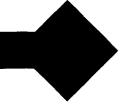


100966

Quality • Integrity • Creativity • Responsiveness



SKINNER LANDFILLWest Chester, Butler County, Ohio

Remedial Design

Groundwater Design Investigation

Volume III of III

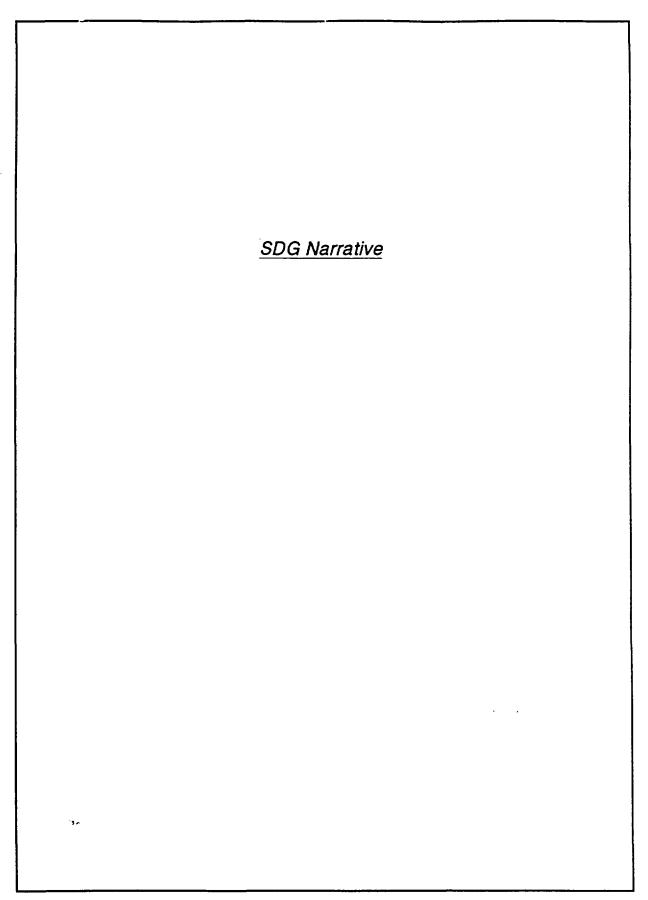
November 9, 1995

Prepared by:

Rust Environment & Infrastructure 11785 Highway Drive Cincinnati, Ohio 45241 Ph: (513)733-9374 • Fx: (513)733-8213



APPENDIX IX



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 adv_sory 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.

00002

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.

00003

NON-CONFORMANCE SUMMARY (Case Narrative)

37 F

Login No.: 22571, 22587

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

243

00004

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 Gidante, 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.

RUST ENVIRONMENT & INFRASTRUCTURE I:\AMN\SLRDIVOA.\WPD

PAGE 1 JANUARY 6, 1995

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 qualified 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

RUST ENVIRONMENT & INFRASTRUCTURE I:\amn\slrdivoa.wpd

PAGE 2 JANUARY 6, 1995

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 SKGW50-01MSD	20 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, SKGW50-01, SKGW51-01, 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.

RUST ENVIRONMENT & INFRASTRUCTURE I:\AMN\SLRDIVOA.WPD PAGE 4 JANUARY 6, 1995

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.

Reviewed By Date

Conthony M. Moce 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	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
Compound											
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	ט סג	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 Ј	2 ј	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 ប	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	U 01	ប 01	10 U	10 U	10 U	10 U	U 01	រ 0 ប	10 U	10 ប	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 บ	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	טסנ	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	เดบ	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.

SKIN6V.XLS (ann) 1/6/95

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?

1. Sample GW5101

1. Sample GW5101

1. Sample GW5101

1. Sample GW5101

2. Cal.b. Second

analysis diluted love

thun expected

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".

Date: January 1992 Revision: 8

YES NO N/A

2.0 Holding Times

يت. سپيد 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	Date Lab Received	Date	
						
						
						
	 					

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 stect data are unusable (R).

Date: January 1992 Revision: 8

YES NO N/A

3.0	System Monitoring Compound (SMC) Recovery	(Form II	π.	
3.1	Are the VOA SMC Recovery Summaries (Form I for each of the following matrices:	I) prese	int	
	a. Low Water	<u> </u>		
	b. Low Soil	\Box		
	c. Med Soil		-	
3.2	Are all the VOA samples listed on the appr System Monitoring Compound Recovery Summar of the following matrices:		ıch	
	a. Low Water	17		
	b. Low Soil	1-7		~
	c. Med Soil	Γ		
	ACTION: Call lab for explanation/ resubmittals. If missing deliverables are unavailable, document effect in data assessment	: s.		
3	Were outliers marked correctly with an asterisk?	\Box		
	ACTION: Circle all outliers in red.			
	Was one or more VOA system monitoring compound recovery outside of contract pecifications for any sample or method lank?	÷	. 1/2	
	yes, were samples re-analyzed?			~
	e method blanks re-analyzed?	\Box		

Date: January 1992 Revision: 8

YES NO N/A

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

- 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% :</pre>

- Flag all positive results as estimated ("J").

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 <u>Matrix Spikes (Form III)</u>

4.1 s the Matrix Spike/Matrix Spike Duplicate scovery Form (Form III) present?

STANDARD OPERATING PROCEDURE

Date: January 1992
Revision: 8

YES NO N/A

4	1.2	Were m	atrix spikes analyzed ncy for each of the i	l at the required collowing matrices	: .	
		a. L	ow Water		<u>1</u>	
		b. I	ow Soil		\Box	
		c. M	ed Soil		1	
λ	CTIC	ON: I	f any matrix spike da he action specified i	ita are missing, t in 3.2 above.	ake	
4	. 3	How ma	ny VOA spike recover: ?	ies are outside QC		-
		,	Water	Soils		
			out of 10	NA out of	10	RAD
4	. 4		ny RPD's for matrix a ate recoveries are ou		pike	Toluen 17 chbrobenzene
			Water	Soils		
			out of 5	NA out of	5	
•		ACTION	: No action is taken data alone. However professional judger results may be used with other QC criticaths need for quality data.	r, using informed ment, the MS/MSD i in conjunction eria to determine	,	
0		Blanks	(Form IV)			
5	5 .	s the	Method Blank Summary	y (Form IV)	1/1	
5	5.2	VOA ik an	ency of Analysis: for a TCL compounds, has a been analyzed for each ples of similar matrioil, medium soil), whent?	a reagent/method ch SDG or every ix (low water,		

Date: January 1992 Revision: 8

> 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. 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. nc 3.11

> Is the chromatographic performance (baseline stability) for each instrument acceptable for VOAs?

ACTION:

Use professional judgement to

determine the effect on the data.

57 3,3 51 3,3 50 3,3 se ns 3,76.0 55 3,3

SOMS D3

VALK 28 Acres 1.35

TRP SKEROL 3,7

57 4.7 FD 2,3

.3**6**.

Contamination

53 3/3 NOTE: "Water blanks", "drill blanks", and distilled water blanks" are validated like any other sample, and are BBCK 29 not used to qualify data. Do not confuse them with mecla 18 the other QC blanks discussed below. 510L 20

- 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)?

Prepare a list of the samples associated with any effect of the contaminated blanks. (Attach a seperative sheet.)

Siloxunes LNSOUI TIC rejected

- 7 -

Date: January 1992

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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.

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 Sample cońc < CRQL Sample conc > CRQL but < 10x blank & <10x blank value & >10x blank value

Methylene

Chloride Flag sample result Report CRQL &

qualify "U"

Acetone with a "U; Toluene 2-Butanone

No qualification is needed

ut < 5x blank

is < 5x blank value

Sample conc > CRQL Sample conc < CRQL & Sample conc > CRQL value & > 5x blank value

Other Contaminants

ag sample result Report CRQL & h a "U"

qualify "U"

No qualification is needed

NOTE:

A: tes qualified "U" for blank contamination are considered as "hits" when qualifying for

ation criteria. ca.

Date: January 1992 Revision: 8

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?	

Date: January 1992 Revision: 8

YES NO N/A

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

DATE	TI	ME	• ,	INSTRUMENT	Sampl	E NUMBERS
						
			٠	·		
ACTION:	data ger		outside	missing data, reject an acceptable twel		11
7.4	Have the m/z 95?	e ion abu	undance	es been normalized t	:0	
	ACTION:		all as	nment is in error, ssociated data as		
7.5		e ion abi strument		criteria been met	for 1/1	
•	ACTION:		ce crit	which do not meet i teria (attach a t).	ion	
	ACTION:		Regio	nce criteria are not on II TPO must		
7.6	: tween	mass li	sts and	iption/calculation e i Form Vs? (Check a ors are found, check	it least	<u></u>

Date: January 1992 Revision: 8

YES NO N/A

7.7	Have the appropriate number of significant figures (two) been reported?	ι'n		
	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?	ग्य		_
	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 present with required header information on page, for each of the following:			
	a. Samples and/or fractions as appropriate	1		_
	b. Matrix spikes and matrix spike duplicates	<u>പ</u>		
	c. Blanks	14		
8.2		nd the		, .
	3. Samples and/or fractions as appropriate	1	_	
	Matrix spikes and matrix spike duplicates (Mass spectra not required)	-		
	c Blanks	17		
	AC ON: If any data are missing, take action specified in 3.2 above.			

Date: January 1992 Revision: 8

		YES	МО	N/A	-
8.3	Are the response factors shown in the Quant Report?	F T		<u>/</u>	
8.4	Is chromatographic performance acceptable respect to:	with			
	Baseline stability?	1	<u></u>		_
	Resolution?	1	<u> </u>		
	Peak shape?	1	<u>V1</u>		
	Full-scale graph (attenuation)?	1	<u></u>		_
	Other:	١ .			
	ACTION: Use professional judgement to determine the acceptability of the data.				
8.5	Are the lab-generated standard mass spectr of the identified VOA compounds present fo each sample?		<u>√</u>		
	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?	n n	$\sqrt{\frac{1}{2}}$		_
8.7	e all ions present in the standard mass actrum at a relative intensity greater n 10% also present in the sample mass strum?	1	<u>, </u>		_

Date: January 1992 Revision: 8

YES NO N/A

8.8 Do sample and standard relative ion intensities agree within 20%?

<u>~</u> _ _

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 <u>Tentatively Identified Compounds (TIC)</u>

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

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

. V: Add "JN" qualifier if missing.

Date: January 1992 Revision: 8

YES NO N/A

9.3 Are any TCL compounds (from any fraction)
listed as TIC compounds (example: 1,2dimethylbenzene 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?

A. B.

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: CO₂ (M/E 44), Siloxanes (M/E 73) Hexane, Aldol Condensation Products, Solvent Preservatives, and related by products - see Functional Guidelines for more guidance).

Date: January 1992 Revision: 8

YES NO N/A

10.0 <u>Compound Quantitation and Reported Detection</u> 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) prement for initial and continuing calibration?

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

Date: January 1992 Revision: 8

YES NO N/A

GC/MS Initial Calibration (Form VI) 12.0

ACTION:

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/1? 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?

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.

except mech -closery resided / me due to blank contemnation

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).

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

12.4 Are the RRFs above 0.05?

Circle all outliers in red. Action:

If any RRF are < 0.05, qualify associated non-detects (R) and flag associated positive Action:

data as estimated (J).

Date: January 1992 Revision: 8

YES NO N/A

1	2.5 Are there any transcription/calculation in the reporting of average response fac (RRF) or *RSD? (Check at least 2 values if errors are found, check more.)	ctors /
13.0	GC/MS Continuing Calibration (Form VII)	
13	.1 Are the Continuing Calibration Forms (Form VII) present and complete for the volatile fraction?	<u> </u>
13	.2 Has a continuing calibration standard been analyzed for every twelve hours of sample analysis per instrument?	<u></u>
डें	ACTION: List below all sample analyses the were not within twelve hours of the previous continuing calibration analysis.	
ACTION	calibration standard has been analyzed wi hours of every sample analysis, call lab explanation/resubmittal. If continuing ca	thin twelve for libration
	data are not available, flag all associat data as unusable ("R").	ed sample
	.3 Do any volatile compounds have a % Differ (% D) between the initial and continuing RRF which exceeds the \pm 25% criteria?	11 11-21-4t
11-22-97 chlorometheine	ACTION: Circle all outliers in red.	Metholene chloride 40.8 Acetone -64.1 Corbon disciplide 30

ACTION: Qualify both positive results and 2-between -57.4

1- 1-1-penkunone -41.5

non-detects for the outlier compound(s) 4-methyl-1-pentunone -61.9

as estimated. When & D is above 90%, reject 1-hexance -85.5

all non-detects for that analyte (R) unusable.

Date: January 1992 Revision: 8

						•	YES	NO.	N/A
13.4	Do an	y vo	latile	compo	unds ha	ve a RRF <0.	.057 <u>1</u>	<u>ا</u> .	
•						in red.			
	ACTIC		non-de	tects	as unus	ualify associable (R) and values.			
13.5	error facto initi	s in rs (al a alue	the r RRF) c nd con s but	eporti r %dif tinuin	ng of a ference	calculation verage resp (%D) betwee (Check at found,	onse en	· ·	ny —
	ACTIC	N: C	ircle	errors	in red	•	•		
	ACTIC	e n	xplana	tion/r	esubmit	call lab for tal, make and note sions".			
14.0	Inter	nal	Standa	rd (Fo	em VIII	7 ·			
14.1	of evand 1	ery	sample limit	and b	lank wi	eas (Form V thin the up 100%) for e	per	1	
	ACTIC	N: I	ist al	1 the	outlier	s below.			
Samp	le #	Inte	rnal S	itd	Area	Lower Lim	it v	pper	Limit
							-		
							 -	 	
							-		
									
									

(Attach additional sheets if necessary.)

Date: January 1992 Revision: 8

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.
 - 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?

1/1

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%.

Reviewed By

Approved By

10 JANUARY 95

> A T

Date

Semivolatile Organic Analytical Data

Skinner Landfill Site West Chester, Ohio

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

Sample ID	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
Compound										
Phenol	10 U									
bis(2-Chloroethyl)Ether	10 U	38	10 U	40	48	10 U				
2-Chlorophenol	10 U									
1,3-Dichlorobenzene	10 U									
1,4-Dichlorobenzene	10 U									
1,2-Dichlorobenzene	10 U									
2-Methylphenol	10 U									
2,2'-oxybis(1-Chloropropane)	10 U									
4-Methylphenol	10 U									
N-Nitroso-di-n-propylamine	10 U									
Hexachloroethane	10 U									
Nitrobenzene	10 U									
Isophorone	10 U									
2-Nitrophenol	10 U									
2,4-Dimethylphenol	10 U									
2,4-Dichlorophenol	10 U									
1,2,4-Trichlorobenzene	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									
Hexachlorobutadiene	10 U									
bis(2-Chloroethoxy)methane	10 U									
4-Chloro-3-Methylphenol	10 U									
2-Methylnaphthalene	10 U									
Hexachlorocyclopentadiene	10 U									
2,4,6-Trichlorophenol	10 U									
2,4,5-Trichlorophenol	25 U									
2-Chloronaphthalene	10 U									
2-Nitroaniline	25 U 🕠	25 U								
Dimethylphthalate	10 U									
Acenaphthylene	10 U									
2,6-Dinitrotoluene	10 U									
3-Nitroaniline	25 U									
Acenaphthene	10 U									
2,4-Dinitrophenol	25 U									
4-Nitrophenol	25 U									

Semivolatile Organic Analytical Data

Skinner Landfill Site West Chester, Ohio

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

Sample ID	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
Compound										
Dibenzofuran	10 U									
2,4-Dinitrotoluene	10 U									
Diethylphthalate	10 U	1 J								
4-Chlorophenyl-phenylether	10 U									
Fluorene	10 U									
4-Nitroaniline	25 U									
4,6-Dinitro-2-methylphenol	25 U									
N-Nitrosodiphenylamine	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									
Anthracene	10 U									
Carbazole	10 U									
Di-n-butylphthalate	10 U									
Fluoranthene	10 U									
Pyrene	10 U									
Butylbenzylphthalate	10 U									
3,3'-Dichlorobenzidine	10 U									
Benzo(a)anthracene	10 U	10 U .								
Chrysene	10 U									
bis(2-Ethylhexyl)phthalate	10 U	1 J	10 U							
Di-n-octylphthalate	10 U									
Benzo(b)fluoranthene	10 U									
Benzo(k)fluoranthene	10 U									
Benzo(a)pyrene	10 U									
Indeno(1,2,3-cd)pyrene	10 U									
Dibenz(a,h)anthracene	10 U ··	10 U								
Benzo(g,h,i)perylene	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.

	Date: January 1992 Revision: 8
	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 <u>Holding Times</u>

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.

essibite .

Date: January 1992 Revision: 8

YES NO N/A

Table of Holding Time Violations

Sample	Sample Matrix	Date Sampled	(See Date Lab Received		Date Analyzed
·					
					
					
					
					
			<u> </u>		
	ACTION:	flag all po ("J") and s as estimate	sample quanti ad ("UJ"), and	mes are exceed ts as estimate tation limits d document in ing times were	d
	holding upon re profess reliabi addition At a mi "J", bu data ar	rtime, either analysis, the sional judger the phal storage in the review to unusable	er on the firm of reviewer manner to determine the sample coults should be may determine the firm.	mine the effects of	detect exceeded by
3.0	Surroga	te Recovery	(Form II)	•	
3.1	Are the (Form 1 matrice	(I) present t	ate Recovery for each of t	Summaries he following	·
	a. Lo	ow Water			1√1 — —
	b. Lo	ow Soil			<u> </u>
	c. Me	ed Soil			□ - ▼

Date: January 1992 Revision: 8

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	1 √1
	b. Low Soil	山 _ ✓
	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?	<u>1√1</u>
	ACTION: Circle all outliers in red.	
3.4	Were two or more base-neutral <u>OR</u> acid surrogreecoveries out of specification for any samp or method blank?	
	If yes, were samples reanalyzed?	□ _ ✓
	Were method blanks reanalyzed?	<u>⊓</u> _ ≺
	ACTION: If all BNA surrogate recoveries are > 10% but two within the base-neutral or acid fraction do not meet SOW specifications, for the affected fraction only (i.e. base-neutral or acid compounds):	1
·	 Flag all positive results as estimated ("J"). Flag all non-detects as estimated detection limits ("UJ") when recoveries are less than the lower acceptance limit. If recoveries are greater than the upper acceptance limit, do not qualify non-detects. 	t. r

Date: January 1992 Revision: 8

YES NO N/A

1/1

If any base-neutral or acid surrogate has a recovery of <10%: 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 11/1 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. Matrix Spikes (Form III) Is the Matrix Spike/Matrix Spike Duplicate ι√ı Recovery Form (Form III) present?

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

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

Low Water

Low Soil

Med Soil

c.

4.0

Date: January 1992 Revision: 8

YES	NO	N/A
-----	----	-----

4.3	How many BNA spike QC limits?	recoveries are outside		
	Water	Soils		
	8 out of 22	N/A out of 22		
4.4	How many RPD's for spike duplicate relimits?	matrix spike and matrix coveries are outside QC		
	Water	<u>Soils</u>		
	Ø out of 11	N/A out of 11		
	alone. How profession reviewer matrix spi conjunction determine	is taken on MS/MSD data vever, using informed hal judgement, the data hay use the matrix spike ke duplicate results in on with other QC criteria the need for some tion of the data.		
0	Blanks (Form IV)			
5.1	Is the Method Blan	nk Summary (Form IV) pres	ent? //	
5.2	Frequency of Analy	/sis:		
	reported per 20 sa	nod blank analysis been amples of similar matrix, level, and for each extra		
5.3	each GC/MS system	plank been analyzed for used? 9/SV, Section 8.7)	(<u>\lambda</u>	
	call lab : If not ava judgement	thod blank data are missifor explanation/resubmittailable, use professional to determine if the associate should be qualified.	al.	

5.

Date: January 1992

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YES NO N/A

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?

ı√ı

ACTION: Use professional judgement to determine

the effect on the data.

6.0 Contamination

"Water blanks", "drill blanks" and Note:

"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.

<u>[√1</u>

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.)

All field blank results associated to Note: 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.

Date: January 1992 Revision: 8

> 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 (D)

as unusable (R).

Sample conc > CR but < 10x blank	QL Sample conc <crql &="" 10x="" blank="" is<="" th="" value<=""><th>Sample conc > CRQL value & >10x blank</th></crql>	Sample conc > CRQL value & >10x blank
Common Phthalate	Esters	
Flag sample resu with a "U";	lt Report CRQL & qualify "U"	No qualification is needed
Sample conc > CR but < 5x blank	QL Sample conc < CRQL & is < 5x blank value	Sample conc > CRQL value & >5 blank value
Other Contaminan	ts	
Flag sample resu with a "U";	lt Report CRQL & qualify "U"	No qualification is needed
NOTE:	Analytes qualified "U" for are still considered as "he for calibration criteria.	blank contamination its" when qualifying
ACTION:	For TIC compounds, if the concentration in the sample than five times the concentrate most contaminated assofiag the sample data "R" (tration in ciated blank,
	re field/rinse/equipment bl ted with every sample?	anks
ACTION:	For low level samples, not assessment that there is n field/rinse/equipment blan	o associated k. Exception:

samples taken from a drinking water tap do not have associated field blanks.

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YES NO N/A

				•					
7.0		GC/MS I	nstru	ment Perform	nance Chec	k			
	7.1	Are the (Form V) (DFTPP)) pres	S Instrument sent for Dec	Performa afluorotr	nce Check Form iphenylphosphi	i\1	_	_
	7.2	charge	(m/z)	nced bar gra listing for nour shift?	ph spectr the DFTF	um and mass/ P provided for	<u></u> 1√2		
	7.3	been and	alyzed		twelve ho	ck solution urs of sample	ार्ग		_
		ACTION:	samp) assoc	date, time, le analyses ciated GC/MS lable.	for which	no			
	DATE	TI:	ME	INSTRUMENT	-	SAMPLE NUMBERS	-		,
		- <u>-</u>			- -		-		
		ACTION:	rejed		l data ger	ssing data, merated outside calibration	•		
		ACTION:	If m	ass assignm clated samp	ent is in le data a:	error, flag als unusable (R).	11		
	7.4	Have th	e ion	abundances	been nor	malized to m/z	i √1		_

14 in 14

STANDARD OPERATING PROCEDURE

Date: January 1992
Revision: 8

YES NO N/A

	7.5		ion abunda rument usa		eria been m ;	et for	1/1	•	_
		a			do not mee (attach a s				
		30	f ion abuset, the Ree notified	egion II	iteria are TPO must	not			
	7.6	between m	ass lists	and Form	/calculatio Vs? (Check	at least		./>	
	7.7	Have the		te number	e found, ch of signifi ?		<u>1</u> √7		_
		· e	xplanation	n/resubmi correctio	st, call la ttal, make ns and docu		ct		,
	7.8	Are the sacceptabl		the mass	calibratio	on compound	1 √ J		_
		w	hether as:	sociated	dgement to data should , or reject	be			
8.0		Target Co	mpound Li	st (TCL)	Analytes				
	8.1	present w		red heade	ta Sheets (r informati wing:				
		a. Samp	les and/o	r fractio	ns as appro	priate	11/	_	_
		b. Matr	ix spikes	and matr	ix spike du	plicates	17)		_
		c. Blan	ks				$1\sqrt{1}$		_

Date: January 1992 Revision: 8

YES	NO	N/A

8.2		cleanup been performed on all soil/ t sample extracts?	L		✓
	ACTION:	If data suggests that GPC was not performed, use professional judgement. Make note in "Contract Problems/Non-Compliance".			
8.3	the mass	BNA Reconstructed Ion Chromatograms, sepectra for the identified compounds, data system printouts (Quant Reports) in the sample package for each of the ng?			
	a. Sa	mples and/or fractions as appropriate	1√ 1		
		trix spikes and matrix spike duplicates ass spectra not required)	1/1		_
	c. Bl	anks	<u>1</u> √1		_
	ACTION:	If any data are missing, take action specified in 3.2 above.		•	:
8.4	Are the Report?	response factors shown in the Quant	1/1		_
8.5	Is chro	matographic performance acceptable with to:			
		Baseline stability?	1/7	. —	_
		Resolution?	1√ 3		_
		Peak shape?	11/1		
		Full-scale graph (attenuation)?	11/1		_
		Other:	1.1		\checkmark

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

Date: January 1992 Revision: 8

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.
	Tentatively Identified Compounds (TIC)
۱ ۵	Are all Tentatively Identified Compound Forms

9.0

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?

Date: January 1992

Revision: 8

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: īΛī Samples and/or fractions as appropriate 1/1 ъ. Blanks ACTION: If any TIC data are missing, take action specified in 3.2 above. ACTION: Add-"JN" qualifier if missing. 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)? 1/1 ACTION: Flag with "R" any TCL compound listed as a TIC. 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 ग्र 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).

Date: January 1992

Revision: 8

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 7-JANYS Form I result. Were any errors found?

10.2 Are the CRQLs adjusted to reflect sample SK-GW51-01 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.

Date: January 1992

Revision: 8

YES NO N/A

12.0	GC/MS Initial	Calibration	(Form VI)
------	---------------	-------------	-----------

i de la companya de l

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

ı√ı

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%) $\sqrt{1}$

ACTION: Circle all outliers in red.

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 nondetect results for that analyte R (unusable).

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

12.3 Are all BNA compound RRFs > 0.05?

22F 11

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 1/1 are found, check more.)

ACTION: Circle Errors in red.

Date: January 1992

Revision: 8

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)	(IIV
------	--------------------------------------	------

- 13.1 Are the Continuing Calibration Forms (Form VII) ı√ı 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?

1√1

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 <u>√ ∟:</u> 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.

Date: January 1992 Revision: 8

YES	NO	N/A
-----	----	-----

	ILS RO R/A	
13.4	Do any semivolatile compounds have a RRF <0.05?	<u> </u>
	ACTION: Circle all outliers in red.	
·	ACTION: If RRF <0.05, qualify as unusable (R) associated non-detects and "J" associated positive values.	1
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).	<u>√ı</u> _
	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.	
4.0	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.	
ample #	Internal Std Area Lower Limit Upper	r Limit
 	<u> </u>	
	·	

(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.

Date: January 1992 Revision: 8

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?

1/1

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.

RUST ENVIRONMENT & INFRASTRUCTURE C:\WORD5\LIBRARY\SKIN6M.DOC

PAGE 1 January 9, 1995 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 <u>Deliverable Requirements</u> 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%.

Table 1
GFAA QC Analysis Exceedance Summary

		Analytical Spike
Sample ID	Analyte	Recovery
SK-GW50-01	Se	65.0%
	TI	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%

TBL1.XLS (amn)

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.

TBL2.XLS (amn) 1/10/95

Inorganic Analytical Data

Skinner Landfill Site West Chester, Ohio

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

Sample ID	SK-GW50-01	SK-GW51-01	SK-GW52-01	SK-GW53-01	SK-GWFD-01	SK-GW56-01	SK-GW57-01	SK-GWFB-01
Analyte								
Aluminum	17200 V	967	26200	5050 V	9180 V	10900	13400	57 U
Antimony	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							
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							
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							

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.

SKIN6M.XLS (amn) 1/9/95

clarification.

STANDARD OPERATING PROCEDURE Page 4 of 34 ile: Evaluation of Metals Data for the Date: Jan. 1992 Contract Laboratory Program Appendix A.1: Data Assessment - Contract Naber: Revision: 11 Compliance (Total Review) YES NO NZÀ 1.1 Contract Compliance Screening Report (CCS) - Present? ACTION: If no, contact RSCC. 1.2 Record of Communication (from RECC) - Present? ACTION: If no, request from RSCC. ... 3 Trip Report - Present and complete? MCTION: If no, contact RSCC for trip report. .4 Sample Traffic Report - Present? Legible? MCTION: 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? נ עו ACTION: If no, prepare Telephone Record Log, and contact laboratory. amigs 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? MCTION: If no for any of the above, contact RSCC for

STANDARD OFFICE PROCEDURE

tie: Evaluation of Metals Data for the

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Date: Jan. 1992

	Contract Laboratory Program Appendix A.1: Data Assessment - Contract Compliance (Total Review)	Revision:	11	
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 mamber?		_	
	EPA sample No.?	\checkmark	_	
	SDG No.?	\Box	_	
	Contract No.?	\Box	_	
	Correct units?	ب		
tan-	Matrix?	\checkmark		·
•.	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-DX for:			
	(NOTE: Check all forms against rew data.)			
	(a) all analytes analyzed by ICP? \mathcal{U}^{n}	19:5	<u>/</u> .	
	(b) all analytes analyzed by GFAA? 8 N	ٺ	✓ .	
	(c) all analytes analyzed by AA Flame?		<u> </u>	<u> </u>
	(d) Harcury?		<u>√</u> .	
	(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: 184-2 Revision: 11

		YES	750	N/A
1.7	Rev Data			
1.7.1	Digestion Log* for flame AN/ICP (Form XIII) present?	\checkmark		<u></u>
	Digestion Log for furnace AA Form XIII present?	لك	_	
	Distillation Log for mercury Form XIII present?	4	_	
	Distillation Log for cyanides Form XIII present?		-	
٠	Are pH values (pH<2 for all metals, pH>12 for cyanide) present?	\checkmark	_	
	*Weights, dilutions and volumes used to obtain values.	•		
	Percent solids calculation present for soils/sediments?	ا ا		<u> </u>
	Are present on sample preparation logs sheets?	<u> </u>		
.2	Measurement read out record present?	$ \mathcal{L} $		
	Flame AA	[]	_	
	Furnace AA	ر ک	<u> </u>	_ .
	Marcury	ب ك		
	Cyanides			
1.7.3	Are all raw data to support all sample analyses and QC operations present?	<u></u>	٠	
	\ 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 Date: Jan. 1992 Number: 137-2 Laboratory Program Appendix A.1: Data Assessment - Contract Revision: 11 Compliance (Total Review) N/A YES NO 1.8 Kolding Times - (aqueous and soil samples) (Domine sample traffic reports and digestion/distillation logs.) [1] Mercury analysis (28 days). exceeded? Cyanide distillation (14 days). . . . exceeded? Other Metals analysis (6 months). . . . exceeded? Prepare a list of all samples and analytes for NOTE: 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. MCTION: If yes, reject (red-line) values less than Instrument Detection Limit (IDL) and flag CALLA CALLA as estimated (J) the values above IDL even though sample(s) was preserved properly. Is pH of aqueous samples for:2 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? MCTION; If no, prepare telephone record log and contact laboratory for submittal.

