

16OCT94

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSWFD

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225803

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Q1427.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 10/13/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 11/09/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

GMN
16 DEC 94

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSWFD

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225803

Sample wt/vol: 1000 (g/mL) ML Lab File ID: Q1427.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: _____ decanted: (Y/N)___ Date Extracted:10/13/94

Concentrated Extract Volume: 1000(UL) Date Analyzed: 11/09/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

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1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SKSWFD

) Name: NYTEST ENV INC Contract: 9421375

) Co NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

rix: (soil/water) WATER Lab Sample ID: 2225803

ple wt/vol: 1000 (g/mL) ML Lab File ID: Q1427.D

el: (low/med) LOW Date Received: 10/11/94

oisture: _____ decanted: (Y/N)___ Date Extracted:10/13/94

centrated Extract Volume: 1000(uL) Date Analyzed: 11/09/94

e(on Volume: 2.0(uL) Dilution Factor: 1.0

Cleanup: (Y/N) N pH: 8.0

mber TICs found: 5 | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
..	~~UNKNOWN~~	~~6.704~~	~~3~~	~~JB~~ R
?.	~~UNKNOWN~~	~~6.808~~	~~3~~	~~JB~~ R
).	~~UNKNOWN~~	~~6.877~~	~~3~~	~~JB~~ R
..	~~UNKNOWN~~	~~7.051~~	~~5~~	~~JB~~ R
).	UNKNOWN	22.346	16	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW50

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: _____ SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225805

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 10/11/94

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 10/13/94 ✓

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/29/94 ✓

Injection Volume: 1.00 (uL) Dilution Factor: 1.00 ✓

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CMN
20 DEC 94

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW51

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: _____ SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225801

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 10/11/94

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 10/13/94 ✓

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/29/94 ✓

Injection Volume: 1.00 (uL) Dilution Factor: 1.00 ✓

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

(jmn) 20 DEC 94

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW52

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: _____ SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225808

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 10/11/94

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 10/13/94

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/29/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

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CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW53

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: _____ SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225802

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 10/11/94

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 10/13/94 ✓

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/29/94 ✓

Injection Volume: 1.00 (uL) Dilution Factor: 1.00 ✓

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
319-84-6	alpha-BHC	0.050	U	N
319-85-7	beta-BHC	0.050	U	N
319-86-8	delta-BHC	0.050	U	N
58-89-9	gamma-BHC (Lindane)	0.050	U	N
76-44-8	Heptachlor	0.050	U	N
309-00-2	Aldrin	0.050	U	N
1024-57-3	Heptachlor epoxide	0.050	U	N
959-98-8	Endosulfan I	0.050	U	N
60-57-1	Dieldrin	0.10	U	N
72-55-9	4,4'-DDE	0.10	U	N
72-20-8	Endrin	0.10	U	N
33213-65-9	Endosulfan II	0.10	U	N
72-54-8	4,4'-DDD	0.10	U	N
1031-07-8	Endosulfan sulfate	0.10	U	N
50-29-3	4,4'-DDT	0.10	U	N
72-43-5	Methoxychlor	0.50	U	N
53494-70-5	Endrin ketone	0.10	U	N
7421-93-4	Endrin aldehyde	0.10	U	N
5103-71-9	alpha-Chlordane	0.050	U	N
5103-74-2	gamma-Chlordane	0.050	U	N
8001-35-2	Toxaphene	5.0	U	N
12674-11-2	Aroclor-1016	1.0	U	N
11104-28-2	Aroclor-1221	2.0	U	N
11141-16-5	Aroclor-1232	1.0	U	N
53469-21-9	Aroclor-1242	1.0	U	N
12672-29-6	Aroclor-1248	1.0	U	N
11097-69-1	Aroclor-1254	1.0	U	N
11096-82-5	Aroclor-1260	1.0	U	N

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000039

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSWFB

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: _____ SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225804

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 10/11/94

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 10/13/94

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/29/94

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.0 Sulfur Cleanup: (Y/N) N

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20 DEC 94

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
319-84-6	alpha-BHC	0.050	U	N
319-85-7	beta-BHC	0.050	U	N
319-86-8	delta-BHC	0.050	U	N
58-89-9	gamma-BHC (Lindane)	0.050	U	N
76-44-8	Heptachlor	0.050	U	N
309-00-2	Aldrin	0.050	U	N
1024-57-3	Heptachlor epoxide	0.050	U	N
959-98-8	Endosulfan I	0.050	U	N
60-57-1	Dieldrin	0.10	U	N
72-55-9	4,4'-DDE	0.10	U	N
72-20-8	Endrin	0.10	U	N
33213-65-9	Endosulfan II	0.10	U	N
72-54-8	4,4'-DDD	0.10	U	N
1031-07-8	Endosulfan sulfate	0.10	U	N
50-29-3	4,4'-DDT	0.10	U	N
72-43-5	Methoxychlor	0.50	U	N
53494-70-5	Endrin ketone	0.10	U	N
7421-93-4	Endrin aldehyde	0.10	U	N
5103-71-9	alpha-Chlordane	0.050	U	N
5103-74-2	gamma-Chlordane	0.050	U	N
8001-35-2	Toxaphene	5.0	U	N
12674-11-2	Aroclor-1016	1.0	U	N
11104-28-2	Aroclor-1221	2.0	U	N
11141-16-5	Aroclor-1232	1.0	U	N
53469-21-9	Aroclor-1242	1.0	U	N
12672-29-6	Aroclor-1248	1.0	U	N
11097-69-1	Aroclor-1254	1.0	U	N
11096-82-5	Aroclor-1260	1.0	U	N

