ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

EPA Region 5 Records Ctr.
393197

CRL Receipt Date 11-12-87 FIT Receipt Date 12-16-87 Review Completed 12-21-87

TO: Gerard Breen

FROM: Jim Mertes

SUBJECT: Municipal Landfill/Arlington Heights

PAN: IL 0533 CASE # 8142

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
# 5	Low Soil	#	Low Soil
	Low Water		Low Water
	Drinking Water		Drinking Water
	Other		Other

Project Data Status X Completed!!

_____ Incomplete, awaiting: _____

FIT Data Review Findings:

- HPS usable hits in sample EN550
- TICs in all samples

Check Data Sheets for Transcription Errors

X Compounds were detected in sample(s); see enclosed sheet.

Book No. 7 Page No. 33 Date Sampled 10-1-87

26U:001

I hr. charged to above PAN Q week ending 12-26-87 J.M.

Rec'd 12/16/87
41 pages

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 12/14/87

SUBJECT: Review of Region V CLP Data
Received for Review on 11-12-87

FROM: Curtis Ross, Director (5SCRL) Patrick J. Chenelle for
Central Regional Laboratory

TO: Data User: FIT

We have reviewed the data for the following case(s).

SITE NAME: Municipal Landfill/ Arlington Heights SMO case No. 8142

EPA Data Set No. SF4492 No. of Samples: 5 D.U./Activity Numbers Y905/C72100

CRL No. 88FB01S91 - S95

SMC Traffic No. EN545 - 548, 550

CLP Laboratory: Hazleton Hrs. Required for Review: 5

PAN #: IL0533

Following are our findings:

Ira Hold-Kaufman 12/11/87

( ) Data are acceptable for use.
(X) Data are acceptable for use with qualifications noted above.
( ) Data are preliminary - pending verification by Contractor Laboratory.
( ) Data are unacceptable.

cc: Duane Geuder, Quality Assurance Officer, EPA Support Services
James Petty, Chief Quality Assurance Rese arch, EMSL, Las Vegas

EPA FORM 1320-6 (Rev. 5/87)

Municipal Landfill/Arlington-Heights

This case consists of ~~four~~ five soil samples for which full organic analysis was requested. The laboratory reported no problem with these samples.

A. Holding Times - Acceptable

B. Surrogates - Acceptable
Volatiles 4 out of 36; outside QC limits
Pesticides 1 out of 8; outside QC limits

C. MS/MSD - Acceptable
Recovery
Acid 2 out of 10; outside QC limits

D. Method Blank - Acceptable
Common lab artifacts including:
Methylene Chloride
Acetone
Toluene
Diethylphthalate
Di-n-butylphthalate
Other compounds detected include.
Trichloroethene
N-nitrosodiphenylamine
TICs

E. Calibration - Acceptable
Some compounds are outside specification with respect to RF, %RSD and/or %D. These compounds are so noted on the calibration outlier form.

F. Tuning - Acceptable

G. Pesticides - Acceptable
Linearity - Acceptable
DBC - Acceptable
DDT retention time greater than 12 minutes acceptable

JGK 12/11/87

3/9

USER INFORMATION SHEET

Municipal Landfill/Arlington Heights
PAN # IL0533

Sample	TCL Compounds	TIC Compounds
EN545	See attached listing for compounds detected	VOA - 2 TICs SV - 20 TICs
EN545RE	See attched listing for compounds detected	
EN546	See attached listing for compounds detected	VOA - 2 TICs SV - 20 TICs
EN547	See attached listing for comopounds detected	VOA - 1 TIC SV - 10 TICs
EN548	See attached listing for compounds detected	VOAs- None SVs - 19 TICs
EN550	See attached listing for comopounds detected	VOAs- 3 TICs SVs - 20 TICS

PAHs (polyaromatic Hydrocarbons) detected above and below the CRDL Chloroform detected in all samples. Indeno (1,2,3-cd) pyrene detected in EN550; samples is J'd (estimated) due to its failure to meet QC standard calibration criteria.

ZGK 12/11/87

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS # 8142

CONTRACTOR Hanfeton

Instrument #	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	9/24			10/06 1043			10/07 1319								
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane															
Bromomethane															
Vinyl Chloride															
Chloroethane					26	J									
Methylene Chloride															
Acetone															
Carbon Disulfide		41	J												
1,1-Dichloroethane															
1,1-Dichloroethene															
Trans-1,2-Dichloroethene															
Chloroform															
2-Butanone															
1,2-Dichloroethane															
1,1,1-Trichloroethane															
Carbon Tetrachloride															
Vinyl Acetate															
Bromodichloromethane															
1,2-Dichloropropane															
Trans-1,3-Dichloropropene															
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane															
Benzene															
cis-1,3-Dichloropropene															
2-Chloroethylvinylether															
Bromoform															
4-Methyl-2-Pentanone															
2-Hexanone															
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
m-Xylene															
o/p-Xylene															

AFFECTED SAMPLES:

EN 545	EN 550
546	545 RE
547	548 MS
548	548 MSD
	548 MSD

Reviewer's Initials/Date: ZOK 12/7/87

all lab samples

* These flags should be applied to the analytes on the sample data sheets.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

CASE/SAS # 8142 CONTRACTOR Hayleton

Instrument # FINN5D	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	10/26			10/27 844			10/27 2103								
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Phenol															
bis(-2-Chloroethyl)Ether															
2-Chlorophenol															
1,3-Dichlorobenzene															
1,4-Dichlorobenzene															
Benzyl Alcohol								33	J						
1,2-Dichlorobenzene															
2-Methylphenol															
bis(2-chloroisopropyl)Ether															
4-Methylphenol															
N-Nitroso-Di-n-Propylamine															
Hexachloroethane															
Nitrobenzene															
Isophorone					29	J									
2-Nitrophenol															
2,4-Dimethylphenol															
Benzoic Acid															
bis(2-Chloroethoxy)Methane															
2,4-Dichlorophenol															
1,2,4-Trichlorobenzene															
Naphthalene															
4-Chloroaniline					190	J		130	J						
Hexachlorobutadiene															
4-Chloro-3-Methylphenol															
2-Methylnaphthalene															
Hexachlorocyclopentadiene															
2,4,6-Trichlorophenol															
2,4,5-Trichlorophenol															
2-Chloronaphthalene															
2-Nitroaniline								95	J						
Dimethyl Phthalate															
Acenaphthylene								27	J						
3-Nitroaniline								48	J						
Acenaphthene															
2,4-Dinitrophenol															
4-Nitrophenol															
Dibenzofuran															

AFFECTED SAMPLES:

	EN 550	EN 545 MSD
	EN 545	EN 548
	EN 545 MS	
All samples	EN 546	
	EN 547	

Reviewer Initials/Date: ZGK 12/7/87

* These flags should be applied to the analytes on the sample data sheets.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
Page 2

CASE/SAS # 8142 CONTRACTOR Hayleton

Instrument #	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	10/26			10/27			10/27								
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
2,4-Dinitrotoluene					40	J									
2,6-Dinitrotoluene															
Diethylphthalate															
4-Chlorophenyl-phenylether															
Fluorene															
4-Nitroaniline					66	J		65	J						
4,6-Dinitro-2-Methylphenol															
N-Nitrosodiphenylamine															
4-Bromophenyl-phenylether															
Hexachlorobenzene															
Pentachlorophenol															
Phenanthrene															
Anthracene															
Di-n-Butylphthalate															
Fluoranthene															
Pyrene															
Butylbenzylphthalate															
Benzo(a)Anthracene															
bis(2-Ethylhexyl)Phthalate															
Chrysene															
Di-n-Octyl Phthalate															
Benzo(b)Fluoranthene															
Benzo(k)Fluoranthene															
Benzo(a)Pyrene															
Indeno(1,2,3-cd)Pyrene		37	J												
Dibenz(a,h)Anthracene															
Benzo(g,h,i) Perylene															

SEE PAGE 1 FOR AFFECTED SAMPLES.

* These flags should be applied to the analytes on the sample data sheets.

Reviewer's Initials/Date: ZGK 12/7/87

8/87

Case: _____

Contractor: Hazleton

TENTATIVELY IDENTIFIED COMPOUNDS
WATCH ASSESSMENT

NOTE: Reviewer should note directly on Organic Analysis Data Sheet (OADS) those matches that in his opinion (based on contract criteria) are unreasonable.

CRITERIA

(1) Relative intensities of major ions (>10%) reference spectrum should be present in the sample spectrum.

(2) Relative intensities of major ions in sample spectrum should agree to within ± 20% of reference spectrum intensities.

(3) Molecular ions present in reference spectrum should be present in sample spectrum.

(4) Ions present in sample spectrum, but not in reference spectrum should be reviewed for possible background contamination or presence of coeluting interferences.

(5) Ions present in reference spectrum, but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or coeluting interferences.

(6) If, in the reviewer's opinion, no valid identification can be made the compound should be labelled as "unknown" and the initials and date of the reviewer placed on the OADS.

Reviewer's Initials/Date: ZGK 12/7/87

8142 COMPOUND	SAMPLE	DET. LIMIT	EN545	EN546	547	548	550		8/9
chloromethane									
bromomethane									
vinyl chloride									
chloroethane									
methylene chloride									
acetone									
carbon disulfide									
1,1-dichloroethane									
1,1-dichloroethane									
trans-1,2,-dichloroethene									
chloroform			5	3J	4J	4J	3J		
1,2-dichloroethane									
2-butanone									
1,1,1-trichloroethane									
carbon tetrachloride									
vinyl acetate									
bromodichloromethane									
1,1,2,2-tetrachloroethane									
1,2-dichloropropane									
trans-1,3-dichloropropene									
trichloroethene									
dibromochloromethane									
1,1,2-trichloroethane									
benzene									
cis-1,3-dichloropropene									
2-chloroethylvinylether									
bromoform									
2-hexanone									
4-methyl-2-pentanone									
tetrachloroethene									
toluene				2JB	1JB				
chlorobenzene									
ethylbenzene									
styrene									
total xylenes									
N-nitrosodimethylamine									
phenol									
aniline									
bis(2-chloroethyl)ether									
2-chlorophenol									
1,3-dichlorobenzene									
1,4-dichlorobenzene									
benzyl alcohol									
1,2-dichlorobenzene									
2-methylphenol									
bis(2-chloroisopropyl)ether									
4-methylphenol									
N-nitroso-di-n-propylamine									
hexachloroethane									
nitrobenzene									
isophrone									
2-nitrophenol									
2,4-dimethylphenol									
benzoic acid			80J						
bis(2-chloroethoxy)methane									
2,4-dichlorophenol									
1,2,4-trichlorobenzene									
napthalene									
4-chloroaniline									
hexachlorobutadiene									
4-chloro-3-methylphenol									
2-methylnapthalene									
hexachlorocyclopentadiene									
2,4,6-trichlorophenol									
2,4,5-trichlorophenol									

V O A

B N

A

9/9

	8145 COMPOUND	SAMPLE DET. LIMIT	ENS45	546	547	548	550
V	dimethyl phthalate						
	acenaphthylene						14J
	2-nitroaniline						
	acenaphthene						110J
	2,4-dinitrophenol						
	4-nitrophenol						55J
	dibenzofuran						
	2,4-dinitrotoluene						
S	2,6-dinitrotoluene						
	diethylphthalate						
	4-chlorophenyl-phenylether						
V	fluorene						140J
	4-nitroaniline						
	4,6-dinitro-2-methylphenol						
	N-nitrosodiphenylamine						
	4-bromophenyl-phenylether						
	hexachlorobenzene						
	pentachlorophenol						
	phenanthrene		56J	63J			2[illegible]
	anthracene						420
	di-n-butylphthalate						
	fluoranthene		110J	100J		13J	4400
	benzidine						
	pyrene		83J	75J	4J	13J	3100
	butylbenzylphthalate						
	3,3'-dichlorobenzidine						
	benzo(a)anthracene						1600
	bis(2-ethylhexyl)phthalate						
	chrysene			50J			1600
	di-n-octylphthalate						
	benzo(b&k)fluoranthene		75J	62J			3[illegible]
	benzo(a)pyrene						1[illegible]
	indeno(1,2,3-cd)pyrene						1[illegible]J
	dibenzo(a,h)anthracene						
T	benzo(g,h,i)perylene						1100
	alpha-BHC						
	beta-BHC						
	delta-BHC						
	gamma-BHC(lindane)						
P	heptachlor						
	aldrin						
E	heptachlor epoxide						
	endosulfan I						
S	dieldrin						
T	4,4'-DDE						
	endrin						
	endosulfan II						
	4,4'-DDD						
	endrin aldehyde						
	endosulfan sulfate						
	4,4'-DDT						
	methoxychlor						
	endrin ketone						
	chlordane						
	toxaphene						
P	Aroclor-1016						
	Aroclor-1221						
C	Aroclor-1232						
B	Aroclor-1242						
	Aroclor-1248						
	Aroclor-1254						
	Aroclor-1260						

HAZLETON LABORATORIES AMERICA, INC.
3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WI 53707 • (608) 241-4471 • TLX 703956 HAZRAL MDS UD

November 9, 1987

RECEIVED
NOV 10 1987
U.S. EPA CENTRAL REGIONAL LABS

Sample Management Office
Viar and Company
209 Madison Street
Alexandria VA 22314

Enclosed is the data package for Case No. 8142. Under this case number, we received a total of five soil samples on October 2, 1987 from Region V. All samples were analyzed and reported according to the protocols provided under our Contract No. 68-01-7146 bid lot #1.

Please note the following summary comments relating to the contractual quality control in this case:

- GC-MS Tuning. All tuning requirements for both BFB and DFTPP for samples analyzed in this case were within contract criteria.

- Instrumental Calibrations. All instrumental calibrat ons for all fractions analyzed were within contract criteria for both initial and continuing calibrations.

- Method Blanks. All method blanks for the volatile, semivolatile, and pesticide fractions were found to be within contract criteria with the exception of the semi-volatile method blank, which contained di-n-butylphthalate in excess of 5 times the CRDL (2400 ug/kg). We are investigating the source of that contamination.

- Surrogate Recoveries. All calculated surrogate recoveries for the volatile, semivolatile and pesticide fractions were found to be within contract criteria with the following exceptions:

  Volatile fraction: Samples EN 545 and EN548MSD produced out of control surrogate recoveries for Toluene-d8 and were re-analyzed. The re-analysis of both EN545 and EN548MSD resulted in high, out of control recoveries for Toluene-d8. In the case of EN548MSD, it should be noted that between the unspiked and spiked aliquots, the Toluene-d8

recoveries were all very close to the upper QC limit, either being marginally in or marginally out. The reanalysis of both EN545 and EN548MSD are considered billable.

Pesticide fraction: The dibutylchlorendate recovery in sample EN548, reported at 159%, was above the upper advisory limit of 150%.

- Pesticide Confirmation Analysis. GC confirmation analysis of samples in this case was performed using a DB-608 Megabore Capillary Column. Please note that a 1.5% DBC shift criteria has been established by Joan Fisk when using Megabore capillary columns.

- Sample EN550 Pesticide Analysis. Technical chlordane in sample EN 550 was reported as less than the detection limit, based on the absence of a technical chlordane pattern and the failure of both the alpha and gamma chlordane isomers to be confirmed as present. It should be noted that gamma chlordane was indeed quantitated and confirmed to be present at approximately 25 ug/kg.

If you have any questions regarding this case or need any further clarifications, please feel free to call.

Sincerely,

David C. Hills
Manager, Environmental Analysis

DCH/sc

cc: Region V
USEPA EMSL-LV
Central File

INSTRUMENT DETECTION LIMITS

FINN 5100A

Organics Analysis Data Sheet
(Page 1)

HAZLETON LABORATORIES AMERICA

Volatile Compounds

CAS Number		ug/l
74-87-3	Chloromethane	6
74-83-9	Bromomethane	6
75-01-4	Vinyl Chloride	5
75-00-3	Chloroethane	5
75-09-2	Methylene Chloride	5
67-64-1	Acetone	6
75-15-0	Carbon Disulfide	3
75-35-4	1, 1-Dichloroethene	2
75-34-3	1, 1-Dichloroethane	2
156-60-5	Trans-1, 2-Dichloroethene	2
67-66-3	Chloroform	2
107-06-2	1, 2-Dichloroethane	2
78-93-3	2-Butanone	8
71-55-6	1, 1, 1-Trichloroethane	2
56-23-5	Carbon Tetrachloride	2
108-05-4	Vinyl Acetate	3
75-27-4	Bromodichloromethane	3

CAS Number		ug/l
78-87-5	1, 2-Dichloropropane	2
10061-02-6	Trans-1, 3-Dichloropropene	3
79-01-6	Trichloroethene	3
124-48-1	Dibromochloromethane	3
79-00-5	1, 1, 2-Trichloroethane	2
71-43-2	Benzene	3
10061-01-5	cis-1, 3-Dichloropropene	3
110-75-8	2-Chloroethylvinylether	2
75-25-2	Bromoform	2
108-10-1	4-Methyl-2-Pentanone	2
591-78-6	2-Hexanone	2
127-18-4	Tetrachloroethene	5
79-34-5	1, 1, 2, 2-Tetrachloroethane	5
108-88-3	Toluene	5
108-90-7	Chlorobenzene	3
100-41-4	Ethylbenzene	5
100-42-5	Styrene	3
	Total Xylenes	2

INSTRUMENT DETECTION LIMITS

FINN 51 B

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

HAZLETON LABORATORIES AMERICA

CAS Number		ug/L
108-95-2	Phenol	4
111-44-4	bis(-2-ChloroethylEther	2
95-57-8	2-Chlorophenol	2
541-73-1	1, 3-Dichlorobenzene	6
106-46-7	1, 4-Dichlorobenzene	2
100-51-6	Benzyl Alcohol	5
95-50-1	1, 2-Dichlorobenzene	4
95-48-7	2-Methylphenol	3
39638-32-9	bis(2-chloroisopropyl)Ether	4
106-44-5	4-Methylphenol	4
621-64-7	N-Nitroso-Di-n-Propylamine	2
67-72-1	Hexachloroethane	1
98-95-3	Nitrobenzene	2
78-59-1	Isophorone	3
88-75-5	2-Nitrophenol	5
105-67-9	2, 4-Dimethylphenol	3
65-85-0	Benzoic Acid	5
111-91-1	bis(-2-ChloroethoxylMethane	1
120-83-2	2, 4-Dichlorophenol	3
120-82-1	1, 2, 4-Trichlorobenzene	2
91-20-3	Naphthalene	1
106-47-8	4-Chloroaniline	4
87-68-3	Hexachlorobutadiene	1
59-50-7	4-Chloro-3-Methylphenol	6
91-57-6	2-Methylnaphthalene	3
77-47-4	Hexachlorocyclopentadiene	10
88-06-2	2, 4, 6-Trichlorophenol	13
95-95-4	2, 4, 5-Trichlorophenol	13
91-58-7	2-Chloronaphthalene	10
88-74-4	2-Nitroaniline	9
131-11-3	Dimethyl Phthalate	10
208-96-8	Acenaphthylene	10
99-09-2	3-Nitroaniline	6

CAS Number		ug/L
83-32-9	Acenaphthene	11
51-28-5	2, 4-Dinitrophenol	11
100-02-7	4-Nitrophenol	4
132-64-9	Dibenzofuran	10
121-14-2	2, 4-Dinitrotoluene	8
606-20-2	2, 6-Dinitrotoluene	9
84-66-2	Diethylphthalate	7
7005-72-3	4-Chlorophenyl-phenylether	9
86-73-7	Fluorene	10
100-01-6	4-Nitroaniline	8
534-52-1	4, 6-Dinitro-2-Methylphenol	5
86-30-6	N-Nitrosodiphenylamine (1)	7
101-55-3	4-Bromophenyl-phenylether	6
118-74-1	Hexachlorobenzene	4
87-86-5	Pentachlorophenol	3
85-01-8	Phenanthrene	4
120-12-7	Anthracene	2
84-74-2	Di-n-Butylphthalate	3
206-44-0	Fluoranthene	5
129-00-0	Pyrene	8
85-68-7	Butylbenzylphthalate	4
91-94-1	3, 3'-Dichlorobenzidine	1
56-55-3	Benzo(a)Anthracene	3
117-81-7	bis(2-Ethylhexyl)Phthalate	3
218-01-9	Chrysene	5
117-84-0	Di-n-Octyl Phthalate	14
205-99-2	Benzo(b)Fluoranthene	10
207-08-9	Benzo(k)Fluoranthene	17
50-32-8	Benzo(a)Pyrene	7
193-39-5	Indeno(1, 2, 3-cd)Pyrene	14
53-70-3	Dibenzo(a, h)Anthracene	16
191-24-2	Benzo(g, h, i)Perylene	12

(1)-Cannot be separated from diphenylamine

7 85

Hazleton Laboratories America

Instrument Detection Limits
HP 5779
1.5% SP 2250
1.95% SP 2401

ORGANICS ANALYSIS
DATA SHEET
Pesticide/PCBs

CAS Number	Compound	µg/mL	H_2O µg/L	Soil µg/kg
319-84-6	Alpha-BHC	0.00086	0.0086	0.57
319-85-7	Beta-BHC	0.00049	0.0049	0.33
319-86-8	Delta-BHC	0.00042	0.0042	0.28
56-89-9	Gamma-BHC (lindane)	0.0062	0.062	4.1
76-44-8	Heptachlor	0.00049	0.0049	0.33
309-00-2	Aldrin	0.00042	0.0042	0.28
1024-57-3	Heptachlor Epoxide	0.00028	0.0028	0.19
959-98-8	Endosulfan I	0.00042	0.0042	0.28
60-57-1	Dieldrin	0.00042	0.0042	0.28
72-55-9	4-4-DDE	0.00028	0.0028	0.19
72-20-8	Endrin	0.0030	0.030	2.0
33213-65-9	Endosulfan II	0.0021	0.021	1.4
72-54-8	4-4-DDD	0.00057	0.0057	0.38
1031-07-8	Endosulfan Sulfate	0.0011	0.011	0.73
50-29-3	4-4-DDT	0.00014	0.0014	0.93
72-43-5	Methoxychlor	0.031	0.31	21
53494-70-6	Endrin Ketone	0.00085	0.0085	0.57
57-74-9	Chlordane	0.0085	0.085	5.7
8001-35-2	Toxaphene	0.0049	0.049	3.3
12674-11-2	Aroclor-1016	0.0085	0.085	5.7
11104-28-2	Aroclor-1221	0.025	0.25	17
11141-16-5	Aroclor-1232	0.025	0.25	17
53469-21-9	Aroclor-1242	0.025	0.25	17
12672-29-6	Aroclor-1248	0.025	0.25	17
11097-69-1	Aroclor-1254	0.025	0.25	17
11096-82-5	Aroclor-1260	0.025	0.25	17

H_2O: (10 x µg/mL) reflects on 100 x concentration factor for waters per CLP protocol.

Soil: $(\frac{1,000}{1.5} \times \mu g/mL)$ reflects on normal concentration factor for soils per CLP protocol.