Are correct units (ug/l for waters and mg/kg for soils)

Are soil sample results for each parameter corrected for

Are all "less than IDL" values properly coded with "U"? $[\checkmark]$

indicated on Form I's?

percent solids?

..9.2

SINEARD OPERATING PROCEDURE

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tle: Evaluation of Metals Data for the Contract Laboratory Program Appendix A.1: Data Assessment - Contract Revision: 11 Compliance (Total Revisus)

	Are the correct concentration qualifiers used with final data?		" <u>↑</u>	N/A	
	MCTION: If no for any of the above, prepare Telephone Record Log, and contact laboratory for correct data.	PF	DELIVERI QUIREMA		
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?	• <u>~</u>			
	Was a brief physical description of samples given on Form I's?	<u></u>	_		
	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				
1.13.1	Is record of at least 2 point calibration present for ICP analysis?	<u></u>			
	Is record of 5 point calibration present for Hg analysis?	ر 🗸			
	Is record of 4 point calibration present for:				
	Flame AA?			1	
	(Furnace AA?				
	Cyanides?				
	Is one calibration standard at the CROL 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".

SINCARD OPERATING PROCEDURE Page 9 of 34 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

1.10.2	Is corn	elation coefficient less than 0.995 for:	YES	NO	N/A	
		Heroury Analysis?		لك		
		Cyanide Analysis?		\checkmark		
		Atomic Absorption Analysis?	_			
	ACTUON:	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.).	2			
1.10.3		In the instance where less than 4 standards are measured in absorbance (or peak area, peak height mode, are the remaining standards analyzed in concentration mode immediately after calibration within ±10% of the true values?	,etc.)		<u>/</u>	
	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 ranging indicated by good recovery of standard(s).	•			
* * * *	Form II	A (Initial and Continuing Calibration Varification	<u>a) =</u>			
	Present	and complete for every metal and cyanide?	<u></u>	· —		
·		and complete for AA and ICP when both are r the same analyte?				
	ACTION:	If no for any of the above, prepare Telephone Record Log and contact laboratory.				
1.11.2	are out	on each Form IIA all percent recoveries that side the contract windows. calibration standards (initial and continuing)				
	wicum	control limits: Metals- 90-110%R?				
		Hg - 80-120kR?			—	
•		Omnider_ 95-115192	1/1			

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: 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

E	CM: 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 %r="" (cn,="" (red-line)="" (ut)="" 65-135%).="" 65-79%).="" 70-130%;="" 70-84%;="" 75-125%="" 75-89%="" as="" ccv="" control="" data="" either="" estimated="" five="" hg,="" icv="" if="" is="" limits.<="" of="" on="" or="" out="" outside="" qualify="" range="" recovery="" reject="" samples="" side="" standard="" th="" the="" unacceptable="" verification=""><th></th><th>XO</th><th>N/A</th></idl>		XO	N/A
	as continuing calibration performed every 10 samples or every 2 hours?	ر ک	~ ✓	
•	as ICV for cyanides distilled?		_	
).	QN: If no for any of the above, write in the Contract-Problem/Non-Compliance section of the "Data Assessment Narrative".			
12	Form II B (CROL Standards for AA and ICP) -			
1.12.1	Was a CRDL standard (CRA) analyzed after initial calibration for all AA metals (except Hg)?	(<u> </u>		
	Was a mid-range calib. verification standard distilled and analyzed for cyanide analysis?	<u> </u>	_	
	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.)	<u>\(\sqrt{1}\) </u>		
	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 ± CROL ICP Analysis - **True Value ± 2CROL CN Analysis - **True Value ± 0.5 x True Value.			

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

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1.12.2	Was CRI analyzed after ICV/ICB and before the final CCV/CCB, and twice every eight hours of ICP run?	¥ 25	ЖO	N/A	
	ACTION: If no, write in Contract Problem/Non-Compliant Section of the "Data Assessment Narrative".				
12.3	Circle on each Form IIB all the percent recoveries that are outside the acceptance vindows.				
	Are CRA and CRI standards within control limits:				
	Metals 80 - 120%R?	(✓_)			
	Is mid-range standard within control limits:				
	Cyanide 80 - 120%?	· []			•
MG-1	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 if the recovery is greater than 150%. Qualify the samples on either side of CRI standard out the control limits. Note: Flag or reject the final results only when same raw data are within the affected ranges and the standards are outside the acceptance windows.	e t; range 50t of side ple cROL			
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?	[]		<u> </u>	
	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'		

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		•			
	Metrical:	If no, prepare Telephone Record Log, contact laboratory and write in the Contract-Problems/ Non-Compliance section of the "Data Assessment N	YES Serretive*	<u> </u>	N/A
1.13.2		n each Form III all calibration blank values above CRUL (or 2 x IUL when IUL > CRUL).			
	Are all a	calibration blanks (when IDL <crol) less="" or<br="" than="">the Contract Required Detection Limits (CROLs)?</crol)>	· 🗸		
	·	calibration blanks less than two times nt Dataction Limit (when IDL>CROL)?			<u> </u>
	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 CROL (or 2xIDL) and nearest good calibration blank. Flag five samples on either side of the calibration blank outside the control limits.	.		
14	(Note: T	(Preparation Blank) - he preparation blank for marcury is the same alibration blank.)			
1.14.1	Was one	prep. blank analyzed for:		,	
		each Sample Delivery Group (SDG)?	₩ .		
	•	each batch of digested samples?	رك ا		_
		each matrix type?			
	\	both AA and ICP when both are used for the same analyte?	[]		<u>/</u>
	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 flowed as estimated (7)			

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		YES	<u> </u>	N/A	
4.1.14.2	Is concentration of prep. blank value greater than the CROL when IDL is less than or equal to CROL?		<u></u>	_	
	If yes, is the concentration of the sample with the least concentrated analyte less than 10 times the prep.blank?			<u> </u>	
•	ACTION: If yes, reject (red-line) all associated data greater than CROL 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 CROL?			<u>√</u>	
	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?		<u>(</u>		
•	ACTION: If yes, reject (red-line) all associated same results less than 10xCROL.	ole			
1.15	Form IV (ICP Interference Check Sample)				
1.15.1	Present and complete?	(<u> </u>			
	(NOTE: Not required for furnace AA, flame AA, mercury cyanide and Ca, Mg, K and Na.)	7.			
	Was ICS analyzed at beginning and end of run (or at least twice every 8 hours)?	[]	<u>.</u>	_	
	ACTION: If no, flag as estimated (J) all the samples thich AL, Ca, Fe, or Mg is higher than in IC				
1.15.2	Circle all values on each Form IV that are more than \pm 20% of true or established mean value.				
	Are all Interference Check Sample results inside the control limits (± 20%)?		_	_	
، المعيني	If no, is concentration of Al, Ca, Fe, or Mg lower than the respective concentration in ICS?	[]		/	

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	Action: If no, flag as estimated (J) those position results for which ICS recovery is between flag all sample results as estimated if I recovery falls within 50-79%; reject (red those sample results for which ICS recover than 50%; if ICS recovery is above 150%, positive results only (not flagged with a	121-150%; CS -line) my is less reject	№	N/A	
:. : 6	Form V A (Spiked Sample Recovery - Pre-Dignation/Fre (Note: Not required for Ca, Mg, K, and Na (both mat (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?			<u> </u>	
	<u>ACTION</u> : If no for any of the above, flag as estimated (J) all the positive data less than four times the spiking levels specific in SOW for which spiked sample was not analysed.				
•	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?		<u>(</u> √)		
	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			
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?	<u></u>		_	
	If no, is sample concentration greater than or equate to four times spike concentration?	Al, Fr, Mn	Se, Ag, T	i į	

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.1e:	Contract Lab Appendix A.	of Metals Data forestory Progress L: Data Assesses (Total Review)	I		Jan. 199 191- 2 n: 11	
				YES	NO	N/A
	ACTION:	whose concentrate to four times analytes on Fo	ard spile recoveries for stions are greater than o spile added. If no, cir on V for which sample co our times the spile cond	or equal tile those nountration		
			control limits (75-125%) I's and Form VA?	<u> </u>		
	ACTION:		the Contract - Problem/ ion of "Data Assessment!			
1.16.	•	spike recoveries	: (a) less than 30%?		<u></u>	
			(b) between 30-74%?	_/	[]	,
			(c) between 126-150%?	√ 4×		
			(d) greater than 150%?	<u> </u>		
	ACTION:	data: if betwee aqueous data as 126-150%, flag aqueous data no greater than 15	Pt, reject all associated in 30-74%, flag all associated (J); if between estimated (J) all associated (J) al	ciated men cociated 1		
1.16.		mile recoveries	l: .ess than 10%?			<u>, </u>
		(b) I	petween 10-74%?		()	<u> </u>
		(c) I	pertween 126-200%?	-	()	_/
		(d) c	reater than 200%?		1	J

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	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".	ЖO	N/A
4.1.17	Form VI (lab Dublicates)		
4.1.17.1	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?		<u>,</u>
	ACTION: If no for any the above, flag as estimated (J) all the data ACROL* 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 RFD or Difference for each analyte.		
.1.17.2	Was field blank used for duplicate analysis? MCTION: If yes, flag all data MCTION: If yes, flag all data CROI# as estimated (J) for which field blank was used as duplicate.	<u>[√</u>]	
.1.17.3	Are all values within control limits (RPD 20% or difference < ±CROL)?	<u>/</u>	
	If no, are all results outside the control limits flagged with an * on Form I's and VI? $[\underline{\hspace{1cm}}\underline{\hspace{1cm}}]$		
	ACTION: If no, write in the Contract - Problems/Non- Compliance section of "Data Assessment Narrative".		

[&]quot; Substitute IDL for CRDL when IDL > CRDL.

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154-2 Contract Laboratory Program Appendix A.1: Data Assessment - Contract Revision: 11 Compliance (Total Review) YZS 8 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 enalyzed 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 GFM. **Actions** Circle on each Form VI all values that are: RPD > 50%, or Difference > CROLA Is any RFD greater than 50% where sample and duplicate $[\sqrt{\ }]$ are both greater than or equal to 5 times *CROL? Is any difference** between sample and duplicate greater than *CRDL where sample and/or duplicate is less than 5 times *CROL? <u>ACTION</u>: 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 CROL* Is any RPD (where sample and duplicate are both greater than or equal to 5 times *CROL) : ·> 100%? Is any **difference between sample and duplicate (where sample and/or duplicate is less than 5x*CROL) :

> 2x*CRDL?

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

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le:	Evaluation of Metals Data for the Contract Laboratory Program Appendix A.1: Data Assessment - Contract Compliance (Total Review)	Date: Jan. Number: Revision:	151- 2
		YES)	20

2	CTION: If yes, flag the associated data as estimated.			
18 . 1	ield Duplicates		-	
.18.1 ¥	Here field duplicates analyzed?			
2	CTION: 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.			
	Do not calculate RFD when both values are less than IDL.Flag all associated data only for field duplicate pair.			٠
.8.2	CHACHE			
	Circle all values on self prepared Form VI for Field duplicates that are: HØ7, RPD > 50t, or Difference > CROLA			
	is any RPD greater than 50% where sample and duplicate are both greater than or equal to 5 times *CROL?	<u>✓</u>	<u></u>	
1	is any **difference between sample and duplicate greater than *CROL where sample and/or duplicate is less than times *CROL?		<u></u>	<u>.</u>

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.

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		XIS	750	N/A
.18.3	Boil/Sediment			
	Circle all values on self prepared Form VI for field duplicates that are:			
	RPD >1004, car		•	
	Difference > 2 x CROLA	•		
,	Is any RFD (where sample and duplicate are both			
	greater than 5 times *CROL) : >100%?	_	[]	_/
	Is any **difference between sample and duplicate (where sample and/or duplicate is less than 5x *CROL)	:		
	>2x *CROL?	_		<u>√</u> .
	MCTICN: If yes, flag the associated data as estimated	•		
_9	Form VII (laboratory Control Sample) (Note: ICS - not required for aqueous Hg and cyanide analyses.)	,		
.19.1	Was one LCS prepared and analyzed for:			
	each SDG?	<u></u> _	_	
	each batch samples digested/distilled?		<u>.</u>	
	both AA and ICP when both are used for the same analyte?			<u> </u>
	ACTION: If no for any of the above, prepare Telephone Record Log and contact laboratory for submitt of results of LCS. Flag as estimated (J) all the data for which LCS was not analyzed.	اه		
	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			

ubstitute IDL for CRDL when IDL > CRDL.

-- use absolute values of sample and duplicate to calculate the difference.

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

estimated.

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								_
					<u>Y75</u>	ЖO	N/A	
1.19.2	Acresus 10	7						
		control limits	the LCS percent: (80 - 120%) exces					
	Is any LCS	recovery:	less th	an 50%?		\checkmark		
			between 50% as	nd 79%?		u	<u></u>	
			between 121% an	d 150%?		\checkmark	_	
			greater the	n 150%?			_	
Salah		estween 50% and as estimated (all positive (reject (red-line d 79%, flag all a J); between 121% not flagged with greater than 150% ts.	esociated dated and 150%, flate (UM) result	1 5			
1.19.3	Solid ICE							
	2. I	injections or regardless of us estimated (If IDL of an a true value of	ue of LCS is rejected analytical spike LCS recovery, flaction of the LCS, disregard the cut of control li	recovery crit g the associa o or greater e "Action" be	teria, sted dat than	· a		
		ls LCS "Found" Limits on Form	Value higher the VII?	n the control	1	·		
		If yes, qualifus estimated.	y all associated	positive data	.			
		Is LCS "Found" limits on Form	value lower than VII?	the Control		<u></u> ;	<u>/</u>	
	ACTION:	If yes, qualif	y all associated	data as				

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fare !

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Contract Laboratory Program Revision: 11 Appendix A.1: Data Assessment - Contract Compliance (Total Review) XIS **120** N/A Form IX (ICP Serial Mintion) -.1.20 NOTE: Serial dilution analysis is required only for initial concentrations equal to or greater than 10 x IDL. Was Serial Dilution analysis performed for: .1.20.1 [<u>√</u>] each SDG? each matrix type? each concentration range (i.e. low, mad.)? MOTION: If no for any of the above, flag as estimated all the positive data \geq 10xIDLs or \geq CROL when 10xIDL ≤ CROL for which Serial Dilution Analysis was not performed. (\sqrt{1}) Was field blank(s) used for Serial Dilution Analysis? ACTION: If yes, flag all associated data ≥ 10 x IDL as estimated (J). If $10xIDL \leq CROL$, flag all data > CROL. .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". Circle on each Form IX all percent difference that are outside the control limits for initial .1.20.4 concentrations equal to or greater than 10 x IDLs only. JAR, GW52 Are any & difference values:

> 10%?

≥ 100%?

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	ACTION: Flag as estimated (J) all the associated sample data > 10xIDLs (or > CROL when 10xIDL < CROL) for which percent difference is greater than 10 but less than 100t. Reject (red-line) all the associated sample results equal to or greater than 10xIDLs (or > CROL when 10xIDL < CROL) for which PD is greater than or equal to 100%.	XXX	82	S/A	
	Note: Flag or reject on Form I's only the sample result whose associated raw data are ≥ 10xIDL (or ≥ CR when 10xIDL CROL)				
1.21	Purnace Atomic Absorbtion (AA) OC 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?	<u>_</u>	_		
	ACTION: If no, <u>reject</u> 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%?	∠ 1			
	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?	<u> </u>		_	
	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 results as estimated; reject the associated sam results if the recovery is less than 10%; reject positive sample results if the recovery is great than 200%.	sample ple t			

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

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tle: Evaluation of Metals Data for the Contract Laboratory Program Number Appendix A.1: Data Assessment - Contract Revis

(Total

Compliance

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YES 70 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 (Nethod of Standard Addition Results) دك 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? MITION: If yes, reject (red-line) the affected data. Was *MSA required for any sample but not performed? 22.3 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). 5K-GW52-01,50 Was proper quantitation procedure followed correctly .1.22.4 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.

Review)

^{*} MSA is not required on LCS and prep. blank.

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Contract Laboratory Program
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> Is field blank concentration less than CFOL (or 2 x IDL when IDL > CROL) for all parameters

of associated aqueous and soil samples?

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α λ	ontract Lab	of Metals Data forestory Program : Data Assessmi (Total Review)		Date: Ji Number: Revision:	157-2	1
	** ** **	no diala blank		YZS	XD	N/A
		ther QC criteri	value already rejected a?			\checkmark
	*******	all associated than or equal value. Reject or results that we basis are less	(except field blank results) positive sample data less to five times the field blank on Form I's the soil sample hen converted to ug/L on wet s then or equal to five times k value in ug/L.			
.1.25	Tom I.	II. III Werifi	cation of Instrumental Parameter	25).		
.1.25.1	Is verifi	ication report p	resent for:	٠		
		Instrument De	tection Limits (quarterly)?	\checkmark		
	ICP I	Interelement Cor	rection Factors (annually)?	u		
		IO	Linear Ranges (quarterly)?			
	MOTION:	If no, contact	TPO of the lab.			
.1.25.2		Instrument Detection ()	tion Limits) - (Note: IDL is no	*		
.1.25.2.	Are IDLs	present for:	all the analytes?		-	
			all the instruments used?	u	_	
	For both analyte?	AA and ICP when	both are used for the same			<u>√</u>
			of the above, prepare of Log and contact			
.1.25.2.	2 Is IDL g	reater than CROI	for any analyte?		\checkmark	-
\$	analyzed	is the concentra on the instrume than 5 x IDL.	tion on Form I of the sample int whose IDL exceeds CRDL,	r 1		/

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greater than 90%).

NOTE: Reject or flag(J) only the sample results that were not previously rejected or flaged due to other QC criteria.

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			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	Tom.	T (Linear Rences)			
1.25.3.1	Was ar	ny sample result higher than high linear range P.			
		ny sample result higher than the highest ration standard for non-ICP parameters?	· . <u> </u>		
		for any of the above, was the diluted to obtain the result on Form I?	<u>√</u>		_
	207703	<pre>If no, flag the result reported on Form I as estimated(J).</pre>			
1.26	Parcel	nt Solids of Sediments			
1.26.1	Are p	ercent solids in sediment(s): < 50%?	_ ()		
		< 104?			
N T		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		· :	·

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.

EPA SAMPLE NO.

GW5001

Contract: 9421375 Lab Name: NYTEST ENV INC 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

JESS 12

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)

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

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/		Q
74-87-3 74-83-9 75-01-4 75-00-3 75-09-2 67-64-1 75-35-4 75-35-4 75-34-3 540-59-0 67-66-3 107-06-2 78-93-3 71-55-6 75-27-4 78-87-5 10061-01-5 79-01-6 124-48-1 79-00-5 124-48-1 79-00-5 124-48-1 79-01-6 124-48-1 79-01-6 124-48-1 79-01-6 124-48-1 79-01-6 124-48-1 79-01-6 124-48-1 79-01-6 124-48-1 79-01-6 124-48-1 79-01-6 124-48-1 79-01-6 124-48-1 79-01-6 124-48-1 79-01-6 124-48-1 10061-02-6 75-25-2 108-10-1 591-78-6 108-88-3	Chloromethane_ Bromomethane_ Vinyl Chloride Chloroethane_ Methylene Chlo	cride		ם מטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטט
100-41-4	Chlorobenzene Ethylbenzene Styrene Xylene (total)		10 10 10 3	U U JB

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1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

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

27. 28. 29. 30.

300

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: ____(uL)

Number TICs found: 3

Soil Aliquot Volume: ____(uL)

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	UNKNOWN SILOXANE UNKNOWN SILOXANE UNKNOWN SILOXANE	12.230 17.085 21.214	11 43 19	J J
14. 15. 16. 17. 18.				
20. 21. 22. 23. 24. 25. 26.				

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3/90

FORM I VOA-TIC

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

% 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: ____(u/.)

CONCENTRATION UNITS:

Date Received: 11/19/94

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

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FORM I VOA

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: NYTEST ENV INC Contract: 9421375 GW5101

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)

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

Number TICs found: 4

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 2. 3. 4.	UNKNOWN UNKNOWN AROMATIC UNKNOWN AROMATIC UNKNOWN AROMATIC	11.300 20.765 21.261 22.739	8 10	J J
6. 7. 8. 9. 10.				
12. 13. 14. 15. 16.				
19. 20. 21.				
23. 24. 25. 26. 27. 28.				
29.				

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:

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)

5.0 (g/mL) ML

Dilution Factor: 5.0

Soil Aliquot Volume: (uL)

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

CAS NO. COMPOUND

Soil Extract Volume: ____(uL)

CAS NO. COMPOUND (ug/L or ug/kg	3) ng/r	Q
74-87-3Chloromethane	50	U
74-83-9Bromomethane	50	Ü
75-01-4Vinyl Chloride	50	Ü
75-00-3Chloroethane	20	ù.
75-09-2Methylene Chloride	22	JED
67-64-1Acetone	50	U
75-15-0Carbon Disulfide	50	Ū
75-35-41,1-Dichloroethene	50	Ū
75-34-31,1-Dichloroethane	50	Ū
540-59-01,2-Dichloroethene (total)	50	U
67-66-3Chloroform	50	U
107-06-21,2-Dichloroethane	50	U
78-93-32-Butanone	50	U
71-55-61,1,1-Trichloroethane	50	U
56-23-5Carbon Tetrachloride	50	U
75-27-4Bromodichloromethane	50	U
78-87-51,2-Dichloropropane	50	U
10061-01-5cis-1,3-Dichloropropene	50	Ū
79-01-6Trichloroethene	50	Ŭ
124-48-1Dibromochloromethane	50	U
79-00-51,1,2-Trichloroethane	50	U
71-43-2Benzene	77	D
10061-02-6trans-1,3-Dichloropropene	50	U
75-25-2Bromoform	50	Ü
108-10-14-Methyl-2-Pentanone	50	U
591-78-62-Hexanone	50	U
127-18-4Tetrachloroethene	50	U
79-34-51,1,2,2-Tetrachloroethane	50	U
108-88-3Toluene	50	U
108-90-7Chlorobenzene	50	U
100-41-4Ethylbenzene	50	U
100-42-5Styrene	50	U
1330-20-7Xylene (total)	50	U

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: NYTEST ENV INC

Sample wt/vol: 5.0

Number TICs found: 0

EPA SAMPLE NO.

GW5101DL Contract: 9421375

Lab File ID: M1047.D

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

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

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

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

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

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

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

		or ug/kg/		
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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3		.		
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7.				
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26. 27.				
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29.				
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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) Date Received: 11/18/94

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

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

LOW

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

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L CAS NO. COMPOUND

75-01-4			5	~
74-83-9	74-87-3	Chloromethane	10	TT
75-01-4				ان ا
75-00-3	75-01-4	Vinyl Chloride		ן ט
75-09-2	75-00-3	Chloroethane		l ŭ
67-64-1				- 1
75-15-0	67-64-1	Acetone		32
75-35-41,1-Dichloroethene 10 75-34-31,1-Dichloroethane 10 540-59-01,2-Dichloroethene (total) 10 67-66-3				Ū
75-34-31,1-Dichloroethane 10 540-59-01,2-Dichloroethene (total) 10 67-66-3				ט
540-59-01,2-Dichloroethene (total) 10 67-66-3Chloroform 10 107-06-21,2-Dichloroethane 10 78-93-32-Butanone 10 71-55-61,1,1-Trichloroethane 10 56-23-5Carbon Tetrachloride 10 75-27-4Bromodichloromethane 10 78-87-51,2-Dichloropropane 10 10061-01-5cis-1,3-Dichloropropene 10 79-01-6Trichloroethene 10 124-48-1Dibromochloromethane 10 79-00-51,1,2-Trichloroethane 10 71-43-2Benzene 10 10061-02-6trans-1,3-Dichloropropene 10 75-25-2Bromoform 10 108-10-14-Methyl-2-Pentanone 10 591-78-62-Hexanone 10 127-18-4Tetrachloroethene 10 108-88-3Toluene 10 108-90-7Chlorobenzene 10 100-42-5Styrene 10				ן ט
67-66-3				ט ו
107-06-21,2-Dichloroethane 10 78-93-32-Butanone 10 71-55-61,1,1-Trichloroethane 10 56-23-5Carbon Tetrachloride 10 75-27-4Bromodichloromethane 10 78-87-51,2-Dichloropropane 10 10061-01-5cis-1,3-Dichloropropene 10 79-01-6Trichloroethene 10 124-48-1Dibromochloromethane 10 79-00-51,1,2-Trichloroethane 10 71-43-2Benzene 10 10061-02-6trans-1,3-Dichloropropene 10 75-25-2Bromoform 10 108-10-14-Methyl-2-Pentanone 10 591-78-62-Hexanone 10 127-18-4Tetrachloroethene 10 79-34-51,1,2,2-Tetrachloroethane 10 108-88-3Chlorobenzene 10 100-41-4Ethylbenzene 10 100-42-5Styrene 10				ן ט
78-93-32-Butanone 10 10 71-55-61,1,1-Trichloroethane 10 10 56-23-5Carbon Tetrachloride 10 10 75-27-4Bromodichloromethane 10 10 78-87-51,2-Dichloropropane 10 10 10061-01-5cis-1,3-Dichloropropene 10 10 79-01-6Trichloroethene 10 10 124-48-1Dibromochloromethane 10 10 79-00-51,1,2-Trichloroethane 10 10 71-43-2Benzene 10 10 10061-02-6trans-1,3-Dichloropropene 10 10 75-25-2Bromoform 10 10 108-10-14-Methyl-2-Pentanone 10 10 591-78-62-Hexanone 10 10 127-18-4Tetrachloroethene 10 10 79-34-5Toluene 10 10 108-88-3Chlorobenzene 10 10 100-41-4Styrene 10 10			1	U
71-55-61,1,1-Trichloroethane 10 56-23-5Carbon Tetrachloride 10 75-27-4Bromodichloromethane 10 78-87-51,2-Dichloropropane 10 10061-01-5cis-1,3-Dichloropropene 10 79-01-6Trichloroethene 10 124-48-1Dibromochloromethane 10 79-00-51,1,2-Trichloroethane 10 71-43-2Benzene 10 10061-02-6trans-1,3-Dichloropropene 10 75-25-2Bromoform 10 108-10-14-Methyl-2-Pentanone 10 591-78-62-Hexanone 10 127-18-4Tetrachloroethene 10 79-34-51,1,2,2-Tetrachloroethane 10 108-88-3Toluene 10 109-90-7Chlorobenzene 10 100-41-4Styrene 10	78-93-3	2-Butanone		ן ט
56-23-5Carbon Tetrachloride 10 75-27-4Bromodichloromethane 10 78-87-5			(U
75-27-4Bromodichloromethane 10 10 78-87-51,2-Dichloropropane 10 10 10061-01-5cis-1,3-Dichloropropene 10 10 79-01-6Trichloroethene 10 10 124-48-1Dibromochloromethane 10 10 79-00-51,1,2-Trichloroethane 10 10 71-43-2Benzene 10 10 1061-02-6trans-1,3-Dichloropropene 10 10 75-25-2Bromoform 10 10 108-10-14-Methyl-2-Pentanone 10 10 591-78-62-Hexanone 10 10 127-18-4Tetrachloroethene 10 10 79-34-5Toluene 10 10 108-88-3Toluene 10 10 108-90-7Chlorobenzene 10 10 100-41-4Styrene 10 10	56-23-5	Carbon Tetrachloride	1	υ
10061-01-5cis-1,3-Dichloropropene 10 79-01-6Trichloroethene 10 124-48-1Dibromochloromethane 10 79-00-51,1,2-Trichloroethane 10 71-43-2Benzene 10 10061-02-6trans-1,3-Dichloropropene 10 75-25-2Bromoform 10 108-10-14-Methyl-2-Pentanone 10 591-78-62-Hexanone 10 127-18-4Tetrachloroethene 10 79-34-51,1,2,2-Tetrachloroethane 10 108-88-3Chlorobenzene 10 100-41-4Ethylbenzene 10 100-42-5Styrene 10	75-27-4	Bromodichloromethane	10	ן ט
10061-01-5cis-1,3-Dichloropropene 10 79-01-6Trichloroethene 10 124-48-1Dibromochloromethane 10 79-00-51,1,2-Trichloroethane 10 71-43-2Benzene 10 10061-02-6trans-1,3-Dichloropropene 10 75-25-2Bromoform 10 108-10-14-Methyl-2-Pentanone 10 591-78-62-Hexanone 10 127-18-4Tetrachloroethene 10 79-34-51,1,2,2-Tetrachloroethane 10 108-88-3Chlorobenzene 10 100-41-4Ethylbenzene 10 100-42-5Styrene 10	78-87-5	1,2-Dichloropropane	10	ן ט
79-01-6Trichloroethene 10 124-48-1Dibromochloromethane 10 79-00-51,1,2-Trichloroethane 10 71-43-2Benzene 10 10061-02-6trans-1,3-Dichloropropene 10 75-25-2Bromoform 10 108-10-14-Methyl-2-Pentanone 10 591-78-62-Hexanone 10 127-18-4Tetrachloroethene 10 79-34-51,1,2,2-Tetrachloroethane 10 108-88-3Chlorobenzene 10 100-41-4Ethylbenzene 10 100-42-5Styrene 10	10061-01-5	cis-1,3-Dichloropropene	10	ט
79-00-51,1,2-Trichloroethane 10 I 71-43-2Benzene 10 I 10061-02-6trans-1,3-Dichloropropene 10 I 75-25-2Bromoform 10 I 108-10-14-Methyl-2-Pentanone 10 I 591-78-62-Hexanone 10 I 127-18-4Tetrachloroethene 10 I 79-34-51,1,2,2-Tetrachloroethane 10 I 108-88-3Toluene 10 I 108-90-7Chlorobenzene 10 I 100-41-4Ethylbenzene 10 I 100-42-5Styrene 10 I	79-01-6	Trichloroethene	10	ט
71-43-2	124-48-1	Dibromochloromethane	10	U
10061-02-6trans-1,3-Dichloropropene 10 75-25-2Bromoform 10 108-10-14-Methyl-2-Pentanone 10 591-78-62-Hexanone 10 127-18-4Tetrachloroethene 10 79-34-51,1,2,2-Tetrachloroethane 10 108-88-3Toluene 10 108-90-7Chlorobenzene 10 100-41-4Ethylbenzene 10 100-42-5Styrene 10			10	ַ ט
75-25-2Bromoform 10 10 108-10-14-Methyl-2-Pentanone 10 10 591-78-62-Hexanone 10 10 127-18-4Tetrachloroethene 10 10 79-34-51,1,2,2-Tetrachloroethane 10 10 108-88-3Toluene 10 10 108-90-7Chlorobenzene 10 10 100-41-4Ethylbenzene 10 10 100-42-5Styrene 10 10			10	U
108-10-14-Methyl-2-Pentanone 10 U 591-78-62-Hexanone 10 U 127-18-4Tetrachloroethene 10 U 79-34-51,1,2,2-Tetrachloroethane 10 U 108-88-3Toluene 10 U 108-90-7Chlorobenzene 10 U 100-41-4Ethylbenzene 10 U 100-42-5Styrene 10 U			10	U
591-78-62-Hexanone 10 10 127-18-4Tetrachloroethene 10 10 79-34-51,1,2,2-Tetrachloroethane 10 10 108-88-3Toluene 10 10 108-90-7Chlorobenzene 10 10 100-41-4Ethylbenzene 10 10 100-42-5Styrene 10 10			10	U
127-18-4Tetrachloroethene 10 I 79-34-51,1,2,2-Tetrachloroethane 10 I 108-88-3Toluene 10 I 108-90-7Chlorobenzene 10 I 100-41-4Ethylbenzene 10 I 100-42-5Styrene 10 I				U
79-34-51,1,2,2-Tetrachloroethane 10 0 108-88-3Toluene 10 0 108-90-7Chlorobenzene 10 0 100-41-4Ethylbenzene 10 0 100-42-5Styrene 10 0			1	U
108-88-3Toluene 10 0 108-90-7Chlorobenzene 10 0 100-41-4Ethylbenzene 10 0 100-42-5Styrene 10 0			10	U
108-90-7Chlorobenzene 10 0 100-41-4Ethylbenzene 10 0 100-42-5Styrene 10 0			10	U
100-41-4Ethylbenzene 10 0				_
100-42-5Styrene 10 t				1
			j	1 .
1330-20-7Xylene (total) 3 JF				
	1330-20-7	Xylene (total)	3	JB

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3/90

FORM I VOA

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: NYTEST ENV INC

Contract: 9421375

SKGW52

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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)

Number TICs found: 0

Soil Aliquot Volume: ____(uL)

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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25. 26.		-		
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FORM I VOA-TIC

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EPA SAMPLE NO.