000044

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EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SKSWFD

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: _____ SDG No.: SKIN1

Matrix: (soil/water) WATER Lab Sample ID: 2225803

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 10/11/94

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 10/13/94 ✓

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/29/94 ✓

Injection Volume: 1.00 (uL) Dilution Factor: 1.00 ✓

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CMM
20 DEC 94

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
319-84-6	alpha-BHC	0.050	U	N
319-85-7	beta-BHC	0.050	U	N
319-86-8	delta-BHC	0.050	U	N
58-89-9	gamma-BHC (Lindane)	0.050	U	N
76-44-8	Heptachlor	0.050	U	N
309-00-2	Aldrin	0.050	U	N
1024-57-3	Heptachlor epoxide	0.050	U	N
959-98-8	Endosulfan I	0.050	U	N
60-57-1	Dieldrin	0.10	U	N
72-55-9	4,4'-DDE	0.10	U	N
72-20-8	Endrin	0.10	U	N
33213-65-9	Endosulfan II	0.10	U	N
72-54-8	4,4'-DDD	0.10	U	N
1031-07-8	Endosulfan sulfate	0.10	U	N
50-29-3	4,4'-DDT	0.10	U	N
72-43-5	Methoxychlor	0.50	U	N
53494-70-5	Endrin ketone	0.10	U	N
7421-93-4	Endrin aldehyde	0.10	U	N
5103-71-9	alpha-Chlordane	0.050	U	N
5103-74-2	gamma-Chlordane	0.050	U	N
8001-35-2	Toxaphene	5.0	U	N
12674-11-2	Aroclor-1016	1.0	U	N
11104-28-2	Aroclor-1221	2.0	U	N
11141-16-5	Aroclor-1232	1.0	U	N
53469-21-9	Aroclor-1242	1.0	U	N
12672-29-6	Aroclor-1248	1.0	U	N
11097-69-1	Aroclor-1254	1.0	U	N
11096-82-5	Aroclor-1260	1.0	U	N

000049

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SKSW50

Lab Name: NYTEST_ENV_INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: _____ SDG No.: SKIN1

Matrix (soil/water): WATER Lab Sample ID: 225805

Level (low/med): LOW Date Received: 10/11/94

% Solids: 0.0

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

GLM 28DEC94

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	104	B		P
7440-36-0	Antimony	38.0	U		P N
7440-38-2	Arsenic	5.0	U		F
7440-39-3	Barium	89.8	B		P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	137000			P
7440-47-3	Chromium	5.0	U		P
7440-48-4	Cobalt	6.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	141			P
7439-92-1	Lead	3.0	U		F
7439-95-4	Magnesium	49200			P
7439-96-5	Manganese	79.5			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	26.0	U		P
7440-09-7	Potassium	9410			P
7782-49-2	Selenium	5.0	U		F
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	51100			P
7440-28-0	Thallium	5.0	U		F
7440-62-2	Vanadium	17.0	U		P
7440-66-6	Zinc	5.0	U		P
5955-70-0	Cyanide	10.0	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SKSW51

Lab Name: NYTEST_ENV_INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix (soil/water): WATER Lab Sample ID: 225801

Level (low/med): LOW Date Received: 10/11/94

% Solids: 0.0

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

GMM 28DEC94

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	57.0	U		P
7440-36-0	Antimony	38.0	U		P
7440-38-2	Arsenic	5.0	U		F
7440-39-3	Barium	109	B		P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	174000			P
7440-47-3	Chromium	5.0	U		P
7440-48-4	Cobalt	6.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	16.0	U		P
7439-92-1	Lead	3.0	U		F
7439-95-4	Magnesium	57300			P
7439-96-5	Manganese	31.2			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	26.0	U		P
7440-09-7	Potassium	10400			P
7782-49-2	Selenium	5.0	U		F
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	59500			P
7440-28-0	Thallium	5.0	U		F
7440-62-2	Vanadium	17.0	U		P
7440-66-6	Zinc	5.0	U		P
5955-70-0	Cyanide	57.6			AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SKSW52