Date Analyzed: 03/14/86

(0361b/lma)

Hazleton Laboratories America

Instrument Detection Limits
HP 10802
DB608

ORGANICS ANALYSIS
DATA SHEET
Pesticide/PCBs

CAS Number	Compound	µg/mL	H_2O µg/L	Soil µg/kg
319-84-6	Alpha-BHC	0.0015	0.015	1.0
319-85-7	Beta-BHC	0.0011	0.011	0.73
319-86-8	Delta-BHC	0.0016	0.016	1.10
56-89-9	Gamma-BHC (lindane)	0.0020	0.020	1.3
76-44-8	Heptachlor	0.0017	0.017	1.1
309-00-2	Aldrin	0.0020	0.020	1.3
1024-57-3	Heptachlor Epoxide	0.0006	0.006	0.40
959-98-8	Endosulfan I	0.0008	0.008	0.53
60-57-1	Dieldrin	0.0023	0.023	1.5
72-55-9	4-4-DDE	0.0020	0.020	1.3
72-20-8	Endrin	0.0028	0.028	1.9
33213-65-9	Endosulfan II	0.0030	0.030	2.0
72-54-8	4-4-DDE	0.0025	0.025	1.7
1031-07-8	Endosulfan Sulfate	0.0030	0.030	2.0
50-29-3	4-4-DDT	0.0018	0.018	1.2
72-43-5	Methoxychlor	0.0048	0.048	3.2
53494-70-6	Endrin Ketone	0.0080	0.080	5.3
57-74-9	Chlordane	0.035	0.35	23
8001-35-2	Toxaphene	0.039	0.39	26
12674-11-2	Aroclor-1016	0.035	0.35	23
11104-28-2	Aroclor-1221	0.002	0.02	1.3
11141-16-5	Aroclor-1232	0.015	0.15	10
53469-21-9	Aroclor-1242	0.025	0.25	17
12672-29-6	Aroclor-1248	0.012	0.12	8
11097-69-1	Aroclor-1254	0.005	0.05	3.3
11096-82-5	Aroclor-1260	0.014	0.14	9.3

H_2O: (10 x µg/mL) reflects on 100 x concentration factor for waters per CLP protocol.

Soil: $\left(\frac{1,000}{1.5} \times \mu g/mL\right)$ reflects on normal concentration factor for soils per CLP protocol.

Date Analyzed: 04/21/87

(0361b/lma)

SOIL SURROGATE PERCENT RECOVERY SUMMARY

Case No. 8142 Contract Laboratory HAZLETON LABORATORIES Contract No. 68-01-7146

Low X Medium _____

	VOLATILE				SEMI-VOLATILE							PESTICIDE**
SMO TRAFFIC NO.	TOLUENE-D8 (81-117)	BFB (74-121)	1,2 DICHLOROETHANE-D4 (70-121)	NITROBENZENE-D5 (23-120)	2-FLUOROBIPHENYL (30-115)	TERPHENYL-D14 (18-137)			PHENOL-D5 (24-113)	2-FLUOROPHENOL (25-121)	2,4,6 TRIBROMOPHENOL (19-122)	DIBUTYLCHLORENDATE (20-150)
EN545	119*	79	91	58	67	93			54	54	72	95
EN545RE	124*	81	97	NA	NA	NA			NA	NA	NA	NA
EN545MS	NA	NA	NA	60	71	98			56	53	75	106
EN545MSD	NA	NA	NA	61	66	103			52	56	77	116
EN546	116	78	85	55	66	98			46	50	77	107
EN547	117	77	83	69	75	109			53	59	60	112
EN548	113	77	81	41	46	98			27	33	62	159*
EN548MS	117	81	99	NA	NA	NA			NA	NA	NA	NA
EN548MSD	118*	80	99	NA	NA	NA			NA	NA	NA	NA
RE EN548MSD	119*	78	98	NA	NA	NA			NA	NA	NA	NA
EN550	116	83	98	44	66	94			47	46	67	87
M.BIK-1	91	89	88	69	75	136			58	67	58	121
M.BIK-2	102	101	96	NA	NA	NA			NA	NA	NA	NA
H.BIK	100	95	99	NA	NA	NA			NA	NA	NA	NA
	4											
		0	0	0	0							

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

** ADVISORY LIMITS ONLY

Volatiles: 4 out of 36 ; outside of QC limits

Semi-Volatiles: 0 out of 48 ; outside of QC limits

Pesticides: 1 out of 8 ; outside of QC limits

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Comments: NA = NOT APPLICABLE

FORM II

SOIL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Case No. 8142 **Contractor** HAZLETON LABORATORIES **Contract No.** 68-01-7146

Low Level X **Medium Level** _____

FRACTION	COMPOUND	CONC. SPIKE ADDED (ug/Kg)	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	RPD	QC LIMITS* RPD	QC LIMITS* RECOVERY
VOA SMO SAMPLE NO. EN548	1,1-Dichloroethene	66	0	55	83	54	82	1	22	59-172
	Trichloroethene		0	64	97	64	97	0	24	62-137
	Chlorobenzene		0	68	103	68	103	0	21	60-133
	Toluene		3	75	109	74	108	1	21	59-139
	Benzene		0	61	92	61	92	0	21	66-142
B/N SMO SAMPLE NO. EN545	1,2,4-Trichlorobenzene	2050	0	1430	70	1400	68	3	23	38-107
	Acenaphthene	2050	0	1280	62	1220	60	3	19	31-137
	2,4 Dinitrotoluene	2050	0	1340	65	1390	68	5	47	28-89
	Pyrene	2050	83	2110	99	1650	76	23	36	35-142
	N-Nitrosodi-n-Propylamine	2050	0	1090	53	1190	58	9	38	41-126
	1,4-Dichlorobenzene	2050	0	1020	50	940	46	8	27	28-104
ACID SMO SAMPLE NO. EN545	Pentachlorophenol	4100	0	2420	59	2350	57	3	47	17-109
	Phenol	4100	0	2060	50	2010	49	2	35	26-90
	2-Chlorophenol	4100	0	8	0.2*	9	0.2*	0	50	25-102
	4-Chloro-3-Methylphenol	4100	0	2850	70	2500	61	13	33	26-103
	4-Nitrophenol	4100	0	2930	71	3600	88	24	50	11-114
PEST SMO SAMPLE NO. EN545	Lindane	16.4	0	9.14	56	9.88	60	7.8	50	46-127
	Heptachlor	16.4	0	12.6	77	14.1	86	11	31	35-130
	Aldrin	16.4	0.63	8.77	50	8.90	50	1.5	43	34-132
	Dieldrin	41.0	1.68	30.0	69	34.8	81	15	38	31-134
	Endrin	41.0	0	37.5	91	45.4	111	19	45	42-139
	4,4'-DDT	41.0	0	35.3	86	39.5	96	11	50	23-134

*ASTERISKED VALUES ARE OUTSIDE QC LIMITS.

RPD:
VOAs 0 out of 5 ; outside QC limits
B/N 0 out of 6 ; outside QC limits
ACID 0 out of 5 ; outside QC limits
PEST 0 out of 6 ; outside QC limits

RECOVERY:
VOAs 0 out of 10 ; outside QC limits
B/N 1 out of 12 ; outside QC limits
ACID 2 out of 10 ; outside QC limits
PEST 0 out of 12 ; outside QC limits

Comments:

FORM III

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METHOD BLANK SUMMARY

Case No. 8142 Region 5 Contractor HAZLETON LABORATORIES Contract No. 68-01-7146

FILE ID	DATE OF ANALYSIS	FRACTION	MATRIX	CONC. LEVEL	INST. ID	CAS NUMBER	COMPOUND (HSL, TIC OR UNKNOWN)	CONC.	UNITS	CRQL
1087V43	10/06/87	VOA	soil	L	5100A	75-09-2	Methylene Chloride	2 J	µg/kg	5
						67-64-1	Acetone	10		10
						108-88-3	Toluene	1 J		5
1087V49	10/07/87	VOA	soil	L	5100A	75-09-2	Methylene Chloride	4 J	µg/kg	5
						67-64-1	Acetone	18		10
						79-01-6	Trichloroethene	1 J		5
						108-88-3	Toluene	2 J		5
BAN405	10/26/87	BNA	SOIL	L	FINN 5/B	84-66-2	Diethylphthalate	14	mg/kg	330
						86-30-6	N-Nitrosodiphenylamine	85		330
						84-74-2	Di-N-Butylphthalate	2400		330
						117-81-7	Bis(2-Ethylhexyl) Phthalate	22		330
						3970-62-5	3-pentanol, 2, 2-Dimethyl	160		—
						57-15-8	2-propanol, 1,1,1,1-Trichloro-2methyl	320		—
						17851-53-5	1,2 Benzenedicarboxylic Acid, Butyl	210		—
							1,2 methylpropyl ester			
3692	10/21/87	PEST	SOIL	L	5779	—	None found	—	—	—

Comments:

Sample Number
EN 545

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: HAZLETON LABORATORIES

Case No: 8142

Lab Sample ID No: 71000455

QC Report No:

Sample Matrix: Soil

Contract No: 68-01-7146

Data Release Authorized By: [signature]

Date Sample Received: 10/02/87

Volatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 10/06/87

Date Analyzed: 10/06/87

Conc/Dil Factor: 1 pH 8.3

Percent Moisture: (Not Decanted) 18.4 CF = 1.23

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	12 U
74-83-9	Bromomethane	12 U
75-01-4	Vinyl Chloride	12 U
75-00-3	Chloroethane	12 U
75-09-2	Methylene Chloride	13 B
67-64-1	Acetone	36 B
75-15-0	Carbon Disulfide	6 U
75-35-4	1, 1-Dichloroethene	6 U
75-34-3	1, 1-Dichloroethane	6 U
156-60-5	Trans-1, 2-Dichloroethene	6 U
67-66-3	Chloroform	5
107-06-2	1, 2-Dichloroethane	6 U
78-93-3	2-Butanone	12 U
71-55-6	1, 1, 1-Trichloroethane	6 U
56-23-5	Carbon Tetrachloride	6 U
108-05-4	Vinyl Acetate	12 U
75-27-4	Bromodichloromethane	6 U

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1, 2-Dichloropropane	6 U
10061-02-6	Trans-1, 3-Dichloropropene	6 U
79-01-6	Trichloroethene	6 U
124-48-1	Dibromochloromethane	6 U
79-00-5	1, 1, 2-Trichloroethane	6 U
71-43-2	Benzene	6 U
10061-01-5	cis-1, 3-Dichloropropene	6 U
110-75-8	2-Chloroethylvinylether	12 U
75-25-2	Bromoform	6 U
108-10-1	4-Methyl-2-Pentanone	12 U
591-78-6	2-Hexanone	12 U
127-18-4	Tetrachloroethene	6 U
79-34-5	1, 1, 2, 2-Tetrachloroethane	6 U
108-88-3	Toluene	3 J B
108-90-7	Chlorobenzene	6 U
100-41-4	Ethylbenzene	6 U
100-42-5	Styrene	6 U
	Total Xylenes	6 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 µg/l and a concentration of 3 µg/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report

ecology and environment

Laboratory Name: HAZLETON LABORATORIES

Case No: 8142

Sample Number
EN 545

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 10/5/87

Date Analyzed: 10/27/87

Conc/Dil Factor: 1

Percent Moisture (Decanted): 18.4

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)	
108-95-2	Phenol	410 u	
111-44-4	bis-2-Chloroethyl Ether		
95-57-8	2-Chlorophenol		
541-73-1	1,3-Dichlorobenzene		
106-46-7	1,4-Dichlorobenzene		
100-51-6	Benzyl Alcohol		
95-50-1	1,2-Dichlorobenzene		
95-48-7	2-Methylphenol		
39638-32-9	bis(2-chloroisopropyl)Ether		
106-44-5	4-Methylphenol		
621-64-7	N-Nitroso-Di-n-Propylamine		
67-72-1	Hexachloroethane		
98-95-3	Nitrobenzene		
78-59-1	Isophorone		
88-75-5	2-Nitrophenol		
105-67-9	2,4-Dimethylphenol	✓	
65-85-0	Benzoic Acid	80 J	•
111-91-1	bis-2-Chloroethoxy Methane	410 u	
120-83-2	2,4-Dichlorophenol		
120-82-1	1,2,4-Trichlorobenzene		
91-20-3	Naphthalene		
106-47-8	4-Chloroaniline		
87-68-3	Hexachlorobutadiene		
59-50-7	4-Chloro-3-Methylphenol		
91-57-6	2-Methylnaphthalene		
77-47-4	Hexachlorocyclopentadiene		
88-06-2	2,4,6-Trichlorophenol	✓	
95-95-4	2,4,5-Trichlorophenol	2000 u	•
91-58-7	2-Chloronaphthalene	410 u	
88-74-4	2-Nitroaniline	2000 u	•
131-11-3	Dimethyl Phthalate	410 u	
208-96-8	Acenaphthylene	✓	
99-09-2	3-Nitroaniline	2000 u	•

CAS Number		ug/l or ug/Kg (Circle One)	
83-32-9	Acenaphthene	410 u	
51-28-5	2,4-Dinitrophenol	2000 u	•
100-02-7	4-Nitrophenol	2000 u	•
132-64-9	Dibenzofuran	410 u	
121-14-2	2,4-Dinitrotoluene	✓	
606-20-2	2,6-Dinitrotoluene	✓	
84-66-2	Diethylphthalate	27 BJ	
7005-72-3	4-Chlorophenyl-phenylether	410 u	
86-73-7	Fluorene	✓	
100-01-6	4-Nitroaniline	2000 u	•
534-52-1	4,6-Dinitro-2-Methylphenol	2000 u	•
86-30-6	N-Nitrosodiphenylamine (1)	410 u	
101-55-3	4-Bromophenyl-phenylether	✓	
118-74-1	Hexachlorobenzene	✓	
87-86-5	Pentachlorophenol	2000 u	•
85-01-8	Phenanthrene	56 J	
120-12-7	Anthracene	410 u	
84-74-2	Di-n-Butylphthalate	2600 B	
206-44-0	Fluoranthene	410 J	
129-00-0	Pyrene	83 J	
85-68-7	Butylbenzylphthalate	410 u	
91-94-1	3,3'-Dichlorobenzidine	820 u	•
56-55-3	Benzo(a)Anthracene	410 u	
117-81-7	bis(2-Ethylhexyl)Phthalate	64 BJ	
218-01-9	Chrysene	43 J	
117-84-0	Di-n-Octyl Phthalate	410 u	
205-99-2	Benzo(b)Fluoranthene	75 J	coelute
207-08-9	Benzo(k)Fluoranthene		
50-32-8	Benzo(a)Pyrene	410 u	
193-39-5	Indeno(1,2,3-cd)Pyrene		
53-70-3	Dibenzo(a,h)Anthracene		
191-24-2	Benzo(g,h,i)Perylene	✓	

(1)-Cannot be separated from diphenylamine

ecology and environment

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN 545

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 10-5-87

Date Analyzed 10-22-87

Conc/Dil Factor 1

Percent Moisture (decanted) 18.4%

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	9.8u
319-85-7	Beta-BHC	9.8u
319-86-8	Delta-BHC	9.8u
58-89-9	Gamma-BHC (Lindane)	9.8u
76-44-8	Heptachlor	9.8u
309-00-2	Aldrin	9.8u
1024-57-3	Heptachlor Epoxide	9.8u
959-98-8	Endosulfan I	9.8u
60-57-1	Dieldrin	20u
72-55-9	4,4'-DDE	20u
72-20-8	Endrin	20u
33213-65-9	Endosulfan II	20u
72-54-8	4,4'-DDD	20u
1031-07-8	Endosulfan Sulfate	20u
50-29-3	4,4'-DDT	20u
72-43-5	Methoxychlor	98u
53494-70-5	Endrin Ketone	20u
57-74-9	Chlordane	98u
8001-35-2	Toxaphene	200u
12674-11-2	Aroclor-1016	98u
11104-28-2	Aroclor-1221	98u
11141-16-5	Aroclor-1232	98u
53469-21-9	Aroclor-1242	98u
12672-29-6	Aroclor-1248	98u
11097-69-1	Aroclor-1254	200u
11096-82-5	Aroclor-1260	200u

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s — or W_s 24g V_t 20,000ul V_i 4.0ul

ecology and environment

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN548

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	57-15-8	2-Propanol, 1,1,1-Trichloro-2-Methyl	BNA	356	340
2.		Unknown		474	330
3.	17301-32-5	Undecane, 4,7-Dimethyl		893	240
4.	3287-21-3	Tridecane 6-Methyl		1173	320
5.	54105-67-8	Heptadecane, 2,6-Dimethyl		1178	500
6.	74764-11-7	Benzenamine, N-Tricosyl/N-(Phenyl-2-Pyridinylmethylene)		1256	220
7.	629-92-5	Nonadecane		1264	290
8.	17851-53-5	1,2-Benzenedicarboxylic Acid, Butyl 2-Methylpropyl Ester		1307	310
9.		Unknown		1336	200
10.	10544-50-0	Sulfur		1417	4300
11.	2432-89-5	Decanedioic Acid, Didecyl Ester		1749	430
12.	630-02-4	Octacosane		1867	280
13.		Unknown		1977	260
14.		Unknown		1982	210
15.		Unknown		2092	250
16.		Unknown		2112	290
17.		Unknown		2143	370
18.		Unknown		2158	230
19.		Unknown		2186	1700
20.		Unknown	↓	2208	230
21.	109-66-0	Pentane	VOA	225	29
22.	110-54-3	Hexane	↓	332	7
23.	—	No Pesticides found	PEST	—	—
24.					
25.					
26.					
27.					
28.					
29.					
30.					

ecology and environment

Sample Number
EN545 RE

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: HAZLETON LABORATORIES
Case No: 8142
Lab Sample ID No: 71000455
QC Report No:
Sample Matrix: Soil
Contract No: 68-01-7146
Data Release Authorized By: David C. Gill
Date Sample Received: 10/02/87

Volatile Compounds

Concentration: (Low) Medium (Circle One)
Date Extracted/Prepared: 10/07/87
Date Analyzed: 10/07/87
Conc/Dil Factor: 1 pH 8.3
Percent Moisture: (Not Decanted) 18.4 CF=1.23

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	12U
74-83-9	Bromomethane	12U
75-01-4	Vinyl Chloride	12U
75-00-3	Chloroethane	12U
75-09-2	Methylene Chloride	11 B
67-64-1	Acetone	22 B
75-15-0	Carbon Disulfide	6U
75-35-4	1, 1-Dichloroethene	6U
75-34-3	1, 1-Dichloroethane	6U
156-60-5	Trans-1, 2-Dichloroethene	6U
67-66-3	Chloroform	2J
107-06-2	1, 2-Dichloroethane	6U
78-93-3	2-Butanone	12U
71-55-6	1, 1, 1-Trichloroethane	6U
56-23-5	Carbon Tetrachloride	6U
108-05-4	Vinyl Acetate	12U
75-27-4	Bromodichloromethane	6U

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1, 2-Dichloropropane	6U
10061-02-6	Trans-1, 3-Dichloropropene	6U
79-01-6	Trichloroethene	6U
124-48-1	Dibromochloromethane	6U
79-00-5	1, 1, 2-Trichloroethane	6U
71-43-2	Benzene	6U
10061-01-5	cis-1, 3-Dichloropropene	6U
110-75-8	2-Chloroethylvinylether	12U
75-25-2	Bromoform	6U
108-10-1	4-Methyl-2-Pentanone	12U
591-78-6	2-Hexanone	12U
127-18-4	Tetrachloroethene	6U
79-34-5	1, 1, 2, 2-Tetrachloroethane	6U
108-88-3	Toluene	3J B
108-90-7	Chlorobenzene	6U
100-41-4	Ethylbenzene	6U
100-42-5	Styrene	6U
	Total Xylenes	6U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 µg/l and a concentration of 3 µg/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

recycling and environment

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number EN 545 RE

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	No volatiles found	VOA		
2.				
3.				
4.				
5.				
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Sample Number
EN 546

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: HAZLETON LABORATORIES

Case No: 8142

Lab Sample ID No: 71000456

QC Report No:

Sample Matrix: soil

Contract No: 68-01-7146

Data Release Authorized By: David C Gilb

Date Sample Received: 10/02/87

Volatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 10/06/87

Date Analyzed: 10/06/87

Conc/Dil Factor: 1 pH 8.2

Percent Moisture: (Not Decanted) 25.5 C.F. = 1.34

CAS Number		ug/l or (ug/Kg) (Circle One)
74-87-3	Chloromethane	13u
74-83-9	Bromomethane	13u
75-01-4	Vinyl Chloride	13u
75-00-3	Chloroethane	13u
75-09-2	Methylene Chloride	9 B
67-64-1	Acetone	40 B
75-15-0	Carbon Disulfide	7u
75-35-4	1, 1-Dichloroethene	7u
75-34-3	1, 1-Dichloroethane	7u
156-60-5	Trans-1, 2-Dichloroethene	7u
67-66-3	Chloroform	3J
107-06-2	1, 2-Dichloroethane	7u
78-93-3	2-Butanone	13u
71-55-6	1, 1, 1-Trichloroethane	7u
56-23-5	Carbon Tetrachloride	7u
108-05-4	Vinyl Acetate	13u
75-27-4	Bromodichloromethane	7u

CAS Number		ug/l or (ug/Kg) (Circle One)
78-87-5	1, 2-Dichloropropane	7u
10061-02-6	Trans-1, 3-Dichloropropene	7u
79-01-6	Trichloroethene	7u
124-48-1	Dibromochloromethane	7u
79-00-5	1, 1, 2-Trichloroethane	7u
71-43-2	Benzene	7u
10061-01-5	cis-1, 3-Dichloropropene	7u
110-75-8	2-Chloroethylvinylether	13u
75-25-2	Bromoform	7u
108-10-1	4-Methyl-2-Pentanone	13u
591-78-6	2-Hexanone	13u
127-18-4	Tetrachloroethene	7u
79-34-5	1, 1, 2, 2-Tetrachloroethane	7u
108-88-3	Toluene	2J B
108-90-7	Chlorobenzene	7u
100-41-4	Ethylbenzene	7u
100-42-5	Styrene	7u
	Total Xylenes	7u

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. *Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.*

Value If the result is a value greater than or equal to the detection limit, report the value

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g., 10J). If limit of detection is 10 µg/l and a concentration of 3 µg/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report