GW5301

Lab Name: NYTEST ENV INC Contract: 9421375

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

SDG No.: SKIN6

Lab File ID: M1032.D

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

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

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)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

	conform (ag/II of ag/	11.57 00/2	×
74-87-3	Chloromethane	10	
	Bromomethane	10	Ū
	Vinyl Chloride	10	Ŭ
	Chloroethane	6	J
	Methylene Chloride	3	J
67-64-1		10	Ŭ
	Carbon Disulfide	10	Ū
	1,1-Dichloroethene	10	Ū
	1,1-Dichloroethane	2	Ĵ
	1,2-Dichloroethene (total)	آ ا	J
67-66-3		10	Ü
	1,2-Dichloroethane	10	Ŭ
78-93-3		10	Ü
	1,1,1-Trichloroethane	10	Ŭ
	Carbon Tetrachloride	10	וט
75-27-4	Bromodichloromethane	10	<u>"</u>
78-87-5	1,2-Dichloropropane	10	Ü
10061-01-5	cis-1,3-Dichloropropene	10	υ
79-01-6	Trichloroethene	10	Ü
	Dibromochloromethane	10	บ
	1,1,2-Trichloroethane	10	Ü
71-43-2		20	
	trans-1,3-Dichloropropene	10	
75-25-2	Bromoform	10	Ü
	4-Methyl-2-Pentanone	10	Ŭ
591-78-6		10	Ü
	Tetrachloroethene	10	Ü
	1,1,2,2-Tetrachloroethane	10	Ŭ
108-88-3		10	Ü
	Chlorobenzene	10	Ü
	Ethylbenzene	10	Ü
100-41-4		10	ט
	Xylene (total)	3	J
1550 20-7	Myrene (cocar)		٦
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1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW5301

Lab Name: NYTEST ENV INC Contract: 9421375

Number TICs found: 0

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

LOW Level: (low/med) 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)

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

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CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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00015

3/90

FORM I VOA-TIC

EPA SAMPLE NO.

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)

CONCENTRATION UNITS:

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

00028

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

SKGW54

EPA SAMPLE NO.

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

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

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

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	
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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)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L

74-87-3Chloromethane	10	ט
74-83-9Bromomethane	- 10	Ü
75-01-4Vinyl Chloride	10	Ü
75-00-3Chloroethane	- 10	ָ ט
75-09-2Methylene Chloride	- 3	JВ
67-64-1Acetone	-	J
75-15-0Carbon Disulfide	- 10	บ
75-35-41,1-Dichloroethene	- 10	Ü
75-34-31,1-Dichloroethane	- 10	บี
540-59-01,2-Dichloroethene (total)	- 10	บ
67-66-3Chloroform	- 10	บ
107-06-21,2-Dichloroethane	- 10	บ
78-93-32-Butanone	- 10	บ
71-55-61,1,1-Trichloroethane	10	บี
56-23-5Carbon Tetrachloride	- 10	Ü
75-27-4Bromodichloromethane	- 10	ָ ע
78-87-51,2-Dichloropropane	- 10	บ
10061-01-5cis-1,3-Dichloropropene	- 10	ال
79-01-6Trichloroethene	10	ان ا
124-48-1Dibromochloromethane	- 10	ال ا
79-00-51,1,2-Trichloroethane	- 10	Ŭ
71-43-2Benzene	- 10	Ü
10061-02-6trans-1,3-Dichloropropene	10	ן ט
75-25-2Bromoform	10	Ū
108-10-14-Methyl-2-Pentanone	10	ان ا
591-78-62-Hexanone	10	Ū
127-18-4Tetrachloroethene	- 10	Ŭ
79-34-51,1,2,2-Tetrachloroethane	10	Ŭ
108-88-3Toluene	10	Ŭ
108-90-7Chlorobenzene	- 10	Ü
100-41-4Ethylbenzene	10	Ū
100-42-5Styrene	10	Ü
1330-20-7Xylene (total)	- 3	JB
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00016

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW5501 Contract: 9421375

Lab Name: NYTEST ENV INC

SDG No.: SKIN6

Matrix: (soil/water) WATER

Lab Sample ID: 2258710

Sample wt/vol: 5.0

(g/mL) ML

Lab File ID: M1037.D

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

Date Received: 11/19/94

% Moisture: not dec. __

Level: (low/med) LOW

Date Analyzed: 11/21/94

GC Column:CAP

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ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: ____(uL)

Number TICs found: 0

Soil Aliquot Volume: ____(uL)

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

			797 6016	
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	
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00017

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

Date Received: 11/19/94 % Moisture: not dec. Date Analyzed: 11/21/94

Level: (low/med)

LOW

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

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

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

74-87-3Chloromethane	10	U
74-83-9Bromomethane	10	บั
75-01-4Vinyl Chloride	10	บ็
75-00-3Chloroethane	10	Ü
75-09-2Methylene Chloride	2	JВ
67-64-1Acetone	10	ָּט
75-15-0Carbon Disulfide	10	Ŭ
75-35-41,1-Dichloroethene	10	Ŭ
75-34-31,1-Dichloroethane	10	Ŭ
540-59-01,2-Dichloroethene (total)	10	Ŭ
67-66-3Chloroform	10	Ŭ
107-06-21,2-Dichloroethane	10	Ü
78-93-32-Butanone	10	Ū
71-55-61,1,1-Trichloroethane	10	Ū
56-23-5Carbon Tetrachloride	10	Ū
75-27-4Bromodichloromethane	10	U
78-87-51,2-Dichloropropane	10	Ū
10061-01-5cis-1,3-Dichloropropene	10	U
79-01-6Trichloroethene	10	U
124-48-1Dibromochloromethane	10	U
79-00-51,1,2-Trichloroethane	10	ט ו
71-43-2Benzene	10	U
10061-02-6trans-1,3-Dichloropropene	10	U
75-25-2Bromoform	10	U
108-10-14-Methyl-2-Pentanone	: 10	U
591-78-62-Hexanone	10	U
127-18-4Tetrachloroethene	10	U
79-34-51,1,2,2-Tetrachloroethane	10	U
108-88-3Toluene	10	U
108-90-7Chlorobenzene	10	ן ע
100-41-4Ethylbenzene	10	U
100-42-5Styrene	10	ן ע
1330-20-7Xylene (total)	3	JB
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00018

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

(g/mL) ML

EPA SAMPLE NO.

GW5601

Lab Name: NYTEST ENV INC

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

Contract: 9421375

SDG No.: SKIN6

Matrix: (soil/water) WATER

Lab Sample ID: 2258703

Sample wt/vol: 5.0

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

4

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: ____(uL)

Soil Aliquot Volume: ____(uL)

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

Number TICs found: 2

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 2. 3	UNKNOWN	5.031	63 120	J J
4. 5. 6. 7.				
9. 10. 11.				
12. 13. 14. 15.				
16. 17. 18.				
20. 21. 22. 23.				
25. 26.				
27. 28. 29. 30.				

00019

FORM I VOA-TIC

EPA SAMPLE NO.

GW5701

Lab Name: NYTEST ENV INC Contract: 9421375

Level: (low/med) LOW

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

Date Received: 11/19/94

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

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

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

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L

ab 1.0.	confoons (ag/if of ag	, kg, 66, L	*
74-87-3	Chloromethane	10	U
	Bromomethane	10	Ū
	Vinyl Chloride	10	Ū
	Chloroethane	10	υl
	Methylene Chloride	2	JВ
	Acetone	10	U
	Carbon Disulfide	10	Ū
	1,1-Dichloroethene	10	Ü
	1,1-Dichloroethane	10	ט
	1,2-Dichloroethene (total)	10	Ū
	Chloroform	10	Ū
	1,2-Dichloroethane	10	U
	2-Butanone	10	וֹט
	1,1,1-Trichloroethane	10	Ū
	Carbon Tetrachloride	10	Ū
	Bromodichloromethane	10	Ū
	1,2-Dichloropropane	10	Ü
	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	Ü
	Dibromochloromethane	10	ט
	1,1,2-Trichloroethane	10	บ
	Benzene	10	Ū
	trans-1,3-Dichloropropene	10	Ū
	Bromoform	10	Ū
	4-Methyl-2-Pentanone	10	U
	2-Hexanone	10	U
	Tetrachloroethene	10	U
	1,1,2,2-Tetrachloroethane	10	U
	Toluene	10	Ū
	Chlorobenzene	10	Ū
	Ethylbenzene	10	Ū
	Styrene	10	Ū
	Xylene (total)] 3	JB

00020

3/90

FORM I VOA

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

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)

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

Number TICs found: 2

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 2.	NNKNOMN NNKNOMN	5.031 6.738	69 110	J J
3. 4. 5.				
5. 6. 7.				
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22. 23. 24.				
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28.				
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00021

EPA SAMPLE NO.

Lab Name: NYTEST ENV INC Contract: 9421375

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)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

74-87-3Chloromethane	10	U
74-83-9Bromomethane	- ₁₀	ן ט
75-01-4Vinyl Chloride	- ₁₀	ט
75-00-3Chloroethane	- - ₅	J
75-09-2Methylene Chloride	$- $ $\frac{1}{2}$	JВ
67-64-1Acetone	_\	ט
75-15-0Carbon Disulfide	10	ן ט
75-35-41,1-Dichloroethene	10	ן ט
75-34-31,1-Dichloroethane	_ 2	J
540-59-01,2-Dichloroethene (total)	_ ₁	J
67-66-3Chloroform		ן די
107-06-21,2-Dichloroethane	_ 10	ן ט
78-93-32-Butanone		ן ט
71-55-61,1,1-Trichloroethane	10	ט ו
56-23-5Carbon Tetrachloride	_ ₁₀	U
75-27-4Bromodichloromethane	_ 10	ט
78-87-51,2-Dichloropropane	<u> </u>	U
10061-01-5cis-1,3-Dichloropropene	_ 10	U
79-01-6Trichloroethene	10	U
124-48-1Dibromochloromethane	<u> </u>	U
79-00-51,1,2-Trichloroethane		Ū
71-43-2Benzene		
10061-02-6trans-1,3-Dichloropropene		Ū
75-25-2Bromoform	10	ן ט
108-10-14-Methyl-2-Pentanone	10	U
591-78-62-Hexanone	10	ט '
127-18-4Tetrachloroethene		U
79-34-51,1,2,2-Tetrachloroethane	10	U
108-88-3Toluene	<u> </u>	U
108-90-7Chlorobenzene		U
100-41-4Ethylbenzene		U
100-42-5Styrene		ַ ט
1330-20-7Xylene (total)	3	JB
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00024

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: NYTEST ENV INC

Contract: 9421375

SKFD01

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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

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16. 17.

19. 20. 21._ 22.

24._ 25. 26. 27. 28. 29.

Level: (low/med) LOW

% Moisture: not dec.

Date Received: 11/19/94

Date Analyzed: 11/21/94

GC Column: CAP ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: ____(uL)

Soil Aliquot Volume: ____(uL)

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

Number TICs found: 0

COMPOUND NAME CAS NUMBER RTEST. CONC.

00025

EPA SAMPLE NO.

Q

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) Date Received: 11/19/94

LOW

COMPOUND

ID: 0.53 (mm)

GC Column: CAP

CAS NO.

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

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

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

Dilution Factor: 1.0

,	1		
	74-87-3Chloromethane	10	,
ı	74-83-9Bromomethane	10	1
	75-01-4Vinyl Chloride	10	1
	75-00-3Chloroethane	10] 1
	75 00 0	2	l -

74-87-3Chloromethane	10	U
74-83-9Bromomethane	10	ַ
75-01-4Vinyl Chloride	10	ប
75-00-3Chloroethane	10	U
75-09-2Methylene Chloride	3	JB
67-64-1Acetone	10	ַ
75-15-0Carbon Disulfide	10	ַ ט
75-35-41,1-Dichloroethene	10	<u></u> ט
75-34-31,1-Dichloroethane	10	U
540-59-01,2-Dichloroethene (total)	10	ן ט
67-66-3Chloroform	10	ן ט
107-06-21,2-Dichloroethane	10	[ט
78-93-32-Butanone	10	ַ ט
71-55-61,1,1-Trichloroethane	10	U
56-23-5Carbon Tetrachloride	10	ן ט
75-27-4Bromodichloromethane	10	U
78-87-51,2-Dichloropropane	10	ן ט
10061-01-5cis-1,3-Dichloropropene	10	[ט
79-01-6Trichloroethene	10	U
124-48-1Dibromochloromethane	10	U
79-00-51,1,2-Trichloroethane	10	U
71-43-2Benzene	10	ן די
10061-02-6trans-1,3-Dichloropropene	10	· ʊ
75-25-2Bromoform	10	U U
108-10-14-Methyl-2-Pentanone	: 10	U
591-78-62-Hexanone	10	U
127-18-4Tetrachloroethene	10	ן ט
79-34-51,1,2,2-Tetrachloroethane	10	ן ט
108-88-3Toluene	10	ע
108-90-7Chlorobenzene	10	ַ עֹ
100-41-4Ethylbenzene	10	U
100-42-5Styrene	10	Ū
1330-20-7Xylene (total)	3	JB

00022

3/90

FORM I VOA

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SKFB01

Lab	Name:	NYTEST	ΕNV	INC	Contract:	942137	/5

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)

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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00023

3/90

FORM I VOA-TIC

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.

GC Column:CAP ID: 0.53 (mm)

Date Analyzed: 11/21/94

Dilution Factor: 1.0

Soil Extract Volume: ____(uL)

Soil Aliquot Volume: ____(uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug	/Kg) UG/L	Q
	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	ַ ט
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	7	JB
	Acetone	10	וט
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	וט
	1,2-Dichloroethene (total)	10	וט
	Chloroform	10	ט
107-06-2	1,2-Dichloroethane	10	ט
	2-Butanone	10	יט
	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
	Bromodichloromethane	10	Ū
	1,2-Dichloropropane	10	וט
10061-01-5-	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
	trans-1,3-Dichloropropene	10	U
	Bromoform	10	U
	4-Methyl-2-Pentanone	10	יט
	2-Hexanone	10	ט
	Tetrachloroethene	10	Ū
	1,1,2,2-Tetrachloroethane	10	Ū
	Toluene	10	U
	Chlorobenzene	10	U
	Ethylbenzene	10	Ū
	Styrene	10	U
	Xylene (total)	3	JB
	•	1	
			1

00030

FORM I VOA

EPA SAMPLE NO.

Lab Name: NYTEST ENV INC Contract: 9421375

Concrace: 5421575

TRPBLK

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)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

74-87-3Chloromethane	10	ָּט
74-83-9Bromomethane	10	บ
75-01-4Vinyl Chloride	10	บี
75-00-3Chloroethane	10	Ü
75-09-2Methylene Chloride	7	JB
67-64-1Acetone	10	บ
75-15-0Carbon Disulfide	10	וט
75-35-41,1-Dichloroethene	10	Ū
75-34-31,1-Dichloroethane	10	ָ ע
540-59-01,2-Dichloroethene (total)	10	บ
67-66-3Chloroform		ָ ע
107-06-21,2-Dichloroethane	10	ט
78-93-32-Butanone	10	
	10	ប
71-55-61,1,1-Trichloroethane	10	U
56-23-5Carbon Tetrachloride	10	Ü
75-27-4Bromodichloromethane	10	ָט
78-87-51,2-Dichloropropane	10	Ū
10061-01-5cis-1,3-Dichloropropene	10	Ū
79-01-6Trichloroethene	10	Ŭ
124-48-1Dibromochloromethane	10	Ü
79-00-51,1,2-Trichloroethane	10	Ŭ
71-43-2Benzene	10	Ŭ
10061-02-6trans-1,3-Dichloropropene	10	Ü
75-25-2Bromoform	10	Ū
108-10-14-Methyl-2-Pentanone	: 10	Ü
591-78-62-Hexanone	10	U
127-18-4Tetrachloroethene	10	บ
79-34-51,1,2,2-Tetrachloroethane	10	Ū
108-88-3Toluene	10	U
108-90-7Chlorobenzene	10	U
100-41-4Ethylbenzene	10	U
100-42-5Styrene	10	ן ע
1330-20-7Xylene (total)	3	JB
	•	ĺ

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: NYTEST ENV INC Contract: 9421375

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

Number TICs found: 0

.

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

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
ì		:= =======	=========	=====
1				
2		-[
3.				
5.				
6		_		
7		_		
8.				
9				
10.				-
11.				
14.				
13.				
14.				
1.J.				
±0.				
±./•				
10.				
19.				
20.		_		
ZI.				
22.				
23.		_		
24.				
23.				
26.				
41.		_		
28.		_		
29.		_		
30		_		<u> </u>

00033

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

FORM I SV-1

GW5001

Lab Name: NYTEST ENV INC

Contract: 9421375

SDG No.: SKIN6

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

Lab Sample ID: 2258705

Matrix: (soil/water) WATER

Sample wt/vol:

Lab File ID: R2122.D

Level: (low/med) LOW

% Moisture: ____ decanted: (Y/N)___

pH: 7.0

1000 (g/mL) ML

Date Received: 11/19/94 Date Extracted:11/23/94

Date Analyzed: 12/20/94

Injection Volume:

2.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

CAS NO. COMPOUND

Concentrated Extract Volume: 1000(UL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Q

51-28-52,4-Dinitrophenol	25	บ
100-02-74-Nitrophenol	25	Ü
132-64-9Dibenzofuran	10	บั
121-14-22,4-Dinitrotoluene	10	Ü
84-66-2Diethylphthalate	10	ŭ
7005-72-34-Chlorophenyl-phenylether_	10	Ü
86-73-7Fluorene	10	บ
100-01-64-Nitroaniline	25	บ
534-52-14,6-Dinitro-2-methylphenol	25	บ
86-30-6N-Nitrosodiphenylamine (1)	10	ט
101-55-34-Bromophenyl-phenylether	10	บ
118-74-1Hexachlorobenzene	10	Ü
87-86-5Pentachlorophenol	25	บ
85-01-8Pentachiorophenoi	10	ָט
120-12-7Anthracene	10	U U
86-74-8Carbazole	10	บ
		Ü
84-74-2Di-n-butylphthalate	10	
206-44-0Fluoranthene	10	Ŭ
129-00-0Pyrene	10	Ŭ
85-68-7Butylbenzylphthalate	10	ט
91-94-13,3'-Dichlorobenzidine	10	Ü
56-55-3Benzo (a) anthracene	10	ט
218-01-9Chrysene	10	Ŭ
117-81-7bis(2-Ethylhexyl)phthalate	10	U
117-84-0Di-n-octylphthalate	10	U
205-99-2Benzo (b) fluoranthene	10	U
207-08-9Benzo(k) fluoranthene	10	. Д
50-32-8Benzo (a) pyrene	10	U
193-39-5Indeno(1,2,3-cd)pyrene	10	ט
53-70-3Dibenz(a,h)anthracene	10	ט
191-24-2Benzo(g,h,i)perylene	10	ט

(1) - Cannot be separated from Diphenylamine FORM I SV-2

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00016

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

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

Number TICs found: 4 /

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	
1. 2. 3. 4. 5.	UNKNOWN UNKNOWN UNKNOWN	18.693 21.215 23.441 25.545	3 7 4 2	J J J J
6. 7. 8. 9.				
12.				
15. 16. 17. 18.				
21. 22. 23.				
26. 27. 28.				
29. 30.				

FORM I SV-TIC

<u>uma</u> 00017

GW5101

Lab Name: NYTEST ENV INC Contract: 9421375

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

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L

FORM I SV-1

CMM) FLANSS 3/90

EPA SAMPLE NO.

GW5101

Lab Name: NYTEST ENV INC

Contract: 9421375

SDG No.: SKIN6

Matrix: (soil/water) WATER

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

Lab Sample ID: 2258708

Lab File ID: R2154.D

Sample wt/vol:

1000 (g/mL) ML

Date Received: 11/19/94

% Moisture: ____ decanted: (Y/N)___

Level: (low/med) LOW

Date Extracted:11/23/94

Concentrated Extract Volume: 1000(UL)

Date Analyzed: 12/23/94

Injection Volume: 2.0(uL)

Dilution Factor: 1.0

CONCENTRATION UNITS:

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

CAS NO.	COMPOUND	(ug/L or ug/K	g) UG/L	Q
51-28-5	2,4-Dinitropl	honol	25	77
	4-Nitropheno		25	ש
132-64-9	Dibenzofuran		10	ַ ד
121-14-2	2,4-Dinitrot	oluene	10	ן ט
84-66-2	Diethylphthal	late	10	וט
7005-72-3	4-Chloropheny	yl-phenylether	10	ָּט
86-73-7	Fluorene		10	ע
	4-Nitroa nili		25	U
534-52-1	4,6-Dinitro-2	2-methylphenol	25	ן ט
00000	30 301 4 31 3	, , - ,- , ₋ , —		1

	84-66-2Diethylphthalate		10	וט	
	7005-72-34-Chlorophenyl-phenylether		10	U	
	86-73-7Fluorene		10	ָּט	
	100-01-64-Nitroaniline		25	U	
	534-52-14,6-Dinitro-2-methylphenol		25	U	
	86-30-6N-Nitrosodiphenylamine (1)		.10	U	
	101-55-34-Bromophenyl-phenylether		10	บ	
	118-74-1Hexachlorobenzene		10	U	
	87-86-5Pentachlorophenol	1	25	U	
	85-01-8Phenanthrene		10	Ü	İ
	120-12-7Anthracene		10	U	
1	86-74-8Carbazole		10	Ū	
	84-74-2Di-n-butylphthalate		10	Ū	
	206-44-0Fluoranthene		10	U	ł
	129-00-0Pyrene		10	Ū	
	85-68-7Butylbenzylphthalate		10	Ŭ	
	91-94-13,3'-Dichlorobenzidine		10	U	
	56-55-3Benzo (a) anthracene		10	U	
	218-01-9Chrysene		10	U	
	117-81-7bis(2-Ethylhexyl)phthalate	✓	1	J	15
	117-84-0Di-n-octylphthalate		10	ט	
i	205-99-2Benzo(b)fluoranthene		10	U	
	207-08-9Benzo(k)fluoranthene	1	10		
	50-32-8Benzo(a)pyrene		10	Ū	1
	193-39-5Indeno(1,2,3-cd)pyrene		10		1
	53-70-3Dibenz(a,h)anthracene		10		
- 1	191-24-2Benzo(g,h,i)perylene	!	10	บ	

(1) - Cannot be separated from Diphenylamine FORM I SV-2

1F SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

GW5101

Lab Name: NYTEST ENV INC

Contract: 9421375

EPA SAMPLE NO.

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

00026 3/90

FORM I SV-TIC

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

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

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

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

CAS NO. COMPOUND

<u> </u>		
108-95-2Phenol	10	U
111-44-4bis(2-Chloroethyl)Ether	10	Ü
95-57-82-Chlorophenol	10	Ū
541-73-11,3-Dichlorobenzene	10	Ū
106-46-71,4-Dichlorobenzene	10	Ū
95-50-11,2-Dichlorobenzene	10	Ū
95-48-72-Methylphenol	10	Ū
108-60-12,2'-oxybis(1-Chloropropane)	10	Ū
106-44-54-Methylphenol	10	U
621-64-7Nitroso-di-n-propylamine	10	U
67-72-1Hexachloroethane	10	Ū
98-95-3Nitrobenzene	10	U
78-59-1Isophorone	10	บ
88-75-52-Nitrophenol	10	ט
105-67-92,4-Dimethylphenol	10	ט
120-83-22,4-Dichlorophenol	10	ט
120-82-11,2,4-Trichlorobenzene	10	ט
91-20-3Naphthalene	10	U
106-47-84-Chloroaniline	10	υ
87-68-3Hexachlorobutadiene	10	נ
111-91-1bis (2-Chloroethoxy) methane	10	ן ד
59-50-74-Chloro-3-Methylphenol	10.	ן נ
91-57-62-Methylnaphthalene	10	נ
77-47-4Hexachlorocyclopentadiene	10	ן נ
88-06-22,4,6-Trichlorophenol	10	ן ד
95-95-42,4,5-Trichlorophenol	25	τ
91-58-72-Chloronaphthalene	10	ן נ
88-74-42-Nitroaniline	25	l t
131-11-3Dimethylphthalate	10	Į
208-96-8Acenaphthylene	10	τ
606-20-22,6-Dinitrotoluene	10	t
99-09-23-Nitroaniline	25	ן נ
83-32-9Acenaphthene	10	l u
	1	1

FORM I SV-1

(TWI) ZPMLF

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

51-28-52,4-Dinitrophenol 25 100-02-74-Nitrophenol 25 132-64-9Dibenzofuran 10	Q
121-14-2	ממממממממממממממממממממ

(1) - Cannot be separated from Diphenylamine

00182

3/90

FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

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

Number TICs found: 9

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. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24.	UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN		EST. CONC. 2 3 3 4 10 2 4 4 2	- (
25. 26. 27. 28. 29. 30.				