Lab Name: NYTEST_ENV_INC_____ Contract: 9421375___

Lab Code: NYTEST Case No.: 22258_ SAS No.: _____ SDG No.: SKIN1_

Matrix (soil/water): WATER Lab Sample ID: 225808_____

Level (low/med): LOW__ Date Received: 10/11/94

% Solids: __0.0

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

GMM 28DEC94

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.7	B		P
7440-36-0	Antimony	38.0	U		P
7440-38-2	Arsenic	5.0	U		F
7440-39-3	Barium	78.6	B		P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	126000			P
7440-47-3	Chromium	5.0	U		P
7440-48-4	Cobalt	6.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	121			P
7439-92-1	Lead	3.0	U		F
7439-95-4	Magnesium	47400			P
7439-96-5	Manganese	56.8			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	26.0	U		P
7440-09-7	Potassium	7980			P
7782-49-2	Selenium	5.0	U		F
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	50100			P
7440-28-0	Thallium	5.0	U		F
7440-62-2	Vanadium	17.0	U		P
7440-66-6	Zinc	5.0	U		P
5955-70-0	Cyanide	10.0	U		AS

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SKSWFD

Lab Name: NYTEST_ENV_INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: _____ SDG No.: SKIN1

Matrix (soil/water): WATER Lab Sample ID: 225803

Level (low/med): LOW Date Received: 10/11/94

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	102	B		P	V
7440-36-0	Antimony	38.0	U		P	V
7440-38-2	Arsenic	5.0	U		F	
7440-39-3	Barium	74.4	B		P	
7440-41-7	Beryllium	2.0	U		P	
7440-43-9	Cadmium	2.0	U		P	
7440-70-2	Calcium	114000			P	
7440-47-3	Chromium	5.0	U		P	
7440-48-4	Cobalt	6.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	264			P	V
7439-92-1	Lead	3.0	U		F	
7439-95-4	Magnesium	42000			P	
7439-96-5	Manganese	77.6			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	26.0	U		P	
7440-09-7	Potassium	7460			P	
7782-49-2	Selenium	5.0	U		F	
7440-22-4	Silver	5.0	U		P	
7440-23-5	Sodium	47700			P	
7440-28-0	Thallium	5.0	U		F	
7440-62-2	Vanadium	17.0	U		P	
7440-66-6	Zinc	20.8			P	V
5955-70-0	Cyanide	10.0	U		AS	

AM 28DEC94

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SKSW53

Lab Name: NYTEST_ENV_INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Matrix (soil/water): WATER Lab Sample ID: 225802

Level (low/med): LOW Date Received: 10/11/94

% Solids: 0.0

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

AMN 28DEC94

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	57.0	U		P	
7440-36-0	Antimony	48.2	B		P	V
7440-38-2	Arsenic	5.0	U		F	
7440-39-3	Barium	115	B		P	
7440-41-7	Beryllium	2.0	U		P	
7440-43-9	Cadmium	2.0	U		P	
7440-70-2	Calcium	170000			P	
7440-47-3	Chromium	5.0	U		P	
7440-48-4	Cobalt	6.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	373			P	
7439-92-1	Lead	3.0	U		F	
7439-95-4	Magnesium	61200			P	
7439-96-5	Manganese	3910			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	26.0	U		P	
7440-09-7	Potassium	7780			P	
7782-49-2	Selenium	5.0	U		F	
7440-22-4	Silver	5.0	U		P	
7440-23-5	Sodium	32800			P	
7440-28-0	Thallium	5.0	U	W	F	V
7440-62-2	Vanadium	17.0	U		P	
7440-66-6	Zinc	23.9			P	
5955-70-0	Cyanide	10.0	U		AS	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SKSWFB

Lab Name: NYTEST_ENV_INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.: _____ SDG No.: SKIN1

Matrix (soil/water): WATER Lab Sample ID: 225804

Level (low/med): LOW Date Received: 10/11/94

% Solids: 0.0

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

GMM 28 DEC 94

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	57.0	U		P
7440-36-0	Antimony	38.0	U		P
7440-38-2	Arsenic	5.0	U		F
7440-39-3	Barium	11.0	U		P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	2420	B		P
7440-47-3	Chromium	5.0	U		P
7440-48-4	Cobalt	6.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	16.0	U		P
7439-92-1	Lead	3.0	U		F
7439-95-4	Magnesium	1550	U		P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	26.0	U		P
7440-09-7	Potassium	840	U		P
7782-49-2	Selenium	5.0	U		F
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	1750	B		P
7440-28-0	Thallium	5.0	U		F
7440-62-2	Vanadium	17.0	U		P
7440-66-6	Zinc	5.0	U		P
5955-70-0	Cyanide	10.0	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

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NARRATIV DISCUSSION
WATER CHEMISTRY - 22587

As previously notified, due to a holding time issue, BOD was not analyzed. Resampling was to be performed and results wil follow under a separate login number.