Laboratory Name: HAZLETON LABORATORIES

Case No: 8142

Sample Number
EN 546

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 10/5/87

Date Analyzed: 10/27/87

Conc/Dil Factor: 1

Percent Moisture (Decanted) 25.5

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	450 u
111-44-4	bis(-2-Chloroethyl)Ether	
95-57-8	2-Chlorophenol	
541-73-1	1,3-Dichlorobenzene	
106-46-7	1,4-Dichlorobenzene	
100-51-6	Benzyl Alcohol	
95-50-1	1,2-Dichlorobenzene	
95-48-7	2-Methylphenol	
39638-32-9	bis(2-chloroisopropyl)Ether	
106-44-5	4-Methylphenol	
621-64-7	N-Nitroso-Di-n-Propylamine	
67-72-1	Hexachloroethane	
98-95-3	Nitrobenzene	
78-59-1	Isophorone	
88-75-5	2-Nitrophenol	
105-67-9	2,4-Dimethylphenol	✓
65-85-0	Benzoic Acid	2200 u
111-91-1	bis(-2-Chloroethoxy)Methane	450 u
120-83-2	2,4-Dichlorophenol	
120-82-1	1,2,4-Trichlorobenzene	
91-20-3	Naphthalene	
106-47-8	4-Chloroaniline	
87-68-3	Hexachlorobutadiene	
59-50-7	4-Chloro-3-Methylphenol	
91-57-6	2-Methylnaphthalene	
77-47-4	Hexachlorocyclopentadiene	
88-06-2	2,4,6-Trichlorophenol	✓
95-95-4	2,4,5-Trichlorophenol	2200 u
91-58-7	2-Chloronaphthalene	450 u
88-74-4	2-Nitroaniline	2200 u
131-11-3	Dimethyl Phthalate	450 u
208-96-8	Acenaphthylene	✓
99-09-2	3-Nitroaniline	2200 u

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	450 u
51-28-5	2,4-Dinitrophenol	2200 u
100-02-7	4-Nitrophenol	2200 u
132-64-9	Dibenzofuran	450 u
121-14-2	2,4-Dinitrotoluene	
606-20-2	2,6-Dinitrotoluene	
84-66-2	Diethylphthalate	
7005-72-3	4-Chlorophenyl-phenylether	
86-73-7	Fluorene	✓
100-01-6	4-Nitroaniline	2200 u
534-52-1	4,6-Dinitro-2-Methylphenol	2200 u
86-30-6	N-Nitrosodiphenylamine (1)	450 u
101-55-3	4-Bromophenyl-phenylether	
118-74-1	Hexachlorobenzene	✓
87-86-5	Pentachlorophenol	2200 u
85-01-8	Phenanthrene	65 J
120-12-7	Anthracene	450 u
84-74-2	Di-n-Butylphthalate	530 B
206-44-0	Fluoranthene	100 J
129-00-0	Pyrene	75 J
85-68-7	Butylbenzylphthalate	450 u
91-94-1	3,3'-Dichlorobenzidine	900 u
56-55-3	Benzo(a)Anthracene	450 u
117-81-7	bis(2-Ethylhexyl)Phthalate	150 BJ
218-01-9	Chrysene	50 J
117-84-0	Di-n-Octyl Phthalate	450 u
205-99-2	Benzo(b)Fluoranthene	62 J
207-08-9	Benzo(k)Fluoranthene	✓
50-32-8	Benzo(a)Pyrene	450 u
193-39-5	Indeno(1,2,3-cd)Pyrene	
53-70-3	Dibenz(a,h)Anthracene	
191-24-2	Benzo(g,h,i)Perylene	✓

coelute

(1)-Cannot be separated from diphenylamine

ecology and environment

Laboratory Name HAZLETON LABORATORIES

Case No 5142

Sample Number
EN 546

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared 10-5-87

Date Analyzed 10-22-87

Conc/Dil Factor: 1

Percent Moisture (decanted) 25.5

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	11u
319-85-7	Beta-BHC	11u
319-86-8	Delta-BHC	11u
58-89-9	Gamma-BHC (Lindane)	11u
76-44-8	Heptachlor	11u
309-00-2	Aldrin	11u
1024-57-3	Heptachlor Epoxide	11u
959-98-8	Endosulfan I	11u
60-57-1	Dieldrin	21u
72-55-9	4,4'-DDE	21u
72-20-8	Endrin	21u
33213-65-9	Endosulfan II	21u
72-54-8	4,4'-DDD	21u
1031-07-8	Endosulfan Sulfate	21u
50-29-3	4,4'-DDT	21u
72-43-5	Methoxychlor	110u
53494-70-5	Endrin Ketone	21u
57-74-9	Chlordane	110u
8001-35-2	Toxaphene	210u
12674-11-2	Aroclor-1016	110u
11104-28-2	Aroclor-1221	110u
11141-16-5	Aroclor-1232	110u
53469-21-9	Aroclor-1242	110u
12672-29-6	Aroclor-1248	110u
11097-69-1	Aroclor-1254	210u
11096-82-5	Aroclor-1260	210u

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s — or W_s 22 g V_t 20,000 µl V_i 4.0 µl

ecology and environment

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN546

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 1731-01-3	Undecane, 4 7 - Dimethy	BNA	991	260
2. 6418-41-3	Tridecane, 3-Methyl		1177	320
3. 1921-30-6	Pentadecane, 2,6,10,14-Tetramethyl		1177	520
4. 74760-11-3	Benzenamine, N-U Trans Tricarbonyl [N-(Phenyl-2-Pyridinylmethylene)]		1255	250
5. 629-92-5	Nonadecane		1263	320
6. 10544-50-0	Sulfur		1417	7500
7. 54105-67-8	Heptadecane, 2,6-Dimethyl		1484	280
8.	Unknown		1541	350
9.	Unknown		1548	290
10. 629-97-0	Docosane		1554	770
11.	Unknown		1561	300
12.	Unknown		1565	690
13.	Unknown		1696	410
14. 629-99-2	Pentacosane		1975	410
15.	Unknown		2091	520
16.	Unknown		2112	460
17.	Unknown		2187	4200
18.	Unknown		2206	680
19.	Unknown		2223	280
20.	Unknown	↓	2288	850
21. 629-14-1	1,2-Diethoxyethane	VOA	191	8
22. 109-66-0	Pentane	↓	226	20
23. —	No Pesticides found	PEST	—	—
24.				
25.				
26.				
27.				
28.				
29.				
30.				

Sample Number
EN 547

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: HAZLETON LABORATORIES
Case No: 8142
Lab Sample ID No: 71000457
QC Report No:
Sample Matrix: Soil
Contract No: 68-01-7146
Data Release Authorized By: David C Gilly
Date Sample Received: 10/02/87

Volatile Compounds

Concentration: (Low) Medium (Circle One)
Date Extracted/Prepared: 10/06/87
Date Analyzed: 10/06/87
Conc/Dil Factor: 1 pH 8.1
Percent Moisture: (Not Decanted) 24.2 C.F = 1.32

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	13U
74-83-9	Bromomethane	13U
75-01-4	Vinyl Chloride	13U
75-00-3	Chloroethane*	13U
75-09-2	Methylene Chloride	6JB
67-64-1	Acetone	31B
75-15-0	Carbon Disulfide	7U
75-35-4	1, 1-Dichloroethene	7U
75-34-3	1, 1-Dichloroethane	7U
156-60-5	Trans-1, 2-Dichloroethene	7U
67-66-3	Chloroform	4J
107-06-2	1, 2-Dichloroethane	7U
78-93-3	2-Butanone	13U
71-55-6	1, 1, 1-Trichloroethane	7U
56-23-5	Carbon Tetrachloride	7U
108-05-4	Vinyl Acetate	13U
75-27-4	Bromodichloromethane	7U

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1, 2-Dichloropropane	7U
10061-02-6	Trans-1, 3-Dichloropropene	7U
79-01-6	Trichloroethene	7U
124-48-1	Dibromochloromethane	7U
79-00-5	1, 1, 2-Trichloroethane	7U
71-43-2	Benzene	7U
10061-01-5	cis-1, 3-Dichloropropene	7U
110-75-8	2-Chloroethylvinylether	13U
75-25-2	Bromoform	7U
108-10-1	4-Methyl-2-Pentanone	13U
591-78-6	2-Hexanone	13U
127-18-4	Tetrachloroethene	7U
79-34-5	1, 1, 2, 2-Tetrachloroethane	7U
108-88-3	Toluene	1JB
108-90-7	Chlorobenzene	7U
100-41-4	Ethylbenzene	7U
100-42-5	Styrene	7U
	Total Xylenes	7U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g., 10J). If limit of detection is 10 µg/l and a concentration of 3 µg/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report

Laboratory Name: HAZLETON LABORATORIES

Case No: 8142

Sample Number
EN547

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 10/5/87

Date Analyzed: 10/27/87

Conc/Dil Factor: 1

Percent Moisture (Decanted) 24.2

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	440 u
111-44-4	bis(2-Chloroethyl)Ether	
95-57-8	2-Chlorophenol	
541-73-1	1,3-Dichlorobenzene	
106-46-7	1,4-Dichlorobenzene	
100-51-6	Benzyl Alcohol	
95-50-1	1,2-Dichlorobenzene	
95-48-7	2-Methylphenol	
39638-32-9	bis(2-chloroisopropyl)Ether	
106-44-5	4-Methylphenol	
621-64-7	N-Nitroso-Di-n-Propylamine	
67-72-1	Hexachloroethane	
98-95-3	Nitrobenzene	
78-59-1	Isophorone	
88-75-5	2-Nitrophenol	
105-67-9	2,4-Dimethylphenol	✓
65-85-0	Benzoic Acid	2200 u •
111-91-1	bis(2-Chloroethoxy)Methane	440 u
120-83-2	2,4-Dichlorophenol	
120-82-1	1,2,4-Trichlorobenzene	
91-20-3	Naphthalene	
106-47-8	4-Chloroaniline	
87-68-3	Hexachlorobutadiene	
59-50-7	4-Chloro-3-Methylphenol	
91-57-6	2-Methylnaphthalene	
77-47-4	Hexachlorocyclopentadiene	
88-06-2	2,4,6-Trichlorophenol	✓
95-95-4	2,4,5-Trichlorophenol	2200 u •
91-58-7	2-Chloronaphthalene	440 u
88-74-4	2-Nitroaniline	2200 u •
131-11-3	Dimethyl Phthalate	440 u
208-96-8	Acenaphthylene	440 u
99-09-2	3-Nitroaniline	2200 u •

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	440 u
51-28-5	2,4-Dinitrophenol	2200 u •
100-02-7	4-Nitrophenol	2200 u •
132-64-9	Dibenzofuran	440 u
121-14-2	2,4-Dinitrotoluene	
606-20-2	2,6-Dinitrotoluene	✓
84-66-2	Diethylphthalate	18 BJ
7005-72-3	4-Chlorophenyl-phenylether	440 u
86-73-7	Fluorene	✓
100-01-6	4-Nitroaniline	2200 u •
534-52-1	4,6-Dinitro-2-Methylphenol	2200 u •
86-30-6	N-Nitrosodiphenylamine (1)	59 BJ
101-55-3	4-Bromophenyl-phenylether	440 u
118-74-1	Hexachlorobenzene	✓
87-86-5	Pentachlorophenol	2200 u •
85-01-8	Phenanthrene	440 u
120-12-7	Anthracene	✓
84-74-2	Di-n-Butylphthalate	3300 B
206-44-0	Fluoranthene	440 u
129-00-0	Pyrene	4 J
85-68-7	Butylbenzylphthalate	440 u
91-94-1	3,3'-Dichlorobenzidine	880 u •
56-55-3	Benzo(a)Anthracene	440 u
117-81-7	bis(2-Ethylhexyl)Phthalate	25 BJ
218-01-9	Chrysene	440 u
117-84-0	Di-n-Octyl Phthalate	
205-99-2	Benzo(b)Fluoranthene	
207-08-9	Benzo(k)Fluoranthene	
50-32-8	Benzo(a)Pyrene	
193-39-5	Indeno(1,2,3-cd)Pyrene	
53-70-3	Dibenz(a,h)Anthracene	
191-24-2	Benzo(g,h,i)Perylene	✓

(1)-Cannot be separated from diphenylamine

ecology and environment

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN 547

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration (Low) Medium (Circle One)

Date Extracted/Prepared: 10·5·87

Date Analyzed 10·22·87

Conc/Dil Factor 1

Percent Moisture (decanted) 24.2%

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	11u
319-85-7	Beta-BHC	11u
319-86-8	Delta-BHC	11u
58-89-9	Gamma-BHC (Lindane)	11u
76-44-8	Heptachlor	11u
309-00-2	Aldrin	11u
1024-57-3	Heptachlor Epoxide	11u
959-98-8	Endosulfan I	11u
60-57-1	Dieldrin	21u
72-55-9	4, 4'-DDE	21u
72-20-8	Endrin	21u
33213-65-9	Endosulfan II	21u
72-54-8	4, 4'-DDD	21u
1031-07-8	Endosulfan Sulfate	21u
50-29-3	4, 4'-DDT	21u
72-43-5	Methoxychlor	110u
53494-70-5	Endrin Ketone	21u
57-74-9	Chlordane	110u
8001-35-2	Toxaphene	210u
12674-11-2	Aroclor-1016	110u
11104-28-2	Aroclor-1221	110u
11141-16-5	Aroclor-1232	110u
53469-21-9	Aroclor-1242	110u
12672-29-6	Aroclor-1248	110u
11097-69-1	Aroclor-1254	210u
11096-82-5	Aroclor-1260	210u

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s — or W_s 23 g V_t 20,000 ul V_i 4.0 ul

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number EN547

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 109-66-0	Pentane	VOA	225	11
2. 3970-62-5	3-Pentanol, 2,2-Dimethyl	BNA	256	240
3. 3240-09-3	5-Hexene-2-one, 5-methyl		319	210
4. 57-15-8	2-Propanol, 1,1,1,1-Trichloro-2-Methyl		355	400
5. 17851-53-5	1,2-Benzenedicarboxylic Acid, Butyl 2-		1307	400
6.	Methyl propyl Ester			
7.	Unknown		2143	190
8.	Unknown		2166	940
9.	Unknown		2169	310
10.	Unknown		2175	330
11.	Unknown		2210	1800
12. —	No Pesticides found	PEST	—	—
13.				
14.				
15.				
16.				
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30.				

ecology and environment

Sample Number
EN548

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: HAZLETON LABORATORIES

Case No: 8142

Lab Sample ID No: 71000458

QC Report No:

Sample Matrix: Soil

Contract No: 68-01-7146

Data Release Authorized By: David C. Gilbert

Date Sample Received: 10/02/87

Volatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 10/06/87

Date Analyzed: 10/06/87

Conc/Dil Factor: 1 pH 7.9

Percent Moisture: (Not Decanted) 23.7 CF = 1.31

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	13U
74-83-9	Bromomethane	13U
75-01-4	Vinyl Chloride	13U
75-00-3	Chloroethane	13U
75-09-2	Methylene Chloride	7JB
67-64-1	Acetone	12JB
75-15-0	Carbon Disulfide	7U
75-35-4	1, 1-Dichloroethene	7U
75-34-3	1, 1-Dichloroethane	7U
156-60-5	Trans-1, 2-Dichloroethene	7U
67-66-3	Chloroform	4J
107-06-2	1, 2-Dichloroethane	7U
78-93-3	2-Butanone	13U
71-55-6	1, 1, 1-Trichloroethane	7U
56-23-5	Carbon Tetrachloride	7U
108-05-4	Vinyl Acetate	13U
75-27-4	Bromodichloromethane	7U

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1, 2-Dichloropropane	7U
10061-02-6	Trans-1, 3-Dichloropropene	7U
79-01-6	Trichloroethene	7U
124-48-1	Dibromochloromethane	7U
79-00-5	1, 1, 2-Trichloroethane	7U
71-43-2	Benzene	7U
10061-01-5	cis-1, 3-Dichloropropene	7U
110-75-8	2-Chloroethylvinylether	13U
75-25-2	Bromoform	7U
108-10-1	4-Methyl-2-Pentanone	13U
591-78-6	2-Hexanone	13U
127-18-4	Tetrachloroethene	7U
79-34-5	1, 1, 2, 2-Tetrachloroethane	7U
108-88-3	Toluene	3JB
108-90-7	Chlorobenzene	7U
100-41-4	Ethylbenzene	7U
100-42-5	Styrene	7U
	Total Xylenes	7U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g., 10J). If limit of detection is 10 µg/l and a concentration of 3 µg/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report

Laboratory Name: HAZLETON LABORATORIES

Case No: 8142

Sample Number
EN 548

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 10/5/87

Date Analyzed: 10/28/87

Conc/Dil Factor: 1

Percent Moisture (Decanted) 23.7

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	440u
111-44-4	bis-2-Chloroethyl Ether	
95-57-8	2-Chlorophenol	
541-73-1	1 3-Dichlorobenzene	
106-46-7	1. 4-Dichlorobenzene	
100-51-6	Benzyl Alcohol	
95-50-1	1. 2-Dichlorobenzene	
95-48-7	2-Methylphenol	
39638-32-9	bis(2-chloroisopropyl)Ether	
106-44-5	4-Methylphenol	
621-64-7	N-Nitroso-Di-n-Propylamine	
67-72-1	Hexachloroethane	
98-95-3	Nitrobenzene	
78-59-1	Isophorone	
88-75-5	2-Nitrophenol	
105-67-9	2. 4-Dimethylphenol	✓
65-85-0	Benzoic Acid	2200u
111-91-1	bis-2-Chloroethoxy Methane	440u
120-83-2	2. 4-Dichlorophenol	
120-82-1	1. 2. 4-Trichlorobenzene	
91-20-3	Naphthalene	
106-47-8	4-Chloroaniline	
87-68-3	Hexachlorobutadiene	
59-50-7	4-Chloro-3-Methylphenol	
91-57-6	2-Methylnaphthalene	
77-47-4	Hexachlorocyclopentadiene	
88-06-2	2. 4 6-Trichlorophenol	✓
95-95-4	2. 4 5-Trichlorophenol	2200u
91-58-7	2-Chloronaphthalene	440u
88-74-4	2-Nitroaniline	2200u
131-11-3	Dimethyl Phthalate	440u
208-96-8	Acenaphthylene	✓
99-09-2	3-Nitroaniline	2200u

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	440u
51-28-5	2. 4-Dinitrophenol	2200u
100-02-7	4-Nitrophenol	2200u
132-64-9	Dibenzofuran	440u
121-14-2	2 4-Dinitrotoluene	
606-20-2	2. 6-Dinitrotoluene	
84-66-2	Diethylphthalate	2785
7005-72-3	4-Chlorophenyl-phenylether	440u
86-73-7	Fluorene	✓
100-01-6	4-Nitroaniline	2200u
534-52-1	4. 6-Dinitro-2-Methylphenol	2200u
86-30-6	N-Nitrosodiphenylamine (1)	36J
101-55-3	4-Bromophenyl-phenylether	440u
118-74-1	Hexachlorobenzene	✓
87-86-5	Pentachlorophenol	2200u
85-01-8	Phenanthrene	440u
120-12-7	Anthracene	✓
84-74-2	Di-n-Butylphthalate	3900u
206-44-0	Fluoranthene	13J
129-00-0	Pyrene	13J
85-68-7	Butylbenzylphthalate	440u
91-94-1	3. 3'-Dichlorobenzidine	880u
56-55-3	Benzo(a)Anthracene	440u
117-81-7	bis(2-Ethylhexyl)Phthalate	
218-01-9	Chrysene	
117-84-0	Di-n-Octyl Phthalate	
205-99-2	Benzo(b)Fluoranthene	
207-08-9	Benzo(k)Fluoranthene	
50-32-8	Benzo(a)Pyrene	
193-39-5	Indeno(1 2. 3-cd)Pyrene	
53-70-3	Dibenz(a,h)Anthracene	
191-24-2	Benzo(g, h, i)Perylene	

(1)-Cannot be separated from diphenylamine

✓ ✓

ecology and environment

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN 548

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 10.5.87

Date Analyzed: 10.22.87

Conc/Dil Factor: 1

Percent Moisture (decanted): 23.7

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or (ug/Kg) (Circle One)
319-84-6	Alpha-BHC	10u
319-85-7	Beta-BHC	10u
319-86-8	Delta-BHC	10u
58-89-9	Gamma-BHC (Lindane)	10u
76-44-8	Heptachlor	10u
309-00-2	Aldrin	10u
1024-57-3	Heptachlor Epoxide	10u
959-98-8	Endosulfan I	10u
60-57-1	Dieldrin	21u
72-55-9	4,4'-DDE	21u
72-20-8	Endrin	21u
33213-65-9	Endosulfan II	21u
72-54-8	4,4'-DDD	21u
1031-07-8	Endosulfan Sulfate	21u
50-29-3	4,4'-DDT	21u
72-43-5	Methoxychlor	100u
53494-70-5	Endrin Ketone	21u
57-74-9	Chlordane	100u
8001-35-2	Toxaphene	210u
12674-11-2	Aroclor-1016	100u
11104-28-2	Aroclor-1221	100u
11141-16-5	Aroclor-1232	100u
53469-21-9	Aroclor-1242	100u
12672-29-6	Aroclor-1248	100u
11097-69-1	Aroclor-1254	210u
11096-82-5	Aroclor-1260	210u

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s — or W_s 23g V_t 20,000µl V_i 4.0µl

ecology and environment

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN 548

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	No volatiles found	VOA	—	—
2. 57-15-8	2-Propanol, 1,1,1-Trichloro-2-Methyl	BNA	353	220
3. 17851-53-5	1,2-Benzenedicarboxylic Acid, Butyl		1308	360
4.	2-Methylpropyl Ester			
5. 7206-25-9	9-Octadecene		1764	180
6. 74264-11-7	Iron, Tricarbonyl[N-(Phenyl-2-Pyridinylmethylene)		1929	250
7.	Benzenamine-N,N']-			
8. 1454-85-9	1-Heptadecanol		1996	580
9. 629-99-2	Pentacosane		2083	470
10.	Unknown		2101	560
11.	Unknown		2145	890
12.	Unknown		2154	360
13.	Unknown		2159	370
14.	Unknown		2170	340
15.	Unknown		2179	360
16.	Unknown		2199	960
17.	Unknown		2216	1400
18.	Unknown		2220	1300
19.	Unknown		2231	1700
20.	Unknown		2252	260
21. —	No pesticides found	PEST	—	—
22.				
23.				
24.				
25.				
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27.				
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30.				

ecology and environment

Sample Number
EN550

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: HAZLETON LABORATORIES
Case No: 8142
Lab Sample ID No: 71000459
QC Report No:
Sample Matrix: Soil
Contract No: 68-01-7146
Data Release Authorized By: David C. Gill
Date Sample Received: 10/02/87

Volatile Compounds

Concentration: (Low) Medium (Circle One)
Date Extracted/Prepared: 10/07/87
Date Analyzed: 10/07/87
Conc/Dil Factor: 1 pH 8.1
Percent Moisture: (Not Decanted) 17.5 CF = 1.21

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	12 U
74-83-9	Bromomethane	12 U
75-01-4	Vinyl Chloride	12 U
75-00-3	Chloroethane	12 U
75-09-2	Methylene Chloride	20 B
67-64-1	Acetone	24 B
75-15-0	Carbon Disulfide	6 U
75-35-4	1, 1-Dichloroethene	6 U
75-34-3	1, 1-Dichloroethane	6 U
156-60-5	Trans-1, 2-Dichloroethene	6 U
67-66-3	Chloroform	3 J
107-06-2	1, 2-Dichloroethane	6 U
78-93-3	2-Butanone	12 U
71-55-6	1, 1, 1-Trichloroethane	6 U
56-23-5	Carbon Tetrachloride	6 U
108-05-4	Vinyl Acetate	12 U
75-27-4	Bromodichloromethane	6 U