3/90

00183

FORM I SV-TIC

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	CONCENTRATIO			Q
108-95-2 111-44-4 95-57-8 541-73-1 95-50-1 95-48-7 108-60-1 106-44-5 621-64-7 98-95-3 78-59-1 88-75-5 120-83-2 120-83-2 120-82-1 91-20-3 111-91-1 59-50-7 91-57-6 77-47-4 88-06-2 91-58-7 88-74-4	Phenolbis(2-Chloroethy2-Chlorophenol1,3-Dichlorobenz1,4-Dichlorobenz1,2-Dichlorobenz2,2'-oxybis(1-Ch-2,2'	rl)Ether	kg) UG/L	10 40 10 10 10 10 10 10 10 10 10 10 10 10 10	ם מטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטט
208-96-8 606-20-2 99-09-2	DimethylphthalateAcenaphthylene2,6-Dinitrotolue3-NitroanilineAcenaphthene_			10 10 10 25 10	ט ט ט

FORM I SV-1

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

CONCENTRATION UNITS:

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

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
51-28-5 100-02-7 132-64-9 121-14-2 84-66-2 7005-72-3 86-73-7 100-01-6 534-52-1 86-30-6 101-55-3 118-74-1 87-86-5 85-01-8 120-12-7	COMPOUND 2,4-Dinitrophen4-NitrophenolDibenzofuran2,4-DinitrotoluDiethylphthalat4-ChlorophenylFluorene4-Nitroaniline4,6-Dinitro-2-mN-Nitrosodiphen4-BromophenylPentachlorophenPentachloropherPhenanthreneAnthraceneCarbazoleDi-n-butylphtha	nol nene phenylether methylphenol nylamine_(1) phenylether ene nol	1) UG/L 25 25 10 10 10 10 25 25 10 10 10 10 10 10 10 10 10 10 10 10 10	טטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטט
91-94-1	Butylbenzylphth 3,3'-Dichlorobe Benzo(a)anthrac	enzidine	10 10 10	บ บ บ
218-01-9 117-81-7 117-84-0	Chrysene bis(2-Ethylhex) Di-n-octylphtha	yl)phthalate	10 10 10	บ บ
207-08-9 50-32-8 193-39-5	Benzo (b) fluorar Benzo (k) fluorar Benzo (a) pyrene Indeno (1,2,3-co Dibenz (a,h) antl	nthene	10 10 10 10	ם מ
191-24-2	Benzo(g,h,i)per	rylene	10	

(1) - Cannot be separated from Diphenylamine FORM I SV-2

Cmn

00051

1F SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

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:

. Latinia

(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(址)

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

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FORM I SV-TIC

. 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:

CONCENTRATION UNITS:

R2117.D

Date Received: 11/18/94

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U U U U U

Level: (low/med) LOW

% Moisture: ____ decanted: (Y/N)___

Concentrated Extract Volume:

Date Extracted:11/23/94/

1000 (UL)

Date Analyzed: 12/20/94

Injection Volume:

2.0(uL)

91-58-7----2-Chloronaphthalene 88-74-4----2-Nitroaniline

606-20-2----2,6-Dinitrotoluene

131-11-3-----Dimethylphthalate

208-96-8-----Acenaphthylene

99-09-2----3-Nitroaniline

83-32-9-----Acenaphthene

Dilution Factor: 1.0

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

CAS NO. COMPOUND (ug/L or ug/Kg)	
108-95-2Phenol 111-44-4bis(2-Chloroethyl)Ether	10
95-57-82-Chlorophenol	10
541-73-11,3-Dichlorobenzene	10
106-46-71,4-Dichlorobenzene	10
95-50-11,2-Dichlorobenzene	10

Ŭ 95-48-7----2-Methylphenol_ 108-60-1----2,2'-oxybis(1-Chloropropane) 10 106-44-5-----4-Methylphenol U 10 621-64-7-----N-Nitroso-di-n-propylamine___67-72-1------Hexachloroethane U 10 10 U 98-95-3-----Nitrobenzene Ū U 10 78-59-1-----Isophorone 10 88-75-5----2-Nitrophenol U 10 105-67-9-----2,4-Dimethylphenol U 10 120-83-2----2,4-Dichlorophenol U 10 Ŭ 120-82-1-----1,2,4-Trichlorobenzene_ 10 91-20-3-----Naphthalene 10 106-47-8-----4-Chloroaniline U 10 U 87-68-3-----Hexachlorobutadiene 10 111-91-1-----bis (2-Chloroethoxy) methane U 10 Ū U 59-50-7----4-Chloro-3-Methylphenol 10 91-57-6----2-Methylnaphthalene 10 77-47-4-----Hexachlorocyclopentadiene U 10 88-06-2----2,4,6-Trichlorophenol 95-95-4----2,4,5-Trichlorophenol Ū 10 25 U

FORM I SV-1

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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

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

CAS NO.	COMPOUND	(ug/L or ug/		Q
51-28-5 100-02-7 132-64-9 121-14-2 84-66-2 7005-72-3 86-73-7 534-52-1 86-30-6 101-55-3 118-74-1 87-86-5 85-01-8 120-12-7 86-74-8 206-44-0 129-00-0 85-68-7 91-94-1 56-55-3 218-01-9 117-81-7	2,4-Dinitrophe4-NitrophenolDibenzofuran2,4-DinitrotoDiethylphthal4-ChlorophenyFluorene4-Nitroanilin4,6-Dinitro-2N-Nitrosodiphe4-BromophenylHexachlorobenPentachlorophePhenanthreneCarbazoleDi-n-butylphtFluoranthenePyreneButylbenzylph3,3'-DichloroBenzo(a) anthrChrysenebis(2-Ethylhe	enol luene ate l-phenylether eenylamine(1)phenylether zeneenol halate thalate benzidine acene xyl)phthalate	Kg) UG/L 25 25 10 10 10 10 25 25 10 10 10 10 10 10 10 10 10 10 10 10 10	מטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטט
56-55-3 218-01-9 117-81-7 117-84-0	Benzo(a) anthr Chrysene bis(2-Ethylhe Di-n-octylpht	xyl)phthalate_halate	10 10 10 10	U U U
205-99-2 207-08-9 50-32-8 193-39-5 53-70-3	Benzo (b) fluor Benzo (k) fluor Benzo (a) pyren Indeno (1,2,3- Dibenz (a,h) an Benzo (g,h,i) p	anthene anthene cd) pyrene thracene	10 10 10 10 10	U U U U
171-24-2		er A terre	10	

(1) - Cannot be separated from Diphenylamine

00196 3/90

FORM I SV-2

1F SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SKGW54

SDG No.: SKIN6

Lab Name: NYTEST ENV INC

Contract: 9421375

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

Matrix: (soil/water) WATER

Level: (low/med) LOW

Lab Sample ID: 2257102 Lab File ID: R2117.D

Sample wt/vol: 1000 (g/mL) ML

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
	IDUOLOUN	4 000	=======================================	=====
1. 2.	UNKNOWN	4.902	10	J
2. 3.	UNKNOWN	4.971	6	J
	UNKNOWN	5.093	20	J J
4.	UNKNOWN	6.067	24	J
5.	UNKNOWN	6.380	49	J
6.	UNKNOWN	9.667	18	J
7.	UNKNOWN	9.858	6	נמנננ
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	77777
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			:	l
22.				
<i>23</i> .				
24.				
2 J .				
20.				
41.				
20.				
43.				
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FORM I SV-TIC

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00197

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

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

		,
108-95-2Phenol	10	ט
111-44-4bis(2-Chloroethyl)Ether	10	Ū
95-57-82-Chlorophenol	10	บั
541-73-11,3-Dichlorobenzene	10	Ŭ
106-46-71,4-Dichlorobenzene	10	ŭ
95-50-11,2-Dichlorobenzene	10	Ŭ
95-48-72-Methylphenol	10	Ü
108-60-12,2'-oxybis(1-Chloropropane)	10	Ü
106-44-54-Methylphenol	10	ŭ
621-64-7N-Nitroso-di-n-propylamine		Ü
67-72-1Hexachloroethane	10	
98-95-3Nitrobenzene	10	Ü
98-95-3Nitropenzene	10	Ü
78-59-1Isophorone	10	U
88-75-52-Nitrophenol	10	U
105-67-92,4-Dimethylphenol	10	ַע
120-83-22,4-Dichlorophenol	10	U
120-82-11,2,4-Trichlorobenzene	10	ָט
91-20-3Naphthalene	10	U
106-47-84-Chloroaniline	10	U
87-68-3Hexachlorobutadiene	10	ט
111-91-1bis(2-Chloroethoxy)methane	10	U
59-50-74-Chloro-3-Methylphenol	10	Ū
91-57-62-Methylnaphthalene	10	U
77-47-4Hexachlorocyclopentadiene	10	U
88-06-22,4,6-Trichlorophenol	10	U
95-95-42,4,5-Trichlorophenol	25	U
91-58-72-Chloronaphthalene	10	ט ו
88-74-42-Nitroaniline	25	U
131-11-3Dimethylphthalate	10	ט
208-96-8Acenaphthylene	10	Ū
606-20-22,6-Dinitrotoluene	10	ט ט
99-09-23-Nitroaniline	25	ן ט
83-32-9Acenaphthene	10	Ū
Acettapitettette		
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FORM I SV-1

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EPA SAMPLE NO.

GW5501

Lab Name: NYTEST ENV INC

Contract: 9421375

SDG No.: SKIN6

Matrix: (soil/water) WATER

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

Lab Sample ID: 2258710

CONCENTRATION UNITS:

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: R2156.D

% Moisture: ____ decanted: (Y/N)___

Level: (low/med) LOW

Date Received: 11/19/94

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	(ug/L or ug/	'Kg) UG/L		Q
100-02-7 132-64-9 121-14-2 84-66-2 7005-72-3 86-73-7 100-01-6 534-52-1 86-30-6 101-55-3 118-74-1 87-86-5 120-12-7 86-74-8 120-12-7 84-74-2 206-44-0 129-00-0 85-68-7 91-94-1 56-55-3 218-01-9 117-81-7 205-99-2 207-08-9 207-08-9 50-32-8 193-39-5 53-70-3	-Dibenzofuran -2,4-Dinitrotoluei -Diethylphthalate -4-Chlorophenyl-pi -Fluorene -4-Nitroaniline -4,6-Dinitro-2-mei -N-Nitrosodiphenyi -4-Bromophenyl-phi -Hexachlorophenoi -Pentachlorophenoi -Pentachlorophenoi -Phenanthrene -Carbazole -Di-n-butylphthali -Fluoranthene -Pyrene -Butylbenzylphthali -3,3'-Dichlorobeni -Benzo(a) anthrace	henylether		25 10 10 10 25 10 10 25 10 10 10 10 10 10 10 10 10 10 10 10 10	מטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטטט
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(1) - Cannot be separated from Diphenylamine FORM I SV-2

1F SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

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

Lab File ID: R2156.D

(g/mL) ML

Date Received: 11/19/94

% Moisture: ____ decanted: (Y/N)___

Level: (low/med) LOW

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. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30.	UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN	5.861 13.983 16.261 16.644 19.357 19.531 21.548 21.687 22.070 23.843 23.983 24.261 24.348 26.556 26.904 31.061	2 6 2 8 8 2 21 3 2 27 2 2 2 10 2 3 3	

FORM I SV-TIC

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EPA SAMPLE NO.

GW5601

SDG No.: SKIN6

Lab File ID: R2120.D

Lab Name: NYTEST ENV INC

Sample wt/vol:

- EA

Contract: 9421375

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

1000 (g/mL) ML

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

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

CAS NO.	COMPOUND (ug/L or ug/kg)	UG/LI	· · ·
108-95-2	Phenol		10	U
111-44-4	bis(2-Chloroethyl)	Ether	10	U
	2-Chlorophenol		10	ט
	1,3-Dichlorobenzen	e	10	U
106-46-7	1,4-Dichlorobenzen	e	10	ט
95-50-1	1,2-Dichlorobenzen	e	10	ט
	2-Methylphenol		10	Ū
108-60-1	2,2'-oxybis(1-Chlo	ropropane)	10	[[
106-44-5	4-Methylphenol		10	U
621-64-7	N-Nitroso-di-n-pro	pylamine	10	Ū
67-72-1	Hexachloroethane	·· —	10	U
98-95-3	Nitrobenzene		10	Ū
78-59-1	Isophorone		10	ប
88-75-5	2-Nitrophenol		10	ַ ט
105-67-9	2,4-Dimethylphenol		10	U
120-83-2	2,4-Dichlorophenol		10	บ
120-82-1	1,2,4-Trichloroben	zene	10	U
91-20-3	Naphthalene		10	ט
	4-Chloroaniline		10	Ū
	Hexachlorobutadien		10	ט
111-91-1	bis(2-Chloroethoxy	r) methane	10	Ū
59-50-7	4-Chloro-3-Methylp	henol	10	U
91-57-6	2-Methylnaphthalen	ıe	10	ַ ט
77-47-4	Hexachlorocyclopen	tadiene	· 10	ַ ד
88-06-2	2,4,6-Trichlorophe	nol	10	ט
95-95-4	2,4,5-Trichlorophe	nol	25	U
91-58-7	2-Chloronaphthalen	ıe	10	ט
	2-Nitroaniline		25	יט ו
	Dimethylphthalate_		10	ַ
208-96-8	Acenaphthylene		10	ַ '
	2,6-Dinitrotoluene		10	ן ע
	3-Nitroaniline		25	U
83-32-9	Acenaphthene		10	ט

FORM I SV-1

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00097

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	CONCENTRATIO		Q .
51-28-5 100-02-7 132-64-9 121-14-2 84-66-2 7005-72-3 86-73-7 100-01-6 534-52-1 86-30-6 101-55-3 118-74-1 87-86-5 85-01-8 120-12-7 86-74-8 129-00-0 85-68-7 206-44-0 129-00-0 85-68-7 117-84-0 117-84-0 205-99-2 207-08-9 50-32-8 193-39-5 53-70-3	2,4-Dinitrophenol4-NitrophenolDibenzofuran2,4-DinitrotoDiethylphthal4-ChlorophenyIluorene4,6-Dinitro-2N-NitrosodiphenylHexachlorophenylPentachlorophenylPhenanthreneCarbazoleDi-n-butylphtenePyreneButylbenzylpheneBenzo(a) anthreneBenzo(b) fluoreneBenzo(b) fluorene	denol	25 25 10 10 10 10 10 25 25 10 10 10 10 10 10 10 10 10 10 10 10 10	מממממממממממממממממממממ
171-24-2	Benzo(g,h,i)	ber A terre		1 1

(1) - Cannot be separated from Diphenylamine FORM I SV-2

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

CAC AND TO	GOLDOLD MAG	200	TOTAL CONTR	
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	12.226	22	J
7.	UNKNOWN	15.183	6	J
8.	UNKNOWN	1	82	J
9.	UNKNOWN	15.896	5	J
		18.365	_	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
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4				
43.				
26				1
27.				
28.				
29.				
30				
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FORM I SV-TIC

GW5701

Lab Name: NYTEST ENV INC

Contract: 9421375

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

1000 (g/mL) ML

SDG No.: SKIN6

Matrix: (soil/water) WATER

Lab Sample ID: 2258704

Sample wt/vol:

Lab File ID: R2121.D

Level: (low/med) LOW

Date Received: 11/19/94

% Moisture: ____ decanted: (Y/N)___

1000 (UL)

Date Extracted:11/23/94√

Concentrated Extract Volume:

Date Analyzed: 12/20/94

Injection Volume: 2.0(uL)

Dilution Factor: 1.0

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

FORM I SV-1

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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

CONCENTRATION UNITS:

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

(1) - Cannot be separated from Diphenylamine FORM I SV-2

00123

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

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

1

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	מממממממממ
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				
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00124

FORM I SV-TIC

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

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L

			*
108-95-2	Phenol	10	ָּט
111-44-4	bis(2-Chloroethyl)Ether	48	
95-57-8	2-Chlorophenol	10	Ū
541-73-1	1,3-Dichlorobenzene	10	ប
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	Ū
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	Ū
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	ับ
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	บ
91-20-3	Naphthalene	10	บ
106-47-8	4-Chloroaniline	10	ับ
	Hexachlorobutadiene	10	Ū
111-91-1	bis(2-Chloroethoxy) methane	10	U
59-50-7	4-Chloro-3-Methylphenol	10	IJ
91-57-6	2-Methylnaphthalene	10	ט
77-47-4	Hexachlorocyclopentadiene	10	ט
88-06-2	2,4,6-Trichlorophenol	10	Ŭ
95-95-4	2,4,5-Trichlorophenol	25	ט
91-58-7	2-Chloronaphthalene	10	ט
	2-Nitroaniline	25	ט
131-11-3	Dimethylphthalate	10	ט
208-96-8	Acenaphthylene	10	ַ ט
606-20-2	2,6-Dinitrotoluene	10	ן ע
99-09-2	3-Nitroaniline	25	ט
	Acenaphthene	10	ט
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FORM I SV-1

CMI) 29NALF

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

CONCENTRATION UNITS:

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

CAS NO.	COMPOUND (ug/L or ug/)	Kg) UG/L	Q
51-28-5 100-02-7 132-64-9 121-14-2 84-66-2 7005-72-3 86-73-7 100-01-6 534-52-1 86-30-6 101-55-3 118-74-1 87-86-5 85-01-8 120-12-7 86-74-8 206-44-0 129-00-0 85-68-7 91-94-1 56-55-3 218-01-9 117-81-7	2,4-Dinitrophenol4-NitrophenolDibenzofuran2,4-DinitrotolueneDiethylphthalate4-Chlorophenyl-phenyletherFluorene4,6-Dinitro-2-methylphenolN-Nitrosodiphenylamine (1)4-Bromophenyl-phenyletherHexachlorobenzenePentachlorophenolPhenanthreneCarbazoleCarbazoleButylphthalate	25 25 10 10 10 10 10 25 25 10 10 10 10 10 10 10	מממממממממממממממממ
85-68-7 91-94-1 56-55-3 218-01-9 117-81-7	Butylbenzylphthalate3,3'-DichlorobenzidineBenzo(a)anthraceneChrysenebis(2-Ethylhexyl)phthalate	10 10 10 10	ט ט ט
205-99-2 207-08-9 50-32-8 193-39-5 53-70-3	Di-n-octylphthalateBenzo(b)fluorantheneBenzo(k)fluorantheneBenzo(a)pyreneIndeno(1,2,3-cd)pyreneDibenz(a,h)anthracene	10 10 10 10 10	מממממ
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

(mn)

00156

3/90

FORM I SV-2

EPA SAMPLE NO.

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: 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 \(\text{CONCENTRATION UNITS:} \) (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND AND	200	TIGTH CONTO	
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.262	7	J
2.	UNKNOWN	4.870	ا و	J
3.	UNKNOWN	5.062	11	J
4.	UNKNOWN	6.018	8	Ĵ
5.	UNKNOWN	8.001	7	J
6.	UNKNOWN	9.653	31	J
7.	UNKNOWN	9.792	49	
8.	UNKNOWN	9.844	10	J 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 J J 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		ļ		
22.				
43.				
24. 25. 26.				
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CLMN 7 JAN95 00157 3/90

FORM I SV-TIC

EPA SAMPLE NO.

SKFB01

Lab Name: NYTEST ENV INC

Contract: 9421375

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. COMPOUN	CONCENTRATION (ug/L or ug/Kg		Q
108-95-2	cophenol chlorobenzene chlorobenzene chlorobenzene chlorobenzene chlorobenzene chloropropane) clorodine coroethane corobutadiene corobutadiene corocyclopentadiene coroc	10 10 10 10 10 10 10 10 10 10 10 10 10 1	מטמטמטמטמטמטמטמטמטמטמטטטטט

FORM I SV-1

EPA SAMPLE NO.

SKFB01

Lab Name: NYTEST ENV INC

Contract: 9421375

SDG No.: SKIN6

Matrix: (soil/water) WATER

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

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

CONCENTRATION UNITS:

GPC Cleanup: (Y/N) N pH: 5.0

CAS NO.	COMPOUND	(ug/L or ug/		Q
100-02-7 132-64-9 121-14-2 84-66-2 7005-72-3 86-73-7 100-01-6 534-52-1 86-30-6 101-55-3 87-86-5 85-01-8 120-12-7 86-74-8 206-44-0 129-00-0 85-68-7 91-94-1 56-55-3 91-94-1 117-81-7 117-84-0 205-99-2 207-08-9 207-08-9 50-32-8 193-39-5 53-70-3	4-Nitroaniline4,6-Dinitro-2N-Nitrosodiphe4-BromophenylHexachlorobenzPentachlorophePhenanthreneCarbazoleDi-n-butylphthFluoranthenePyreneButylbenzylpht3,3'-DichlorobenzBenzo(a) anthraChryseneDi-n-octylphthBenzo(b) fluoraBenzo(k) fluoraBenzo(a) pyreneIndeno(1,2,3-cDibenz(a,h) ant	nol uene tephenylether methylphenol methylphenol nylamine (1) phenylether ene enol alate chalate chalate	25 25 10 10 10 10 25 25 10 10 10 10 10 10 10 10 10 10 10 10 10	מממממממממממממממממממממממממממממממממממממממ
1)1-24-2	Benzo(g,h,i)pe	TATEME	10	ט ט

(1) - Cannot be separated from Diphenylamine FORM I SV-2

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00149

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: NYTEST ENV INC

Contract: 9421375

SKFB01

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.	
1.	UNKNOWN	3.757	8	J
2				
3. 4.				
J.				
6. 7.				
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16. 17.				
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エン・				
20.				
22.				
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FORM I SV-TIC

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1 INORGANIC ANALYSES DATA SHEET EPA SAMPLE NO. GW5001 Lab Name: NYTEST_ENV_INC_____ Contract: 9421375_ Case No.: 22571_ SAS No.: _____ SDG No.: SKIN6_ Lab Code: NYTEST Matrix (soil/water): WATER Lab Sample ID: 258705____ Level (low/med): Date Received: 11/19/94 LOW___ __0.0 % Solids: Concentration Units (ug/L or mg/kg dry weight): UG/L_ rwj JAN95

T440-39-3 Barium	CAS No.	Analyte	Concentration	C	Q	M	<u> </u>
7440-36-0 Antimony 38.0	7429-90-5	Aluminum	17200	<u> </u> -	*	P	lv.
7440-38-2 Arsenic 8.6 B F	7440-36-0			เซิเ			Ì
7440-39-3 Barium 1060 P	7440-38-2					F	1
7440-43-9 Cadmium 2.0 U P V 7440-70-2 Calcium 440000 P	7440-39-3		1060	1 1		P	1
7440-70-2 Calcium 440000	7440-41-7	Beryllium	2.0	ועו		P	ŀ
7440-47-3 Chromium 33.6	7440-43-9	-		וטן		P	IV
7440-48-4 Cobalt 26.5 B P	7440-70-2	Calcium	440000	1		P_	١ .
7440-50-8 Copper 53.0 P	7440-47-3	Chromium	33.6	۱٦		I P	1
7439-89-6 Iron 52900	7440-48-4	Cobalt -	26.5	B		P	1
7439-92-1 Lead	7440-50-8	Copper	53.0	1		I P	ł
7439-95-4 Magnesium 105000 P	7439-89-6	Iron	52900	1		P	1
7439-96-5 Manganese 2580 P	7439-92-1	Lead /	45.9	1_1	S	F	İ
7440-02-0 Nickel 0.20 U	7439-95-4	Magnesium	105000	[_]		P_	1
7440-02-0 Nickel 64.9	7439-96-5	Manganese	2580	1_1			
7440-09-7 Potassium 10200 P	7439-97-6	Mercury	0.20	ָן ט		1cv	
7782-49-2 Selenium 5.0 U WN F V 7440-22-4 Silver 5.0 U N P V Y Y Y Y Y Y Y Y Y	7440-02-0	Nickel	64.9]_]] P_	1
7440-22-4 Silver 5.0 U N P V 7440-23-5 Sodium 69500 P V	7440-09-7	Potassium	10200	ا_ا		P_	ļ
7440-23-5 Sodium 69500 P P 7440-28-0 Thallium 5.0 U WN F V P P P P P P P P P	7782-49-2	Selenium_	15.0	ן עו	WN	[F_	17
7440-28-0 Thallium 5.0 U WN F	7440-22-4	Silver	5.0	U	N	P	N
7440-62-2 Vanadium 53.2	7440-23-5	Sodium	69500	1_1		[P _	1
7440-66-6 Zinc 155	7440-28-0	Thallium	5.0	ΙŪ	WN	F	N
	7440-62-2	Vanadium_	153.2	1_	I <u> </u>	[P _	1
FOCE 20 0 10 The last 1 The last 2 The last	7440-66-6	Zinc				P	1
5955-70-0 Cyanide 10.0 U	5955-70-0	Cyanide	10.0	เซิ		IAS	1

Color Before:	BROWN	Clarity Before:	TURBID	Texture:	_
Color After:	COLORLESS	Clarity After:	CLEAR_	Artifacts:	
Comments:				<i>y</i>	

FORM I - IN

3/90

1 INORGANIC ANALYSES DATA SHEET

EPA	SAMPI	E NO
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Lab Name:	NYTEST ENV INC		Contract: 9421	375	GW5101			
			571_ SAS No.: _		SDG No.: SKIN6_			
Matrix (so	il/water): WATE	R	Lal	b Sample	e ID: 258708			
Level (low	/med): LOW_	_	Da	te Rece	ived: 11/19/94			
% Solids:	0.	0 .						
	Concentration	Units (ug	/L or mg/kg dry w	eight):	UG/L_			
	CAS No.	 Analyte 	 Concentration C	Q [1	LI CLMI) LI SJAN95			
	7429-90-5	Aluminum	967	* i	P CONNY			
	17440-36-0				P			
	17440-38-2		18.1		F			
	17440-39-3		444		P			
	17440-41-7	Beryllium	2.0 0		P_1			
	7440-43-9	Cadmium_	2.0 0		₽_ ∨			
	7440-70-2	Calcium_	391000		P_1			
	17440-47-3	· _		1	P_			
	7440-48-4		[6.0 U		P_1			
	17440-50-8		10.2 B		P_			
	17439-89-6	·	11000	:	P_			
	17439-92-1		[6.6]_		F_!			
	17439-95-4				P_			
	17439-96-5				P_			
	17439-97-6		0.20 0		CVI			
	17440-02-0		26.0 0		P_			
	17440-09-7	•	·		P_ F-()/			
	7782-49-2 7440-22-4	• –	5.0 U		F_IV P			
	17440-23-5		56800		F_1 P			
	17440-28-0				F V			
	17440-62-2				P			
	17440-66-6	_	12.0 B		P			
	15955-70-0	•	10.0 0		AS I			
			ii_i_i		_1			
Color Befo	ore: COLORLESS	Clari	ty Before: CLOUDY		Texture:			
Color Afte	er: COLORLESS	Clari	ty After: CLEAR_	·	Artifacts:			
Comments:	Comments:							
	•							
								
		· ······ ····						
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		F	ORM I - IN		3/90			

		U.S.	EPA - CLP				
1 INORGANIC ANALYSES DATA SHEET					EPA SAMPLE NO.		
Lab Name: NYTES	ST_ENV_INC_		Contract	: 94213	375	 	SKGW52
Lab Code: NYTES	ST Ca	se No.: 225	71_ SAS	No.: _		SDG 1	No.: SKIN6_
Matrix (soil/wa	ater): WATE	R		Lab	Sample	e ID:	257101
Level (low/med)	: LOW_	_		Dat	e Rece	ived:	11/18/94
% Solids:	0.	0					
Concentration Units (ug/L or mg/kg dry weight): UG/L_							
: !	CAS No.		Concentrat	ion C	Q 1	1	Cumil
	7429-90-5 7440-36-0 7440-38-2 7440-39-3	Antimony_ Arsenic	3		 	P_i P_I F_IV P_I	SJAN95
ĺ	7440-41-7 7440-43-9 7440-70-2	Beryllium Cadmium		2.0 \vec{v} 2.0 \vec{v} 2.0 \vec{v}	i:	P_ P_ V P_	

|7440-70-2 |Calcium_

|7440-47-3 |Chromium

|7439-95-4 |Magnesium| |7439-96-5 |Manganese|

|7439-97-6 |Mercury_

|7782-49-2 |Selenium_ |7440-22-4 |Silver

|7440-28-0 |Thallium |7440-62-2 | Vanadium

|7440-02-0 |Nickel |7440-09-7 |Potassium|

|7440-23-5 |Sodium

|7440-66-6 |Zinc 15955-70-0 | Cyanide

|7440-48-4 |Cobalt

|7440-50-8 |Copper

|7439-89-6 |Iron |7439-92-1 |Lead

BROWN_ Texture: Color Before: Clarity Before: TURBID Color After: COLORLESS Clarity After: CLEAR_ Artifacts: Comments: CA_AT_A_2X_DILUTION.

FORM I - IN

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3/90

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353001

5.0|0|

62.6|_| _212|_|

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	;	INORGANIC A	1 NALYSES DATA S	HEET	EPA SAI	MPLE NO.
Lab Name: NYTE	Contract: 94	21375_	GW	5301		
Lab Code: NYTE	ST Ca	se No.: 225	571_ SAS No.:		_ SDG No	.: SKIN6_
Matrix (soil/w	ater): WATE	R		Lab Sam	mple ID: 2	58701
Level (low/med): LOW	_		Date Re	eceived: 1	1/19/94
% Solids:	0.	0				
Co	ncentration	Units (ug/	/L or mg/kg dry	weight	t): UG/L	
	CAS No.	 Analyte	 Concentration	CI Q		CMN 29WLB
	7429-90-5 7440-36-0	Antimony_	38.0	บี	_ P_ V	03/11/3
	7440-38-2 7440-39-3	Barium	4281		F_ V P_	
	7440-41-7 7440-43-9	-	2.01	וט	_ P_ _ P_ V	
	7440-70-2 7440-47-3	• —	481000 13.4	_:	_ P_ _ P_ V	
	7440-48-4 7440-50-8	·	7.4		P V	
	7439-89-6 7439-92-1	Iron	225001	_1	P V F V	
	17439-95-4	Magnesium	1030001		P	
	7439-96-5 7439-97-6	Mercury	0.201	<u></u>	IP_I ICVI	
	7440-02-0 7440-09-7		34.4 20000		P_ P_	
	7782-49-2 7440-22-4			N N N	F	
	7440-23-5 7440-28-0	Sodium	357001	U WN	P	
	7440-62-2 7440-66-6	Vanadium_	19.0	В	P_ V	
	1 / 4 4 U - 00 - 0		57.01		! P!V	

Color	Before:	BROWN	Clarity	Before:	TURBID	Texture:
Color	After:	COLORLESS	Clarity	After:	CLEAR_	Artifacts:
Commer CA_	nts: _AT_A_2X_I	DILUTION				·
-						-

_10.0|0|

|5955-70-0 |Cyanide

FORM I - IN

1 INORGANIC ANALYSES DATA SHEET

ב ה	SAMPLE	NO
CFA	SMITTE	NO.