Total Organic Halides
Results

Lab Name: Nytest Environmental Inc. Case No. 22587

Project No: 9421375 SDG: SKIN6

Client : Rust Environment & Infrastructure

Sample ID	Lab ID		Results in mg/L
GW5301	2258701		2.1
SKD01	2258702		<0.5
GW5601	2258703		<0.5
GW5701	2258704		<0.5
GW5001	2258705		<0.5
GW5001D	2258706	DUP	<0.5
GW5001S	2258707	SPIKE	1
GW5101	2258708		<0.5
SKFB01	2258709		<0.5

Duplicate Sample Relative Percent Difference:	NC	
Spike Added:	1.00 ppm	
Spike Percent Recovery:	101.0%	
MDL		0.5
Method Blank		<0.5

Total Organic Carbon
Results

Lab Name: Nytest Environmental Inc. Case No. 22587

Project No: 9421375 SDG: SKIN6

Client : Rust Environment & Infrastructure

Sample ID	Lab ID		Results in mg/L
GW5301	2258701		16.9
SKD01	2258702		17.4
GW5601	2258703		33.1
GW5701	2258704		27.2
GW5001	2258705		3.4
GW5001D	2258706	DUP	3.6
GW5001S	2258707	SPIKE	201
GW5101	2258708		29.8
SKFB01	2258709		<1.0

Duplicate Sample Relative Percent Difference:	5.71
Spike Added:	200 ppm
Spike Percent Recovery:	98.8%

MDL	1.00
Method Blank	<1.00

NYTEST ENVIRONMENTAL, INC.

REPORT OF ANALYSIS

Log In No : 22571

We find as follows :

	Sample Identification	
Lab ID :	2257102	
Client ID :	SKGW54	Method Blank
Parameter(s)		
Results in mg/L:		
Sulfide	0.2 U	0.2 U

U : Below method blank/method reporting limit
E : Above method limit
NA : Not available
NR : Not Required

NYTEST ENVIRONMENTAL, INC.

REPORT OF ANALYSIS

Log In No : 22587

We find as follows :

	Sample Identification			
Lab ID :	2258701	2258702	2258703	
Client ID :	GW5301	SKFD01	GW5601	Method Blank
Parameter(s)				
Results in mg/L:				
Chemical Oxygen Demand	141	237	196	3 U
Sulfide	0.2 U	0.2 U	0.2 U	0.2 U
Total Dissolved Solid	2110	2100	2100	10 U
Total Kjeldahl Nitrogen	2.5	2.6	23.6	0.1 U

U : Below method blank/method reporting limit
E : Above method limit
NA : Not available
NR : Not Required

NYTEST ENVIRONMENTAL, INC.

REPORT OF ANALYSIS

Log In No : 22587

We find as follows :

Parameter(s)	Lab ID : 2258704 Client ID : GW5701	2258705 GW5001	2258706 GW5001MS	Method Blank
	Sample Identification			
Results in mg/L:				
Chemical Oxygen Demand	264	44	46	3 U
Sulfide	0.2 U	0.2 U	0.2 U	0.2 U
Total Dissolved Solid	874	652	662	10 U
Total Kjeldahl Nitrogen	1.8	2.3	2.2	0.1 U

U : Below method blank/method reporting limit
E : Above method limit
NA : Not available
NR : Not Required

NYTEST ENVIRONMENTAL, INC.

REPORT OF ANALYSIS

Log In No : 22587

We find as follows :

Parameter(s)	Lab ID : 2258708 Client ID : GW5101	2258709 SKFB01	Method Blank
Results in mg/L:			
Chemical Oxygen Demand	313	40	3 U
Sulfide	0.2 U	0.2 U	0.2 U
Total Dissolved Solid	2340	10 U	10 U
Total Kjeldahl Nitrogen	2.8	0.1 U	0.1 U

Sample Identification

U : Below method blank/method reporting limit
E : Above method limit
NA : Not available
NR : Not Required

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NYTEST ENVIRONMENTAL, INC.

REPORT OF ANALYSIS

Log In No : 22628

We find as follows :

Sample Identification	Parameter(s)
	Biochemical Oxygen Demand
Results in :	mg/L
Method Blank/Method Reporting Limit :	3 U

Lab ID	Client ID	
2262801	GW5001	3 U
2262802	GW5001MS	3 U
2262804	GW5101	3 U
2262805	GW5201	3 U
2262806	GW5301	3 U
2262807	FD5301	3 U
2262808	GW5401	7
2262809	GW5501	3 U
2262810	GW5601	3 U
2262811	SKFB01	3 U
2262812	GW5701	4

NA : Not available
NR : Not Required

U : Below method blank/method reporting limit
E : Above method limit