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1, 2-Dichloropropane	6 U
10061-02-6	Trans-1, 3-Dichloropropene	6 U
79-01-6	Trichloroethene	6 U
124-48-1	Dibromochloromethane	6 U
79-00-5	1, 1, 2-Trichloroethane	6 U
71-43-2	Benzene	6 U
10061-01-5	cis-1, 3-Dichloropropene	6 U
110-75-8	2-Chloroethylvinylether	12 U
75-25-2	Bromoform	6 U
108-10-1	4-Methyl-2-Pentanone	12 U
591-78-6	2-Hexanone	12 U
127-18-4	Tetrachloroethene	6 U
79-34-5	1, 1, 2, 2-Tetrachloroethane	6 U
108-88-3	Toluene	6 B
108-90-7	Chlorobenzene	6 U
100-41-4	Ethylbenzene	6 U
100-42-5	Styrene	6 U
	Total Xylenes	6 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g., 10J). If limit of detection is 10 µg/l and a concentration of 3 µg/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report

Laboratory Name: HAZLETON LABORATORIES

Case No: 8142

Sample Number
EN550

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 10/5/87

Date Analyzed: 10/27/87

Conc/Dil Factor: 1

Percent Moisture (Decanted) 17.5

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)	
108-95-2	Phenol	400 u	
111-44-4	bis(2-Chloroethyl)Ether		
95-57-8	2-Chlorophenol		
541-73-1	1,3-Dichlorobenzene		
106-46-7	1,4-Dichlorobenzene		
100-51-6	Benzyl Alcohol		
95-50-1	1,2-Dichlorobenzene		
95-48-7	2-Methylphenol		
39638-32-9	bis(2-chloroisopropyl)Ether		
106-44-5	4-Methylphenol		
621-64-7	N-Nitroso-Di-n-Propylamine		
67-72-1	Hexachloroethane		
98-95-3	Nitrobenzene		
78-59-1	Isophorone		
88-75-5	2-Nitrophenol		
105-67-9	2,4-Dimethylphenol		
65-85-0	Benzoic Acid	2000 u	*
111-91-1	bis(2-Chloroethoxy)Methane	400 u	
120-83-2	2,4-Dichlorophenol		
120-82-1	1,2,4-Trichlorobenzene		
91-20-3	Naphthalene		
106-47-8	4-Chloroaniline		
87-68-3	Hexachlorobutadiene		
59-50-7	4-Chloro-3-Methylphenol		
91-57-6	2-Methylnaphthalene		
77-47-4	Hexachlorocyclopentadiene		
88-06-2	2,4,6-Trichlorophenol		
95-95-4	2,4,5-Trichlorophenol	2000 u	*
91-58-7	2-Chloronaphthalene	400 u	
88-74-4	2-Nitroaniline	2000 u	*
131-11-3	Dimethyl Phthalate	400 u	
208-96-8	Acenaphthylene	14 J	
99-09-2	3-Nitroaniline	2000 u	*

CAS Number		ug/l or ug/Kg (Circle One)	
83-32-9	Acenaphthene	110 J	
51-28-5	2,4-Dinitrophenol	2000 u	*
100-02-7	4-Nitrophenol	2000 u	*
132-64-9	Dibenzofuran	55 J	
121-14-2	2,4-Dinitrotoluene	400 u	
606-20-2	2,6-Dinitrotoluene		
84-66-2	Diethylphthalate	20 BJ	
7005-72-3	4-Chlorophenyl-phenylether	400 u	
86-73-7	Fluorene	140 J	
100-01-6	4-Nitroaniline	2000 u	*
534-52-1	4,6-Dinitro-2-Methylphenol	2000 u	*
86-30-6	N-Nitrosodiphenylamine (1)	400 u	
101-55-3	4-Bromophenyl-phenylether		
118-74-1	Hexachlorobenzene		
87-86-5	Pentachlorophenol	2000 u	*
85-01-8	Phenanthrene	2100	
120-12-7	Anthracene	420	
84-74-2	Di-n-Butylphthalate	2900 B	
206-44-0	Fluoranthene	1400	HRS DL= 400
129-00-0	Pyrene	3700	
85-68-7	Butylbenzylphthalate	400 u	
91-94-1	3,3'-Dichlorobenzidine	800 u	*
56-55-3	Benzo(a)Anthracene	1600	
117-81-7	bis(2-Ethylhexyl)Phthalate	140 BJ	
218-01-9	Chrysene	1600	
117-84-0	Di-n-Octyl Phthalate	400 u	HRS
205-99-2	Benzo(b)Fluoranthene	3500	coelute
207-08-9	Benzo(k)Fluoranthene		
50-32-8	Benzo(a)Pyrene	1800	
193-39-5	Indeno(1,2,3-cd)Pyrene	1400	J EGK*
53-70-3	Dibenzo(a,h)Anthracene	400 u	
191-24-2	Benzo(g,h,i)Perylene	1100	

(1)-Cannot be separated from diphenylamine

Form I 7/85

* data "J" due to initial calibration - high RSD

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN 550

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration (Low) Medium (Circle One)

Date Extracted/Prepared 10·5·87

Date Analyzed 10·22·87

Conc/Dil Factor 1

Percent Moisture (decanted) 17.5 %

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or (ug/Kg) (Circle One)
319-84-6	Alpha-BHC	9.7u
319-85-7	Beta-BHC	9.7u
319-86-8	Delta-BHC	9.7u
58-89-9	Gamma-BHC (Lindane)	9.7u
76-44-8	Heptachlor	9.7u
309-00-2	Aldrin	9.7u
1024-57-3	Heptachlor Epoxide	9.7u
959-98-8	Endosulfan I	9.7u
60-57-1	Dieldrin	19u
72-55-9	4,4'-DDE	19u
72-20-8	Endrin	19u
33213-65-9	Endosulfan II	19u
72-54-8	4,4'-DDD	19u
1031-07-8	Endosulfan Sulfate	19u
50-29-3	4,4'-DDT	19u
72-43-5	Methoxychlor	97u
53494-70-5	Endrin Ketone	19u
57-74-9	Chlordane	97u
8001-35-2	Toxaphene	190u
12674-11-2	Aroclor-1016	97u
11104-28-2	Aroclor-1221	97u
11141-16-5	Aroclor-1232	97u
53469-21-9	Aroclor-1242	97u
12672-29-6	Aroclor-1248	97u
11097-69-1	Aroclor-1254	190u
11096-82-5	Aroclor-1260	190u

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s — or W_s 25 g V_t 20,000 µl V_i 4.0 µl

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Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN 550

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 17851-53-5	1,2-Benzenedicarboxylic Acid Butyl 2-Ethylpropyl Ester	BNA	1306	200
2.	Unknown		1332	340
3. 10544-50-0	Sulfur		1412	610
4. 2360-37-6	Naphthalene, 1,8-Di-1-propynyl		1484	360
5. 243-42-5	Benzo [B] Naphtho [2,3-D] Furan		1508	200
6. 238-84-6	11H-Benzo[A] Fluorene		1548	250
7. 243-17-4	11H-Benzo[B] Fluorene		1560	230
8. 203-12-3	Benzo [GHI] Fluoranthene		1664	220
9. 195-19-7	Benzo [C] Phenanthrene		1722	220
10.	Unknown		1866	210
11. 205-82-3	Benzo [J] Fluoranthene		1907	310
12. 205-99-2	Benz [E] Acephenanthrylene		1933	1700
13. 18435-45-9	1-Nonadecene		1981	2800
14. 629-99-2	Pentacosane		2081	350
15.	Unknown		2093	900
16.	Unknown		2148	3400
17.	Unknown		2157	1300
18.	Unknown		2190	1600
19.	Unknown		2208	400
20.	Unknown		2221	340
21. 629-14-1	Ethane, 1,2-diethoxy	VOA	187	10
22. 109-66-0	Pentane		224	12
23. 110-54-3	Hexane		332	6
24. —	No Pesticides found	PEST	—	—
25.				
26.				
27.				
28.				
29.				
30.				

ecology and environment, inc.

111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

CRL Receipt Date 11/16/87 FIT Receipt Date 12/10/87 Review Completed 12/16/87

TO: Brien

FROM: Brenda R. Jones

SUBJECT: Municipal Landfill /Arlington Heights

PAN: IL C533 CASE # 8142

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
#	Low Soil	# 5	Low Soil
	Low Water		Low Water
	Drinking Water		Drinking Water
	Other		Other

Project Data Status _____ Completed!!

✓ Incomplete, awaiting: _____

FIT Data Review Findings:

Check Data Sheets for Transcription Errors

✓✓ Compounds were detected in sample(s); see enclosed sheet.

Book No. 7 Page No. 35 Date Sampled 10/1/87

26U:001

1 hour charged to above PAN week ending 12/19/87

ecology and environment, inc.
CHICAGO, ILLINOIS

CHEMICAL EVALUATION FORM

SITE NAME: Municipal Landfill/ Arlington Heights PAN# DATE: 12/16/87

CASE # 8142 UNITS- mg/kg REVIEWER: BRJ

TOX/ PERS	COMPOUND	CRDL	3-5xCRDL	MEP 767	768	769	770	772		
	ALUMINUM									
	ANTIMONY									
	ARSENIC	2		7.8	19	7.4	6.4	6.9		
	BARIUM									
	BERYLLIUM	1		0.2	.3	1.6	1.8	1.0		
	CADMIUM	1					1.3			
	CHROMIUM	2		45	12	21	30	12.3		
	COBALT	10		6.2	8.6	8.6	16.7	13		
	COPPER	5		25	43	38	30	35		
	LEAD	1		14	37	23	20	30		
	MERCURY									
	NICKEL	8		38	30	29	25	74		
	SELENIUM									
	SILVER									
	THALLIUM									
	TIN									
	VANADIUM	10		19	20	33	46	50		
	ZINC									
	CYANIDE									

Rec: 12/10/87
13 pages

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE 11.25.87

SUBJECT: Review of Region V CLP Data Received for Review on 11-16-87

FROM: Curtis Ross, Director (5SCRL) Central Regional Laboratory *Ada Lesin*

TO: Data User: FIT

We have reviewed the data for the following case(s).

SITE NAME: MUNICIPAL LANDFILL/ARLINGTON HEIGHTS SMO case No. 8142

EPA Data Set No. SF 4492 No. of Samples: 5 D.U./Activity Numbers Y905/C72100

CRL No. 88FB01591 - 595

SMO Traffic No. MEP767-770, 772

CLP Laboratory: CSMRI - ANALYTICA Hrs. Required for Review: 5

Following are our findings: The laboratory's portion of case #8142 consisted of 5 low conc. soil samples analyzed for metals and CN. The laboratory did not report any problems with the analysis.

ICP: Al RPD is 41%. Al data is estimated (J). Mg & Zn are flagged for high RPD values, but the RPD values are below the 35% limit for soils/sediments. Mg & Zn data are acceptable for use. V RPD of 22% is not flagged on Form I, however the data are acceptable.

GFAA: Sb spike %R is 0% and Sb data are < IDL. Sb data is unusable. Ag spike %R is 170% and Ag data are < IDL. Ag data are acceptable as spike %R calculated from incorrect sample result. Reviewer found 6.2 mg/kg sample result & 112% spike recovery. As data are acceptable

Hg: Hg data are within control limits.

(See page 2)

( ) Data are acceptable for use.
(><) Data are acceptable for use with qualifications noted above.
( ) Data are preliminary - pending verification by Contractor Laboratory.
( ) Data are unacceptable.

cc: Duane Geuder, Quality Assurance Officer, EPA Support Services
James Petty, Chief Quality Assurance Research, EMSL, Las Vegas

ecology and environment

EPA FORM 1320-6 (Rev. 5/87)

DATA QUALIFIERS

Contractor: CSMRI-ANALYTICA Case 8142

Below is a summary of the out of control audits and the possible effect on the data for this case:

CN: CN spike %R = 56%. Data is biased low and estimated (UJ). CN also run 4 days after holding time. For sample MEP 768 Duplicate % Solids are calculated from incorrect dry sample result. Reviewer found 2.93 g dry sample and 65% solids, which agrees closely with MEP768.

Reviewed by: Margaret Drake

Phone: 353-3088

Date: 11/25/87

U. S. EPA Contract Laboratory Program
Sample Management Office
P. O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS 8-557-2490

Document Control No. _____
Page 1 of 1
Date 11-14-87

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name CSMRI-Analytica, Inc.

Case No. 8142

SOW No. 785

Q. C. Report No. 3546

Sample Numbers

EPA No.	Lab ID No.	EPA No.	Lab ID No.
MEP 767			
MEP 768			
MEP 769			
MEP 770			
MEP 772			

RECEIVED
NOV 16 1987
U.S. EPA CENTRAL REGIONAL LAB

Comments: FIVE (5) LOW SOIL SAMPLES FOR AL METAL AND CYANIDE ANALYSES. Fe on Ag IEC OBSERVED & ECESSARY. IEC SHOWN ON RAW DATA AS FOLLOWS:
(0.000471) (Fe value > 21 ppm) + (uncor 4d Ag value) = Ag true value

Added Footnote: NA - Not Applicable

ICP interelement and background corrections applied? Yes X No _____.

If yes, corrections applied before X or after _____ generation of raw data.

Footnotes:

NR - Not required by contract at this time.

Form I:

Value - If the result is a value greater than or equal to the instrument detection limit but less than the contract-required detection limit, report the value in brackets (i.e. [10]). Indicate the analytical method used P (for ICP), A (for Flame AA) or F (for Furnace AA).
U - Indicates element was analyzed for but not detected. Report with the instrument detection limit value (e.g., 10U).
E - Indicates a value estimated or not reported due to the presence of interference. Explanatory note included on cover page.
S - Indicates value determined by Method of Standard Addition.
N - Indicates spike sample recovery is not within control limits.
* - Indicates duplicate analysis is not within control limits
+ - Indicates the correlation coefficient for method of standard addition is less than 0.995
M - Indicates duplicate injection results exceeded control limits.

Indicate method used: P for ICP; A for Flame AA, F for Furnace, and CV for Cold Vapor AA.

IFB Amend. One

Document Control No._____
Page 1 of 5

Form I

U. S. EPA Contract Laboratory Program
Sample Management Office
P. O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MEP 767

Date 11-14-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME CSMRI-Analytica, Inc.

CASE NO. 8142

SOW NO. 785

Lab Receipt Date 10-2-87

LAB SAMPLE ID. NO. 3546-MEP 767

QC REPORT NO. 3546

Elements Identified and Measured

Concentration: Low X Medium ____

Matrix: Water ____ Soil X Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	9120	* P	13.	Magnesium	47500	* P
2.	Antimony	15U ~~12U~~ MPC	N F	14.	Manganese	468	P
3.	Arsenic	7.8 ~~6.2~~ MPC	N F	15.	Mercury	0.12 U	CV
4.	Barium	[32] MPC	P	16.	Nickel	38	P
5.	Beryllium	[0.2]	P	17.	Potassium	2920	P
6.	Cadmium	1.2U ~~6.2U~~ MPC	P	18.	Selenium	1.2U	F
7.	Calcium	95000	P	19.	Silver	2.5U	N MPC ~~S~~ P
8.	Chromium	45	P	20.	Sodium	1290	P
9.	Cobalt	[6.2]	P	21.	Thallium	2.5U	F
10.	Copper	25	P	22.	Vanadium	19	P
11.	Iron	21500	P	23.	Zinc	115	* P
12.	Lead	14	F		Percent Solids (%)	~~80.8~~ MPC 80.0 MPC	

Cyanide 0.6U N

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: SAMPLE DESCRIPTION: SOIL, MEDIUM + FINE, BROWN, ROOTS

Lab Manager [signature]

Document Control No. _____
Page 2 of 5

Form I

U. S. EPA Contract Laboratory Program
Sample Management Office
P. O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MEP 768

Date 11-14-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME CSMRI-Analytica, Inc.
CASE NO. 8142
SOW NO. 785
Lab Receipt Date 10-2-87
LAB SAMPLE ID. NO. —
QC REPORT NO. 3546

Elements Identified and Measured

Concentration: Low X Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1. Aluminum	6670	*	P	13. Magnesium	54000	*	P
2. Antimony	19U ~~12U~~ NPC	N	F	14. Manganese	613		P
3. Arsenic	19 ~~12~~ NPC	N S	F	15. Mercury	0.16U		CV
4. Barium	[24]		P	16. Nickel	30		P
5. Beryllium	[0.3]		P	17. Potassium	2230		P
6. Cadmium	1.6U		P	18. Selenium	1.6U		F
7. Calcium	117000		P	19. Silver	3.2U	N	P
8. Chromium	12		P	20. Sodium	[502]		P
9. Cobalt	[8.6]		P	21. Thallium	3.2U		F
10. Copper	43		P	22. Vanadium	20		P
11. Iron	29700		P	23. Zinc	237	*	P
12. Lead	37 ~~22~~ NPC ~~20~~ NPC	S	F	Percent Solids (%)	63		

Cyanide 0.8U N

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: SAMPLE DESCRIPTION: SOIL, FINE, MEDIUM, ~~BROWN WITH ROOTS~~ NPC COARSE, DARK BROWN, WITH ROOTS

Lab Manager [signature]

IFB Amend. One

Document Control No._____
Page 3 of 5

Form I

U. S. EPA Contract Laboratory Program
Sample Management Office
P. O. Bos 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MEP -769

Date 11-14-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME CSMRI-Analytica, Inc.
CASE NO. 8142
SOW NO. 785
Lab Receipt Date 10-2-87
LAB SAMPLE ID. NO. 3546-MEP 769
QC REPORT NO. 3546

Elements Identified and Measured

Concentration: Low X Medium_____

Matrix: Water_____ Soil X Sludge_____ Other_____

ug/L or mg/kg dry weight (Circle One)

1. Aluminum	13700	*	P	13. Magnesium	31100	*	P
2. Antimony	~~17U~~ ~~12U~~ MPC	N	F	14. Manganese	474		P
3. Arsenic	7.4 ~~5.2~~ MPC	N	F	15. Mercury	0.14U		CV
4. Barium	[55]		P	16. Nickel	29		P
5. Beryllium	[0.6]		P	17. Potassium	3510		P
6. Cadmium	1.4U		P	18. Selenium	1.4U		F
7. Calcium	68000		P	19. Silver	2.9U	N	MPC P
8. Chromium	21		P	20. Sodium	423U		P
9. Cobalt	[8.6]		P	21. Thallium	2.9U		F
10. Copper	38		P	22. Vanadium	33		P
11. Iron	27600		P	23. Zinc	145	*	P
12. Lead	23 ~~16~~ MPC		F	Percent Solids (%)	70.4 MPC		

Cyanide 0.7 U N

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: SAMPLE DESCRIPTION: ~~SOIL, FINE, MEDIUM, COARSE, DARK~~ MPC ~~BROWN, WITH LEAVES~~ MPC ~~WITH ROOTS~~

SOIL, FINE, BROWN, WITH ROOTS

Lab Manager [signature]

IFB Amend. One

Document Control No.

Form I

U. S. EPA Contract Laboratory Program
Sample Management Office
P. O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MEP 770

Date 11-14-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME CSMRI-Analytica, Inc.

CASE NO. 8142

SOW NO. 785

Lab Receipt Date 10-2-87

LAB SAMPLE ID. NO. 3546-MEP 770

QC REPORT NO. 3546

Elements Identified and Measured

Concentration: Low X Medium

Matrix: Water Soil X Sludge Other

ug/L or mg/kg dry weight (Circle One)

1. Aluminum	19500	*	P	13. Magnesium	6590	*	P
2. Antimony	16U ~~12U~~ MRC	N	F	14. Manganese	397		P
3. Arsenic	6.4 ~~4.8~~ MRC	N	F	15. Mercury	0.13 U		CV
4. Barium	105		P	16. Nickel	25		P
5. Beryllium	[0.87]		P	17. Potassium	2590		P
6. Cadmium	1.3		P	18. Selenium	1.3U ~~1U~~ MRC		F
7. Calcium	10300		P	19. Silver	2.7U	N	MRC XP
8. Chromium	30		P	20. Sodium	395U		P
9. Cobalt	[6.77]		P	21. Thallium	~~2.7U~~		F
10. Copper	30		P	22. Vanadium	46		P
11. Iron	32000		P	23. Zinc	97	*	P
12. Lead	20 ~~15~~ MRC		F	Percent Solids (%)	~~74.9~~ MRC 75		

Cyanide 0.7U N

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: SAMPLE DESCRIPTION: SOIL, FINE, BLACK AND BROWN WITH ROOTS

Lab Manager

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Form I

U. S. EPA Contract Laboratory Program
Sample Management Office
P. O. Bos 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MEP 772

Date 11-14-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME CSMRI-Analytica, Inc.

CASE NO. 8142

SOW NO. 785

Lab Receipt Date 10-2-87

LAB SAMPLE ID. NO. 3546-MEP 772

QC REPORT NO. 3546

Elements Identified and Measured

Concentration: Low X Medium_____

Matrix: Water_____ Soil X Sludge_____ Other_____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	23900	* P	13.	Magnesium	15100	* P
2.	Antimony	15U ~~12U~~ MPC	N F	14.	Manganese	664	P
3.	Arsenic	6.9 ~~5.6~~ MPC	N F	15.	Mercury	0.12U	CV
4.	Barium	116	P	16.	Nickel	74	P
5.	Beryllium	[1.0]	P	17.	Potassium	5060	P
6.	Cadmium	1.2U	P	18.	Selenium	1.2U	F
7.	Calcium	22000	P	19.	Silver	2.5U	N MPC ~~P~~
8.	Chromium	123	P	20.	Sodium	1290	P
9.	Cobalt	13	P	21.	Thallium	2.5U	F
10.	Copper	35	P	22.	Vanadium	50	P
11.	Iron	28900	P	23.	Zinc	129	* P
12.	Lead	30 ~~24~~ MPC	S F		Percent Solids (%)	81.3 MPC	

Cyanide 0.6U N

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: SAMPLE DESCRIPTION: SOIL, FINE, DARK BROWN WITH ROOTS

Lab Manager [signature]

IFB Amend. One

Document Control No.
Page 1 of 1

FORM III

Q. C. Report No. 3546
BLANKS

LAB NAME CSMRI-Analytica, Inc. CASE NO. 8142

DATE 11-14-87 Units: µg/L

Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank[1] Matrix: LS (1)	Matrix: (2)
Metals:							
1. Aluminum	[142]	90U	[152]			[28]	
2. Antimony	60U	60U	60U			12U	
3. Arsenic	10U	10U	10U			2.0U ~~10U~~ MPC	
4. Barium	11U	11U	11U			2.2U	
5. Beryllium	1U	[1]	1U			0.2U	
6. Cadmium	~~[4]~~ MPC 5U	5U	5U			1.0U	
7. Calcium	147U	147U	147U			[31]	
8. Chromium	9U	[illegible]	9U			1.8U	
9. Cobalt	~~[12]~~ MPC 12U	[illegible]	12U			2.4U	
10. Copper	[24]	[illegible]	[22]			[4.8]	
11. Iron	8U	[illegible]	8U			[15]	
12. Lead	10U	10U	10U	10U	10U	1.0U ~~10U~~ MPC	
13. Magnesium	[168]	[175]	[289]			21U	
14. Manganese	3U	3U	3U			0.6U	
15. Mercury	0.2U	0.2U	~~0~~ MPC			0.1U	
16. Nickel	11U	11U	11U			2.2U	
17. Potassium	629U	629U	629U			126U	
18. Selenium	5U	5U	5U			1.0U	
19. Silver	10U	10U	10U			2.0U	
20. Sodium	1480U	1480U	1480U			296U	
21. Thallium	10U	10U	10			2U	
22. Vanadium	7U	7U ~~[7]~~ MPC	7U ~~[10]~~ MPC			1.4U	
23. Zinc	8U	8U	[8]			[2.2]	
~~24. Tin~~ MPC							
Other:							
Cyanide	10U	10U	10U			MPC 0.5U	

* Reporting Units: aqueous, ug/L; solid mg/kg

IFB Amend One.