Lab Na	me: NYTE	ST ENV INC		Contract: 9421	375	, GW5601 	Ì
Lab Co	de: NYTE	ST Ca		571_ SAS No.: _		SDG No.: SKIN	16_
Matrix	(soil/w	ater): WATE	R	La	b Sampl	e ID: 258703_	
Level	(low/med): LOW_	_	Da	te Rece	ived: 11/19/94	ł
% Soli	ds:	0.	0				
	Co	ncentration	Units (ug	/L or mg/kg dry w	eight):	UG/L_	
		CAS No.	 Analyte	 Concentration C	Q 1	m! ar	าก
		1 17429-90-5	l Aluminum	 10900	 -	1	
		17440-36-0	Artimory	38.0 <u>0</u>		P-1 8 JA	CIN
		17440-38-2	larsenic	5.0 0		F-	
		17440-39-3		126 B		P_	
		17440-41-7				P	
		17440-43-9		2.0 0		P_i_/	
		17440-70-2		3880001		PI	
		17440-47-3				P i	
		17440-48-4		12.9 B		P	
		17440-50-8		19.5 B		P	
		17439-89-6		24000		P	
		7439-92-1		12.21		F	
		17439-95-4			i	P	
		17439-96-5				P	
		17439-97-6		0.20 0		c⊽i	
		17440-02-0		34.4 B		P	
		17440-09-7				P	
		17782-49-2	Selenium	1 30.0 5-0101	N I	F_I	
		17440-22-4	Silver	5.0 0	_NI	P_	
		17440-23-5		142000		P_	
		17440-28-0				F_IV	
		17440-62-2	_			P_	
		17440-66-6		166.51_1		P_	
		5955-70-0 	Cyanide 	10.0 U _		AS 	
Color	Before:	BROWN	Clari	ty Before: TURBID)	Texture:	
Color	After:	COLORLESS	Clari	ty After: CLEAR_	-	Artifacts:	
Commen	ts:					,	
<u>.</u>							<u>-</u>
							_
							-

FORM I - IN

00008

	:	INORGANIC A	l ANALYSES DATA S	SHEET	EPA SAMP	LE NO.
Lab Name: NYTE	ST_ENV_INC_		Contract: 94	121375	 GW57 	01
Lab Code: NYTE	ST Ca	se No.: 225	571_ SAS No.:	·	SDG No.:	SKIN6_
Matrix (soil/w	ater): WATE	R		Lab Sam	ple ID: 258	704
Level (low/med): LOW_	_		Date Re	ceived: 11/	19/94
% Solids:	0.	0				
Co	ncentration	Units (ug/	/L or mg/kg dry	y weight): UG/L_	C mO
	CAS No.	Analyte	Concentration	ICI Q	M	Comi
	7429-90-5	Aluminum	13400	¦−¦ − -	- <u> - </u>	8 JAN 95
	7440-36-0				_ i	
	17440-38-2				TIF I	
	17440-39-3		93.4	B	P	
	17440-41-7	Beryllium	2.0	וטו	_ P_	
	17440-43-9	Cadmium_	12.0		_ P_ \/	
	7440-70-2	Calcium_	437000	I_I	_ P_	
	17440-47-3				_1 P_1	
	7440-48-4		15.4		_ P_	
	17440-50-8	• • • • • • • • • • • • • • • • • • • •	25.1		_ P_	
	7439-89-6		32400		_ P_	
	7439-92-1		16.5		_ F_	
	17439-95-4				_ P_	
	17439-96-5				_ P_	
	17439-97-6				_icvi	
	17440-02-0		34.5		_ P_	
	17440-09-7				_ P_	
	7782-49-2 7440-22-4		·		_ F_	
	17440-23-5		92900	_אוטן	_ P P	
	7440-23-3			่บ่ พท	- F V	
	17440-62-2			B	_ P_	
	17440-66-6		83.8	:	- P-	
	15955-70-0				IASI	
	i	i	1	i_i	_i_i	
Color Before:	BROWN	Clari	ty Before: TUR	BID	Texture:	
Color After:	COLORLESS	Clari	ty After: CLE	AR_	Artifacts	s:
Comments:					:	

FORM I - IN

00009

		INORGANIC A	1 NALYSES DATA S	SHE	ЕT	EPA	SAMPLE NO.
Lab Name: NYTE	ST_ENV_INC_		Contract: 94	121	375	 	SKFD01
Lab Code: NYTE	ST Ca	se No.: 225	571_ SAS No.:	_		SDG	No.: SKIN6_
Matrix (soil/w	ater): WATE	R		Lai	b Samp	le ID	: 258702
Level (low/med): LOW			Da	te Rec	eived	: 11/19/94
Solids:	0.	0					
Co	ncentration	Units (ug	/L or mg/kg dry	y w	eight)	: UG/	L_
	CAS No.	 Analyte	 Concentration	CI	Q		amn
	7429-90-5	Aluminum	9180	- -	*	P N	CPUALB .
	17440-36-0	[Antimony]				P_	
	17440-38-2	Arsenic_	9.7	BI		IF N	į
	7440-39-3	Barium_	522	_		P_	
	7440-41-7	Beryllium	12.0	וּטוּ		1 P_1	
	7440-43-9	Cadmium	2.0			1P_1\	i
	17440-70-2	Calcium_	659000	1_1		P_	
	17440-47-3	Chromium_	21.5	1_1		1P_1V	
	17440-48-4		12.3	BI		[P] N	•
	17440-50-8	Copper	129.7	_		IP_N	
	17439-89-6		38800			IP_IV	
	17439-92-1		28.0			IF_IV	1
	17439-95-4	Magnesium	143000	1_1		P_	
	17439-96-5			1 _ 1		P	
	17439-97-6	[Mercury	0.20	וּטּו		CVI	
	17440-02-0	Nickel	140.9	1_1		P_	
	17440-09-7	Potassium	120300	1[]		P_	
	17782-49-2	Selenium_	50.0	เบิเ	N	F_	
	17440-22-4	Silver	36.1	1_1	N	P_	
	17440-23-5	Sodium	36500	1_1		[P _	
	17440-28-0	Thallium	50.0	וּטּו	WN	[F	1
	17440-62-2	Vanadium	35.0	B		[P_ \	ĺ
	7440-66-6	Zinc -	95.8			IP N	i
	15955-70-0	Cyanide	10.0	וּטּו ו		IASI	
Color Before:	BROWN	Clari	ty Before: TUR	•)		ure:

COTOL	berore.	DROWN	CIAIICY	belule.	TUKBID		
Color	After:	COLORLESS	Clarity	After:	CLEAR_	Artifacts:	
Comme: CA	nts: _AT_A_2X_	DILUTION					-
							-
·							-

FORM I - IN

		U.S.	EPA - CLP			
	:	INORGANIC A	1 NALYSES DATA	SHEET	EPA SAMP	LE NO.
Lab Name: NYTE	ST_ENV_INC_		Contract: 9	421375	SKFB	01
Lab Code: NYTE	ST Ca:	se No.: 225	571_ SAS No.	:	SDG No.:	skin6_
Matrix (soil/w	ater): WATE	R		Lab Sampl	e ID: 258	709
Level (low/med): LOW_		Date Rece	ived: 11/	19/94	
% Solids:	0.	0				
Co	ncentration	Units (ug/	'L or mg/kg dr	y weight):	UG/L_	
	CAS No.	 Analyte	Concentration		M I	CMN 29NALS
	7429-90-5 7440-36-0 7440-38-2 7440-39-3 7440-41-7 7440-43-9 7440-47-3 7440-48-4 7440-50-8 7439-89-6 7439-95-4 7439-95-4 7439-96-5 7439-97-6 7440-02-0 7440-09-7 7782-49-2	Antimony_ Arsenic_ Barium_ Beryllium Cadmium_ Calcium_ Chromium_ Cobalt_ Copper_ Iron_ Lead Magnesium Manganese Mercury_ Nickel Potassium	38.0 5.0 11.0 2.0 1390 1 5.0 1 6.0 1 5.0 1 6.0 1 75.0 1 75.0 1 75.0 1 75.0 1 75.0 1 75.0		P	
Color Before:	7440-22-4 7440-23-5 7440-28-0 7440-62-2 7440-66-6 5955-70-0	Silver Sodium Thallium Vanadium Zinc Cyanide	5.0 1 463 1 5.0 1 17.0 1 5.0		P P P P P P P P P P	

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN



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.

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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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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.

<u>CALIBRATIONS</u>

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.

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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

NON-CONFORMANCE SUMMARY (Case Narrative)

Login No.: 22258

The samples were analyzed according to the required protocols. No 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

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.

RUST ENVIRONMENT & INFRASTRUCTURE C:\WORD\LIBRARY\22258Y.DOC

PAGE 1 December 19, 1994 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%.

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PAGE 2 December 19, 1994

DECEMBE

Volatile Organic Analytical Data

Skinner Landfill Site West Chester, Ohio

Sampling Date: October 10, 1994 Remedial Design Investigation

Sample ID	SK-SV	V50-01	SK-SV	V51-01	SK-SV	V52-01	SK-SW	/FD-01	SK-SV	V53-01	SK-SW	FB-01	Trip !	Blank
Compound										'			L	
Chloromethane	10	U	10	U	10	Ū	10	U	10	U	10	Ū	10	Ü
Bromomethane	10	U	10	U	10	U								
Vinyl Chloride	10	U	10	U	10	U	10	บ	10	บ	10	บ	10	บ
Chloroethane	10	U	10	Ŭ	10	U								
Methylene Chloride	26	U	26	U	10	U	28	U	28	U	26	В	2	JB
Acetone	10	U	10	U	12	S	10	U	10	U	10	U	10	U
Carbon Disulfide	10	U	10	υ										
1,1-Dichloroethene	10	U	10	ប	10	U	10	U	10	U	10	υ	10	U
1,1-Dichloroethane	10	U	10	Ŭ	10	U	10	U	10	U	10	U	10	Ü
1,2-Dichloroethene (total)	10	U	10	U	10	U	10	U	10	U	10	บ	10	U
Chloroform	10	U	10	บ										
1,2-Dichloroethane	10	U	10	U										
2-Butanone	10	υ	10	ប	10	Ü	10	บ	10	U	10	บ	10	ប
1,1,1-Trichloroethane	10	U	10	บ										
Carbon Tetrachloride	10	U	10	บ										
Bromodichloromethane	10	U	10	ប										
1,2-Dichloropropane	10	U	10	υ	10	ប	10	U	10	U	10	U	10	บ
cis-1,3-Dichloropropene	10	U	10	Ų	10	U	10	U	10	U	10	U	10	บ
Trichloroethene	10	,U	10	U	10	U								
Dibromochloromethane	10	U	10	U	10	U	10	U	10	ប	10	U	10	U
1,1,2-Trichloroethane	10	U	10	U										
Benzene	10	U	10	U										
trans-1,3-Dichloropropene	10	U	10	υ	10	υ	10	ប	10	ប	10	ប	10	ប
Bromoform	10	U	10	U										
4-Methyl-2-Pentanone	10	U	10	U										
2-Hexanone	10	U	10	U										
Tetrachloroethene	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										
Chlorobenzene	10	U	10	Ŭ	10	U	10	U	10	U	10	U	10	U
Ethylbenzene	10	U	10	U										
Styrene	10	U	10	U										
Xylene (total)	10	ប	10	U	10	ប	10	ប	10	บ	10	ប	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 SKINI

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?

 $1\sqrt{1}$

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?

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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".

Date: January 1992

Revision: 8

YES NO N/A

Holding Times

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

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

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).

3.

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Date: January 1992 Revision: 8

YES NO N/A

0	System Monitoring Compound (SMC) Recovery	(Form I	n	
3.1	Are the VOA SMC Recovery Summaries (Form I for each of the following matrices:	I) pres	ent	
	a. Low Water -	ι√л		
	b. Low Soil	\Box		<u>√</u>
	c. Med Soil	\Box		1
3.2	Are all the VOA samples listed on the appr System Monitoring Compound Recovery Summar of the following matrices:		a ch	
	a. Low Water	$1\sqrt{7}$		
	b. Low Soil	\Box		1
	c. Med Soil	\Box		
	ACTION: Call lab for explanation/ resubmittals. If missing deliverables are unavailable, document effect in data assessment	s .		
3.3	Were outliers marked correctly with an asterisk?	17		<u> </u>
·	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?		141	_
	If yes, were samples re-analyzed?	\Box		
	Were method blanks re-analyzed?	L		/

Date: January 1992 Revision: 8

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% :

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

errors in the data assessment.

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

4.0 Matrix Spikes (Form III)

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Is the Matrix Spike/Matrix Spike Duplicate Recovery Form (Form III) present?

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STANDARD OPERATING PROCEDURE

Date: January 1992
Revision: 8

							Y	ES	NO	N/A	-
4.2	Were freq	nenc	rix sp y for	ikes an each of	alyzed the fo	at the r llowing:	equired matrice	s:			
	a.	Low	Water	•				t √	1	_	_
	b.	Low	Soil				٠	1	1		1
	c.	Med	Soil					L	1		_
ACTI	on:					a are mi 3.2 abo		take	···)		
4.3	How limi	many its?	VOA s	pike re	coverie	s are ou	tside Q	С			
		!	Water			Soils					
			Q	out of	10	N/A	out of	10			
4.4						ike and side QC			:•		
		,	Water			Soils					
			Ø	out of	5	NA	out of	5			
•	ACTI	,	data a profest result with co	lone. H sional s may b other QC	owever, judgeme e used criter	esed on using int, the in conjuctation of the	nformed MS/MSD nction termine				
. 0	Blar	nks (Form	(V)				,			
5.1		the M sent?		Blank S	ummary	(Form IV	")	14	<u>′</u> 1		_
5.2	of V blan 20 s low	VOA T nk be sampl	CL comen and es of , med:	npounds, alyzed f similar	has a for each matrix	the analy reagent/ SDG or (low watchever is	method every iter,		/1		

Date: January 1992

Revision: 8

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 <u>Contamination</u>

igair.

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 a 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.)

Date: January 1992

Revision: 8

YES NO N/A

NOTE:

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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
Flag sample result with a "U;	Report CRQL & qualify "U"	No qualification is needed

	but < 5x blank her Flag sample result	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.

Date: January 1992 Revision: 8

YES NO N/A

	•			
ACTION:	For TIC compounds, if the concentration in t sample is less than five times the concentra the most contaminated associated blank, flag sample data "R" (unusable).	tion i	'n	
6.3	Are there field/rinse/equipment blanks associated with every sample?	ग्र	-	
ACTION:	For low level samples, note in data assessmenthere is no associated field/rinse/equipment Exception: samples taken from a drinking wat do not have associated field blanks.	t blar	ık.	<i>:</i> :
7.0	GC/MS Instrument Performance Check (Form V)			i.
7.1	Are the GC/MS Instrument Performance Check Forms (Form V) present for Bromofluorobenzer (BFB)?	• ເ ∧		
7.2	Are the enhanced bar graph spectrum and mass/charge (m/z) listing for the BFB provided for each twelve hour shift?	ц√J	<u> </u>	
7.3	Has an instrument performance compound been analyzed for every twelve hours of sample analysis per instrument?	乀		

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• .	,	YES	NO H/A
	ACTION: List date, time, in sample analysis for associated GC/MS to available.	which no	
DATE	TIME INSTR	UMENT S	AMPLE NUMBER
			<u>.</u>
			
			<u> </u>
ACTION:	If lab cannot provide missi data generated outside an a calibration interval.		
7.4	Have the ion abundances beem/z 95?	n normalized to	<u>√ı</u>
	ACTION: If mass assignment qualify all associa unusable (R).		
7.5	Have the ion abundance criteach instrument used?	eria been met for <u>f</u>	<u> </u>
	ACTION: List all data which abundance criteria 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.)

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YES NO N/A Have the appropriate number of significant figures (two) been reported? **1**/1 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 1/1 compound acceptable? ACTION: Use professional judgement to determine whether associated data should be accepted, qualified, or rejected. 8.0 Target Compound List (TCL) Analytes Are the Organic Analysis Data Sheets (Form I VOA) present with required header information on each page, for each of the following: Samples and/or fractions as appropriate $\lceil \sqrt{1} \rceil$ Matrix spikes and matrix spike duplicates Blanks c. 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? Samples and/or fractions as appropriate $\sqrt{1}$ Matrix spikes and matrix spike īΛı duplicates (Mass spectra not required) 乜 Blanks ACTION: If any data are missing, take action

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specified in 3.2 above.

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		ES NO	N/A	
8.3	Are the response factors shown in the Quant Report?	. ≅	******	
8.4	Is chromatographic performance acceptable wrespect to:	rith		
	Baseline stability?	$\overline{\Lambda}$	_	_
	Resolution?	17.7		
	Peak shape?	177		
	Full-scale graph (attenuation)?	$\overline{1}$		
	Other:	. 🕰		1
	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?	ा <u>√</u> ,		
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?	<u>1</u>		

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YES NO N/A

8.8 Do sample and standard relative ion intensities agree within 20%?

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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 <u>Tentatively Identified Compounds (TIC)</u>

- 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? [1]
- 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.

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YES NO N/A

9.3 Are any TCL compounds (from any fraction)
listed as TIC compounds (example: 1,2dimethylbenzene 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

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.

ion intensities agree within 20%?

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: CO₂ (M/E 44), Siloxanes (M/E 73) Hexane, Aldol Condensation Products, Solvent Preservatives, and related by products - see Functional Guidelines for more guidance).

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YES NO N/A

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10.0	Compound Ouantitation 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)

THE WAY

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.

Date: January 1992 Revision: 8

YES NO N/A

12.0 GC/MS Initial Calibration (Form V)	12.0	tial 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/1? Are there separate calibrations for low water/med soils and low soil samples?

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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%)?

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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?

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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).

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	YES NO N/A
12.	Are there any transcription/calculation errors in the reporting of average response factors (RRF) or tRSD? (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

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						,	YES	NO	N/A
13.4	Do an	y vol	latil:	e comp	oounds hav	ve a RRF <0.	.05? [٠ -	
	ACTIO	N: (Circl	e all	outliers	in red.			
	ACTIO	1	non-d	etects	<0.05, questive	ualify associable (R) and values.	iated "J"		
13.5	error: facto: initia	s in rs (F al ar alue:	the : RF) id co: but	report or %di ntinui	ing of a	calculation verage responsible (%D) between (Check at 1 found,	מפ		т -
	ACTIO	N: Ci	ircle	erro	rs in red	•	•		
•	ACTIO	נם פת	plan cess	ation/ ary co	resubmit	call lab for tal, make and s and note sions".			
4.0	Inter	nal S	Stand	ard ()	Form VIII	ī			
14.1	of evand 1	ery :	sampl limi	e and	blank wi	eas (Form Vithin the up)	per ach	<u>√1</u>	
	ACTIO	N: L	ist a	11 the	outlier	s below.			
Sampl	le #	Inte	rnal	Std	Area	Lower Lim	it t	pper	Limit
	-						-		
							-		
									
									•

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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.

- 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?

1/1

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?

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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-SW52-01 SK-SW50-01 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.

	MS	MSD		QC LIMITS		
	%R	%R	RPD	RPD	% R	
Compound						
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%.

Unthony M. Mace

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Date

Approved By

Date

Semivolatile Organic Analytical Data

Skinner Landfill Site West Chester, Ohio

Sampling Date: October 10, 1994 Remedial Design Investigation

Sample ID	SK-SW50-01	SK-SW51-01	SK-SW52-01	SK-SWFD-01	SK-SW53-01	SK-SWFB-01
Compound		332 5 11 5 5 5				
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 ປ	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	10 Ü	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	SK-SW50-01	SK-SW51-01	SK-SW52-01	SK-SWFD-01	SK-SW53-01	SK-SWFB-01
Compound						
Anthracene	10 U					
Carbazole	10 U					
Di-n-butylphthalate	10 U					
Fluoranthene	10 U					
Pyrene	10 U					
Butylbenzylphthalate	10 U					
3,3'-Dichlorobenzidine	10 U					
Benzo(a)anthracene	10 U					
Chrysene	10 U					
bis(2-Ethylhexyl)phthalate	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10 U					
Benzo(b)fluoranthene	10 U					
Benzo(k)fluoranthene	10 U					
Benzo(a)pyrene	10 U .	10 U				
Indeno(1,2,3-cd)pyrene	10 U					
Dibenz(a,h)anthracene	10 U					
Benzo(g,h,i)perylene	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 ROI SDC SKIN1

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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?

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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?

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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

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2.1 Have any BNA technical holding times, determined from date of collection to date of ार 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.

Date: January 1992 Revision: 8

YES NO N/A

Table of Holding Time Violations

Sample	Sample Matrix		(See Date Lab Received	Traffic Report) Date Extracted	Date Analyzed
		_			
					
					
	. ACTION:	flag all po ("J") and a as estimate	sample quantised ("UJ"), and	mes are exceeded ts as estimated tation limits d document in ing times were	i, ,
•	holding upon re profess reliabi additio At a mi "J", bu data ar	time, either analysis, the conal judger lity of the conal storage nimum, all to the review anusable	er on the first ne reviewer man ment to determ data and the on the sample results should wer may determ ("R"). If hold	mine the effects of	exceeded by
3.0	Surroga	te Recovery	(Form II)	•	
3.1	Are the (Form I matrice	 present : 	ate Recovery : for each of t	Summaries he following	
	a. Lo	ow Water		•	<u>~</u> — —
	b. Lo	ow Soil	*	•	<u>⊓</u> — <u>√</u>
	c. Me	d Soil			└ _ ✓

Date: January 1992 Revision: 8

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	吶 — —							
	b. Low Soil	<u> </u>							
	c. Low Soil	п — √							
	ACTION: Call lab for explanation/resubmitta If missing deliverables are unavail document effect in data assessments	able,							
3.3	Were outliers marked correctly with an asterisk?	<u> </u>							
	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?	<u> </u>							
	Were method blanks reanalyzed?	<u>⊓</u>							
	ACTION: If all BNA surrogate recoveries are > 10% but two within the base-neutr or acid fraction do not meet SOW specifications, for the affected fraction only (i.e. base-neutral or acid compounds):	al							
	 Flag all positive results as estimated ("J"). 								
	 Flag all non-detects as estimated detection limits ("UJ") when recoverie are less than the lower acceptance lim 	it.							
	 If recoveries are greater than the upp acceptance limit, do not qualify non-d 	er etects.							

Date: January 1992 Revision: 8

YES NO N/A

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

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

OK - INSIGNIFICANT

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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)

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4.1	Is the Matrix Spike/Matrix Spike Duplicate Recovery Form (Form III) present?	ı√ı	-
4.2	Were matrix spikes analyzed at the required frequency for each of the following matrices:		
	a. Low Water	1√	
	b. Low Soil	П	
	c. Med Soil	1.1	

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

Date: January 1992

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YES NO N/A

4.3 How many BNA spike recoveries are outside oc limits?

Water

Soils

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

<u>Ø</u> out of 11

NA out of 11

ACTION: No action is taken on MS/MSD data along. 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)

- 5.2 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?

11

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

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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.

Date: January 1992 Revision: 8

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?

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

6.0 <u>Contamination</u>

Note: "Water blanks", "drill blanks" and "distilled water blanks" are validated like any other sample and are <u>not</u> 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.

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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.

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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 &="" 10x="" blank="" is<="" th="" value<=""><th>Sample conc > CRQL value & >10x blank</th></crql>	Sample conc > CRQL value & >10x blank
Common Phthalate Est	ters	
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
are	alytes qualified "U" for he still considered as "hit realibration criteria.	olank contamination is when qualifying
co: th: th:	r TIC compounds, if the ncentration in the sample an five times the concentre most contaminated associag the sample data "R" (ur	ration in lated blank,

6.3 Are there field/rinse/equipment blanks associated with every sample?

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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.

STANDARD OPERATING PROCEDURE
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Revision: 8

YES NO N/A

7.0		GC/MS I	netru	ment Perfo	rmance Che	ick.				
•	7.1) pre			ence Check riphenylph		<u> </u>		
7	7.2	Are the enhanced bar graph spectrum and mass/ charge (m/z) listing for the DFTPP provided for each twelve hour shift?						<u>√1</u>		-
	7.3	Has an instrument performance check solution been analyzed for every twelve hours of sample analysis per instrument?								-
		ACTION:	samp;	date, tim le analyse ciated GC/ lable.	s for which		nđ			7.
	DATE	TII	ME	INSTRUMEN	<u>-</u>	SAMPLE NO	MBERS			•
		ACTION:	reje	ct ("R") a	11 data go	issing data enerated our or calibrat	ıtside			
		ACTION:	inte	rval. ass assign	ment is i	n error, fi	lag all			
•	7.4	Have the	e ion	abundance	s been no	rmalized to	9 m/z J	<u>√1</u>		

Date: January 1992 Revision: 8

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.) 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

Date: January 1992 Revision: 8

YES NO N/A

8.2	Has GPC cleanup been performed on all soil/ sediment sample extracts?	\Box	
	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	ार्∖	
	b. Matrix spikes and matrix spike duplicates (Mass spectra not required)	<u>1√1</u>	
	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?	ī\7	
8.5	Is chromatographic performance acceptable with respect to:		
	Baseline stability?	$\overline{\Lambda}$	
	Resolution?	1 √1	
	Peak shape?	ार्∖ा	
	Full-scale graph (attenuation)?	17.7	
	Other:	\Box	

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

·Date: January 1992 Revision: 8

YES NO N/A

8.6	Are the lab-generated standard mass spectra of identified BNA compounds present for each sample?	l		
	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.			٠
8.7	Is the RRT of each reported compound within 0.06 RRT units of the standard RRT in the continuing calibration?	l		
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?	1	_	, —
8.9	Do sample and standard relative ion intensities agree within 20%?	1		
	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.	n		
	Tentatively Identified Compounds (TIC)			
9.1	Are all Tentatively Identified Compound Forms (Form T. Part B) present: and do listed TICs			

9.0

(Form I, Part B) present; and do listed TICs include scan number or retention time, estimated concentration and "JN" qualifier?

Date: January 1992 Revision: 8

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-	fraction	s as appro	priate	N.		_
	b.	Blanks	:				1/1		_
		ACTION:			are missi i in 3.2 s				
		ACTION:	Add -"JN	" qualif:	ler if mis	ssing.			
9.3	as 2 xyle	ric compo	unds (ex	ample: 1,	any fract: ,2-dimethy i not be :	lbenzene	is	ार्∖ा	_
		ACTION:		th "R" as as a TIC.	ny TCL com	apound .			.41
9.4	spec	ctrum with	h a rela	tive into	reference ensity gro le mass sp	eater tha	u √7		
9.5		TIC and "Ensities :			dard relat?	tive ion	1 √1		

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 of a common laboratory contaminant, the result should be qualified as unusable (R).

Date: January 1992 Revision: 8

YES NO N/A

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10.0	Compound	Quantitatio	n_and_	Reported	Detect	ion 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.

Date: January 1992 Revision: 8

YES NO N/A

12.0	GC/MS In	itial	Calibrat	ion	(Porm	VII

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

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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? <u>₁√ı</u> . (% Relative standard deviation (%RSD) < 30.0%)

ACTION: Circle all outliers in red.

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 nondetect results for that analyte R (unusable).

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

criteria.

12.3 Are all BNA compound RRFs > 0.05?

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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.

Date: January 1992 Revision: 8

YES NO N/A

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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 **√**1 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.

Date: January 1992

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YES	No	N/A

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). **1**√1 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 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.

Date: January 1992 Revision: 8

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

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15.1 Were any field duplicates submitted for BNA analysis?

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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:

	TCX <u>DB-608</u>	TCX <u>RTX-1701</u>	DCB <u>DB-608</u>	DCB RTX-1701
Sample ID				
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.

	MS %R	MSD %R	RPD	QC L RPD	imits %R_
Compound	WB 70R	WISD 70K	MD	MD	
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%.

Controne M. Noce 100 DEC 94

Reviewed By Date

Approved By Date

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PAGE 3 December 20, 1994

Pesticide/PCB Analytical Data

Skinner Landfill Site West Chester, Ohio

Sampling Date: October 10, 1994 Remedial Design Investigation

Sample ID	SK-SW50-01	SK-SW51-01	SK-SW52-01	SK-SWFD-01	SK-SW53-01	SK-SWFB-01
Compound						
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	ប្រ	1 U	1 U	ιU	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.

Section.

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.

SKIN1P.XLS (amn)

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5DG SKINI	

Date: January 1992

Revision: 8

YES NO N/A

PART C: PESTICIDE/PCB ANALYSIS

1.0	Traffic Reports and Laboratory Narrative
T.0	

1.1 Are Traffic Report Forms present for all samples?

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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?__

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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

2.1 Have any PEST/PCB technical holding times, determined from date of collection to date of extraction, been exceeded?

<u>ı√ı</u> .

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.

Date: January 1992

Revision: 8

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).

		that non-detects are unusable (R).		
3.0		Surrogate Recovery (Form II)		
	3.1	Are the PEST/PCB Surrogate Recovery Summarie (Form II) present for each of the following matrices?	•	:
		a. Low Water	4	 _
		b. Soil	\Box	 1
	3.2	Are all the PEST/PCB samples listed on the appropriate Surrogate Recovery Summary for each of the following matrices?		
		a. Low Water	न्त्र .	 _
		b. Soil	1	
		ACTION: Call lab for explanation/resubmittal If missing deliverables are unavaila document effect in data assessments.	ble,	
	3.3	Were outliers marked correctly with an asterisk?	रू	
		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%)

3.5

3.6

4.1

4.2

4.0

Date: January 1992 Revision: 8

YES NO N/A

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ACTION:	No qualification is done if surrogates are diluted out. If recovery for both 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 both surrogates qualify positive values "J".	
windows	rrogate retention times (RT) within the established during the initial 3-point 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.	
Are then	re any transcription/calculation errors [\frac{1}{2}]	_
ACTION:	If large errors exist, call lab for explanation/resubmittal. Make any necessary corrections and document effect in data assessments.	
Matrix S	Spikes (Form III)	
	Matrix Spike/Matrix Spike Duplicate y Form (Form III) present?	_
frequence (1 MS/MS	trix spikes analyzed at the required by for each of the following matrices? SD must be performed for every 20 samples har matrix or concentration level)	

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

a. Low Water

b. Soil

Date: January 1992

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YES NO N/A

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4.3 How many PEST/PCB spike recoveries are outside QC limits?

> Water Soil H out of 12 N/A out of 12

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

> Water Soil -N/A out of 6 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)

100

- Is the Method Blank Summary (Form IV) present?[/] 5.1
- 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)

Date: January 1992 Revision: 8

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?

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

6.0 <u>Contamination</u>

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NOTE: "Water blanks", "distilled water blanks" and "drilling water blanks" are validated like any other sample and are <u>not</u> 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?

_ 177 _ _

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.

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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.

		le conc : < 5x blas		Sample conc < CRQL is < 5x blank value				
		sample :	result	Report CRQL & qualify "U"	No quali is needs		on	
		NOTE:	in the	s blank contamination associated samples sl ed as unusable (R).		ll dat	8	 ,
	6.3		re field, ery samp	/rinse/equipment blam le?	nks associa	ted [/]		
ACTI	on:	that the Exception	ere is non: samp	amples, note in data o associated field/r les taken from a dri ociated field blanks	inse/equipm nking water	ent bl	ank.	
7.0		Calibrat	ion and	GC Performance				
	7.1	Systems	Printou	ng Gas Chromatograms ts for both columns ; , blanks, MS/MSD?				
		a.	peak re	solution check		$\sqrt{1}$		
		b.	perform	ance evaluation mixt	ures	1\sqrt{1}		
•	•	c.	aroclor	1016/1260		ार्		
		đ.	aroclor	s 1221, 1232, 1242,	1248, 1254	1/7		
		•	toxaphe	ne		1\(\tau\)		<u>·</u>
		f.	low poi	nts individual mixtu	res A & B	<u>1√1</u>		
		g.	med poi	nts individual mixtu	res A & B	<u>1√</u> 1		
		b	high no	inte individual mixt	ures A & B	r/1		

Date: January 1992 Revision: 8

YES	NO	N/A

	i. instrument blanks	<u>\</u>		
	ACTION: If no, take action specified in 3.2 about	ove.		
7.2	Are Forms VI - PEST 1-4 present and complete for each column and each analytical sequence?	1 √7		
	ACTION: If no, take:action specified in 3.2 above.			
7.3	Are there any transcription/calculation errors between raw data and Forms VI?		1/1	-
	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).	₩ h		

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, nondetects 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.

Date: January 1992 Revision: 8

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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

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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)

— ī∧ī

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.

Date: January 1992 Revision: 8

YES NO N/A

- 2. If any & breakdown has failed the QC criteria in a PEH Verification calibration, review data beginning with the samples which followed the last in-control standard until the next acceptable PEH & 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 20.04:
 - 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).

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YES NO N/A

	ii	• Qualify positive results for endring and endrin aldehyde as presumptively at an approximated quantity (NJ). Quaresults for DDD and/or DDE as presumat an approximated quantity (NJ).	preso	ent posit	tive esent
7.9		relative percent difference (RPD) valu PEM analytes <25.0%? (Form VII-PEST-1)		_	
	ACTION:	If no, qualify all associated positive results generated during the analytica 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	period l	l samples been injected within a 12 hr. beginning with the injection of an ent Blank?	吓		••
	ACTION:	If no, use professional judgement to determine the severity of the effect on the data and qualify accordingly.			
7.11		VII - Pest-2 present and complete for DA and INDB Verification Calibration d?	ा∧ा	_	
	ACTION:	If no, take action specified in 3.2 ab	ove.		
7.12	Are the between	re any transcription/calculation errors raw data and Form VII - Pest-2?		<u>. √1</u>	

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

Date: January 1992 Revision: 8

YES NO N/A

1/1

7.13 Do all standard retention times for each INDA and INDB Verification Calibration fall within the windows established by the initial calibration sequence?

diam's

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 <u>Analytical Sequence Check (Form VIII-PEST)</u>

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.

Date: January 1992 Revision: 8

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 Cleanuis required for all Pest/PCB extracts.)	p	
	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?	L	
	ACTION: If no, take action specified in 3.2 above	ı.	
9.3	If GPC Cleanup was performed, (mandatory for all soil sample extracts) is Form IX - Pest-2 present?	.	1
	ACTION: If no, take action specified in 3.2 above	ı.	
	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?	L	4
:	Qualify only the analyte(s) which fail the recover criteria as follows:	iry	
	ACTION: If % R are < \$0%, 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.		

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YES NO N/A

Sample data should be evaluated for NOTE: 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.

The raw data of the GPC Calibration NOTE: Check analysis is evaluated for pattern similarity with previously run Aroclor standards.

10.0 Pesticide/PCB Identification

final extract)?

. . . .

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

1/1

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.

Date: January 1992 Revision: 8

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

125

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.

Oualifier

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.

Date: January 1992

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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 Ouality

12.1 Were baselines stable?

12.2 Were any electropositive displacement (negative peaks) or unusual peaks seen?

ACTION: Address comments under System Performance of data assessment.

OK - DOES NOT AFFECT

TARGET COMPOUND

IDENTIFICATION/
QUANTITATION/
28 DEC 94

Date: January 1992

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YES NO N/A

13.0 Field Duplicates

13.1 Were any field duplicates submitted for PEST/PCB analysis?

11/1

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 aidol 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) <u>Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analysis</u> (October 1987 Revision) and the USEPA Region II <u>Checklist for Evaluation of Metals Data for the Contract Laboratory Program, Appendix A.1</u>, 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%.

Reviewed By

T. K.

pproved By

28 DECEMBER 94

Date

Data

Table 1

RPD Calculations - Field Duplicate Analysis

	SK-SW52-01	SK-SWFD-01	RPD
Analyte			
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 Ü	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%

SKIN1MA.XLS (amn)

Inorganic Analytical Data

Skinner Landfill Site West Chester, Ohio

Sampling Date: October 10, 1994 Remedial Design Investigation

Sample ID	SK-SW50-01	SK-SW51-01	SK-SW52-01	SK-SWFD-01	SK-SW53-01	SK-SWFB-01
Analyte				·		
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					
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.

SKIN1M.XLS (amn)

12/28/94

SKINNICK	LANDFILL	KNI
SDG SKII	N1	

	STANDARD OFFIXING PROCEILE	Page 4 of 34			
ત્ર€:	Evaluation of Metals Data for the Contract Laboratory Program Appendix A.1: Data Assessment - Contract Compliance (Total Review)	Date: Number: Revision	151-2	_	
		YZS	70	N/A	
1	Contract Compliance Screening Report (CCS) - Present?		-	<u> </u>	
	ACTION: If no, contact RSCC.				
1.2	Record of Communication (from RECT) - Present?	لے	_	<u> </u>	
	ACTION: If no, request from RSCC.				
3	Trip Report - Present and complete?			<u></u>	
i	ACTION: If no, contact RSCC for trip report.			·	
	Sample Traffic Report - Present?	\checkmark			
	Legible?	\mathcal{L}	_	_	
	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?	<u>/</u> .	_		
	ACTION: If no, prepare Telephone Record Log, and contact laboratory.		•		
	Do numbers of samples correspond to numbers on Record of Communication?	<u>_</u>			
	Do sample numbers on cover page agree with sample numbers on:			•	
	(a) Traffic Report Sheet?	<u>(</u> ✓)		-	
	(b) Form I's?				
υx	MCTION: If no for any of the above, contact RSCC for clarification.				

STNEARD OFFRATING PROCEDURE

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.tle: Evaluation of Metals Data for the Contract Laboratory Program Appendix A.1: Data Assessment - Contract Compliance (Total Review) Date: Jan. 1992 Number: 184-2 Revision: 11

1.10.2	Is correlation coefficient less than 0.995 for:	XIZ	<u> 100</u>	N/A
	Mercury Analysis?		ىك	
	Cyanide Analysis?		4	
	Atomic Absorption Analysis?		لك	
	ACTION: If yes, flag the associated data as estimated.		اسياسا	-
	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.).	n.		
1.10.3	In the instance where less than 4 standards are measured in absorbance (or peak area, peak height mode, are the remaining standards analyzed in concentration mode immediately after calibration	,etc.)		
	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 rang indicated by good recovery of standard(s).	•		
1.11	Form II A (Initial and Continuing Calibration Verification	<u>-1</u>		
	Present and complete for every metal and cyanide?	\angle		
•	Present and complete for AA and ICP when both are used for the same analyte?	ب		<u> </u>
	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?	<u>'</u>		
	Hg - 80-1204R?	4		
	Cyanides- 85-115tR?			

SENIONE OF PROCEDURE

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[/]

Date: Jan. 1992 tle: Evaluation of Metals Data for the Maber: H-2 Contract Laboratory Program Revision: Appendix A.1: Data Asse ment - Contract 11 Compliance (Total Review) Pors I to II Yes No N/A 1.6 Are all the Form I through Form IX labeled with: 1.6.1 [\] Laboratory name? ∠ Case/SNS rumber? [__] EPA sample No.? رك SDG No.? 4 Contract No.? Correct units? <u></u> 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-DX for: (NOTE: Check all forms against rew data.) (a) all analytes analyzed by ICF? <u>[\]</u> (b) all analytes analyzed by GTAA? (c) all analytes analyzed by AA Flame? (d) Mercury?

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

(e) Cyanide?

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		YES	140	NZA	_
7	Rev Data	,			
.7.1	Digestion Log* for flame AN/ICP (Form XIII) present?	ب			
	Digestion Log for furnece AA Form XIII present?	ك		_	
	Distillation Log for mercury Form XIII present?	\checkmark		_	
	Distillation Log for cyanides Form XIII present?	$ \mathcal{L} $		_	
	Are pH values (pH<2 for all metals, pH>12 for cyanide) present?	لك		 ;	
	*Weights, dilutions and volumes used to obtain values.	•			•
	Percent solids calculation present for soils/sediments?		_	✓ .	
	Are present on sample preparation logs sheets?	ك	_		
.2 .	Measurment read out record present?	\checkmark			
	Flame AA			✓	
	Purnace AA		·	 .	
	Marcury	\triangle			
	Cyanides				
7.3	Are all raw data to support all sample analyses and OC operations present?	<u></u>	·		
	\ 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 resulmittals.

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œ	mpliance (1	otal Review)				
8	Holding 1	ines - (aqueous and soil samples)	YES	780	N/A	
	(Domine	sample traffic reports and digestion/distillat	cion logs	.)		
	Mercury	analysis (28 days) exceeded?			_	
	Cyanide	distillation (14 days) comesded?		\angle		
	Other Me	tals analysis (6 months) commended?		igsim		
	NOTE:	Prepare a list of all samples and analytes for which holding times have been exceeded. Specthe number of days from date of collection to of preparation (from rew date). Attach to determine the collection of preparation (from rew date).	ity the date	•		
	KOTON:	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.				•
2.2	Is pH of	aquecus samples for: Metals Analysis >2?	_	اك		
		Cyanides Analysis <12?		()	. —	
	Action:	If yes, flag the associated metals and cyanic data as estimated.	les .			
9	Pom I	Final Data)				
9.1	Are all	Form I's present and complete?		· ·		
	ACTION;	If no, prepare telephone record log and contral laboratory for submittal.	ect	·		
9.2		rect units (ug/l for waters and mg/kg for soils id on Form I's?	•)	 -	_	
	Are soil percent	sample results for each parameter corrected : solids?	(ar	·	<u> </u>	
	Are all	"less than IDL" values properly coded with "T	ו ליז כח			

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		XIX	NO	N/A
	Are the correct concentration qualifiers used vi final data?	<u></u>	_	
	<u>ACTION</u> : If no for any of the above, prepare Tele Record Log, and contact laboratory for data.			
1.9.3	Are EPA sample # s and corresponding laboratory ID * s the same as on the Cover Page, Form I's a in the raw data?			_
	Was a brief physical description of samples given on Form I's?	<u> </u>		
et ere	Was the dilution of any sample diluted beyond the requirements of the contract noted on Form I or Form XIV?	• · · · · · · · · · · · · · · · · · · ·	<u></u> 1	∡.
.	ACTION: If no for any of the above, note under Contract-Problem/Non-Compliance of the "Data Assessment Narrative".			
1.10	Calibration			
:.::::	Is record of at least 2 point calibration present for ICP analysis?	<u>ب</u>	_	
	Is record of 5 point calibration present for Hg analysis?	· <u></u>		
	Is record of 4 point calibration present for:			
	Flame AA	•	_	<u> </u>
	(Purpace AA	•	_	_
	Cyanides	?		
	Is one calibration standard at the CROL level for all AA (except Hg) and cyanides analyses?	<u></u>	 .	

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

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1: Evaluation of Metals Data for the Contract Laboratory Program Appendix A.1: Data Assessment - Contract Compliance (Total Review) Date: Jan. 1992 Number: HS-2 Revision: 11

		· ·			
N-TX	flagged with a "U calibration stand (65-79% for Hg; 7 (121-135% for Hg; nearest good cali <idl (cn,="" 65-135%).="" 70-84="" 75-89%="" as="" ccv="" cutside="" d="" estimated="" is="" qualif<="" th="" unacceptable=""><th>(J) all positive data (not ") analyzed between a ard with &R between 75-89% 0-84% for CM) or 111-125% 116-130% for CM) recovery and bration standard. Qualify results (UJ) if the ICV or CCV &R is %; HG, 65-79%). Reject (red-line ata if recovery of the ICV or e range 75-125% (CM, 70-130%; Hg, y five samples on either side of dard out of control limits.</th><th>) 223</th><th>30</th><th>N/A</th></idl>	(J) all positive data (not ") analyzed between a ard with &R between 75-89% 0-84% for CM) or 111-125% 116-130% for CM) recovery and bration standard. Qualify results (UJ) if the ICV or CCV &R is %; HG, 65-79%). Reject (red-line ata if recovery of the ICV or e range 75-125% (CM, 70-130%; Hg, y five samples on either side of dard out of control limits.) 223	30	N/A
	as continuing calibrat r every 2 hours?	ion performed every 10 samples	4		
W	es ICV for cyanides di	stilled?	· 🛂		
XCTI		the above, write in the Non-Compliance section of the Narrative".			
12	Form II B (CROL Stands	rds for Al and ICP) -			
	Was a CROL standard (Co calibration for all AA	RA) analyzed after initial metals (except Hz)?		_	_
	Was a mid-range calib. and analyzed for cyani	verification standard distilled de analysis?	<u>ا</u>		
	for each ICP run?	L when IDE>CROL) analyzed (CRI) analyzed (CRI) analyzed (CRI).	ىك	<u> </u>	
	\ all data fal The affected AA Analysis ICP Analysis	y of the above, flag as estimated ling within the affected ranges. ranges are: - **True Value ± CROL - **True Value ± 2CROL - **True Value ± 0.5 x True Value	D.		٠

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

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1.12.2	Was CRI analyzed after ICV/ICB and before the final	NO N/A
. 1 . 12 . 2	αν/απ, and twice every eight hours of ICP nm?	
	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:	5b
	Metals 80 - 120%R? []	/ _
	Is mid-range standard within control limits:	
	Cyanide 80 - 120%?	
	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 CROL 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)?	

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	ACTION: If no, prepare Telephone Record Log, contact laboratory and write in the Contract-Problems/ Non-Compliance section of the "Data Assessment I	YES Verretive	<u> </u>	N/A
1.13.2	•	•		
	Are all calibration blanks (when IDLoCROL) less than or equal to the Contract Required Detection Limits (CROLE)	· 🗸	-	
	Are all calibration blanks less than two times Instrument Detection Limit (when IDL>CROL)?		-	_
~ .	MCTION: If no for any of the above, flag as estimated (J) positive sample results when raw sample yalue is less than or equal to calibration blank value analyzed between calibration blank with value over CROL (or 2xIDL) and nearest goo calibration blank. Flag five samples on either side of the calibration blank outside the control limits.	4		
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 Dalivery Group (SDG)?	∠ 1.		_
	each batch of digested samples?	∠	_	
	each matrix type?			
	both AA and ICP when both are used for the same analyte?	[]		<u>/</u>
	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).		. ·	

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		YES	750	N/A
4.1.14.2	Is concentration of prep. blank value greater than the CROL when IDL is less than or equal to CROL?			
	If yes, is the concentration of the sample with the least concentrated analyte less than 10 times the prep.blank?			<u>/</u>
	ACTION: If yes, reject (red-line) all associated data greater than CROL 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 CROL?		_	1
	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 CROL?			
•	ACTION: If yes, reject (red-line) all associated samp results less than 10xCROL.	le .	·	
1.15	Form IV (ICP Interference Check Sample)			
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)?	<u></u>	_	_
	ACTION: If no, flag as estimated (J) all the samples thich AL, Ca, Fe, or Mg is higher than in ICS			
1.15.2	Circle all values on each Form IV that are more than \pm 20% of true or established mean value.			
	Are all Interference Check Sample results inside the control limits (± 20%)?	<u>√</u>		_
	If no, is concentration of Al, Ca, Fe, or My lower than the respective concentration in ICS?			

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Contract Laboratory Program
Appendix A.1: Data Assessment - Contract Revision: 11 Compliance (Total Review) 8 YES N/A If no, flag as estimated (J) those positive ACTION: results for which ICS recovery is between 121-150%; flag all susple 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"). Form ▼ A (Spiked Sample Recovery - Pre-Digestion/Pre-Distillation)-1.16 (Note: Not required for Ca, Mg, K, and Na (both metrices), Al, and Fe (soil only.) ىك Present and complete for: each SOG? 1.16.1 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). <u>[√]</u> Was field blank used for spiked sample? 1.16.2 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?

to four times spike concentration?

If no, is sample concentration greater than or equal

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Contract Laboratory Program
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(d) greater than 200%?

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Contract Laboratory Program
Appendix A.1: Data Assessment - Contract Number: 121-2 Revision: 11 Compliance (Total Review) 70 N/A MCTICN: If less than 10%, reject all associated data; if between 10-74%, flag all associated data as estimated; if between 126-2004, 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". Form VI (Lab Dublicates) 3.1.17 Present and complete for: each SDG? 3.1.17.1 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 2000s 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. .1.17.2 Was field blank used for duplicate analysis? MCTION: If yes, flag all data >CROL* as estimated (J) for which field blank was used as duplicate. Are all values within control limits (RPD 20% or .1.17.3 1/1 $difference \leq \pm CROL$)?

If no, are all results outside the control limits

ACTION: If no, write in the Contract - Problems/Non-

Compliance section of "Data Assessment Narrative".

flagged with an * on Form I's and VI?

^{*} Substitute IDL for CROL when IDL > CROL.

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					_
	NOTE: 1. RPD is not calculable for an analyte of the sample - deplicate pair when both values are less than IDL. 2. If the result of lab deplicate analyzed by GFAA is rejectable due to coefficient of correlation of MSA, analytical spike recovery, or deplicate injections criteria, do not apply precision criteria to metals analyzed by GFAA.		<u> </u>	N∕ A	
.17.4	Aqueous .				
	Circle on each Form VI all values that are:				
	RPD > 50%, or Difference > CROLA				
-	Is any RFD 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?		<u>(</u>		
	ACTION: If yes, flag the associated data as estimated.				
.17.5	Soil/Sediment				
	Circle on each Form VI all values that are:				
	RPD > 100%, cr		•		
	Difference > 2 x CROLA				
	Is any RFD (where sample and duplicate are both greater than or equal to 5 times *CRDL) :		.*		
	> 100%?		[]	<u>√</u>	
	Is any **difference between sample and duplicate (where sample and/or duplicate is less than 5x*CROL) :			,	
	> 2x*CROL?		[]	<u>√</u>	

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

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	NZ.	ЖO	N/A	,
	ACTION: If yes, flag the associated data as estimated.			
18	Field Duplicates			
.18.1	Were field deplicates analyzed? Die 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 compentrations of soils in ug/l on wet weight basis and calculate RFDs or Difference for each analyte.			
ern .	NOTE: 1. Do not calculate RFD when both values are less than IDL. 2. Flag all associated data only for field duplicate pair.			
18.2	Acuscus			
	Circle all values on self prepared Form VI for field duplicates that are:			
	RPD > 50%, or Difference > CROLA			
	Is any RPD greater than 50% where sample and duplicate are both greater than or equal to 5 times *CROL?	· [<u></u>]		
	Is any **difference between sample and duplicate greater than *CROL where sample and/or duplicate is less than 5 times *CROL?			

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

^{*} Substitute IDL for CROL when IDL > CROL.

^{**} Use absolute values of sample and duplicate to calculate the difference.

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		YES	NO	N/A	
.18.3	Soil/Sediment	•			
	Circle all values on self prepared Form VI for field duplicates that are:				
	RPD >100%, car				
	Difference > 2 x CROL*	•		•	
•	Is any RPD (where sample and duplicate are both greater than 5 times *CROL) :			/	
	>100%?			<u>√</u>	
	Is any **difference between sample and duplicate (where sample and/or duplicate is less than 5x *CROL):		,	
 .	>2x *CROL?	_		<u>√</u> .	
	ACTION: If yes, flag the associated data as estimate	d.			
.19	Form VII (Laboratory Control Sample) (Note: ICS - no required for aqueous Hg and cyanide analyses.)	×			
.19.1	Was one LCS prepared and analyzed for:				
	each SDG?		_		
	each betch samples digested/distilled?	<u></u> 1	<u>.</u>		
	both AA and ICP when both are used for the same analyte?			_/	
	ACTION: If no for any of the above, prepare Telephor Record Log and contact laboratory for submit of results of LCS. Flag as estimated (J) all the data for which LCS was not analyzed.	tal			
	NOTE: If only one LCS was analyzed for more than a samples, then first 20 samples close to LCS do not have to be flagged as estimated.	20			

Substitute IDL for CROL when IDL > CROL. "- Use absolute values of sample and duplicate to calculate the difference.

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			YES	750	N/A
.19.2	Actionis ICE				
	Circle on each Form VII to outside control limits (Ag and Sb.	he LCS percent recoveries 80 - 120%) except for aquec	NS.		
	Is any LCS recovery:	less than 504?		\checkmark	_
		between 50% and 79%?	_		_
	:	between 121% and 150%?		4	
	·	greater than 150%?			
	between 50% and as estimated (J) all positive (no	eject (red-line) all data; 79%, flag all associated da ; between 121% and 150%, fl t flagged with a "U") result mater than 150%, reject all	ag ts		
.19.3	Solid ICS				
	injections or an regardless of IC as estimated (J) 2. If IDL of an anatrue value of IC	of LCS is rejectable due to alvical spike recovery criss recovery, flag the associality is equal to or greater S, disregard the "Action" is to control limits.	teria, ated dat than	A ·	
	Is ICS "Found" v limits on Form V	alue higher then the contro TI?	1	٠ ـــــا	<u> </u>
	ACTION: If yes, qualify as estimated.	all associated positive dat	2		
	Is LCS "Found" v limits on Form V	alue lower than the Control II?			<u>/</u>
	MCTION: If yes, qualify estimated.	all associated data as			

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ile:	Contract L Appendix A	valuation of Metals Data for the ontract Laboratory Program opendix A.1: Data Assessment - Contract ompliance (Total Review)			2
			YES	NO	N/A
. 1.20	Porm I	(ICP Serial Dilution) -			
	XOTE:	Serial dilution analysis is required only for initial concentrations equal to or greater than 10 x IDL.		•	
1.20.	l Was Sei	rial Dilution analysis performed for: each SDG?	<u>ل</u> ك		_
		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 ≥ CROL when 10xIDL ≤ CROL for which Serial Dilution Analys was not performed.	n		
~ .20.	2 Was fic	ald blank(s) used for Serial Dilution Analysis?		الم	_
	ACTION	: If yes, flag all associated data \geq 10 x IDL as estimated (J). If 10xIDL \leq CROL, flag all data \geq CROL.			
1.20.	on For	sults outside control limit flagged with an "E" is and Form IX when initial concentration on X is equal to 50 times IDL or greater.	· ·		<u></u>
	XCTION	: If no, write in the Contract-Problem/Non- Compliance section of the "Data Assessment Narrative".			
.1.20.	that a	on each form IX all percent difference re outside the control limits for initial trations equal to or greater than 10 x IDLs only	•		
	Are an	y & difference values:			
		> 101?		<u>(\sqrt{1})</u>	

≥ 100%?

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	ACTION: Flag as estimated (J) all the associated sample data > 10xIDLs (or > CROL when 10xIDL < CROL) for which percent difference is greater than 1 but less than 100%. Reject (red-line) all the associated sample results equal to or greater than 10xIDLs (or > CROL when 10xIDL < CROL) for which PD is greater than or equal to 100%.	.0%	150	N ∠ A
	Note: Flag or reject on Form I's only the sample results whose associated raw data are ≥ 10xIDL (or ≥ 0 when 10xIDL CROL)			
1.21	Purnace Atomic Absorbtion (AA) OC 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?	<u></u>	منتواوت	_
	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?	ك		
•	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 results as estimated; reject the associated samples if the recovery is less than 10%; rejective sample results if the recovery is greatly than 200%.	is sample imple ict	• .	,

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

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XZ N/A MO NOTE: Reject or flag the data only when the affected sample(s) was not subsequently analyzed by Mathod of Standard Addition. 1.22 Form VIII Olethod 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? 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.

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tle: Evaluation of Metals Data for the Contract Laboratory Program Appendix A.1: Data Assessment - Contract Compliance (Total Review) Date: Jan. 1992 Number: 157-2 Revision: 11

	X23	NO	H/A
.23	Dissolved/Total or Trongenic/Total Inslytes -		
1.23.1	Were any analyses performed for dissolved as well as total analytes on the same sample(s).	ت	1
٠,	Were any analyses performed for inorganic as wall as total (organic + inorganic) analytes on the same sample(s)?	ப	<u>√</u>
	NOTE: 1. If yes, prepare a list comparing differences between all dissolved (or inorquaic) and total analytes. Compute the differences as a percent of the total analyte only when dissolved concentration is greater than CRUL as well as total concentration. 2. Apply the following questions only if inorquanic (or dissolved) results are (i) above CRUL, and (ii) greater than total constituents. 3. At least one preparation blank, ICS, and ICS should be analyzed in each analytical run.		
1.23.2	Is the concentration of any diasolved (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 $2 \times IDL$ when $IDL > CRDL$).		
i	Is field blank concentration less than CROL (or 2 x IDL when IDL > CROL) for all parameters of associated acresus and soil samples?		

SINGNO OFFICE PROCEDURE

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C	ontract Lai	of Metals Data is borstory Progres 1: Data Assesse (Total Review)	1	Date: J Marber: Revision	151-2	2
	74	ne dield black	value already rejected	YZZ	750	N/A
		other QC criteri		لــا	_	$\frac{}{}$
)con:	all associated then or equal value. Reject results that we basis are less	(except field blank results) is positive sample data less to five times the field blank on Form I's the soil sample then converted to ug/L on wet as then or equal to five times at value in ug/L.			
.1.25	Por I.	M. MI Weelf	cation of Instrumental Parameter	71).		
.1.25.1	Is verif	ication report :	present for:	•		
1		Instrument De	staction Limits (quarterly)?	$ \mathcal{L} $		_
	ICP	Interelement Co	rrection Factors (arrually)?			_
		Ia	P Linear Ranges (quarterly)?	سک		_
	ACTION:	If no, contact	TPO of the lab.			
.1.25.2		Instrument Dates for Cyanide.)	rtico Limita) - (Note: IDL is no	*		
.1.25.2.	1 Are IDLs	present for:	all the analytes?		*****	
			all the instruments used?			
	For both analyte?		n both are used for the same		_	<u>√</u>
	ACTION:		of the above, prepare rd Log and contact			
.1.25.2.	2 Is IDL g	rester than CO	L for any analyte?	_	\checkmark	
	analyzed		ation on Form I of the sample ant whose IDL exceeds CRDL,	r 1		1

SINGNO OFEREING PROCEDURE

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.tle: Evaluation of Metals Data for the Contract Laboratory Program Appendix A.1: Data Assessment - Contract Compliance (Total Review) Date: Jan. 1992 Number: HH-2 Revision: 11

YES 10 NZA Action: If no, flag as estimated all values less than five times IDL of the instrument whose IDL exceeds CROL. .1.25.3 Form II (Linear Renoss) .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): < 501? < 104? MITION: If yes, qualify as estimated all the results of a sample that has per cent solids between 104-504 (i.e. maisture content between 504-90%). 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.

Contract: 9421375 Lab Name: NYTEST ENV INC

SKSW50

SDG No.: SKIN1

Matrix: (soil/water) WATER

Lab Code: NYTEST Case No.: 22258 SAS No.:

Lab File ID: N9659.D

Lab Sample ID: 2225805

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

Level: (low/med) LOW

CAS NO. COMPOUND

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)

CONCENTRATION UNITS:

ug/L	or	ug/Kg)	UG/L	Ç

74-87-3Chloromethane	10	ט
74-83-9Bromomethane	10	Ü
75-01-4Vinyl Chloride	10	Ŭ
75-00-3Chloroethane	10	Ŭ.
75-09-2Methylene Chloride	26	الاها
67-64-1Acetone	10	# U
75-15-0Carbon Disulfide	10	บี
75-35-41,1-Dichloroethene	10	Ŭ
75-34-31,1-Dichloroethane	10	ŭ
540-59-01,2-Dichloroethene (total)	10	ŭ
67-66-3Chloroform	10	ŭ
107-06-21,2-Dichloroethane	10	Ü
78-93-32-Butanone	10	ŭ
71-55-61,1,1-Trichloroethane	10	ŭ
56-23-5Carbon Tetrachloride		ď
75-27-4Bromodichloromethane	10	Ü
78-87-51,2-Dichloropropane	10	Ü
10061-01-5cis-1,3-Dichloropropene	10	Ü
79-01-6Trichloroethene	10	
124-48-1Dibromochloromethane	10	U
79-00-51,1,2-Trichloroethane	10	ָ ט
71-43-2Benzene	10	
10061 02 6	10	Ü
10061-02-6trans-1,3-Dichloropropene	10	Ü
/5-25-2Bromoiorm	10	n
108-10-14-Methyl-2-Pentanone	10	Ü
591-78-62-Hexanone	10	U
127-18-4Tetrachloroethene	10	Ü
79-34-51,1,2,2-Tetrachloroethane	10	Ü
108-88-3Toluene	10	Ü
108-90-7Chlorobenzene	10	<u>ט</u>
100-41-4Ethylbenzene	10	Ŭ
100-42-5Styrene	10	Ū
1330-20-7Xylene (total)	10	U
	_	

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FORM I VOA

3/90.

VOLATILE CRGANICS 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 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)

Number TICs found: ゟ゙゙゙゙゙゙ゔ

Level: (low/med) LOW

Soil Aliquot Volume: ____(uL)

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
 1.	UNIGNOWN SILOXANE	12.068	_	
2.	UNICHONN SILOXANE	18.008		,
3.	UNICONN SILOXANE	- 22.173	1	
٠. 4	Ollidionii Silomiil	22.173	10	~
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FORM I VOA-TIC

1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW51

Lab Name: NYTEST ENV INC

Contract: 9421375

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

CAS NO. COMPOUND

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)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L Q

74-87-3	10 10 10 26 10 10 10 10 10 10 10 10 10 10 10 10 10	
75-25-2Bromoform 108-10-14-Methyl-2-Pentanone 591-78-62-Hexanone	10 10 10	ם מ

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3/90

FORM I VOA

-764 X

1E 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)

Number TICs found: 20

Soil Aliquot Volume: ____(uL)

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
		== ======		
	WOWN SILOXANE	12.007	7	-
	KNOWN-SILOXANE	18.046	12	
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FORM I VOA-TIC

SKSW52

Lab Name: NYTEST ENV INC

Contract: 9421375

SDG No.: SKIN1

Lab Code: NYTEST Case No.: 22258 SAS No.:

Lab Sample ID: 2225808

Matrix: (soil/water) WATER

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

Sample wt/vol:

ID: 0.53 (mm)

Dilution Factor: 1.0✓

Soil Extract Volume: ____(uL)

Soil Aliquot Volume: ____(uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/K			Q
74-87-3	Chloromethane			10	U
74-83-9	Bromomethane			10	ū
75-01-4	Vinyl Chloride			10	ū
75-00-3		3.5	. 🕶	10	ן ש
67-64-1	Methylene Chlori	ae	いみ	, 2	- 20 7
75 15 0	Acetone Carbon Disulfide			12	S
75-13-0	larbon bisuifide 1,1-Dichloroethe			10	
75-35-4	1,1-Dichloroethe 1,1-Dichloroetha	ne		10	Ŭ
	1,1-bichloroetha 1,2-Dichloroethe			10	ש
67-66-3	Chloroform	ne (cocar)_		10	U
	1,2-Dichloroetha			10	ט
78-93-3	- 2 - Putanono			10	ŭ
	1,1,1-Trichloroe	thana		10	Ü
71-33-6	Carbon Tetrachlo	rido		10	Ü
75 27 4	Carbon Tetrachio Bromodichloromet	hane		10	Ü
78-87-5	1,2-Dichloroprop	370		10	ŭ
10061-01-5	cis-1,3-Dichloro	propere		10	Ü
79-01-6	Trichloroethene	properie		10	Ü
124-48-1	Dibromochloromet	hane		10	ט
79-00-5	1,1,2-Trichloroe	thane		10	Ü
71-43-2	-Renzene	CHAILE		10	บี
	trans-1,3-Dichlo	ropropene		10	Ü
75-25-2		Topropene	**	10	Ū
	4-Methyl-2-Penta	none		10	Ü
591-78-6	2-Hexanone			10	Ū
	Tetrachloroethen	e		10	Ü
79-34-5	1,1,2,2-Tetrachl	oroethane		10	ប
108-88-3	Toluene	-		10	Ū
	Chlorobenzene			10	บ
100-41-4	Ethylbenzene			10	ט
100-42-5	Styrene			10	ΰ
1330-20-7	Xylene (total)			10	ΰl
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3/90

FORM I VOA

VOLATILE CRGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

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

Level: (low/med) LOW

Number TICs found: 70

Lab Sample ID: 2225808 Lab File ID: N9662.D

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

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)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
		=======	==========	
1.	UNROWN SILOXANE	12.050	13 -	- 3
2.	UNICHOWN SILOXANE	18.008	54	}
3.	UNITION SILOXANE	22.170		
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FORM I VOA-TIC

3/90.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Case No.: 22258 SAS No.:

EPA SAMPLE NO.