Document Control No._____
Page 1 of 1

FORM V
Q. C. Report No. 3546
SPIKE SAMPLE RECOVERY

LAB NAME CSMRI-Analytica, Inc.

CASE NO. 8142

EPA Sample No. MEP 767

DATE 11-14-87

Lab Sample ID No. 3546-MEP 767

Units mg/Kg

Matrix Soil

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R(1)
Metals:					
1. Aluminum	75-125	7300	7300	NR	NR
2. Antimony	"	12U	12U	20	0 N
3. Arsenic	"	15	~~X2~~ 6 MT 11/24/87	8	38 N
4. Barium	"	428	[26]	400	100
5. Beryllium	"	11	[0.2]	10	108
6. Cadmium	"	10	1U ~~5U~~ MC	10	100
7. Calcium	"	74000	76000	NR	NR
8. Chromium	"	77	36	40	102
9. Cobalt	"	102	[5.0]	100	97
10. Copper	"	71	20	50	102
11. Iron	"	16600	17200	NR	NR
12. Lead	"	21	11	10	100
13. Magnesium	"	36200	38000	NR	NR
14. Manganese	"	470	374	100	96
15. Mercury	"	0.54	0.1U	0.5	108
16. Nickel	"	132	30	100	102
17. Potassium	"	2160	2340	NR	NR
18. Selenium	"	1.7	1U	2	85
19. Silver	"	17 ~~9~~ MC	2U	10	~~90~~ MC 170 N
20. Sodium	"	1010	1030	NR	NR
21. Thallium	"	7.6	2U	10	76
22. Vanadium	"	120	15	100	105
23. Zinc	"	200	92	100	108
Other:					
Cyanide	"	2.8	0.5U	~~50~~ MC	56 N

(1) %R = [(SSR - SR)/SA] x 100
"N" - Out of Control
"NR" - Not Required (by contract or due to initial sample amount > 4 X spike amount)

Document Control No._____
Page 1 of 1

Form VI
Q. C. Report No. 3546
DUPLICATES

LAB NAME CSMRI-Analytica, Inc.

CASE NO. ~~35~~ MPC 8142

EPA Sample NO. MEP 767

DATE 11-14-87

Lab Sample ID No. 3546-MEP 767

Units mg/kg

Matrix Soil

Compound	Control Limit	Samples(S)	Duplicate(D)	RPD(1)
Metals:				
1. Aluminum	± 20 RPD ~~40 mg/kg~~ MPC	7300	4840	41 *
2. Antimony	± 12 mg/kg	12U	12U	NC
3. Arsenic	± 2 mg/kg	6.2 ~~2U~~ MPC	7.6 ~~2U~~ MPC	~~NC~~ MPC 20
4. Barium	± 40 mg/kg	[26]	[17]	NC
5. Beryllium	± 1 mg/kg	[0.2]	[0.2]	NC
6. Cadmium	± 1 mg/kg	1U	1U	NC
7. Calcium	± 20 RPD ~~1000 mg/kg~~ MPC	76000	70400	7.7
8. Chromium	± 2 mg/kg	36	33	8.7
9. Cobalt	± 10 mg/kg	[5.0]	[5.0]	NC
10. Copper	± 5 mg/kg	20	24	18 ~~8.7~~ MPC
11. Iron	± 20 RPD ~~20 mg/kg~~ MPC	17200	16100	6.6
12. Lead	± 20 RPD ~~1 mg/kg~~ MPC	11	12	8.7
13. Magnesium	± 20 RPD ~~1000 mg/kg~~ MPC	38000	30200	23 *
14. Manganese	± 20 RPD ~~3 mg/kg~~ MPC	374	354	5.5
15. Mercury	± .1 mg/kg	0.1U	0.1U	NC
16. Nickel	± 8 mg/kg	30	29	3.4
17. Potassium	± 1000 mg/kg	2340	1670	33 ~~*~~ MPC
18. Selenium	± 1 mg/kg	1U	1U	NC
19. Silver	± 2 mg/kg	2U	2U	NC
20. Sodium	± 1000 mg/kg	1030	1010	2.0
21. Thallium	± 2 mg/kg	2U	2U	NC
22. Vanadium	± 10 mg/kg	11-24-87 ~~19~~ MPC 15	12	22 ~~45~~ MPC 11-24-87
23. Zinc	± 20 RPD ~~4 mg/kg~~ MPC	11-24-87 MPC ~~115~~ 92	69	29 ~~50~~ MPC 11-24-87 ~~*~~
Other:	± ~~mg/kg~~ MPC			
Cyanide	± 2 mg/kg	0.5U ~~NR~~ MPC	0.5U ~~NR~~ MPC	NC ~~NR~~ MPC

* Out of Control NC - Non calculable RPD due to value(s) less than CRDL

(1) RPD = [|S - D|/|(S + D)/2|] x 100

Document Control No. _____
Page 1 of 1

Form VII
Q. C. Report No. 3546
INSTRUMENT DETECTION LIMITS AND
LABORATORY CONTROL SAMPLE

LAB NAME CSNRI-Analytica, Inc. CASE NO. 8142 DATE 11-14-87
LCS NO. EPA-LV

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l ICP/AA ID# ICP-2.5	Instrument Detection Limits (IDL)-ug/l Furnace ID# Z5000	Lab Control Sample ug/L mg/kg (circle one) True	Found	%R
Metals:						
1. Aluminum	200	90		1980	1900	96
2. Antimony	60		2	~~1010~~ 1090	1110	102
3. Arsenic	10		1	49.4	56	113
4. Barium	200	11		1980	1930	97
5. Beryllium	5	1		481	528	110
6. Cadmium	5	5		489	500	102
7. Calcium	5000	1		49800	58400	117
8. Chromium	10			506	535	106
9. Cobalt	50	1		474	485	102
10. Copper	25	1		542	574	106
11. Iron	100			1990	2200	111
12. Lead	5		~~1~~ 2	97.9	84	86
13. Magnesium	5000	105		25000	23900	96
14. Manganese	15	3		513	547	107
15. Mercury	0.2		0.2 CV	NR	NR	NR
16. Nickel	40	11		496	504	107
17. Potassium	5000	629		50200	56500	113
18. Selenium	5		2	98.2	106	108
19. Silver	10	10		509	458	90
20. Sodium	5000	1480		50700	58300	115
21. Thallium	10		~~1~~ 2	97.3	84	86
22. Vanadium	50	7		511	535	105
23. Zinc	20	8		3100	3410	110
Other:						
Cyanide	10	NR	NR	400	364	91

NR - Not Required

ecology and environment, inc.

111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415

International Specialists in the Environment

CRL Receipt Date 11/16/87 FIT Receipt Date 12/10/87 Review Completed 12/16/87

TO: Breen

FROM: Brenda R. Jones

SUBJECT: Municipal Landfill /Arlington Heights

PAN: IL 0533 CASE # 8142

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
#	Low Soil	# 5	Low Soil
	Low Water		Low Water
	Drinking Water		Drinking Water
	Other		Other

Project Data Status _____ Completed!!

✓ Incomplete, awaiting: _____

FIT Data Review Findings:

Check Data Sheets for Transcription Errors

✓ Compounds were detected in sample(s); see enclosed sheet.

Book No. 7 Page No. 35 Date Sampled 10/1/87

26U:001

1 hour charged to above PAN week ending 12/19/87

recycled paper

ecology and environment, inc.
CHICAGO, ILLINOIS

CHEMICAL EVALUATION FORM

SITE NAME: Municipal Landfill/ Arlington Heights PAN#: DATE: 12/16/87

CASE #: 3142 UNITS: mg/kg REVIEWER: BRJ

TOX/ PERS	COMPOUND	CRDL	3-5xCRDL	MEP 767	768	769	770	772		
	ALUMINUM									
	ANTIMONY									
	ARSENIC	2		7.8	11	7.4	6.4	6.9		
	BARIUM									
	BERYLLIUM	1		0.2	.3	1.6	.8	1.0		
	CADMIUM	1					1.3			
	CHROMIUM	2		45	12	21	30	12.3		
	COBALT	10		6.2	8.6	8.6	16.7	13		
	COPPER	5		25	43	38	30	35		
	LEAD	1		14	37	23	20	30		
	MERCURY									
	NICKEL	8		38	30	29	25	74		
	SELENIUM									
	SILVER									
	THALLIUM									
	TIN									
	VANADIUM	10		19	20	33	46	50		
	ZINC									
	CYANIDE									

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

Rec: 12/10/87
13 pages

DATE: 11.25.87

SUBJECT: Review of Region V CLP Data
Received for Review on 11-16-87

FROM: Curtis Ross, Director (5SCRL)
Central Regional Laboratory
Ada Lesin

TO: Data User: FIT

We have reviewed the data for the following case(s).

SITE NAME: MUNICIPAL LANDFILL/ARLINGTON HEIGHTS SMO case No. 8142

EPA Data Set No. SF 4492 No. of Samples: 5 D.U./Activity Numbers Y905/C72100

CRL No. 88FB01591 - 595

SMO Traffic No. MEP767 - 770, 772

CLP Laboratory: CSMRI - ANALYTICA Hrs. Required for Review: 5

Following are our findings: The laboratory's portion of case #8142 consisted of 5 low conc. soil samples analyzed for metals and CN. The laboratory did not report any problems with the analysis.

ICP: Al RPD is 41%. Al data is estimated (J). Mg & Zn are flagged for high RPD values, but the RPD values are below the 35% limit for soils/sediments. Mg & Zn data are acceptable for use. V RPD of 22% is not flagged on Form I, however the data are acceptable.

GFAA: Sb spike %R is 0% and Sb data are < IDL. Sb data is unusable. Ag spike %R is 170% and Ag data are < IDL. Ag data are acceptable. As spike %R calculated from incorrect sample result. Reviewer found 6.2 mg/kg sample result & 112% spike recovery. As data are acceptable

Hg: Hg data are within control limits.

(See page 2)

( ) Data are acceptable for use.
(X) Data are acceptable for use with qualifications noted above.
( ) Data are preliminary - pending verification by Contractor Laboratory.
( ) Data are unacceptable.

cc: Duane Geuder, Quality Assurance Officer, EPA Support Services
James Petty, Chief Quality Assurance Research, EMSL, Las Vegas

EPA FORM 1320-6 (Rev. 5/87)

DATA QUALIFIERS

Contractor: CSMRI-ANALYTICAL Case 8142

Below is a summary of the out of control audits and the possible effect on the data for this case:

CN: CN spike %R = 56%. Data is biased low and estimated (UJ). CN also run 4 days after holding time. For sample MEP768 Duplicate, % Solids are calculated from incorrect dry sample result. Reviewer found 2.93 g dry sample and 65% solids, which agrees closely with MEP768.

Reviewed by: Margaret Dunlop

Phone: 353-3088

Date: 11/25/87

U. S. EPA Contract Laboratory Program
Sample Management Office
P. O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS 8-557-2490

Document Control No. _____
Page 1 of 1
Date 11-14-87

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name CSMRI-Analytica, Inc.

Case No. 8142

SOW No. 785

Q. C. Report No. 3546

Sample Numbers

EPA No.	Lab ID No.	EPA No.	Lab ID No.
MEP 767			
MEP 768			
MEP 769			
MEP 770			
MEP 772			

RECEIVED
NOV 16 1987
U.S. EPA CENTRAL REGIONAL LAB

Comments: FIVE (5) LOW SOIL SAMPLES FOR AL METAL AND CYANIDE ANALYSES. Fe on Ag IEC OBSERVED A ECESSARY. IEC SHOWN ON RAW DATA AS FOLLOWS:
(0.00047) (Fe value > 21 ppm) + (uncorrected Ag value) = Ag true value

Added Footnote: NA - Not Applicable

ICP interelement and background corrections applied? Yes X No _____.

If yes, corrections applied before X or after _____ generation of raw data.

Footnotes:

NR - Not required by contract at this time.

Form I:

Value - If the result is a value greater than or equal to the instrument detection limit but less than the contract-required detection limit, report the value in brackets (i.e. [10]). Indicate the analytical method used P (for ICP), A (for Flame AA) or F (for Furnace AA).
U - Indicates element was analyzed for but not detected. Report with the instrument detection limit value (e.g., 10U).
E - Indicates a value estimated or not reported due to the presence of interference. Explanatory note included on cover page.
S - Indicates value determined by Method of Standard Addition.
N - Indicates spike sample recovery is not within control limits.
* - Indicates duplicate analysis is not within control limits
+ - Indicates the correlation coefficient for method of standard addition is less than 0.995
M - Indicates duplicate injection results exceeded control limits.

Indicate method used: P for ICP; A for Flame AA, F for Furnace, and CV for Cold Vapor AA.

Document Control No._____

Page 1 of 5

Form I

U. S. EPA Contract Laboratory Program
Sample Management Office
P. O. Bos 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MEP 767

Date 11-14-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME CSMRI-Analytica, Inc.

CASE NO. 8142

SOW NO. 785

Lab Receipt Date 10-2-87

LAB SAMPLE ID. NO. 3546-MEP 767

QC REPORT NO. 3546

Elements Identified and Measured

Concentration: Low X Medium_____

Matrix: Water_____ Soil X Sludge_____ Other_____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	9120	* P	13.	Magnesium	47500	* P
2.	Antimony	15U ~~12U~~ MPC	N F	14.	Manganese	468	P
3.	Arsenic	7.8 ~~6.2~~ MPC	N F	15.	Mercury	0.12 U	CV
4.	Barium	[33] MPC	P	16.	Nickel	38	P
5.	Beryllium	[0.2]	P	17.	Potassium	2920	P
6.	Cadmium	1.2U ~~6.2U~~ MPC	P	18.	Selenium	12U	F
7.	Calcium	95000	P	19.	Silver	2.5U	N MPC P
8.	Chromium	45	P	20.	Sodium	1290	P
9.	Cobalt	[6.2]	P	21.	Thallium	2.5U	F
10.	Copper	25	P	22.	Vanadium	19	P
11.	Iron	21500	P	23.	Zinc	115	* P
12.	Lead	14	F		Percent Solids (%)	~~80.8~~ MPC 80.0 MPC	

Cyanide 0.6U N

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: SAMPLE DESCRIPTION: SOIL, MEDIUM + FINE, BROWN, ROOTS

Lab Manager [signature]

IFB Amend. One

Document Control No. _____

Page 2 of 5

Form I

U. S. EPA Contract Laboratory Program
Sample Management Office
P. O. Bos 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MEP 768

Date 11-14-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME CSMRI-Analytica, Inc.

CASE NO. 8142

SOW NO. 785

Lab Receipt Date 10-2-87

LAB SAMPLE ID. NO. —

QC REPORT NO. 3546

Elements Identified and Measured

Concentration: Low X Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	6670	* P	13.	Magnesium	54000	* P
2.	Antimony	19U ~~12U~~ NPC	N F	14.	Manganese	613	P
3.	Arsenic	19 ~~12~~ NPC	N S F	15.	Mercury	0.16U	CV
4.	Barium	[24]	P	16.	Nickel	30	P
5.	Beryllium	[0.3]	P	17.	Potassium	2230	P
6.	Cadmium	1.6U	P	18.	Selenium	1.6U	F
7.	Calcium	117000	P	19.	Silver	3.2U	N P
8.	Chromium	12	P	20.	Sodium	[502]	P
9.	Cobalt	[8.6]	P	21.	Thallium	3.2U	F
10.	Copper	43	P	22.	Vanadium	20	P
11.	Iron	29700	P	23.	Zinc	237	* P
12.	Lead	37 ~~22~~ NPC ~~20~~ NPC	S F		Percent Solids (%)	63	

Cyanide 0.8U N

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: SAMPLE DESCRIPTION: SOIL, FINE, MEDIUM, ~~BROWN WITH ROOTS~~ NPC COARSE, DARK BROWN, WITH ROOTS

Lab Manager [signature]

IFB Amend. One

Document Control No._____
Page 3 of 5

Form I

U. S. EPA Contract Laboratory Program
Sample Management Office
P. O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MEP -769

Date 11-14-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME CSMRI-Analytica, Inc.
CASE NO. 8142
SOW NO. 785
Lab Receipt Date 10-2-87
LAB SAMPLE ID. NO. 3546-MEP 769
QC REPORT NO. 3546

Elements Identified and Measured

Concentration: Low X Medium_____

Matrix: Water_____ Soil X Sludge_____ Other_____

ug/L or mg/kg dry weight (Circle One)

1. Aluminum	13700	*	P	13. Magnesium	31100	*	P
2. Antimony	17U ~~17U~~ MPC	N	F	14. Manganese	474		P
3. Arsenic	7.4 ~~5.2~~ MPC	N	F	15. Mercury	0.14U		CV
4. Barium	[55]		P	16. Nickel	29		P
5. Beryllium	[0.6]		P	17. Potassium	3510		P
6. Cadmium	1.4U		P	18. Selenium	1.4U		F
7. Calcium	68000		P	19. Silver	2.9U	N	MPC P
8. Chromium	21		P	20. Sodium	423U		P
9. Cobalt	[8.6]		P	21. Thallium	2.9U		F
10. Copper	38		P	22. Vanadium	33		P
11. Iron	27600		P	23. Zinc	145	*	P
12. Lead	23 ~~16~~ MPC		F	Percent Solids (%)	70.4 MPC		

Cyanide 0.7 U N

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: SAMPLE DESCRIPTION: ~~SOIL, FINE, MEDIUM, COARSE, DARK~~ MPC ~~BROWN, WITH LEAVES~~ MPC ~~WITH ROOTS~~

SOIL, FINE, BROWN, WITH ROOTS

Lab Manager [signature]

IFB Amend. One

Document Control No._____

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Form I

U. S. EPA Contract Laboratory Program
Sample Management Office
P. O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MEP 770

Date 11-14-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME CSMRI-Analytica, Inc.

CASE NO. 8142

SOW NO. 785

Lab Receipt Date 10-2-87

LAB SAMPLE ID. NO. 3546-MEP 770

QC REPORT NO. 3546

Elements Identified and Measured

Concentration: Low X Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1. Aluminum	19500	*	P	13. Magnesium	6590	*	P
2. Antimony	16U ~~12U~~ MPC	N	F	14. Manganese	397		P
3. Arsenic	6.4 ~~4.8~~ MPC	N	F	15. Mercury	0.13 U		CV
4. Barium	105		P	16. Nickel	25		P
5. Beryllium	[0.87]		P	17. Potassium	2590		P
6. Cadmium	1.3		P	18. Selenium	1.3U ~~1U~~ MPC		F
7. Calcium	10300		P	19. Silver	2.7U	N	MPC P
8. Chromium	30		P	20. Sodium	395U		P
9. Cobalt	[6.77]		P	21. Thallium	2.7U		F
10. Copper	30		P	22. Vanadium	46		P
11. Iron	32000		P	23. Zinc	97	*	P
12. Lead	20 ~~15~~ MPC		F	Percent Solids (%)	~~74.9~~ MPC 75		

Cyanide 0.7U N

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: SAMPLE DESCRIPTION: SOIL, FINE, BLACK AND BROWN WITH ROOTS

Lab Manager [signature]

IFB Amend. One

Document Control No._____

Form I

U. S. EPA Contract Laboratory Program
Sample Management Office
P. O. Bos 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MEP 772

Date 11-14-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME CSMRI-Analytica, Inc.

CASE NO. 8142

SOW NO. 785

Lab Receipt Date 10-2-87

LAB SAMPLE ID. NO. 3546-MEP 772

QC REPORT NO. 3546

Elements Identified and Measured

Concentration: Low X Medium ____

Matrix: Water ____ Soil X Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1. Aluminum	23900	*	P	13. Magnesium	15100	*	P
2. Antimony	15U ~~12U~~ MPC	N	F	14. Manganese	664		P
3. Arsenic	6.9 ~~5.6~~ MPC	N	F	15. Mercury	0.12U		CV
4. Barium	116		P	16. Nickel	74		P
5. Beryllium	[1.0]		P	17. Potassium	5060		P
6. Cadmium	1.2U		P	18. Selenium	1.7U		F
7. Calcium	22000		P	19. Silver	2.5U	N	MPC ~~F~~ P
8. Chromium	123		P	20. Sodium	1290		P
9. Cobalt	13		P	21. Thallium	2.5U		F
10. Copper	35		P	22. Vanadium	50		P
11. Iron	28900		P	23. Zinc	129	*	P
12. Lead	30 ~~24~~ MPC	S	F	Percent Solids (%)	81.3 MPC		

Cyanide 0.6U N

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: SAMPLE DESCRIPTION: SOIL, FINE, DARK BROWN WITH ROOTS

Lab Manager [signature]

IFB Amend. One

Document Control No. _____
Page 1 of 1

FORM III

Q. C. Report No. 3546
BLANKS

LAB NAME CSMRI-Analytica, Inc. CASE NO. 8142

DATE 11-N-87 Units: µg/L

Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank Matrix: LS (1)	Matrix: (2)
Metals:							
1. Aluminum	[142]	90U	[152]			[28]	
2. Antimony	60U	60U	60U			12U	
3. Arsenic	10U	10U	10U			2.0U ~~10U~~ MPC	
4. Barium	11U	11U	11U			2.2U	
5. Beryllium	1U	[1]	1U			0.2U	
6. Cadmium	~~[4]~~ MPC 5U	5U	5U			1.0U	
7. Calcium	147U	7U	147U			[31]	
8. Chromium	9U	U	9U			1.8U	
9. Cobalt	~~[12]~~ MPC 12U	U	12U			2.4U	
10. Copper	[24]	[ ]	[22]			[4.8]	
11. Iron	8U	U	8U			[15]	
12. Lead	10U	10U	10U	10U	10U	1.0U ~~10U~~ MPC	
13. Magnesium	[168]	[175]	[289]			21U	
14. Manganese	3U	3U	3U			0.6U	
15. Mercury	0.2U	0.2U	~~0~~ MPC			0.1U	
16. Nickel	11U	11U	11U			2.2U	
17. Potassium	629U	629U	629U			126U	
18. Selenium	5U	5U	5U			1.0U	
19. Silver	10U	10U	10U			2.0U	
20. Sodium	1480U	1480U	1480U			296U	
21. Thallium	10U	10U	10			2U	
22. Vanadium	7U	7U ~~[7]~~ MPC	7U ~~[10]~~ MPC			1.4U	
23. Zinc	8U	8U	[8]			[2.2]	
~~24. Tin~~ MPC							
Other:							
Cyanide	10U	10U	10U			MPC 0.5U	

[1] Reporting Units: aqueous, ug/L; solid mg/kg

IFB Amend One.

Document Control No._____
Page 1 of 1

FORM V
Q. C. Report No. 3546
SPIKE SAMPLE RECOVERY

LAB NAME CSMRI-Analytica, Inc.

CASE NO. 8142

EPA Sample No. MEP 767

DATE 11-14-87

Lab Sample ID No. 3546-MEP 767

Units mg/Kg

Matrix Soil

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R(1)
Metals:					
1. Aluminum	75-125	7300	7300	NR	NR
2. Antimony	"	12U	12U	20	0 N
3. Arsenic	"	15	~~12~~ 6 MT	11/24/87 8	38 N
4. Barium	"	428	[26]	400	100
5. Beryllium	"	11	[0.2]	10	108
6. Cadmium	"	10	1U ~~5U~~ MC	10	100
7. Calcium	"	74000	76000	NR	NR
8. Chromium	"	77	36	40	102
9. Cobalt	"	102	[5.0]	100	97
10. Copper	"	71	20	50	102
11. Iron	"	16600	17200	NR	NR
12. Lead	"	21	11	10	100
13. Magnesium	"	36200	38000	NR	NR
14. Manganese	"	470	374	100	96
15. Mercury	"	0.54	0.1U	0.5	108
16. Nickel	"	132	30	100	102
17. Potassium	"	2160	2340	NR	NR
18. Selenium	"	1.7	1U	2	85
19. Silver	"	17 ~~9~~ MC	2U	10	~~90~~ MC 170 N
20. Sodium	"	1010	1030	NR	NR
21. Thallium	"	7.6	2U	10	76
22. Vanadium	"	120	15	100	105
23. Zinc	"	200	92	100	108
Other:					
Cyanide	"	2.8	0.5U	~~50~~ MC	56 N

(1) %R = [(SSR - SR)/SA] x 100
"N" - Out of Control
"NR" - Not Required (by contract or due to initial sample amount > 4 X spike amount)
Comments:_____

Document Control No._____
Page 1 of 7

Form VI
Q. C. Report No. 3546
DUPLICATES

LAB NAME CSMRI-Analytica, Inc.

CASE NO. ~~35~~ MPC 8142

EPA Sample NO. MEP 767

DATE 11-14-87

Lab Sample ID No. 3546-MEP 767

Units mg/kg

Matrix Soil

Compound	Control Limit	Samples(S)	Duplicate(D)	RPD(1)
Metals:				
1. Aluminum	± 20 RPD ~~40 mg/kg~~ MPC	7300	4840	41 *
2. Antimony	± 12 mg/kg	12U	12U	NC
3. Arsenic	± 2 mg/kg	6.2 ~~2U~~ MPC	7.6 ~~2U~~ MPC	~~NC~~ MPC 20
4. Barium	± 40 mg/kg	[26]	[17]	NC
5. Beryllium	± 1 mg/kg	[0.2]	[0.2]	NC
6. Cadmium	± 1 mg/kg	1U	1U	NC
7. Calcium	± 20 RPD ~~1000 mg/kg~~ MPC	76000	70400	7.7
8. Chromium	± 2 mg/kg	36	33	8.7
9. Cobalt	± 10 mg/kg	[5.0]	[5.0]	NC
10. Copper	± 5 mg/kg	20	24	18 ~~8.7~~ MPC
11. Iron	± 20 RPD ~~20 mg/kg~~ MPC	17200	16100	6.6
12. Lead	± 20 RPD ~~1 mg/kg~~ MPC	11	12	8.7
13. Magnesium	± 20 RPD ~~1000 mg/kg~~ MPC	38000	30200	23 *
14. Manganese	± 20 RPD ~~3 mg/kg~~ MPC	374	354	5.5
15. Mercury	± .1 mg/kg	0.1U	0.1U	NC
16. Nickel	± 8 mg/kg	30	29	3.4
17. Potassium	± 1000 mg/kg	2340	1670	33 ~~*~~ MPC
18. Selenium	± 1 mg/kg	1U	1U	NC
19. Silver	± 2 mg/kg	2U	2U	NC
20. Sodium	± 1000 mg/kg	1030	1010	2.0
21. Thallium	± 2 mg/kg	2U	2U	NC
22. Vanadium	± 10 mg/kg	11-24-87 ~~19~~ MPC 15	12	22 ~~45~~ MPC 11-24-87
23. Zinc	± 20 RPD ~~4 mg/kg~~ MPC	11-24-87 MPC ~~115~~ 92	69	29 ~~50~~ MPC 11-24-87 *
Other:	± ~~mg/kg~~ MPC			
Cyanide	± 2 mg/kg	0.5U ~~NR~~ MPC	0.5U ~~NR~~ MPC	NC ~~NR~~ MPC

* Out of Control NC - Non calculable RPD due to value(s) less than CRDL

(1) RPD = [|S - D|/|(S + D)/2|] x 100

Document Control No. _____
Page 1 of 1

Form VII
Q. C. Report No. 3546
INSTRUMENT DETECTION LIMITS AND
LABORATORY CONTROL SAMPLE

LAB NAME CSMRI-Analytica, Inc. CASE NO. 8142 DATE 11-14-87
LCS NO. EPA-LV

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l ICP/AA ID# ICP-2.5	Instrument Detection Limits (IDL)-ug/l Furnace ID# 25000	Lab Control Sample ug/L mg/kg (Circle one) True	Found	%R
Metals:						
1. Aluminum	200	90		1980	1900	96
2. Antimony	60		2	1090 ~~1010~~	1110	102
3. Arsenic	10		1	49.4	56	113
4. Barium	200	11		1980	1930	97
5. Beryllium	5	1		481	528	110
6. Cadmium	5	5		489	500	102
7. Calcium	5000	1		49800	58400	117
8. Chromium	10			506	535	106
9. Cobalt	50	1		474	485	102
10. Copper	25	1		542	574	106
11. Iron	100			1990	2200	111
12. Lead	5		~~1~~ 2	97.9	84	86
13. Magnesium	5000	105		25000	23900	96
14. Manganese	15	3		513	547	107
15. Mercury	0.2		0.2 CV	NR	NR	NR
16. Nickel	40	11		496	504	107
17. Potassium	5000	629		50200	56500	113
18. Selenium	5		2	98.2	106	108
19. Silver	10	10		509	458	90
20. Sodium	5000	1480		50700	58300	115
21. Thallium	10		~~1~~ 2	97.3	84	86
22. Vanadium	50	7		511	535	105
23. Zinc	20	8		3100	3410	110
Other:						
Cyanide	10	NR	NR	400	364	91

NR - Not Required

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

CRL Receipt Date 11-12-87 FIT Receipt Date 12-16-87 Review Completed 12-21-87

TO: Gerard Breen

FROM: Jim Mertes

SUBJECT: Municipal Landfill/Arlington Heights

PAN: IL 0533 CASE # 8142

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
# 5	Low Soil	#	Low Soil
	Low Water		Low Water
	Drinking Water		Drinking Water
	Other		Other

Project Data Status X Completed!!

_____ Incomplete, awaiting: _____

FIT Data Review Findings:

- HRS useable hits in sample EN550
- TIC's in all samples

Check Data Sheets for Transcription Errors

X Compounds were detected in sample(s); see enclosed sheet.

Book No. 7 Page No. 33 Date Sampled 10-1-87

26U:001

Jim. changed to above PAN Q
week ending 12-26-87
J.M.

recycled paper

Rec'd 12/16/87
41 pages

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 12/14/87

SUBJECT: Review of Region V CLP Data
Received for Review on 11-12-87

FROM: Curtis Ross, Director (5SCRL) Patrick J. Chenelle for
Central Regional Laboratory

TO: Data User: FIT

We have reviewed the data for the following case(s).

SITE NAME: Municipal Landfill/ Arlington Heights SMO case No. 8142

EPA Data Set No. SF4492 No. of Samples: 5 D.U./Activity Numbers Y905/C72100

CRL No. 88FB01S91 - S95

SMO Traffic No. EN545 - 548, 550

CLP Laboratory: Hazleton Hrs. Required for Review: 5

PAN #: IL0533

Following are our findings:

Tina Hold-Kaufman 12/11/87

( ) Data are acceptable for use.
(X) Data are acceptable for use with qualifications noted above.
( ) Data are preliminary - pending verification by Contractor Laboratory.
( ) Data are unacceptable.

cc: Duane Geuder, Quality Assurance Officer, EPA Support Services
James Petty, Chief Quality Assurance Rese arch, EMSL, Las Vegas

EPA FORM 1320-6 (Rev. 5/87)

Municipal Landfill/Arlington-Heights

This case consists of ~~four~~ five soil samples for which full organic analysis was requested. The laboratory reported no problem with these samples.

A. Holding Times - Acceptable

B. Surrogates - Acceptable
Volatiles 4 out of 36; outside QC limits
Pesticides 1 out of 8; outside QC limits

C. MS/MSD - Acceptable
Recovery
Acid 2 out of 10; outside QC limits

D. Method Blank - Acceptable
Common lab artifacts including:
Methylene Chloride
Acetone
Toluene
Diethylphthalate
Di-n-butylphthalate
Other compounds detected include.
Trichloroethene
N-nitrosodiphenylamine
TICs

E. Calibration - Acceptable
Some compounds are outside specification with respect to RF, %RSD and/or %D. These compounds are so noted on the calibration outlier form.

F. Tuning - Acceptable

G. Pesticides - Acceptable
Linearity - Acceptable
DBC - Acceptable
DDT retention time greater than 12 minutes acceptable

ZOK 12/11/87

USER INFORMATION SHEET

Municipal Landfill/Arlington Heights
PAN # IL0533

Sample	TCL Compounds	TIC Compounds
EN545	See attached listing for compounds detected	VOA - 2 TICs SV - 20 TICs
EN545RE	See attched listing for compounds detected	
EN546	See attached listing for compounds detected	VOA - 2 TICs SV - 20 TICs
EN547	See attached listing for comopounds detected	VOA - 1 TIC SV - 10 TICs
EN548	See attached listing for compounds detected	VOAs- None SVs - 19 TICs
EN550	See attached listing for comopounds detected	VOAs- 3 TICs SVs - 20 TICS

PAHs (polyaromatic Hydrocarbons) detected above and below the CRDL Chloroform detected in all samples. Indeno (1,2,3-cd) pyrene detected in EN550; samples is J'd (estimated) due to its failure to meet QC standard calibration criteria.

ZGK 12/11/87

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS # 8142 CONTRACTOR Hanford

Instrument #	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	9/24			10/06 1043			10/07 1319								
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane															
Bromomethane															
Vinyl Chloride															
Chloroethane					26	J									
Methylene Chloride															
Acetone															
Carbon Disulfide		41	J												
1,1-Dichloroethane															
1,1-Dichloroethene															
Trans-1,2-Dichloroethene															
Chloroform															
2-Butanone															
1,2-Dichloroethane															
1,1,1-Trichloroethane															
Carbon Tetrachloride															
Vinyl Acetate															
Bromodichloromethane															
1,2-Dichloropropane															
Trans-1,3-Dichloropropene															
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane															
Benzene															
cis-1,3-Dichloropropene															
2-Chloroethylvinylether															
Bromoform															
4-Methyl-2-Pentanone															
2-Hexanone															
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
m-Xylene															
o/p-Xylene															

AFFECTED SAMPLES:

EN 545	EN 550
546	545 RE
547	548 MS
548	548 MSD
	548 MSD

all samples

Reviewer's Initials/Date: ZoK 12/7/87

* These flags should be applied to the analytes on the sample data sheets.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

CASE/SAS # 8142 CONTRACTOR Hayleton

Instrument # FINN50	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	10/26			10/27 844			10/27 2103								
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Phenol															
bis(-2-Chloroethyl)Ether															
2-Chlorophenol															
1,3-Dichlorobenzene															
1,4-Dichlorobenzene															
Benzyl Alcohol								33	J						
1,2-Dichlorobenzene															
2-Methylphenol															
bis(2-Chloroisopropyl)Ether															
4-Methylphenol															
N-Nitroso-Di-n-Propylamine															
Hexachloroethane															
Nitrobenzene															
Isophorone					29	J									
2-Nitrophenol															
2,4-Dimethylphenol															
Benzoic Acid															
bis(2-Chloroethoxy)Methane															
2,4-Dichlorophenol															
1,2,4-Trichlorobenzene															
Naphthalene															
4-Chloroaniline					190	J		130	J						
Hexachlorobutadiene															
4-Chloro-3-Methylphenol															
2-Methylnaphthalene															
Hexachlorocyclopentadiene															
2,4,6-Trichlorophenol															
2,4,5-Trichlorophenol															
2-Chloronaphthalene															
2-Nitroaniline								95	J						
Dimethyl Phthalate															
Acenaphthylene								27	J						
3-Nitroaniline								48	J						
Acenaphthene															
2,4-Dinitrophenol															
4-Nitrophenol															
Dibenzofuran															

AFFECTED SAMPLES:

	EN 550	EN 545 MSD
	EN 545	EN 546
	EN 545 MS	
all samples	EN 546	
	EN 547	

Reviewer Initials/Date: ZGK 12/7/87

* These flags should be applied to the analytes on the sample data sheets.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
Page 2

CASE/SAS # 8142 CONTRACTOR Harfaxon

Instrument #	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	10/26			10/27			10/27								
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
2,4-Dinitrotoluene					40	J									
2,6-Dinitrotoluene															
Diethylphthalate															
4-Chlorophenyl-phenylether															
Fluorene															
4-Nitroaniline					66	J		65	J						
4,6-Dinitro-2-Methylphenol															
N-Nitrosodiphenylamine															
4-Bromophenyl-phenylether															
Hexachlorobenzene															
Pentachlorophenol															
Phenanthrene															
Anthracene															
Di-n-Butylphthalate															
Fluoranthene															
Pyrene															
Butylbenzylphthalate															
Benzo(a)Anthracene															
bis(2-Ethylhexyl)Phthalate															
Chrysene															
Di-n-Octyl Phthalate															
Benzo(b)Fluoranthene															
Benzo(k)Fluoranthene															
Benzo(a)Pyrene															
Indeno(1,2,3-cd)Pyrene		37	J												
Dibenz(a,h)Anthracene															
Benzo(g,h,i) Perylene															

SEE PAGE 1 FOR AFFECTED SAMPLES.

* These flags should be applied to the analytes on the sample data sheets.

Reviewer's Initials/Date: ZCK 12/7/87

Case: _____

Contractor: Hazleton

TENTATIVELY IDENTIFIED COMPOUNDS
WATCH ASSESSMENT

NOTE: Reviewer should note directly on Organic Analysis Data Sheet (OADS) those matches that in his opinion (based on contract criteria) are unreasonable.

CRITERIA

(1) Relative intensities of major ions (>10%) reference spectrum should be present in the sample spectrum.

(2) Relative intensities of major ions in sample spectrum should agree to within ± 20% of reference spectrum intensities.

(3) Molecular ions present in reference spectrum should be present in sample spectrum.

(4) Ions present in sample spectrum, but not in reference spectrum should be reviewed for possible background contamination or presence of coeluting interferences.

(5) Ions present in reference spectrum, but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or coeluting interferences.

(5) If, in the reviewer's opinion, no valid identification can be made the compound should be labelled as "unknown" and the initials and date of the reviewer placed on the OADS.

Reviewer's Initials/Date: ZGK 12/7/87

8142 COMPOUND	SAMPLE DET. LIMIT	EN545	FN546	547	548	550		8/9
chloromethane								
bromomethane								
vinyl chloride								
chloroethane								
methylene chloride								
acetone								
carbon disulfide								
1,1-dichloroethene								
1,1-dichloroethane								
trans-1,2,-dichloroethene								
chloroform		5	3J	4J	4J	3J		
1,2-dichloroethane								
2-butanone								
1,1,1-trichloroethane								
carbon tetrachloride								
vinyl acetate								
bromodichloromethane								
1,1,2,2-tetrachloroethane								
1,2-dichloropropane								
trans-1,3-dichloropropene								
trichloroethene								
dibromochloromethane								
1,1,2-trichloroethane								
benzene								
cis-1,3-dichloropropene								
2-chloroethylvinylether								
bromoform								
2-hexanone								
4-methyl-2-pentanone								
tetrachloroethene								
toluene			2JB	1JB				
chlorobenzene								
ethylbenzene								
styrene								
total xylenes								
N-nitrosodimethylamine								
phenol								
aniline								
bis(2-chloroethyl)ether								
2-chlorophenol								
1,3-dichlorobenzene								
1,4-dichlorobenzene								
benzyl alcohol								
1,2-dichlorobenzene								
2-methylphenol								
bis(2-chloroisopropyl)ether								
4-methylphenol								
N-nitroso-di-n-propylamine								
hexachloroethane								
nitrobenzene								
isophrone								
2-nitrophenol								
2,4-dimethylphenol								
benzoic acid		80J						
bis(2-chloroethoxy)methane								
2,4-dichlorophenol								
1,2,4-trichlorobenzene								
napthalene								
4-chloroaniline								
hexachlorobutadiene								
4-chloro-3-methylphenol								
2-methylnapthalene								
hexachlorocyclopentadiene								
2,4,6-trichlorophenol								
2,4,5-trichlorophenol								
2-chloronaphthalene								

	3142 COMPOUND	SAMPLE	DET. LIMIT	EN545	546	547	548	550
V	dimethyl phthalate							
	acenaphthylene							14J
	3-nitroaniline							
	acenaphthene							110J
	2,4-dinitrophenol							
	4-nitrophenol							55J
	dibenzofuran							
	2,4-dinitrotoluene							
S	2,6-dinitrotoluene							
	diethylphthalate							
	4-chlorophenyl-phenylether							
V	fluorene							140J
	4-nitroaniline							
	4,6-dinitro-2-methylphenol							
	N-nitrosodiphenylamine							
	4-bromophenyl-phenylether							
	hexachlorobenzene							
	pentachlorophenol							
	phenanthrene			56J	63J			2500
	anthracene							420
	di-n-butylphthalate							
	fluoranthene			110J	100J		13J	4400
	benzidine							
	pyrene			83J	75J	4J	13J	3100
	butylbenzylphthalate							
	3,3'-dichlorobenzidine							
	benzo(a)anthracene							1600
	bis(2-ethylhexyl)phthalate							
	chrysene				50J			1600
	di-n-octylphthalate							
	benzo(b&k)fluoranthene			75J	62J			3500
	benzo(a)pyrene							1500
	indeno(1,2,3-cd)pyrene							140J
	dibenzo(a,h)anthracene							
	benzo(g,h,i)perylene							100
	alpha-BHC							
	beta-BHC							
	delta-BHC							
	gamma-BHC(lindane)							
P	heptachlor							
	aldrin							
E	heptachlor epoxide							
	endosulfan I							
S	dieldrin							
T	4,4'-DDE							
	endrin							
	endosulfan II							
	4,4'-DDD							
	endrin aldehyde							
	endosulfan sulfate							
	4,4'-DDT							
	methoxychlor							
	endrin ketone							
	chlordane							
	toxaphene							
P	Aroclor-1016							
	Aroclor-1221							
C	Aroclor-1232							
B	Aroclor-1242							
	Aroclor-1248							
	Aroclor-1254							
	Aroclor-1260							

HAZLETON LABORATORIES AMERICA, INC.
3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WI 53707 • (608) 241-4471 • TLX 703956 HAZRAL MDS UD

November 9, 1987

RECEIVED
NOV 10 1987
U.S. EPA REGION V

Sample Management Office
Viar and Company
209 Madison Street
Alexandria VA 22314

Enclosed is the data package for Case No. 8142. Under this case number, we received a total of five soil samples on October 2, 1987 from Region V. All samples were analyzed and reported according to the protocols provided under our Contract No. 68-01-7146 bid lot #1.

Please note the following summary comments relating to the contractual quality control in this case:

- GC-MS Tuning. All tuning requirements for both BFB and DFTPP for samples analyzed in this case were within contract criteria.

- Instrumental Calibrations. All instrumental calibrat ons for all fractions analyzed were within contract criteria for both initial and continuing calibrations.

- Method Blanks. All method blanks for the volatile, semivolatile, and pesticide fractions were found to be within contract criteria with the exception of the semi-volatile method blank, which contained di-n-butylphthalate in excess of 5 times the CRDL (2400 ug/kg). We are investigating the source of that contamination.

- Surrogate Recoveries. All calculated surrogate recoveries for the volatile, semivolatile and pesticide fractions were found to be within contract criteria with the following exceptions:

  Volatile fraction: Samples EN 545 and EN548MSD produced out of control surrogate recoveries for Toluene-d8 and were re-analyzed. The re-analysis of both EN545 and EN548MSD resulted in high, out of control recoveries for Toluene-d8. In the case of EN548MSD, it should be noted that between the unspiked and spiked aliquots, the Toluene-d8

recoveries were all very close to the upper QC limit, either being marginally in or marginally out. The reanalysis of both EN545 and EN548MSD are considered billable.

Pesticide fraction: The dibutylchlorendate recovery in sample EN548, reported at 159%, was above the upper advisory limit of 150%.

- Pesticide Confirmation Analysis. GC confirmation analysis of samples in this case was performed using a DB-608 Megabore Capillary Column. Please note that a 1.5% DBC shift criteria has been established by Joan Fisk when using Megabore capillary columns.

- Sample EN550 Pesticide Analysis. Technical chlordane in sample EN 550 was reported as less than the detection limit, based on the absence of a technical chlordane pattern and the failure of both the alpha and gamma chlordane isomers to be confirmed as present. It should be noted that gamma chlordane was indeed quantitated and confirmed to be present at approximately 25 ug/kg.

If you have any questions regarding this case or need any further clarifications, please feel free to call.