SKSW53

Lab Name: NYTEST ENV INC Contract: 9421375

SDG No.: SKIN1

Matrix: (soil/water) WATER

Lab Sample ID: 2225802

Lab File ID: N9656.D

Sample wt/vol:

Lab Code: NYTEST

5.0 (g/mL) ML

Date Received: 10/11/94

Level: (low/med) LOW

Date Analyzed: 10/17/94✓

% Moisture: not dec. ____

GC Column:CAP

ID: 0.53 (mm)

Dilution Factor: 1.0/

Soil Extract Volume: ____(uL)

CAS NO. COMPOUND

Soil Aliquot Volume: ____(uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Chloromethane	10	
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Bromomethane	10	ש
Vinyl Chloride	10	Ū
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1.2-Dichloroethane	10	U
	10	ט
	L I	ט
	10	ט
Bromodichloromethane	10	ט
	10	ן ט
	10	ן די
Trichloroethene	10	ן די
Dibromochloromethane	10	ן ט
1,1,2-Trichloroethane	10	ט
Benzene	10	U
trans-1,3-Dichloropropene	10	ן ט
Bromoform	10	ן ט
4-Methyl-2-Pentanone	10	ן ט
2-Hexanone	10	ן ט
Tetrachloroethene	10	וט ו
1,1,2,2-Tetrachloroethane	10	ן ט
Toluene	10	ן ט
Chlorobenzene	10	ן ט
	10	ן ט
Styrene	10	ן ט
	10	ט
-		11
	ChloroethaneMethylene ChlorideAcetoneCarbon Disulfide1,1-Dichloroethene1,1-Dichloroethane1,2-Dichloroethene (total)Chloroform1,2-Dichloroethane2-Butanone1,1,1-TrichloroethaneCarbon TetrachlorideBromodichloromethane1,2-Dichloropropanecis-1,3-DichloropropeneTrichloroetheneDibromochloromethane1,2-TrichloroethaneBenzenetrans-1,3-DichloropropeneBromoform4-Methyl-2-Pentanone2-HexanoneTetrachloroethene1,1,2,2-TetrachloroethaneTolueneChlorobenzeneEthylbenzene	Chloroethane 10Methylene Chloride 28Acetone 10Carbon Disulfide 101,1-Dichloroethene 101,2-Dichloroethane 10Chloroform 10Chloroform 101,1-Trichloroethane 10Carbon Tetrachloride 10Carbon Tetrachloride 10Bromodichloromethane 101,2-Dichloropropane 10Trichloroethene 10Trichloroethene 10Trichloroethene 10Trichloroethene 10Trichloroethene 10Trichloroethene 10Trichloroethane 10Trichloroethane 10Trichloroethane 10Trichloroethane 10Trichloroethane 10Trichloroethane 10Trichloroethane 10Tetrachloroethene 10Tetrachloroethene 10Tetrachloroethene 10Tetrachloroethene 10Toluene 10Toluene 10Toluene 10Styrene 10

16DEC94 000055 3/90

FORM I VOA

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)

Number TICs found: 3 0

Soil Aliquot Volume: ____(uL)

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
.===========		1	=========	
1.	UNKNOWN SILOXANE	12.907	6	
2.	UNRYOWN SILOXANE	10.027	12	
3.	UNICHOWN SILOXANE	22:192		
1	Children Silonaria	42.172	١	'
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000056 3/90

FORM I VOA-TIC

1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: NYTEST ENV INC Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.:

SDG No.: SKIN1

SKSWFB

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)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L

				, <u>,</u>			
	74-87-3	Chloromethane			10	<u></u>	
	74-83-9			` .	10	บ	
		Vinyl Chloride		'	10	Ū	
	75-00-3	Chloroethane		· [10	Ū	
		Methylene Chlorie	de		26	3 4	1 OF
	67-64-1	Acetone		·	10	ם פ	
		Carbon Disulfide		· [10	Ū	,
		1,1-Dichloroethe	ne	·	10	Ū	
		1,1-Dichloroetha		·	10	Ü	
		1,2-Dichloroethe		•	10	Ü	
	67-66-3			·	10	บ	
		1,2-Dichloroetha	ne	•	10	Ü	
	78-93-3	2-Butanone		•	10	ט	
		1,1,1-Trichloroe	thane	•	10	Ü	
	56-23-5	Carbon Tetrachlo	ride	•	10	บ	
	75-27-4	Bromodichloromet	hane	• 🛉	10	บ	
-	78-87-5	1,2-Dichloroprop	ane	•	10	ט	
	10061-01-5	cis-1,3-Dichloro	oropene	·	10	ט	
	79-01-6	Trichloroethene		•	10	Ū	
1	124-48-1	Dibromochloromet	nane	· [10	Ü	
	79-00-5	1,1,2-Trichloroe	thane	1	10	Ü	
	71-43-2	Benzene		•	10	Ū	
		trans-1,3-Dichlo	ropropene	•	10	Ŭ	
	75-25-2	Bromoform		1	10	Ū	
		4-Methyl-2-Penta	none	•	10	Ū	
	591-78-6	2-Hexanone		•	10	Ū	
		Tetrachloroethen	e	·	10	บ	ļ
		1,1,2,2-Tetrachl		1	10	บ	ĺ
	108-88-3	Toluene		•	10	Ū	
	108-90-7	Chlorobenzene		•]	10	Ū	j
		Ethylbenzene		·	10	Ū	
	100-42-5				10	Ū	
		Xylene (total)		•	10	<u> </u>	
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UMN 16DEL94 000065 3/90

FORM I VOA

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

	SKSWFB	
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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)

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

mber TICs foun		or ug/Kg)		
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	UNRIOWN SILOXANE	10.017	15	
· ·	Citatoni Cilcinate	1 10.01/]
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7.				
3.				
9.				
<u> </u>				

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FORM I VOA-TIC

1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Contract: 9421375 Lab Name: NYTEST ENV INC

SKSWFD

Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1

Lab Sample ID: 2225803 Matrix: (soil/water) WATER

5.0 (g/mL) ML Sample wt/vol: Lab File ID: N9657.D

Level: (low/med) LOW Date Received: 10/11/94

% Moisture: not dec. Date Analyzed: 10/17/94

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

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

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

CAS NO.	COMPOUND	(ug/L or ug/		Q
74-83-9 75-01-4 75-00-3 75-09-2 67-64-1 75-15-0 75-35-4 75-34-3 67-66-3 107-06-2 78-93-3 75-27-4 78-87-5 10061-01-5 124-48-1 79-01-6 79-01-6 124-48-1 10061-02-6 75-25-2 108-10-1 591-78-6 127-18-4 108-88-3 108-88-3 108-90-7 100-41-4 100-42-5	Vinyl ChlorideChloroethaneMethylene ChloriAcetoneCarbon Disulfide1,1-Dichloroethe1,2-Dichloroethe1,2-Dichloroethe2-Butanone1,1-Trichloroethe2-Butanone1,2-Dichloromethe1,2-Dichloromethe1,2-Dichloromethe1,2-Dichloromethe1,2-Dichloromethe1,2-Dichloromethe1,2-Dichloromethe1,2-TrichloroetheneDibromochloromethe1,1,2-Trichloroethenetrans-1,3-Dichloromethe1,1,2-Trichloroethenetrans-1,3-Dichloromethenetrans-1,3-DichlorometheneTetrachloroetheneTetrachloroetheneTetrachloroetheneTolueneChlorobenzeneEthylbenzene	ene ene ene ethan ethan	10 10 10 10 10 10 10 10 10 10 10 10 10 1	ממממממממממממממממממממממממ

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FORM I VOA

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

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

Lab File ID: N9657.D

Lab Sample ID: 2225803

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: 10

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

ĺ	COMPOUND NAME	RT 	EST. CONC.	Q	R
1. 2. 3.	CATALONIA STEOREME				"
5					
7:					
8. 9. 10.					
12.					
13. 14. 15.					
17.					
18. 19. 20.					
22.					
23. 24. 25.					
27.					
28. 29. 30.					-
]					

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3/90

FORM I VOA-TIC

1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLK /

Contract: 9421375 Lab Name: NYTEST ENV INC

SDG No.: SKIN1

Matrix: (soil/water) WATER

Lab Code: NYTEST Case No.: 22258 SAS No.:

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)

COMPOUND

Dilution Factor: 1.0

Soil Extract Volume: ____(uL)

CAS NO.

Soil Aliquot Volume: ____(uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

	(ug/L OI ug	, ,,	-	, –		*		
74-87-3	Chloromethane			•	10	 ט		
74-83-9	Bromomethane	-			10	Ū		
75-01-4	Vinyl Chloride	-			10	Ū		
75-00-3	Chloroethane	-			10	ប៊		
	Methylene Chloride	-	?	-id -	- 2	- 33	11	gl
67-64-1	Acetone	-	_	, •	10	Ū	٦	OK
75-15-0	Carbon Disulfide	-			10	Ū	1	
	1,1-Dichloroethene	-			10	Ū		Öü
	1,1-Dichloroethane	-			10	U	l	ما
540-59-0	1,2-Dichloroethene (total)	-			10	บ		
67-66-3	Chloroform	-			10	U		
107-06-2	1,2-Dichloroethane	-			10	U	Ì	
78-93-3	2-Butanone	-			10	U	i	
71-55-6	1,1,1-Trichloroethane	-			10	Ŭ	ŀ	
56-23-5	Carbon Tetrachloride	1			10	Ŭ		
75-27-4	Bromodichloromethane	- ·			10	บ		
78-87-5	1,2-Dichloropropane	-			10	Ū		
10061-01-5	cis-1,3-Dichloropropene	-1			10	Ū	ĺ	
79-01-6	Trichloroethene	-]			10	Ŭ		
124-48-1	Dibromochloromethane	-			10	ប		
79-00-5	1,1,2-Trichloroethane	_			10	U		
71-43-2	Benzene	-			10	Ū		
10061-02-6	trans-1,3-Dichloropropene				10	U	ĺ	
	Bromoform		•	•	10	Ŭ		
108-10-1	4-Methyl-2-Pentanone				10	ប	1	
591-78-6	2-Hexanone	[]			10	ט		
127-18-4	Tetrachloroethene	_			10	Ū		
79-34-5	1,1,2,2-Tetrachloroethane				10	Ū		
108-88-3	Toluene				10	Ū		
108-90-7	Chlorobenzene	_[10	ט		
100-41-4	Ethylbenzene				10	Ŭ		
100-42-5	Styrene	_			10	ប		
1330-20-7	Xylene (total)				10	ע		

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FORM I VOA

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

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. 2. 3. 4.	UNKNOWN SILOXANE / UNKNOWN SILOXANE / UNKNOWN SILOXANE /	12.877 18.008 22.174	8 97 33	J
5. 6. 7. 8.				
9. 10. 11. 12. 13. 14.				
16. 17. 18.				
19. 20. 21. 22. 23.				
25. 26. 27.				
28. 29. 30.				

ALL 3 TIC'S ARE COLUMN DEGRADATION PRODUCTS

000082

FORM I VOA-TIC

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

Date Received: 10/11/94

Level: (low/med) LOW

% 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

		CONCENTRATION	UNITS:	
CAS NO.	COMPOUND	(ug/L or ug/K	g) UG/L	Q
1		· ·	T	
108-95-2			10	וט
	bis(2-Chloroet		10	U
	2-Chlorophenol		10	ט
	1,3-Dichlorobe		10	U
106-46-7	1,4-Dichlorobe	nzene	10	U
	1,2-Dichlorobe		10	U
95-48-7	2-Methylphenol	·	10	ַ
	2,2'-oxybis(1-		10	ט
106-44-5	4-Methylphenol	·	10	ט
621-64-7	N-Nitroso-di-r	n-propylamine	10	וט
67-72-1	Hexachloroetha	me	10	ע
	Nitrobenzene		10	U
	Isophorone		10	U
88-75-5	2-Nitrophenol		10	U
105-67-9	2,4-DimethylpF	enol	10	U
120-83-2	2,4-Dichloroph	nenol	10	ע
120-82-1	1,2,4-Trichlor	robenzene	10	U
	Naphthalene_		10	U
	4-Chloroanilir		10	U
	Hexachlorobuta		10	U
	bis(2-Chloroet		10	U
59-50-7	4-Chloro-3-Met	hylphenol	10	U
91-57-6	2-Methylnaphth	nalene	10	U
	Hexachlorocycl		10	U
	2,4,6-Trichlor		10	U
95-95-4	2,4,5-Trichlo	cophenol	25	ע
91-58-7	2-Chloronaphth	nalene	10	U
	2-Nitroaniline		25	U
	Dimethylphthal		10	ע
208-96-8	Acenaphthylene		10	ט
606-20-2	2,6-Dinitroto	uene	10	ט
99-09-2	3-Nitroaniline	=	25	U
83-32-9	Acenaphthene_		10	ַ
	-			1

FORM I SV-1

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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

(1) - Cannot be separated from Diphenylamine

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FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: NYTEST ENV INC

Contract: 9421375

SKSW50

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)___

Concentrated Extract Volume: 1000 (uL)

Date Extracted:10/13/94

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: # 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1.	UNICIOWN	6:671	3	 JB
2.	UNICHOWN	6.792	3	 JD
3.	UNICIOWN	-6.861	3	- JB
4.	UNKNOWN	7.035	6	JB
5.	UNICIONI	17.752		7
6.	UNKNOWN	19.018	34	J
7.	UNKNOWN AROMATIC	21.758	8	J
7. 8.	UNKNOWN AROMATIC	23.024	2]
	ONANOWN AROMATIC	23.024	4	٦
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3/90

FORM I SV-TIC

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/

Dilution Factor: 1.0 Injection Volume: 2.0(uL)

GPC Cleanup: (Y/N) N pH: 8.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L CAS NO. COMPOUND Q

CAS NO.	COMPOSIND (U	g/h or ug/kg/ oc	3/ LJ	Q
108-95-2	Phenol		10	<u> </u>
111-44-4	bis(2-Chloroethyl)E	ther	10	וט
95-57-8	2-Chlorophenol		10	Ū
541-73-1	1.3-Dichlorobenzene		10	ש
106-46-7	1,4-Dichlorobenzene		10	ט
95-50-1	1,2-Dichlorobenzene		10	ש
95-48-7	2-Methylphenol		10	ַ ט
108-60-1	2,2'-oxybis(1-Chlor	opropane)	10	ש
106-44-5	4-Methylphenol_		10	U
621-64-7	N-Nitroso-di-n-prop	ylamine	10	ט
67-72-1	Hexachloroethane		10	U
	Nitrobenzene		10	U
78-59-1	Isophorone		-10	ַ
88-75-5	2-Nitrophenol		10	U
105-67-9	2,4-Dimethylphenol_		10	U
120-83-2	2,4-Dichlorophenol_		10	U
	1,2,4-Trichlorobenz	ene	10	ע
91-20-3	Naphthalene		10	ט
106-47-8	4-Chloroaniline		10	U
87-68-3	Hexachlorobutadiene		10	U
111-91-1	bis(2-Chloroethoxy)	methane	10	ן ט
59-50-7	4-Chloro-3-Methylph	enol	10	ט
91-57-6	2-Methylnaphthalene		10	ַ
77-47-4	Hexachlorocyclopent	adiene	10	ַ ד
88-06-2	2,4,6-Trichlorophen	o <u>l</u>	10	U
95-95-4	2,4,5-Trichlorophen	ol	25	U
91-58-7	2-Chloronaphthalene		10	U
88-74-4	2-Nitroaniline		25	ַ
131-11-3	Dimethylphthalate_		10	ט
208-96-8	Acenaphthylene		10	U
606-20-2	2,6-Dinitrotoluene_		10	ען
99-09-2	3-Nitroaniline		25	ַ ד
83-32-9	Acenaphthene		10	ַ
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FORM I SV-1

000048 3/90

1C SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SKSW51

Lab Name: NYTEST ENV INC

CAS NO.

Yes are

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

> CONCENTRATION UNITS: COMPOUND (ug/L or ug/Kg) UG/L Q

-	(43, 4 01 43,		
51-28-5	2,4-Dinitrophenol	25	บ
	4-Nitrophenol	25	ט
	Dibenzofuran	10	ָט
	2,4-Dinitrotoluene	10	ប
84-66-2	Diethylphthalate	10	Ū
7005-72-3	4-Chlorophenyl-phenylether_	10	Ū
86-73-7	Fluorene	10	<u>ט</u>
	4-Nitroaniline	25	Ū
	4,6-Dinitro-2-methylphenol	25	Ü
86-30-6	N-Nitrosodiphenylamine (1)	10	
101-55-3	4-Bromophenyl-phenylether	10	บั
	Hexachlorobenzene	10	Ū
	Pentachlorophenol	25	• ซั
85-01-8	Phenanthrene	10	บั
	Anthracene	10	ט ו
	Carbazole	10	Ū
	Di-n-butylphthalate	10	บ
206-44-0	Fluoranthene	10	บ
129-00-0		10	Ū
85-68-7	Butylbenzylphthalate	10	Ū
91-94-1	3,3'-Dichlorobenzidine	10	Ū
56-55-3	Benzo (a) anthracene	10	Ū
218-01-9	Chrysene	10	Ū
117-81-7	bis(2-Ethylhexyl)phthalate_	10	Ū
117-84-0	Di-n-octylphthalate	10	Ū
205-99-2	Benzo(b) fluoranthene	10	Ū
207-08-9	Benzo(k) fluoranthene	10	Ū
50-32-8	Benzo (a) pyrene	10	Ŭ
193-39-5	Indeno(1,2,3-cd)pyrene	10	ี บั
53-70-3	Dibenz (a, h) anthracene	10	Ŭ
	Benzo(g,h,i)perylene	10	Ŭ
-51 -51 -5	pormo (3) mi ri ber i reme		
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(1) - Cannot be separated from Diphenylamine

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FORM I SV-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: NYTEST ENV INC

Contract: 9421375

SKSW51

SDG No.: SKIN1

Matrix: (soil/water) WATER

Level: (low/med) LOW

Lab Code: NYTEST Case No.: 22258 SAS No.:

Lab Sample ID: 2225801

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: Q1425.D

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: # 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	² Q
1.	UNICHOWN	6.703		JD 7
2.	UNICIONI	6.807	7 3	30 7
3.	UNICIONI	6.877	•	35 7
3.			, ,	200 1
4.	UNTOVON	7.050	3	- 33 P
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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FORM I SV-TIC

000050

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SKSW52

Lab Name: NYTEST ENV INC Contract: 9421375

Lab File ID: Q1435.D

Matrix: (soil/water) WATER Lab Sample ID: 2225808

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

Sample wt/vol: 1000 (g/mL) ML

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L

108-95-2Phenol	10	ט
111-44-4bis(2-Chloroethyl)Ether	10	Ü
95-57-82-Chlorophenol	10	Ŭ
541-73-11,3-Dichlorobenzene	10	Ü
106-46-71,4-Dichlorobenzene	10	Ŭ
95-50-11,2-Dichlorobenzene	10	Ü
95-48-72-Methylphenol	10	Ū
108-60-12,2'-oxybis(1-Chloropropane)	10	Ū
106-44-54-Methylphenol	10	Ū
621-64-7N-Nitroso-di-n-propylamine	10	U
67-72-1Hexachloroethane	10	Ū
98-95-3Nitrobenzene	10	U
78-59-1Isophorone	10	U
88-75-52-Nitrophenol	10	ט
105-67-92,4-Dimethylphenol	10	U
120-83-22,4-Dichlorophenol	10	ט
120-82-11,2,4-Trichlorobenzene	10	ט
91-20-3Naphthalene	10	ט
106-47-84-Chloroaniline	10	ַ
87-68-3Hexachlorobutadiene	10	U
111-91-1bis(2-Chloroethoxy)methane	10	Ŭ
59-50-74-Chloro-3-Methylphenol	: 10	Ŭ
91-57-62-Methylnaphthalene	10	Ū
77-47-4Hexachlorocyclopentadiene	10	Ŭ
88-06-22,4,6-Trichlorophenol	10	U
95-95-42,4,5-Trichlorophenol	25	Ü
91-58-72-Chloronaphthalene	10	ט
88-74-42-Nitroaniline	25	ט
131-11-3Dimethylphthalate	10	Ü
208-96-8Acenaphthylene	10	מ
606-20-22,6-Dinitrotoluene	10	Ü
99-09-23-Nitroaniline	25	Ŭ
83-32-9Acenaphthene	10	ָט
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FORM I SV-1

CLMI) LDEC 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 (ug/L or ug/Kg) UG/L	Q
51-28-5	מממממממממממממממממממממ

(1) - Cannot be separated from Diphenylamine FORM I SV-2

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

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

Number TICs found: \$ 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
			=========	JB
1.	UNIQUOWN	6.791	2	
2.	UNIQNOWN	6.791	5	- JB
3.	UNYCHOWN			
4.	UNIQIOWN	7.016	4	JB.
5.	UNKNOWN	19.000	2	J
6.	UNKNOWN	22.312	20	J
7				
8.				
9.				
. 		_		i ——
2				
.3.				
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FORM I SV-TIC

SKSW53

Lab Name: NYTEST ENV INC Contract: 9421375

SDG No.: SKIN1 Lab Code: NYTEST Case No.: 22258 SAS No.:

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

	1	
108-95-2	10 10 10 10 10 10 10 10 10 10 10 10 10 1	מממממממממממממממממממממממממ

FORM I SV-1

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SKSW53

Lab Name: NYTEST ENV INC

Contract: 9421375

Lab Code: NYTEST Case No.: 22258 SAS No.:

SDG No.: SKIN1

Matrix: (soil/water) WATER

Level: (low/med) LOW

Lab Sample ID: 2225802

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: Q1426.D

% Moisture: ____ decanted: (Y/N)___

Date Received: 10/11/94

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 (ug/L or ug/Kg)		Q
51-28-52,4-Dinitrophen 100-02-74-Nitrophenol 132-64-9Dibenzofuran 121-14-22,4-Dinitrotolu 84-66-2Diethylphthalat 7005-72-34-Chlorophenyl- 86-73-7Fluorene 100-01-64-Nitroaniline 534-52-14,6-Dinitro-2-m 86-30-6N-Nitrosodiphen 101-55-34-Bromophenyl-p 118-74-1Hexachlorobenze 87-86-5Pentachlorophen 85-01-8Phenanthrene 120-12-7Anthracene	enee phenylether ethylphenol_ ylamine (1)_ henylether ne	UG/L 25 25 10 10 10 25 25 10 10 10 10 10 10 10 10	ממממממממממממממ
86-74-8	alate nzidine ene l) phthalate late thene thene	10 10 10 10 10 10 10 10 10 10 10	a a a a a a a a a a a a a a

(1) - Cannot be separated from Diphenylamine

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FORM I SV-2

SEMIVOLATILE 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: 1000 (g/mL) ML

Lab File ID: Q1426.D

Level: (low/med) LOW

Date Received: 10/11/94

Number TICs found: 14 10

% 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

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
		6.687		=====
1.	UNTONOMN	6.809	7	310
2.		6.009	7 (- U
3.	UNIQUOWN	7.051	-	- 05
4.	UNIQYOWN	7.051	-	
5.	UNKNOWN	12.271	2	J
6.	UNKNOWN	18.237	4	J
7.	UNIONOWN	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
15.				
16.				
17.				
18.				
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25.				
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FORM I SV-TIC

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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	CONCENTRAT (ug/L or u	ION UNITS: g/Kg) UG/L		Q
95-57-8 541-73-1 106-46-7 95-50-1 95-48-7 108-60-1 621-64-7 67-72-1 98-95-3 105-67-9 120-83-2 120-83-2 120-82-1 91-20-3 111-91-1 59-50-7 91-57-6 91-57-6 95-95-4 91-58-7 88-06-2 91-58-7 88-74-4 131-11-3 208-96-8 606-20-2	bis(2-Chloroethy2-Chlorophenol1,3-Dichlorobenz1,4-Dichlorobenz1,2-Dichlorobenz2-Methylphenol2,2'-oxybis(1-Cl4-MethylphenolN-Nitroso-di-n-pHexachloroethaneNitrobenzeneIsophorone2-Nitrophenol2,4-Dimethylphenol2,4-Dichlorophenol2,4-Dichlorophenol	cene cene cene cene cene coropylamine coropy		10 10 10 10 10 10 10 10 10 10 10 10 10 1	מממממממממממממממממממממ
83-32-9	Acenaphthene		_	10	Ū

FORM I SV-1

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1C SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Q

Lab Name: NYTEST ENV INC Contract: 9421375

SKSWFB

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

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

51-28-52,4-Dinitrophenol	25	U
100-02-74-Nitrophenol	25	Ü
132-64-9Dibenzofuran	10	Ü
121-14-22,4-Dinitrotoluene	10	บ็
84-66-2Diethylphthalate	10	Ü
7005-72-34-Chlorophenyl-phenylether	10	Ü
86-73-7Fluorene	10	บ
100-01-64-Nitroaniline	25	Ü
534-52-14,6-Dinitro-2-methylphenol	25	ŭ
	10	ŭ
86-30-6N-Nitrosodiphenylamine (1)		
101-55-34-Bromophenyl-phenylether	10	ט
118-74-1Hexachlorobenzene	10	ט
87-86-5Pentachlorophenol	25	ָט
85-01-8Phenanthrene	10	Ŭ
120-12-7Anthracene	10	U
86-74-8Carbazole	10	บ
84-74-2Di-n-butylphthalate	10	Ŭ
206-44-0Fluoranthene	10	ט
129-00-0Pyrene	10	ַ
85-68-7Butylbenzylphthalate	10	Ū
91-94-13,3'-Dichlorobenzidine	10	U
56-55-3Benzo(a) anthracene	10	ט
218-01-9Chrysene	10	U
117-81-7bis(2-Ethylhexyl)phthalate	10	U
117-84-0Di-n-octylphthalate	10	ט ו
205-99-2Benzo (b) fluoranthene	10	Ū
207-08-9Benzo(k) fluoranthene	10	Ū
50-32-8Benzo (a) pyrene	10	Ŭ
193-39-5Indeno(1,2,3-cd)pyrene	10	Ŭ
53-70-3Dibenz(a,h)anthracene	10	Ü
191-24-2Benzo(q,h,i)perylene	10	l ü
131-24-2		1
1	1	I

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

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16 DEC 94
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1F SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

. SKSWFB Contract: 9421375

Lab Name: NYTEST ENV INC

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

CONCENTRATION UNITS:

Number TICs found	l: 7	(ug/L d	or ug/Kg)	UG/L
CAS MIMBER	COMPORT	NT NAME	рт	FST

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	
1. 2. 3. 4. 5. 6.	UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN UNKNOWN	6.671 6.792 6.862 7.018 17.752 32.267 38.146	2 2 2 4 2 6 7	JB JB JB JB JB JB JB JB JB JB JB JB JB J
12.	1			
22. 23. 24. 25.				
26. 27. 28. 29. 30.				

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FORM I SV-TIC

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

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L

108-95-2Phenol	10	ប
111-44-4bis(2-Chloroethyl)Ether	10	
95-57-82-Chlorophenol	10	Ū
541-73-11,3-Dichlorobenzene	10	Ď
106-46-71,4-Dichlorobenzene	10	Ŭ
95-50-11,2-Dichlorobenzene	10	Ū
95-48-72-Methylphenol	10	Ŭ
108-60-12,2'-oxybis(1-Chloropropane)	10	บ
106-44-54-Methylphenol	10	Ū
621-64-7N-Nitroso-di-n-propylamine	10	Ū
67-72-1Hexachloroethane	10	Ū
98-95-3Nitrobenzene	10	U
78-59-1Isophorone	10	Ū
88-75-52-Nitrophenol	10	U
105-67-92,4-Dimethylphenol	10	ט
120-83-22,4-Dichlorophenol	10	U
120-82-11,2,4-Trichlorobenzene	10	U
91-20-3Naphthalene	10	U
106-47-84-Chloroaniline	10	U
87-68-3Hexachlorobutadiene	10	U
111-91-1bis(2-Chloroethoxy)methane	10	U
59-50-74-Chloro-3-Methylphenol	10	U
91-57-62-Methylnaphthalene	10	ប
77-47-4Hexachlorocyclopentadiene	10	Ū
88-06-22,4,6-Trichlorophenol	10	U
95-95-42,4,5-Trichlorophenol	25	ប
91-58-72-Chloronaphthalene	10	ט
88-74-42-Nitroaniline	25	ט
131-11-3Dimethylphthalate	10	U
208-96-8Acenaphthylene	10	U
606-20-22,6-Dinitrotoluene	10	ַ ט
99-09-23-Nitroaniline	25	U
83-32-9Acenaphthene	10	U

FORM I SV-1

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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

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		CONCENTRATIO		
CAS NO.	COMPOUND	(ug/L or ug/	/Kg) UG/L	Q
		•		
	2,4-Dinitroph		25	ַָּּ
	4-Nitrophenol		25	ិប
	Dibenzofuran_		10	Ū
	2,4-Dinitroto		10	ָּט
	Diethylphthal		10	ט
7005-72-3	4-Chloropheny	l-phenylether	10	ט
	Fluorene_		10	U
1	4-Nitroanilin		25	U
	4,6-Dinitro-2		25	ט
	N-Nitrosodiph		10	ט
101-55-3	4-Bromophenyl	-phenylether	10	ש
	Hexachloroben		10	ש
	Pentachloroph	enol	25	ש
	Phenanthrene_		10	ן ט
	Anthracene		10	Ū
	Carbazole		10	Ū
84-74-2	Di-n-butylpht	halate	10	ע
	Fluoranthene_		10	Ū
129-00-0	Pyrene		10	ប
85-68-7	Butylbenzylph 3,3'-Dichloro	thalate	10	U
91-94-1	3,3 ⁷ -Dichloro	benzidine	10	ט
	Benzo (a) anthr	acene	10	Ū
218-01-9	Chrysene		10	ט
117-81-7	bis(2-Ethylhe	xyl)phthalate	10	ַ ט
117-84-0	Di-n-octylpht	halate	10	U
	Benzo (b) fluor		10	ט
	Benzo(k) fluor		10	ן ט
50-32-8	Benzo(a)pyren	e	10	U
193-39-5	Indeno (1, 2, 3-	cd) pyrene	10	ט
53-70-3	Dibenz (a,h) an	thracene	10	IJ
191-24-2	Benzo(g,h,i)p	erylene	10	ט

(1) - Cannot be separated from Diphenylamine CMN FORM I SV-2 16 DEC 94 000110 3/90

1F SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

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يجدون المتناع ليجرون والود

بدينا بالأباد مخامه ملو كالإنجيج معاد ولدي

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ميرب ويستني برياني فيحوب الدميدي

والمنافر والمعتمرين للمساوي ويلاموني

LN LOS PLUS LA LA MORRE SERVICIONI SER MARIE

SKSWFD

) Name: NYTEST ENV INC

NYTEST

Contract: 9421375

rix: (soil/water) WATER

Case No.: 22258 SAS No.:

SDG No.: SKIN1

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)___

) Cu

Date Extracted:10/13/94

centrated Extract Volume:

e on Volume:

2.0 (uL)

Date Analyzed: 11/09/94

Dilution Factor: 1.0

Cleanup: (Y/N) N pH: 8.0

1000 (uL)

mber TICs found: \$ \

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
· · · · · · · · · · · · · · · · · · ·	UNIGYOWN	6.704 6.000	3	; JD	RR
· .	UNIQUOWN UNKNOWN	6.077 7.051 22.346		- 18 1	天
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	· · · · · · · · · · · · · · · · · · ·	· ————	1		•

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FORM I SV-TIC

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CAS NO.