Sincerely,

David C. Hills

David C. Hills
Manager, Environmental Analysis

DCH/sc

cc: Region V
USEPA EMSL-LV
Central File

INSTRUMENT DETECTION LIMITS

FINN 5100A

Organics Analysis Data Sheet
(Page 1)

HAZLETON LABORATORIES AMERICA

Volatile Compounds

CAS Number		ug/l
74-87-3	Chloromethane	6
74-83-9	Bromomethane	6
75-01-4	Vinyl Chloride	5
75-00-3	Chloroethane	5
75-09-2	Methylene Chloride	5
67-64-1	Acetone	6
75-15-0	Carbon Disulfide	3
75-35-4	1, 1-Dichloroethene	2
75-34-3	1, 1-Dichloroethane	2
156-60-5	Trans-1, 2-Dichloroethene	2
67-66-3	Chloroform	2
107-06-2	1, 2-Dichloroethane	2
78-93-3	2-Butanone	8
71-55-6	1, 1, 1-Trichloroethane	2
56-23-5	Carbon Tetrachloride	2
108-05-4	Vinyl Acetate	3
75-27-4	Bromodichloromethane	3

CAS Number		ug/l
78-87-5	1, 2-Dichloropropane	2
10061-02-6	Trans-1, 3-Dichloropropene	3
79-01-6	Trichloroethene	3
124-48-1	Dibromochloromethane	3
79-00-5	1, 1, 2-Trichloroethane	2
71-43-2	Benzene	3
10061-01-5	cis-1, 3-Dichloropropene	3
110-75-8	2-Chloroethylvinylether	2
75-25-2	Bromoform	2
108-10-1	4-Methyl-2-Pentanone	2
591-78-6	2-Hexanone	2
127-18-4	Tetrachloroethene	5
79-34-5	1, 1, 2, 2-Tetrachloroethane	5
108-88-3	Toluene	5
108-90-7	Chlorobenzene	3
100-41-4	Ethylbenzene	5
100-42-5	Styrene	3
	Total Xylenes	2

INSTRUMENT DETECTION
LIMITS

FINN 51 B

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

HAZLETON LABORATORIES AMERICA

CAS Number		ug/L
108-95-2	Phenol	4
111-44-4	bis(-2-Chloroethyl)Ether	2
95-57-8	2-Chlorophenol	2
541-73-1	1,3-Dichlorobenzene	6
106-46-7	1,4-Dichlorobenzene	2
100-51-6	Benzyl Alcohol	5
95-50-1	1,2-Dichlorobenzene	4
95-48-7	2-Methylphenol	3
39638-32-9	bis(2-chloroisopropyl)Ether	4
106-44-5	4-Methylphenol	4
621-64-7	N-Nitroso-Di-n-Propylamine	2
67-72-1	Hexachloroethane	1
98-95-3	Nitrobenzene	2
78-59-1	Isophorone	3
88-75-5	2-Nitrophenol	5
105-67-9	2,4-Dimethylphenol	3
65-85-0	Benzoic Acid	5
111-91-1	bis(-2-Chloroethoxy)Methane	1
120-83-2	2,4-Dichlorophenol	3
120-82-1	1,2,4-Trichlorobenzene	2
91-20-3	Naphthalene	1
106-47-8	4-Chloroaniline	4
87-68-3	Hexachlorobutadiene	1
59-50-7	4-Chloro-3-Methylphenol	6
91-57-6	2-Methylnaphthalene	3
77-47-4	Hexachlorocyclopentadiene	10
88-06-2	2,4,6-Trichlorophenol	13
95-95-4	2,4,5-Trichlorophenol	13
91-58-7	2-Chloronaphthalene	10
88-74-4	2-Nitroaniline	9
131-11-3	Dimethyl Phthalate	10
208-96-8	Acenaphthylene	10
99-09-2	3-Nitroaniline	6

CAS Number		ug/L
83-32-9	Acenaphthene	11
51-28-5	2,4-Dinitrophenol	11
100-02-7	4-Nitrophenol	4
132-64-9	Dibenzofuran	10
121-14-2	2,4-Dinitrotoluene	8
606-20-2	2,6-Dinitrotoluene	9
84-66-2	Diethylphthalate	7
7005-72-3	4-Chlorophenyl-phenylether	9
86-73-7	Fluorene	10
100-01-6	4-Nitroaniline	8
534-52-1	4,6-Dinitro-2-Methylphenol	5
86-30-6	N-Nitrosodiphenylamine (1)	7
101-55-3	4-Bromophenyl-phenylether	6
118-74-1	Hexachlorobenzene	4
87-86-5	Pentachlorophenol	3
85-01-8	Phenanthrene	4
120-12-7	Anthracene	2
84-74-2	Di-n-Butylphthalate	3
206-44-0	Fluoranthene	5
129-00-0	Pyrene	8
85-68-7	Butylbenzylphthalate	4
91-94-1	3,3'-Dichlorobenzidine	1
56-55-3	Benzo(a)Anthracene	3
117-81-7	bis(2-Ethylhexyl)Phthalate	3
218-01-9	Chrysene	5
117-84-0	Di-n-Octyl Phthalate	14
205-99-2	Benzo(b)Fluoranthene	10
207-08-9	Benzo(k)Fluoranthene	17
50-32-8	Benzo(a)Pyrene	7
193-39-5	Indeno(1,2,3-cd)Pyrene	14
53-70-3	Dibenzo(a,h)Anthracene	16
191-24-2	Benzo(g,h,i)Perylene	12

(1)-Cannot be separated from diphenylamine

Hazleton Laboratories America

Instrument Detection Limits
HP 5779
1.5% SP 2250
1.95% SP 2401

ORGANICS ANALYSIS
DATA SHEET
Pesticide/PCBs

CAS Number	Compound	µg/mL	H_2O µg/L	Soil µg/kg
319-84-6	Alpha-BHC	0.00086	0.0086	0.57
319-85-7	Beta-BHC	0.00049	0.0049	0.33
319-86-8	Delta-BHC	0.00042	0.0042	0.28
56-89-9	Gamma-BHC (lindane)	0.0062	0.062	4.1
76-44-8	Heptachlor	0.00049	0.0049	0.33
309-00-2	Aldrin	0.00042	0.0042	0.28
1024-57-3	Heptachlor Epoxide	0.00028	0.0028	0.19
959-98-8	Endosulfan I	0.00042	0.0042	0.28
60-57-1	Dieldrin	0.00042	0.0042	0.28
72-55-9	4-4-DDE	0.00028	0.0028	0.19
72-20-8	Endrin	0.0030	0.030	2.0
33213-65-9	Endosulfan II	0.0021	0.021	1.4
72-54-8	4-4-DDD	0.00057	0.0057	0.38
1031-07-8	Endosulfan Sulfate	0.0011	0.011	0.73
50-29-3	4-4-DDT	0.00014	0.0014	0.93
72-43-5	Methoxychlor	0.031	0.31	21
53494-70-6	Endrin Ketone	0.00085	0.0085	0.57
57-74-9	Chlordane	0.0085	0.085	5.7
8001-35-2	Toxaphene	0.0049	0.049	3.3
12674-11-2	Aroclor-1016	0.0085	0.085	5.7
11104-28-2	Aroclor-1221	0.025	0.25	17
11141-16-5	Aroclor-1232	0.025	0.25	17
53469-21-9	Aroclor-1242	0.025	0.25	17
12672-29-6	Aroclor-1248	0.025	0.25	17
11097-69-1	Aroclor-1254	0.025	0.25	17
11096-82-5	Aroclor-1260	0.025	0.25	17

H_2O: (10 x µg/mL) reflects on 100 x concentration factor for waters per CLP protocol.

Soil: $\left(\frac{1,000}{1.5} \times \mu g/mL\right)$ reflects on normal concentration factor for soils per CLP protocol.

Date Analyzed: 03/14/86

(0361b/lma)

Hazletor Laboratories America

Instrument Detection Limits
HP 10802
DB608

ORGANICS ANALYSIS
DATA SHEET
Pesticide/PCBs

CAS Number	Compound	µg/mL	H_2O µg/L	Soil µg/kg
319-84-6	Alpha-BHC	0.0015	0.015	1.0
319-85-7	Beta-BHC	0.0011	0.011	0.73
319-86-8	Delta-BHC	0.0016	0.016	1.10
56-89-9	Gamma-BHC (lindane)	0.0020	0.020	1.3
76-44-8	Heptachlor	0.0017	0.017	1.1
309-00-2	Aldrin	0.0020	0.020	1.3
1024-57-3	Heptachlor Epoxide	0.0006	0.006	0.40
959-98-8	Endosulfan I	0.0008	0.008	0.53
60-57-1	Dieldrin	0.0023	0.023	1.5
72-55-9	4-4-DDE	0.0020	0.020	1.3
72-20-8	Endrin	0.0028	0.028	1.9
33213-65-9	Endosulfan II	0.0030	0.030	2.0
72-54-8	4-4-DDE	0.0025	0.025	1.7
1031-07-8	Endosulfan Sulfate	0.0030	0.030	2.0
50-29-3	4-4-DDT	0.0018	0.018	1.2
72-43-5	Methoxychlor	0.0048	0.048	3.2
53494-70-6	Endrin Ketone	0.0080	0.080	5.3
57-74-9	Chlordane	0.035	0.35	23
8001-35-2	Toxaphene	0.039	0.39	26
12674-11-2	Aroclor-1016	0.035	0.35	23
11104-28-2	Aroclor-1221	0.002	0.02	1.3
11141-16-5	Aroclor-1232	0.015	0.15	10
53469-21-9	Aroclor-1242	0.025	0.25	17
12672-29-6	Aroclor-1248	0.012	0.12	8
11097-69-1	Aroclor-1254	0.005	0.05	3.3
11096-82-5	Aroclor-1260	0.014	0.14	9.3

H_2O: (10 x µg/mL) reflects on 100 x concentration factor for waters per CLP protocol.

Soil: $\left(\frac{1,000}{1.5} \times \mu g/mL\right)$ reflects on normal concentration factor for soils per CLP protocol.

Date Analyzed: 04/21/87

(0361b/lma)

SOIL SURROGATE PERCENT RECOVERY SUMMARY

Case No. 8142 Contract Laboratory HAZLETON LABORATORIES Contract No. 68-01 7146

Low X Medium ____

	VOLATILE			SEMI-VOLATILE								PESTICIDE
SMO TRAFFIC NO.	TOLUENE-D8 (81-117)	BFB (74-121)	1,2 DICHLORO-ETHANE-D4 (70-121)	NITRO-BENZENE-D5 (23-120)	2-FLUORO-BIPHENYL (30-115)	TERPHENYL-D14 (18-137)			PHENOL-D5 (24-113)	2-FLUORO-PHENOL (25-121)	2,4,6 TRIBROMO-PHENOL (19-122)	DIBUTYL-CHLORENDATE ** (20-150)
EN545	119*	79	91	58	67	93			54	54	72	95
EN545RE	124*	81	97	NA	NA	NA			NA	NA	NA	NA
EN545MS	NA	NA	NA	60	71	98			56	53	75	106
EN545MSD	NA	NA	NA	61	66	103			52	56	77	116
EN546	116	78	85	55	66	98			46	50	77	107
EN547	117	77	83	69	75	109			53	59	60	112
EN548	113	77	81	41	46	98			27	33	62	159*
EN548MS	117	81	99	NA	NA	NA			NA	NA	NA	NA
EN548MSD	118*	80	99	NA	NA	NA			NA	NA	NA	NA
RE EN548MSD	119*	78	98	NA	NA	NA			NA	NA	NA	NA
EN550	116	83	98	44	66	94			47	46	67	87
M.BIK-1	91	89	88	69	75	136			58	67	58	121
M.BIK-2	102	101	96	NA	NA	NA			NA	NA	NA	NA
H.BIK	100	95	99	NA	NA	NA			NA	NA	NA	NA
	4											
		0	0	0	0							

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

**ADVISORY LIMITS ONLY

Volatiles: 4 out of 36 ; outside of QC limits

Semi-Volatiles: 0 out of 48 ; outside of QC limits

Pesticides: 1 out of 8 ; outside of QC limits

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Comments: NA = NOT APPLICABLE

FORM II

SOIL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Case No. 8142 Contractor HAZLETON LABORATORIES Contract No. 68-01-7146

Low Level X Medium Level

FRACTION	COMPOUND	CONC. SPIKE ADDED (ug/Kg)	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	RPD	QC LIMITS* RPD	QC LIMITS* RECOVERY
VOA SMO SAMPLE NO. EN548	1,1-Dichloroethene	66	0	55	83	54	82	1	22	59-172
	Trichloroethene		0	64	97	64	97	0	24	62-137
	Chlorobenzene		0	68	103	68	103	0	21	60-133
	Toluene		3	75	109	74	108	1	21	59-139
	Benzene		0	61	92	61	92	0	21	66-142
B/N SMO SAMPLE NO. EN545	1,2,4-Trichlorobenzene	2050	0	1430	70	1400	68	3	23	38-107
	Acenaphthene	2050	0	1280	62	1230	60	3	19	31-137
	2,4 Dinitrotoluene	2050	0	1340	65	1390	68	5	47	28-89
	Pyrene	2050	83	2110	99	1650	76	23	36	35-142
	N-Nitrosodi-n-Propylamine	2050	0	1090	53	1190	58	9	38	41-126
	1,4-Dichlorobenzene	2050	0	1020	50	940	46	8	27	28-104
ACID SMO SAMPLE NO. EN545	Pentachlorophenol	4100	0	2420	59	2350	57	3	47	17-109
	Phenol	4100	0	2060	50	2010	49	2	35	26-90
	2-Chlorophenol	4100	0	8	0.2*	9	0.2*	0	50	25-102
	4-Chloro-3-Methylphenol	4100	0	2850	70	2500	61	13	33	26-103
	4-Nitrophenol	4100	0	2930	71	3600	88	24	50	11-114
PEST SMO SAMPLE NO. EN545	Lindane	16.4	0	9.14	56	9.88	60	7.8	50	46-127
	Heptachlor	16.4	0	12.6	77	14.1	86	11	31	35-130
	Aldrin	16.4	0.63	8.77	50	8.90	50	1.5	43	34-132
	Dieldrin	41.0	1.68	30.0	69	34.8	81	15	38	31-134
	Endrin	41.0	0	37.5	91	45.4	111	19	45	42-139
	4,4'-DDT	41.0	0	35.3	86	39.5	96	11	50	23-134

*ASTERISKED VALUES ARE OUTSIDE QC LIMITS.

RPD: VOAs 0 out of 5 ; outside QC limits
B/N 0 out of 6 ; outside QC limits
ACID 0 out of 5 ; outside QC limits
PEST 0 out of 6 ; outside QC limits

RECOVERY: VOAs 0 out of 10 ; outside QC limits
B/N 1 out of 12 ; outside QC limits
ACID 2 out of 10 ; outside QC limits
PEST 0 out of 12 ; outside QC limits

Comments:

FORM III

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METHOD BLANK SUMMARY

Case No. 8142 Region 5 Contractor HAZLETON LABORATORIES Contract No. 68-01-7146

FILE ID	DATE OF ANALYSIS	FRACTION	MATRIX	CONC. LEVEL	INST. ID	CAS NUMBER	COMPOUND (HSL, TIC OR UNKNOWN)	CONC.	UNITS	CRQL
1087V43	10/06/87	VOA	soil	L	5100A	75-09-2	Methylene Chloride	2 J	µg/kg	5
						67-64-1	Acetone	10		10
						108-88-3	Toluene	1 J		5
1087V49	10/07/87	VOA	soil	L	5100A	75-09-2	Methylene Chloride	4 J	µg/kg	5
						67-64-1	Acetone	18		10
						79-01-6	Trichloroethene	1 J		5
						108-88-3	Toluene	2 J		5
BAN405	10/26/87	BNA	SOIL	L	FINN 5/B	84-66-2	Diethylphthalate	14	mg/kg	330
						86-30-6	N-Nitrosodiphenylamine	85		330
						84-74-2	Di-N-Butylphthalate	2400		330
						117-81-7	Bis(2-Ethylhexyl) Phthalate	22		330
						3970-62-5	3-pentanol, 2,2-Dimethyl	160		—
						57-15-8	2-propanol, 1,1,1,1-Trichloro-2methyl	320		—
						17851-53-5	1,2 Benzenedicarboxylic Acid, Butyl 1,2 methylpropyl ester	210		—
3692	10/21/87	PEST	SOIL	L	5779	—	None found	—	—	—

Comments:

Sample Number
EN545

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: HAZLETON LABORATORIES
Case No: 8142
Lab Sample ID No: 71000455
QC Report No:
Sample Matrix: Soil
Contract No: 68-01-7146
Data Release Authorized By:
Date Sample Received: 10/02/87

Volatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 10/06/87
Date Analyzed: 10/06/87
Conc/Dil Factor: 1 pH 8.3
Percent Moisture: (Not Decanted) 18.4 CF = 1.23

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	12 U
74-83-9	Bromomethane	12 U
75-01-4	Vinyl Chloride	12 U
75-00-3	Chloroethane	12 U
75-09-2	Methylene Chloride	13 B
67-64-1	Acetone	36 B
75-15-0	Carbon Disulfide	6 U
75-35-4	1, 1-Dichloroethene	6 U
75-34-3	1, 1-Dichloroethane	6 U
156-60-5	Trans-1, 2-Dichloroethene	6 U
67-66-3	Chloroform	5
107-06-2	1, 2-Dichloroethane	6 U
78-93-3	2-Butanone	12 U
71-55-6	1, 1, 1-Trichloroethane	6 U
56-23-5	Carbon Tetrachloride	6 U
108-05-4	Vinyl Acetate	12 U
75-27-4	Bromodichloromethane	6 U

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1, 2-Dichloropropane	6 U
10061-02-6	Trans-1, 3-Dichloropropene	6 U
79-01-6	Trichloroethene	6 U
124-48-1	Dibromochloromethane	6 U
79-00-5	1, 1, 2-Trichloroethane	6 U
71-43-2	Benzene	6 U
10061-01-5	cis-1, 3-Dichloropropene	6 U
110-75-8	2-Chloroethylvinylether	12 U
75-25-2	Bromoform	6 U
108-10-1	4-Methyl-2-Pentanone	12 U
591-78-6	2-Hexanone	12 U
127-18-4	Tetrachloroethene	6 U
79-34-5	1, 1, 2, 2-Tetrachloroethane	6 U
108-88-3	Toluene	3 J B
108-90-7	Chlorobenzene	6 U
100-41-4	Ethylbenzene	6 U
100-42-5	Styrene	6 U
	Total Xylenes	6 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However the definition of each flag must be explicit

Value If the result is a value greater than or equal to the detection limit, report the value

U Indicates compound was analyzed for but not detected Report the minimum detection limit for the sample with the U (e g 10U) based on necessary concentration/dilution action (This is not necessarily the instrument detection limit) The footnote should read U-Compound was analyzed for but not detected The number is the minimum attainable detection limit for the sample

J Indicates an estimated value This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e g , 10J) If limit of detection is 10 µg l and a concentration of 3 µg/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC MS Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC MS

B This flag is used when the analyte is found in the blank as well as a sample It indicates possible/probable blank contamination and warns the data user to take appropriate action

Other Other specific flags and footnotes may be required to properly define the results If used, they must be fully described and such description attached to the data summary report

Laboratory Name: HAZLETON LABORATORIES

Case No: 8142

Sample Number
EN 545

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 10/5/87

Date Analyzed: 10/27/87

Conc/Dil Factor: 1

Percent Moisture (Decanted) 18.4

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)	
108-95-2	Phenol	410 u	
111-44-4	bis(2-Chloroethyl)Ether		
95-57-8	2-Chlorophenol		
541-73-1	1,3-Dichlorobenzene		
106-46-7	1,4-Dichlorobenzene		
100-51-6	Benzyl Alcohol		
95-50-1	1,2-Dichlorobenzene		
95-48-7	2-Methylphenol		
39638-32-9	bis(2-chloroisopropyl)Ether		
106-44-5	4-Methylphenol		
621-64-7	N-Nitroso-Di-n-Propylamine		
67-72-1	Hexachloroethane		
98-95-3	Nitrobenzene		
78-59-1	Isophorone		
88-75-5	2-Nitrophenol		
105-67-9	2,4-Dimethylphenol	✓	
65-85-0	Benzoic Acid	80 J	•
111-91-1	bis(2-Chloroethoxy)Methane	410 u	
120-83-2	2,4-Dichlorophenol		
120-82-1	1,2,4-Trichlorobenzene		
91-20-3	Naphthalene		
106-47-8	4-Chloroaniline		
87-68-3	Hexachlorobutadiene		
59-50-7	4-Chloro-3-Methylphenol		
91-57-6	2-Methylnaphthalene		
77-47-4	Hexachlorocyclopentadiene		
88-06-2	2,4,6-Trichlorophenol	✓	
95-95-4	2,4,5-Trichlorophenol	2000 u	•
91-58-7	2-Chloronaphthalene	410 u	
88-74-4	2-Nitroaniline	2000 u	•
131-11-3	Dimethyl Phthalate	410 u	
208-96-8	Acenaphthylene	✓	
99-09-2	3-Nitroaniline	2000 u	•

CAS Number		ug/l or ug/Kg (Circle One)	
83-32-9	Acenaphthene	410 u	
51-28-5	2,4-Dinitrophenol	2000 u	•
100-02-7	4-Nitrophenol	2000 u	•
132-64-9	Dibenzofuran	410 u	
121-14-2	2,4-Dinitrotoluene		
606-20-2	2,6-Dinitrotoluene	✓	
84-66-2	Diethylphthalate	27 BJ	
7005-72-3	4-Chlorophenyl-phenylether	410 u	
86-73-7	Fluorene	✓	
100-01-6	4-Nitroaniline	2000 u	•
534-52-1	4,6-Dinitro-2-Methylphenol	2000 u	•
86-30-6	N-Nitrosodiphenylamine (1)	410 u	
101-55-3	4-Bromophenyl-phenylether		
118-74-1	Hexachlorobenzene	✓	
87-86-5	Pentachlorophenol	2000 u	•
85-01-8	Phenanthrene	56 J	
120-12-7	Anthracene	410 u	
84-74-2	Di-n-Butylphthalate	2600 B	
206-44-0	Fluoranthene	410 J	
129-00-0	Pyrene	83 J	
85-68-7	Butylbenzylphthalate	410 u	
91-94-1	3,3'-Dichlorobenzidine	820 u	•
56-55-3	Benzo(a)Anthracene	410 u	
117-81-7	bis(2-Ethylhexyl)Phthalate	64 BJ	
218-01-9	Chrysene	43 J	
117-84-0	Di-n-Octyl Phthalate	410 u	
205-99-2	Benzo(b)Fluoranthene	75 J	Coelute
207-08-9	Benzo(k)Fluoranthene		
50-32-8	Benzo(a)Pyrene	410 u	
193-39-5	Indeno(1,2,3-cd)Pyrene		
53-70-3	Dibenzo(a,h)Anthracene		
191-24-2	Benzo(g,h,i)Perylene	✓	

(1)-Cannot be separated from diphenylamine

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN 545

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration (Low) Medium (Circle One)

Date Extracted/Prepared: 10·5·87

Date Analyzed 10·22·87

Conc/Dil Factor 1

Percent Moisture (decanted) 18.4%

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or (ug/Kg) (Circle One)
319-84-6	Alpha-BHC	9.8u
319-85-7	Beta-BHC	9.8u
319-86-8	Delta-BHC	9.8u
58-89-9	Gamma-BHC (Lindane)	9.8u
76-44-8	Heptachlor	9.8u
309-00-2	Aldrin	9.8u
1024-57-3	Heptachlor Epoxide	9.8u
959-98-8	Endosulfan I	9.8u
60-57-1	Dieldrin	20u
72-55-9	4, 4'-DDE	20u
72-20-8	Endrin	20u
33213-65-9	Endosulfan II	20u
72-54-8	4, 4'-DDD	20u
1031-07-8	Endosulfan Sulfate	20u
50-29-3	4, 4'-DDT	20u
72-43-5	Methoxychlor	98u
53494-70-5	Endrin Ketone	20u
57-74-9	Chlordane	98u
8001-35-2	Toxaphene	200u
12674-11-2	Aroclor-1016	98u
11104-28-2	Aroclor-1221	98u
11141-16-5	Aroclor-1232	98u
53469-21-9	Aroclor-1242	98u
12672-29-6	Aroclor-1248	98u
11097-69-1	Aroclor-1254	200u
11096-82-5	Aroclor-1260	200u

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s — or W_s 24g V_t 20,000ul V_i 4.0ul

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN548

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ~~ug/kg~~)
1. 57-15-8	2-Propanol; 1,1,1-Trichloro-2-Methyl	BNA	356	340
2.	Unknown		474	330
3. 17301-32-5	Undecane, 4,7-Dimethyl		893	240
4. 13287-21-3	Tridecane 6-Methyl		1173	320
5. 54105-67-8	Heptadecane, 2,6-Dimethyl		1178	500
6. 74764-11-7	Benzenamine, N-(Phenyl-2-Pyridinylmethylene)-, Tricarbonyl		1256	220
7. 629-92-5	Nonadecane		1264	290
8. 27554-57-5	1,2-Benzenedicarboxylic Acid, Butyl 2-Methylpropyl Ester		1307	310
9.	Unknown		1336	200
10. 10544-50-0	Sulfur		1417	4300
11. 81432-89-5	Decanedioic Acid, Didecyl Ester		1749	430
12. 630-02-4	Octacosane		1867	280
13.	Unknown		1977	260
14.	Unknown		1982	210
15.	Unknown		2092	250
16.	Unknown		2112	290
17.	Unknown		2143	370
18.	Unknown		2158	230
19.	Unknown		2186	1700
20.	Unknown	↓	2208	230
21. 109-66-0	Pentane	VOA	225	29
22. 110-54-3	Hexane	↓	332	7
23. —	No Pesticides found	PEST	—	—
24.				
25.				
26.				
27.				
28.				
29.				
30.				