Lab Name: NYTEST ENV INC Contract	SKSW50
Lab Code: NYTEST Case No.: 22258 SAS No.	•
	Lab Sample ID: 2225805
Sample wt/vol: 1000 (g/mL) ML	
* Moisture: decanted: (Y/N)	-
Extraction: (SepF/Cont/Sonc) SEPF	
Concentrated Extract Volume: 10000 (uL)	<u></u> -
	Dilution Factor: 1.00
 , , ,	
GPC Cleanup: (Y/N) N pH: 7.0	Sulfur Cleanup: (Y/M) N

CONCENTRATION UNITS:

COMPOUND (ug/L or ug/Kg) UG/L Q

COMP CODEC 94

319-84-6	0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.10 0.10	บ บ บ บ บ บ
319-86-8	0.050 0.050 0.050 0.050 0.050 0.050 0.10	ช ช ช ช ช
58-89-9	0.050 0.050 0.050 0.050 0.10	บ บ บ บ
58-89-9	0.050 0.050 0.050 0.10 	บ บ บ บ
309-00-2	0.050 0.050 0.050 0.10	บ บ บ
1024-57-3	0.050 0.050 0.10 0.10	บ บ บ
959-98-8Endosulfan I 60-57-1Dieldrin 72-55-94,4'-DDE 72-20-8Endrin 33213-65-9Endosulfan II 72-54-84,4'-DDD 1031-07-8Endosulfan sulfate 50-29-34,4'-DDT 72-43-5	0.050 0.10 0.10	U
60-57-1	0.10	ט
60-57-1	0.10	
72-55-94,4'-DDE 72-20-8Endrin 33213-65-9Endosulfan II 72-54-84,4'-DDD 1031-07-8Endosulfan sulfate 50-29-34,4'-DDT 72-43-5Hethoxychlor 53494-70-5Endrin ketone 7421-93-4Endrin aldehyde 5103-71-9alpha-Chlordane 5103-74-2	•	P1
33213-65-9	0.10	•
33213-65-9		U
1031-07-8Endosulfan sulfate	0.10	U
50-29-34,4'-DDT 72-43-5	0.10	ט
72-43-5	0.10	
53494-70-5	0.10	U
7421-93-4Endrin aldehyde	0.50	ט
5103-71-9alpha-Chlordane 5103-74-2gamma-Chlordane 8001-35-2Toxaphene 12674-11-2Aroclor-1016 11104-28-2Aroclor-1221	0.10	U
5103-74-2gamma-Chlordane 8001-35-2Toxaphene 12674-11-2Aroclor-1016 11104-28-2Aroclor-1221	0.10	ט
8001-35-2Toxaphene 12674-11-2Aroclor-1016 11104-28-2Aroclor-1221	0.050	U
12674-11-2Aroclor-1016 11104-28-2Aroclor-1221	0.050	U
12674-11-2Aroclor-1016 11104-28-2Aroclor-1221	5.0	บ
	1.0	U
	2.0	U
11141-16-5Aroclor-1232	1.0	ט
53469-21-9Aroclor-1242	1.01	U .
12672-29-6Aroclor-1248	1.0	U
11097-69-1Aroclor-1254	:	
11096-82-5Aroclor-1260	1.0	U

PESTICIDE ORGANICS ANALYSIS DATA SHEET

COMPOUND

CAS NO.

SKSW51

Lab Name: NYTEST ENV INC Contract	9421375
Lab Code: NYTEST Case No.: 22258 SAS No.	SDG No.: SKIN1
Hatrix: (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

CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>

CIMI)

	!	
319-84-6alpha-BHC	0.050	_
319-85-7beta-BHC		-
319-86-8delta-BHC		U
58-89-9gamma-BHC (Lindane)	_ 0.050	U
76-44-8Heptachlor	_ 0.050	ប
309-00-2Aldrin_	0.050	ט
1024-57-3Heptachlor epoxide	_ 0.050	U
959-98-8Endosulfan I	_ 0.050	U
60-57-1Dieldrin	0.10	ט
72-55-94,4'-DDE	_ 0.10	ט
72-20-8Endrin	0.10	บ
33213-65-9Endosulfan II	0.10	ט
72-54-84,4'-DDD_	0.10	a
1031-07-8Endosulfan sulfate	0.10	ับ
50-29-34,4'-DDT	0.10	ט
72-43-5Nethoxychlor		ט
53494-70-5Endrin ketone	0.10	ט
7421-93-4Endrin aldehyde		U
5103-71-9alpha-Chlordane	0.050	U
5103-74-2gamma-Chlordane	0.050	Ú
8001-35-2Toxaphene	5.0	ט
12674-11-2Aroclor-1016		I u
11104-28-2Aroclor-1221		U
11141-16-5Aroclor-1232		
53469-21-9Aroclor-1242		
12672-29-6Aroclor-1248		
11097-69-1Aroclor-1254	1.0	
11096-82-5Aroclor-1260	_ 1.0	:
- TOTAL OF THE RESIDENCE OF THE PERSON OF TH		1

CAS NO.

Lab Name: NYTEST ENV INC Contract	: 9421375
Lab Code: NYTEST Case No.: 22258 SAS No.	sDG No.: SKIN1
Hatrix: (soil/water) WATER	Lab Sample ID: 2225808
Sample wt/vol: 1000 (g/mL) ML	Lab File ID:
Moisture: decanted: (Y/H)	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/H) N pH: 7.0	Sulfur Cleanup: (Y/M) H

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

210.04.6	
319-84-6alpha-BHC	0.050 U
319-85-7beta-BHC	0.050 U
319-86-8delta-BHC	0.050 0
58-89-9gamma-BHC (Lindane)	
76-44-8Heptachlor	0.050 U
309-00-2Aldrin	0.050 U
1024-57-3Heptachlor epoxide	
959-98-8Endosulfan I	0.050 U
60-57-1Dieldrin_	0.10 U
72-55-94,4'-DDE	0.10 0
72-20-8Endrin	0.10 0
33213-65-9Endosulfan II	0.10 U
72-54-84,4'-DDD	0.10
1031-07-8Endosulfan sulfate	
50-29-34,4'-DDT	0.10 0
72-43-5Hethoxychlor	0.50 U
53494-70-5Endrin ketone	0.10 U
7421-93-4Endrin aldehyde	0.10 0
5103-71-9alpha-Chlordane	0.050 0
5103-74-2gamma-Chlordane	0.050 U
8001-35-2Toxaphene	5.0 U
12674-11-2Aroclor-1016	
11104-28-2Aroclor-1221	2.0 0
11141-16-5Aroclor-1232	
53469-21-9Aroclor-1242	1.0 0
12672-29-6Aroclor-1248	1.0 0
11097-69-1Aroclor-1254	1.00
11096-82-5Aroclor-1260	

PESTICIDE ORGANICS ANALYSIS DATA SHEET

1		
-	SESW53	
- 1		

Lab Name: NYTEST ENV INC Contract: 9421375	SXSW53
Lab Code: NYTEST Case No.: 22258 SAS No.: SI	OG No.: SKIN1
Hatrix: (soil/water) WATER Lab Sample II	2225802
Sample wt/vol: 1000 (g/mL) ML Lab File ID:	
Noisture: decanted: (Y/N) Date Received	i: <u>10/11/94</u>
Extraction: (SepF/Cont/Sonc) SEPF Date Extracte	ıdı <u>10/13/94</u> √
Concentrated Extract Volume: 10000 (uL) Date Analyzed	1: 10/29/94
Injection Volume: 1.00 (uL) Dilution Fact	or: 1.00
GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanu	ip: (Y/N) N

CONCENTRATION UNITS:

COMPOUND (ug/L or ug/Kg) UG/L Q

COMPC 94

319-84-6alpha-BHC	_ 0.050	U	h
319-85-7beta-BHC	0.050	U	-
319-66-8delta-BHC	_ 0.050	U	1
58-89-9gamma-BHC (Lindane)	0.050	U	1
76-44-8Heptachlor	0.050	ū	[
109-00-2Aldrin	_ 0.050	Ū	ľ
1024-57-3Heptachlor epoxide	0.050	U	ľ
959-98-8Endosulfan I	0.050	U	1
60-57-1Dieldrin	_ 0.10	Ū	ŀ
72-55-94,4'-DDE	0.10	U	1
72-20-8Endrin	_ 0.10	U	- 1
33213-65-9Endosulfan II	_ 0.10	U	- 1
72-54-84,4'-DDD	0.10	U	1
1031-07-8Endosulfan sulfate	_ 0.10	ט	- 1
50-29-34,4'-DDT	0.10	ט	- 1
72-43-5Nethoxychlor		ט	Ī
53494-70-5Endrin ketone	0.10	ם	l
7421-93-4Endrin aldehyde	0.10	ט	1
5103-71-9alpha-Chlordane	0.050	ש	
5103-74-2gamma-Chlordane	0.050	ט	1
8001-35-2Toxaphene	_ 5.0	U	1
12674-11-2Aroclor-1016	_ 1.0	ט	į
11104-28-2Aroclor-1221	_ 2.0	ū	١
11141-16-5Aroclor-1232	_ 1.0	ט	١
53469-21-9Aroclor-1242	1.0	ט	1
12672-29-6Aroclor-1248		U	1
11097-69-1Aroclor-1254		י ס	İ
11096-82-5Aroclor-1260	1.0	U	Ì

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PORM I PEST

Injection Volume: 1.00 (uL)

GPC Cleanup: (Y/N) N

11096-82-5----Aroclor-1260

Dilution Pactor: 1.00

Sulfur Cleanup: (Y/W) H

SKSWFB . Lab Name: NYTEST ENV INC Contract: 9421375 Lab Code: NYTEST Case No.: 22258 SAS No.: SDG No.: SKIN1 Lab Sample ID: 2225804 Hatrix: (soil/water) WATER 1000 (g/mL) ML Sample wt/vol: 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

рн: <u>6.0</u>

CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q 0.050 U 319-84-6----alpha-BHC 319-85-7-----beta-BEC . 0.050 0 IV 319-86-8-----delta-BHC_ 0.050 0 | 58-89-9-----gamma-BHC (Lindane) 0.050 σ IV 76-44-8-----Heptachlor 0.050 0 IV | 309-00-2----Aldrin_ 0.050|U 1 1024-57-3----Heptachlor epoxide 0.050 U 959-98-8-----Endosulfan I___ 0.050 0 60-57-1-----Dieldrin 0.10|0 N 72-55-9-----4,4'-DDE 0.10 0 N | 72-20-8-----Endrin_ 0.10 0 N 33213-65-9----Endosulfan II 0.10|0 V 22 72-54-8------4,4'-DDD_ 0.10|0 | 1031-07-8-----Endosulfan sulfate 0.10 0 | 50-29-3-----4,4'-DDT_ 0.10 0 22222 72-43-5-----Methoxychlor 0.50 0 | 53494-70-5----Endrin ketone 0.10 σ 7421-93-4-----Endrin aldehyde_ 0.10|0 | 5103-71-9-----alpha-Chlordane 0.050 0 2222222 5103-74-2----gamma-Chlordane_ 0.050 U 8001-35-2----Toxaphene 5.0 U 12674-11-2----Aroclor-1016 1.0 0 11104-28-2----Aroclor-1221_ 2.0 0 | 11141-16-5----Aroclor-1232 1.0 0 53469-21-9----Aroclor-1242 1.0 0 12672-29-6----Aroclor-1248 1.0 0 11097-69-1----Aroclor-1254 1.0 0

20 DEC 94

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1.0 0

	SESWED
Lab Name: NYTEST ENV INC Contract: 9421375	l
Lab Code: NYTEST Case No.: 22258 SAS No.: S	DG No.: <u>Skini</u>
Matrix: (soil/water) <u>WATER</u> Lab Sample II	D: 2225803
Sample wt/vol: 1000 (g/mL) ML Lab File ID:	
% Moisture: decanted: (Y/N) Date Received	d: <u>10/11/94</u>
Extraction: (SepF/Cont/Sonc) SEPF Date Extract	ed: <u>10/13/94</u> √
Concentrated Extract Volume: 10000 (uL) Date Analyze	d: 10/29/94/
Injection Volume: 1.00 (uL) Dilution Fac	tor:1.00 ✓
GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Clean	up: (T/W) <u>M</u>
. CONCENTRATION UNIT	S:
CAS NO. COMPOUND (ug/L or ug/Kg) UG	re a Chul
319-84-6alpha-BHC	0.050 U 20 DEC 9
· · · · · · · · · · · · · · · · · · ·	0.050 U V
	0.050 U
	0.050 0
76-44-8Heptachlor	0.050 U V
	0.050 U V
1024-57-3Heptachlor epoxide	0.050 U V
	0.050 U N
60-57-1Dieldrin	0.10 U
72-55-94,4'-DDE	0.10 U V
72-20-8Endrin	0.10 a
33213-65-9Endosulfan II	0.10 u V
72-54-84,4'-DDD	0.10 0
1031-07-8Endosulfan sulfate	0.10 U V
50-29-34,4'-DDT	0.10 0
72-43-5Nethoxychlor	0.50 0 V
53494-70-5Endrin ketone	0.10 0 V
7421-93-4Endrin aldehyde	0.10 0 V
5103-71-9alpha-Chlordane	0.050 U V
8001-35-2Toxaphene	0.050 U V 5.0 U V
12674-11-2Aroclor-1016	1.0 a \lambda
11104-28-2Aroclor-1221	2.0 0
11141-16-5Aroclor-1232	: :▼
1	1.0 a /

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| 53469-21-9-----Aroglor-1242 | 12672-29-6-----Aroglor-1248

11097-69-1----Aroclor-1254 11096-82-5-----Aroclor-1260 1.0 0

1.0 U

		INORGANIC A	l ANALYSES DATA :	SHEET	EPA	SAMPLE NO.
Tah Name: NYTE	ኖ ሞ ፑ ህህ ፤ህር		Contract: 94	121375	† 	SKSW50
dasac	o1_EM4_1o_		0002400.		· '	'
Lab Code: NYTE	ST Ca	se No.: 22	258_ SAS No.	·	SDG	No.: SKIN1_
Matrix (soil/w	ater): WATE	R		Lab Samp	le ID:	225805
Level (low/med): LOW_	_		Date Rec	eived:	10/11/94
Solids:	0.	0				
Co	ncentration	Units (ug	/L or mg/kg dry	y weight)	: UG/I	<u>-</u>
	,		1	· · · · · · · · · · · · · · · · · · ·	 ,	- limi
	CAS No.	 Analyte	 Concentration: 		м	28 DEC 94
	7429-90-5	Aluminum	·	· _ ·	P	
	17440-36-0				IP N	
	17440-38-2				IF_I	
	7440-39-3		89.8		P	
	17440-41-7				i P	
	17440-43-9	-	2.0		i P	
	17440-70-2	_	137000		i P	
	17440-47-3				i P	
	17440-48-4	_	6.0		i P	
	17440-50-8		5.0		I P I	
	17439-89-6		141		IP I	
	17439-92-1		3.0		i F	
	17439-95-4				P	
	17439-96-5				P	
	17439-97-6		0.20		CVI	
	17440-02-0		26.0		P	
	17440-09-7				P	
	17782-49-2			ΙŪΙ	F	
	17440-22-4	Silver	5.0	וטו	1 P	
	17440-23-5	Sodium	51100	1_1	P	
	17440-28-0	Thallium	5.0	וטו	F	
	17440-62-2	Vanadium_	17.0	וטו	P_	
	17440-66-6	Zinc	5.0		P_	
	5955-70-0 	Cyanide	10.0	ו טו	IASI	
Color Before:	COLORLESS	Clari	'	AR_	Textu	ıre:
Color After:	COLORLESS	Clari	ty After: CLE	AR_	Artif	acts:
Comments:					TRAME	

FORM I - IN

3/90

0000019

		U.S.	EPA - CLP		
	;	INORGANIC A	1 ANALYSES DATA :	SHEET	EPA SAMPLE NO.
Lab Name: NYTE	ST ENV INC		Contract: 9	421375	
•					
Lab Code: NYTE	ST Cas	se No.: 22	258_ SAS No.		SDG No.: SKIN1_
Matrix (soil/w	ater): WATE	R		Lab Sampl	e ID: 225801
Level (low/med): LOW_	_		Date Rece	ived: 10/11/94
Solids:	0.0	0			
			/L or mg/kg dr	y weight):	nelt- (TWU)
	CAS No.	 Analyte	 Concentration	ici Q i	M 28 DEC 91
	7429-90-5	l Aluminum	· ————		P
	17440-36-0				PN
	17440-38-2	_			F I
	7440-39-3	· —	109		 Ρ ί
	17440-41-7			· · · — · · · · · · · · · · · · · · · ·	₽ [_] i
	17440-43-9	_	2.0		P
	7440-70-2	Calcium	174000		P_
	17440-47-3	Chromium_	15.0	เซิเเ	P_1
	7440-48-4		16.0	<u> </u>	P_
	7440-50-8		15.0		P_
	17439-89-6		16.0		P_
	17439-92-1		3.0		F_
	17439-95-4	•		· _ · ·	P_
	17439-96-5				P_
	17439-97-6				CAI
	17440-02-0	· —	26.0		P_
	17440-09-7	-			P_
	17782-49-2				F_
	17440-22-4	• —	15.0 1 59500		P_ P_
	7440-23-5 7440-28-0				F
	17440-28-0				F_ P_
	17440-62-2		i		P
	15955-70-0		57.6		AS I
	1		¦	;-;;	- ,
	' 	· 	`	·-·	<u>—</u> ·

Color	Before:	COLORLESS	Clarity	Before:	CLEAR_	Texture:
Color	After:	COLORLESS	Clarity	After:	CLEAR_	Artifacts:
Commer	nts:				·	
				•		

FORM I - IN

3/90

0000020

		INORGANIC A	1 ANALYSES DATA :	SHEE	т	EP	A SAMPLE NO.
Lab Name: NYT						1	SKSW52
	Name: NYTEST_ENV_INC Contract: 9421375					'	 _
Lab Code: NYT	EST Ca	se No.: 222	258_ SAS No.	:		SD	G No.: SKIN1_
Matrix (soil/	water): WATE	R		Lab	Samp	le I	D: 225808
Level (low/me	d): LOW_			Dat	e Rec	eive	d: 10/11/94
Solids:	0.	0	•				
C	oncentration	Unite Inc.	/L or mg/kg dr	u wa	iaht)	• 116	:/T.
Ç		Onica (ug/	or mg/kg dr	,			(LM1)
	ĺ			1 1		1 1	
	ICAS No.	Analyte	Concentration		Q	IM I	28 DEC 94
	17420-00-5	. (64.7	[_		<u> </u>	V
	7429-90-5 7440-36-0					P	
	17440-38-2					F	
	17440-39-3		78.6			ו פֿן	
	17440-41-7					P	
	7440-43-9		2.0			P	
	17440-70-2	•	126000			P	
	17440-47-3					P	
	17440-48-4	_	6.0			P	
	17440-50-8		5.0			P	
	17439-89-6		121			P	
•	17439-92-1		3.0			F	V
	17439-95-4					P_	
	17439-96-5					P	
	17439-97-6		0.20			cv	
	17440-02-0		26.0			P	
	17440-09-7					P	
	17782-49-2					F	
	17440-22-4		5.0			I P	
	17440-23-5		50100			I P	
	7440-28-0	·				F	
	17440-62-2					I P	
	17440-66-6	_	5.0			18	
	15955-70-0		10.0	ַוֹטוֹ_		IAS	
	1	.1	l	1_1_		.	
Color Before:	COLORLESS	Clari	ty Before: CLE	AR_		Tex	cture:
Color After:	COLORLESS	Clari	ty After: CLE	AR_		Art	ifacts:
Comments:							

FORM I - IN

0000021

1 EPA SAMPLE NO INORGANIC ANALYSES DATA SHEET

EPA	SAMPLE	NO.

Lab Name: NYTE	ST ENV INC		Contract: 94	21375	I SKSWFD 	
					SDG No.: SKIN1_	
Matrix (soil/w	ater): WATE	R		Lab Sample	e ID: 225803	
Level (low/med	i): LOW_	_		Date Rece	ived: 10/11/94	
% Solids:	0.	0				
Co	ncentration	Units (ug	/L or mg/kg dry	weight):	UG/L_ () as 2	
		1	·	<u> </u>	- mi	
	CAS No.	Analyte	Concentration		M 23 DEC 9	14
	7429-90-5	Aluminum	··		Ply	
	17440-36-0				PIV	
	17440-38-2				F_	
	17440-39-3		74.41		P	
	17440-41-7				P	
	17440-43-9	•			P	
	17440-70-2	Calcium	1140001	1	P	
	17440-47-3	Chromium_	5.01	<u> </u>	₽_	
	17440-48-4	Cobalt	6.01		P_	
	17440-50-8	Copper	5.01		P_	
	7439-89-6	Iron	264		P_1V	
	7439-92-1	Lead	3.01		F_	
	17439-95-4	Magnesium			P_	
	7439-96-5				P_	
	17439-97-6	Mercury			CVI	
	17440-02-0	Nickel	26.01		P_	
	17440-09-7	Potassium			P_1	
	17782-49-2	·			F_	
	17440-22-4		15.01		P_	
	17440-23-5		1477001		P_1	
	17440-28-0				F_	
	17440-62-2	_	·		P_1	
	17440-66-6	·	20.81		P_IV	
	5955-70-0 	Cyanide	10.0		AŠ 	
Color Before:	COLORLESS	Clari	ty Before: CLEA	R_	Texture:	_
Color After:	COLORLESS	Clari	ty After: CLEA	.R	Artifacts:	
Comments:				·.		
						

FORM I - IN

0000018

EPA SAMPLE NO. INORGANIC ANALYSES DATA SHEET SKSW53 Contract: 9421375 Lab Name: NYTEST_ENV_INC____ Case No.: 22258 SAS No.: SDG No.: SKIN1 Lab Code: NYTEST Lab Sample ID: 225802_ Matrix (soil/water): WATER Level (low/med): LOW__ Date Received: 10/11/94 % Solids: 0.0 Concentration Units (ug/L or mg/kg dry weight): UG/L_ (jmj)28 DEC 94 | CAS No. | Analyte |Concentration|C| IM I |7429-90-5 |Aluminum | |7440-36-0 |Antimony | 57.0|0| 48.2|B| |7440-38-2 |Arsenic_ 5.0[0] | F_| |7440-39-3 |Barium | |7440-41-7 |Beryllium| | P | | P | 115|B| __2.0|U| |7440-43-9 |Cadmium__| 2.0|0| | P_| |7440-70-2 |Calcium | |7440-47-3 |Chromium | 1700001 |P P I 5.0|0| P_| |7440-48-4 |Cobalt___| _6.0|Ui |7440-50-8 |Copper 5.0|0| 1P 3731 |7439-89-6 |Iron |7439-92-1 |Lead | |7439-95-4 |Magnesium| ั้3.0|บี| | F 612001_1 | P_ | |7439-96-5 |Manganese| 3910| IP I |7439-97-6 |Mercury_ 0.20|0| ICVI |7440-02-0 |Nickel 26.0|U| IP I i P_! _77801_i |7440-09-7 |Potassium| |7782-49-2 |Selenium_| 5.0|U| | F _5.0|U| |7440-22-4 |Silver___ IP I | P_| | F_|V 328001 I 5.0101 |7440-62-2 |Vanadium_| [17.0|U| 12 |7440-66-6 |Zinc 23.91 | l P |5955-70-0 |Cyanide _10.0|ប៊| IASI Color Before: COLORLESS Clarity Before: CLEAR Texture: Color After: COLORLESS · Clarity After: CLEAR_ Artifacts: Comments:

FORM I - IN

0000022

U.S. EPA - CLP EPA SAMPLE NO. INORGANIC ANALYSES DATA SHEET SKSWFB Lab Name: NYTEST_ENV_INC_____ Contract: 9421375_ Lab Code: NYTEST Case No.: 22258 SAS No.: _____ SDG No.: SKIN1_ Lab Sample ID: 225804_ Matrix (soil/water): WATER Level (low/med): LOW__ Date Received: 10/11/94 % Solids: 0.0 Concentration Units (ug/L or mg/kg dry weight): UG/L_ limil 28 Dic 94 ICAS No. | Analyte | Concentration | C | IM | P |7429-90-5 |Aluminum_| 57.0|0| |7440-36-0 |Antimony_| 38.0|0| PIV |7440-38-2 |Arsenic_ 5.0|0| | F | |7440-39-3 |Barium | |7440-41-7 |Beryllium| | P | 11.0|0| _2.0|0| |7440-43-9 |Cadmium__| | P_| _2.0|U| |7440-70-2 |Calcium 2420|B| | P |7440-47-3 |Chromium_| 5.0|0| | B_ |. P_| |7440-48-4 |Cobalt___ _6.0|U| _5.0|U|

|7440-50-8 |Copper

|7439-95-4 |Magnesium|

|7439-96-5 |Manganese|

|7440-09-7 |Potassium|

|7782-49-2 |Selenium_|

|7440-62-2 |Vanadium |

|5955-70-0 |Cyanide_

|7439-97-6 |Mercury_

17440-02-0 | Nickel

|7440-22-4 |Silver

|7440-23-5 |Sodium

|7440-66-6 |Zinc

|7439-89-6 |Iron

|7439-92-1 |Lead_

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_1_1 Color Before: COLORLESS Clarity Before: CLEAR Texture: Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _ Comments:

FORM I - IN

3/90

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IP. | P |

| F_ | | P_ |

| P |

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IP I | P_|

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1550 U

2.0|0|

0.20101

26.0|U|

840|U|

5.0|0|

5.0|0|

5.0|0|

5.0|U|

10.0|0|

1750|B|

ןט|0.7]

3.0|U|

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

; 'S. .

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 Spike Added: Spike Percent Recovery:	re Percent Dir	fference:	NC 1.00 ppm 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 Relati Spike Added: Spike Percent Recovery:		fference:	5.71 200 ppm 98.8%	e.
MDL				1.00
Method Blank				<1.00

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

·25.

REPORT OF ANALYSIS

Log In No : 22587

We find as follows :

Sample Identification

Lab ID Client ID Parameter(s)		2258702 SKFD01	2258703 GW5601	Method Blank
Results in mg/L:				
Chemical Oxygen Demand Sulfide Total Dissolved Solid Total Kjeldahl Nitrogen	141 0.2 U 2110 2.5	237 0.2 U 2100 2.6	196 0.2 U 2100 23.6	3 U 0.2 U 10 U 0.1 U

U : Below method blank/method reporting limit
E : Above method limit
NA : Not available
NR : Not Required

REPORT OF ANALYSIS

Log In No : 22587

We find as follows :

Sample Identification

Parameter(s)	Lab :	2258704 GW5701	2258705 GW5001	2258706 GW5001MS	Method Blank
Results in mg/L:					
Chemical Oxygen Der Sulfide Total Dissolved So Total Kjeldahl Nit	lid	264 0.2 U 874 1.8	44 0.2 U 652 2.3	46 0.2 U 662 2.2	3 U 0.2 U 10 U 0.1 U

U : Below method blank/method reporting limit
E : Above method limit
NA : Not available
NR : Not Required

REPORT OF ANALYSIS

Log In No : 22587

We find as follows:

Sample Identification

Lab ID : Client ID : Parameter(s)		2258709 SKFB01	Method Blank
Results in mg/L:			
Chemical Oxygen Demand Sulfide Total Dissolved Solid Total Kjeldahl Nitrogen	313 0.2 U 2340 2.8	40 0.2 U 10 U 0.1 U	3 U 0.2 U 10 U 0.1 U

U : Below method blank/method reporting limit
E : Above method limit
NA : Not available
NR : Not Required

REPORT OF ANALYSIS

We find as follows :

Log In No :

22628

Parameter(s)

Sample Identification

S

Biochemical Oxygen Demand Results in : mg/L 3 U Method Blank/Method Reporting Limit : Lab ID Client ID 2262801 GW5001 3 U 3 U 3 U 3 U 3 U 7 U 3 U 3 U 2262802 GW5001MS 2262804 GW5101 GW5201 2262805 2262806 GW5301 2262807 FD5301 2262808 GW5401 2262809 GW5501 2262810 GW5601 2262811 SKFB01 3 U 2262812 GW5701

NA : Not available U : Below method blank/method reporting limit

NR : Not Required E : Above method limit