Sample Number
EN545 RE

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: HAZLETON LABORATORIES

Case No: 8142

Lab Sample ID No: 71000455

QC Report No:

Sample Matrix: Soil

Contract No: 68-01-7146

Data Release Authorized By: David C. Gyll

Date Sample Received: 10/02/87

Volatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 10/07/87

Date Analyzed: 10/07/87

Conc/Dil Factor: 1 pH 8.3

Percent Moisture: (Not Decanted) 18.4 CF=1.23

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	12U
74-83-9	Bromomethane	12U
75-01-4	Vinyl Chloride	12U
75-00-3	Chloroethane	12U
75-09-2	Methylene Chloride	11 B
67-64-1	Acetone	22 B
75-15-0	Carbon Disulfide	6U
75-35-4	1, 1-Dichloroethene	6U
75-34-3	1, 1-Dichloroethane	6U
156-60-5	Trans-1, 2-Dichloroethene	6U
67-66-3	Chloroform	2J
107-06-2	1, 2-Dichloroethane	6U
78-93-3	2-Butanone	12U
71-55-6	1, 1, 1-Trichloroethane	6U
56-23-5	Carbon Tetrachloride	6U
108-05-4	Vinyl Acetate	12U
75-27-4	Bromodichloromethane	6U

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1, 2-Dichloropropane	6U
10061-02-6	Trans-1, 3-Dichloropropene	6U
79-01-6	Trichloroethene	6U
124-48-1	Dibromochloromethane	6U
79-00-5	1, 1, 2-Trichloroethane	6U
71-43-2	Benzene	6U
10061-01-5	cis-1, 3-Dichloropropene	6U
110-75-8	2-Chloroethylvinylether	12U
75-25-2	Bromoform	6U
108-10-1	4-Methyl-2-Pentanone	12U
591-78-6	2-Hexanone	12U
127-18-4	Tetrachloroethene	6U
79-34-5	1, 1, 2, 2-Tetrachloroethane	6U
108-88-3	Toluene	3J B
108-90-7	Chlorobenzene	6U
100-41-4	Ethylbenzene	6U
100-42-5	Styrene	6U
	Total Xylenes	6U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 µg/l and a concentration of 3 µg/l is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN 545 RE

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	No volatiles found	VOA		
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.				

Sample Number
EN 546

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: HAZLETON LABORATORIES

Case No: 8142

Lab Sample ID No: 71000456

QC Report No:

Sample Matrix: Soil

Contract No: 68-01-7146

Data Release Authorized By: David C Gilb

Date Sample Received: 10/02/87

Volatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 10/06/87

Date Analyzed: 10/06/87

Conc/Dil Factor: 1 pH 8.2

Percent Moisture: (Not Decanted) 25.5 C.F. = 1.34

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	13u
74-83-9	Bromomethane	13u
75-01-4	Vinyl Chloride	13u
75-00-3	Chloroethane	13u
75-09-2	Methylene Chloride	9 B
67-64-1	Acetone	40 B
75-15-0	Carbon Disulfide	7u
75-35-4	1, 1-Dichloroethene	7u
75-34-3	1, 1-Dichloroethane	7u
156-60-5	Trans-1, 2-Dichloroethene	7u
67-66-3	Chloroform	3J
107-06-2	1, 2-Dichloroethane	7u
78-93-3	2-Butanone	13u
71-55-6	1, 1, 1-Trichloroethane	7u
56-23-5	Carbon Tetrachloride	7u
108-05-4	Vinyl Acetate	13u
75-27-4	Bromodichloromethane	7u

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1, 2-Dichloropropane	7u
10061-02-6	Trans-1, 3-Dichloropropene	7u
79-01-6	Trichloroethene	7u
124-48-1	Dibromochloromethane	7u
79-00-5	1, 1, 2-Trichloroethane	7u
71-43-2	Benzene	7u
10061-01-5	cis-1, 3-Dichloropropene	7u
110-75-8	2-Chloroethylvinylether	13u
75-25-2	Bromoform	7u
108-10-1	4-Methyl-2-Pentanone	13u
591-78-6	2-Hexanone	13u
127-18-4	Tetrachloroethene	7u
79-34-5	1, 1, 2, 2-Tetrachloroethane	7u
108-88-3	Toluene	2J B
108-90-7	Chlorobenzene	7u
100-41-4	Ethylbenzene	7u
100-42-5	Styrene	7u
	Total Xylenes	7u

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g., 10J). If limit of detection is 10 µg/l and a concentration of 3 µg/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report

Laboratory Name: HAZLETON LABORATORIES

Case No: 8142

Sample Number
EN 546

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 10/5/87

Date Analyzed: 10/27/87

Conc/Dil Factor: 1

Percent Moisture (Decanted): 25.5

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)	
108-95-2	Phenol	450 u	
111-44-4	bis(2-Chloroethyl)Ether		
95-57-8	2-Chlorophenol		
541-73-1	1,3-Dichlorobenzene		
106-46-7	1,4-Dichlorobenzene		
100-51-6	Benzyl Alcohol		
95-50-1	1,2-Dichlorobenzene		
95-48-7	2-Methylphenol		
39638-32-9	bis(2-chloroisopropyl)Ether		
106-44-5	4-Methylphenol		
621-64-7	N-Nitroso-Di-n-Propylamine		
67-72-1	Hexachloroethane		
98-95-3	Nitrobenzene		
78-59-1	Isophorone		
88-75-5	2-Nitrophenol		
105-67-9	2,4-Dimethylphenol	✓	
65-85-0	Benzoic Acid	2200 u	•
111-91-1	bis(2-Chloroethoxy)Methane	450 u	
120-83-2	2,4-Dichlorophenol		
120-82-1	1,2,4-Trichlorobenzene		
91-20-3	Naphthalene		
106-47-8	4-Chloroaniline		
87-68-3	Hexachlorobutadiene		
59-50-7	4-Chloro-3-Methylphenol		
91-57-6	2-Methylnaphthalene		
77-47-4	Hexachlorocyclopentadiene		
88-06-2	2,4,6-Trichlorophenol	✓	
95-95-4	2,4,5-Trichlorophenol	2200 u	•
91-58-7	2-Chloronaphthalene	450 u	
88-74-4	2-Nitroaniline	2200 u	•
131-11-3	Dimethyl Phthalate	450 u	
208-96-8	Acenaphthylene	✓	
99-09-2	3-Nitroaniline	2200 u	•

CAS Number		ug/l or ug/Kg (Circle One)	
83-32-9	Acenaphthene	450 u	
51-28-5	2,4-Dinitrophenol	2200 u	•
100-02-7	4-Nitrophenol	2200 u	•
132-64-9	Dibenzofuran	450 u	
121-14-2	2,4-Dinitrotoluene		
606-20-2	2,6-Dinitrotoluene		
84-66-2	Diethylphthalate		
7005-72-3	4-Chlorophenyl-phenylether		
86-73-7	Fluorene	✓	
100-01-6	4-Nitroaniline	2200 u	•
534-52-1	4,6-Dinitro-2-Methylphenol	2200 u	•
86-30-6	N-Nitrosodiphenylamine (1)	450 u	
101-55-3	4-Bromophenyl-phenylether		
118-74-1	Hexachlorobenzene	✓	
87-86-5	Pentachlorophenol	2200 u	•
85-01-8	Phenanthrene	63 J	
120-12-7	Anthracene	450 u	
84-74-2	Di-n-Butylphthalate	530 B	
206-44-0	Fluoranthene	100 J	
129-00-0	Pyrene	75 J	
85-68-7	Butylbenzylphthalate	450 u	
91-94-1	3,3'-Dichlorobenzidine	900 u	•
56-55-3	Benzo(a)Anthracene	450 u	
117-81-7	bis(2-Ethylhexyl)Phthalate	150 BJ	
218-01-9	Chrysene	50 J	
117-84-0	Di-n-Octyl Phthalate	450 u	
205-99-2	Benzo(b)Fluoranthene	62 J	coelute
207-08-9	Benzo(k)Fluoranthene		
50-32-8	Benzo(a)Pyrene	450 u	
193-39-5	Indeno(1,2,3-cd)Pyrene		
53-70-3	Dibenzo(a,h)Anthracene		
191-24-2	Benzo(g,h,i)Perylene	✓	

(1)-Cannot be separated from diphenylamine

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN 546

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared 10-5-87

Date Analyzed 10-22-87

Conc/Dil Factor 1

Percent Moisture (decanted) 25.5

GPC Cleanup ☐Yes ■No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or (ug/Kg) (Circle One)
319-84-6	Alpha-BHC	11u
319-85-7	Beta-BHC	11u
319-86-8	Delta-BHC	11u
58-89-9	Gamma-BHC (Lindane)	11u
76-44-8	Heptachlor	11u
309-00-2	Aldrin	11u
1024-57-3	Heptachlor Epoxide	11u
959-98-8	Endosulfan I	11u
60-57-1	Dieldrin	21u
72-55-9	4, 4'-DDE	21u
72-20-8	Endrin	21u
33213-65-9	Endosulfan II	21u
72-54-8	4, 4'-DDD	21u
1031-07-8	Endosulfan Sulfate	21u
50-29-3	4, 4'-DDT	21u
72-43-5	Methoxychlor	110u
53494-70-5	Endrin Ketone	21u
57-74-9	Chlordane	110u
8001-35-2	Toxaphene	210u
12674-11-2	Aroclor-1016	110u
11104-28-2	Aroclor-1221	110u
11141-16-5	Aroclor-1232	110u
53469-21-9	Aroclor-1242	110u
12672-29-6	Aroclor-1248	110u
11097-69-1	Aroclor-1254	210u
11096-82-5	Aroclor-1260	210u

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s — or W_s 22g V_t 20,000µl V_i 4.0µl

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN546

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 17301-32-5	Undecane, 4,7-Dimethy	BNA	991	260
2. 6418-41-3	Tridecane, 3-Methyl		1177	320
3. 1921-70-6	Pentadecane, 2,6,10,14-Tetramethyl		1177	520
4. 74761-11-7	Trans Tricarbonyl [N-(Phenyl-2-Pyridinylmethylene) benzenamine-N,N] U		1255	250
5. 629-92-5	Nonadecane		1263	320
6. 10544-50-0	Sulfur		1417	7500
7. 54105-62-8	Heptadecane, 2,6-Dimethyl		1484	280
8.	Unknown		1541	350
9.	Unknown		1548	290
10. 629-97-0	Docosane		1554	770
11.	Unknown		1561	300
12.	Unknown		1565	690
13.	Unknown		1696	410
14. 629-99-2	Pentacosane		1975	410
15.	Unknown		2091	520
16.	Unknown		2112	460
17.	Unknown		2187	4200
18.	Unknown		2206	680
19.	Unknown		2223	280
20.	Unknown	↓	2288	850
21. 629-14-1	1,2-Diethoxyethane	VOA	191	8
22. 109-66-0	Pentane	↓	226	20
23. —	No Pesticides found	PEST	—	—
24.				
25.				
26.				
27.				
28.				
29.				
30.				

Sample Number
EN 547

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: HAZLETON LABORATORIES
Case No: 8142
Lab Sample ID No: 71000457
QC Report No:
Sample Matrix: Soil
Contract No: 68-01-7146
Data Release Authorized By: David Gilly
Date Sample Received: 10/02/87

Volatile Compounds

Concentration: (Low) Medium (Circle One)
Date Extracted/Prepared: 10/06/87
Date Analyzed: 10/06/87
Conc/Dil Factor: 1 pH 8.1
Percent Moisture: (Not Decanted) 24.2 C.F = 1.32

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	13U
74-83-9	Bromomethane	13U
75-01-4	Vinyl Chloride	13U
75-00-3	Chloroethane	13U
75-09-2	Methylene Chloride	6JB
67-64-1	Acetone	31B
75-15-0	Carbon Disulfide	7U
75-35-4	1, 1-Dichloroethene	7U
75-34-3	1, 1-Dichloroethane	7U
156-60-5	Trans-1, 2-Dichloroethene	7U
67-66-3	Chloroform	4J
107-06-2	1, 2-Dichloroethane	7U
78-93-3	2-Butanone	13U
71-55-6	1, 1, 1-Trichloroethane	7U
56-23-5	Carbon Tetrachloride	7U
108-05-4	Vinyl Acetate	13U
75-27-4	Bromodichloromethane	7U

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1, 2-Dichloropropane	7U
10061-02-6	Trans-1, 3-Dichloropropene	7U
79-01-6	Trichloroethene	7U
124-48-1	Dibromochloromethane	7U
79-00-5	1, 1, 2-Trichloroethane	7U
71-43-2	Benzene	7U
10061-01-5	cis-1, 3-Dichloropropene	7U
110-75-8	2-Chloroethylvinylether	13U
75-25-2	Bromoform	7U
108-10-1	4-Methyl-2-Pentanone	13U
591-78-6	2-Hexanone	13U
127-18-4	Tetrachloroethene	7U
79-34-5	1, 1, 2, 2-Tetrachloroethane	7U
108-88-3	Toluene	1JB
108-90-7	Chlorobenzene	7U
100-41-4	Ethylbenzene	7U
100-42-5	Styrene	7U
	Total Xylenes	7U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit

Value If the result is a value greater than or equal to the detection limit, report the value

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g., 10J). If limit of detection is 10 µg/l and a concentration of 3 µg/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report

Laboratory Name: HAZLETON LABORATORIES

Case No: 8142

Sample Number
EN547

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 10/5/87

Date Analyzed: 10/27/87

Conc/Dil Factor: 1

Percent Moisture (Decanted) 24.2

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	440 u
111-44-4	bis(2-Chloroethyl)Ether	
95-57-8	2-Chlorophenol	
541-73-1	1,3-Dichlorobenzene	
106-46-7	1,4-Dichlorobenzene	
100-51-6	Benzyl Alcohol	
95-50-1	1,2-Dichlorobenzene	
95-48-7	2-Methylphenol	
39638-32-9	bis(2-chloroisopropyl)Ether	
106-44-5	4-Methylphenol	
621-64-7	N-Nitroso-Di-n-Propylamine	
67-72-1	Hexachloroethane	
98-95-3	Nitrobenzene	
78-59-1	Isophorone	
88-75-5	2-Nitrophenol	
105-67-9	2,4-Dimethylphenol	✓
65-85-0	Benzoic Acid	2200 u
111-91-1	bis(2-Chloroethoxy)Methane	440 u
120-83-2	2,4-Dichlorophenol	
120-82-1	1,2,4-Trichlorobenzene	
91-20-3	Naphthalene	
106-47-8	4-Chloroaniline	
87-68-3	Hexachlorobutadiene	
59-50-7	4-Chloro-3-Methylphenol	
91-57-6	2-Methylnaphthalene	
77-47-4	Hexachlorocyclopentadiene	
88-06-2	2,4,6-Trichlorophenol	✓
95-95-4	2,4,5-Trichlorophenol	2200 u
91-58-7	2-Chloronaphthalene	440 u
88-74-4	2-Nitroaniline	2200 u
131-11-3	Dimethyl Phthalate	440 u
208-96-8	Acenaphthylene	440 u
99-09-2	3-Nitroaniline	2200 u

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	440 u
51-28-5	2,4-Dinitrophenol	2200 u
100-02-7	4-Nitrophenol	2200 u
132-64-9	Dibenzofuran	440 u
121-14-2	2,4-Dinitrotoluene	
606-20-2	2,6-Dinitrotoluene	✓
84-66-2	Diethylphthalate	18 BJ
7005-72-3	4-Chlorophenyl-phenylether	440 u
86-73-7	Fluorene	✓
100-01-6	4-Nitroaniline	2200 u
534-52-1	4,6-Dinitro-2-Methylphenol	2200 u
86-30-6	N-Nitrosodiphenylamine (1)	59 BJ
101-55-3	4-Bromophenyl-phenylether	440 u
118-74-1	Hexachlorobenzene	✓
87-86-5	Pentachlorophenol	2200 u
85-01-8	Phenanthrene	440 u
120-12-7	Anthracene	✓
84-74-2	Di-n-Butylphthalate	3300 B
206-44-0	Fluoranthene	440 u
129-00-0	Pyrene	4 J
85-68-7	Butylbenzylphthalate	440 u
91-94-1	3,3'-Dichlorobenzidine	880 u
56-55-3	Benzo(a)Anthracene	440 u
117-81-7	bis(2-Ethylhexyl)Phthalate	25 BJ
218-01-9	Chrysene	440 u
117-84-0	Di-n-Octyl Phthalate	
205-99-2	Benzo(b)Fluoranthene	
207-08-9	Benzo(k)Fluoranthene	
50-32-8	Benzo(a)Pyrene	
193-39-5	Indeno(1,2,3-cd)Pyrene	
53-70-3	Dibenzo(a,h)Anthracene	
191-24-2	Benzo(g,h,i)Perylene	✓

(1)-Cannot be separated from diphenylamine

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN 547

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration (Low) Medium (Circle One)

Date Extracted/Prepared: 10·5·87

Date Analyzed 10·22·87

Conc/Dil Factor 1

Percent Moisture (decanted) 24.2%

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or (ug/Kg) (Circle One)
319-84-6	Alpha-BHC	11u
319-85-7	Beta-BHC	11u
319-86-8	Delta-BHC	11u
58-89-9	Gamma-BHC (Lindane)	11u
76-44-8	Heptachlor	11u
309-00-2	Aldrin	11u
1024-57-3	Heptachlor Epoxide	11u
959-98-8	Endosulfan I	11u
60-57-1	Dieldrin	21u
72-55-9	4, 4'-DDE	21u
72-20-8	Endrin	21u
33213-65-9	Endosulfan II	21u
72-54-8	4, 4'-DDD	21u
1031-07-8	Endosulfan Sulfate	21u
50-29-3	4, 4'-DDT	21u
72-43-5	Methoxychlor	110u
53494-70-5	Endrin Ketone	21u
57-74-9	Chlordane	110u
8001-35-2	Toxaphene	210u
12674-11-2	Aroclor-1016	110u
11104-28-2	Aroclor-1221	110u
11141-16-5	Aroclor-1232	110u
53469-21-9	Aroclor-1242	110u
12672-29-6	Aroclor-1248	110u
11097-69-1	Aroclor-1254	210u
11096-82-5	Aroclor-1260	210u

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s ——— or W_s 23 g V_t 20,000 ul V_i 4.0 ul

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number EN547

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 109-66-0	Pentane	VOA	225	11
2. 3970-62-5	3-Pentanol, 2,2-Dimethyl	BNA	256	240
3. 3240-09-3	5-Hexene-2-one, 5-methyl		319	210
4. 57-15-8	2-Propanol, 1,1,1,1-Trichloro-2-Methyl		355	400
5. 17851-53-5	1,2-Benzenedicarboxylic Acid, Butyl 2-Methyl propyl Ester		1307	400
6.				
7.	Unknown		2143	190
8.	Unknown		2166	940
9.	Unknown		2169	310
10.	Unknown		2175	330
11.	Unknown		2210	1800
12. —	No Pesticides found	PEST	—	—
13.				
14.				
15.				
16.				
17.				
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30.				

Sample Number
EN548

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: HAZLETON LABORATORIES

Case No: 8142

Lab Sample ID No: 71000458

QC Report No:

Sample Matrix: Soil

Contract No: 68-01-7146

Data Release Authorized By: David C. Gill

Date Sample Received: 10/02/87

Volatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 10/06/87

Date Analyzed: 10/06/87

Conc/Dil Factor: 1 pH 7.9

Percent Moisture: (Not Decanted) 23.7 CF = 1.31

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	13U
74-83-9	Bromomethane	13U
75-01-4	Vinyl Chloride	13U
75-00-3	Chloroethane	13U
75-09-2	Methylene Chloride	7JB
67-64-1	Acetone	12JB
75-15-0	Carbon Disulfide	7U
75-35-4	1, 1-Dichloroethene	7U
75-34-3	1, 1-Dichloroethane	7U
156-60-5	Trans-1, 2-Dichloroethene	7U
67-66-3	Chloroform	4J
107-06-2	1, 2-Dichloroethane	7U
78-93-3	2-Butanone	13U
71-55-6	1, 1, 1-Trichloroethane	7U
56-23-5	Carbon Tetrachloride	7U
108-05-4	Vinyl Acetate	13U
75-27-4	Bromodichloromethane	7U

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1, 2-Dichloropropane	7U
10061-02-6	Trans-1, 3-Dichloropropene	7U
79-01-6	Trichloroethene	7U
124-48-1	Dibromochloromethane	7U
79-00-5	1, 1, 2-Trichloroethane	7U
71-43-2	Benzene	7U
10061-01-5	cis-1, 3-Dichloropropene	7U
110-75-8	2-Chloroethylvinylether	13U
75-25-2	Bromoform	7U
108-10-1	4-Methyl-2-Pentanone	13U
591-78-6	2-Hexanone	13U
127-18-4	Tetrachloroethene	7U
79-34-5	1, 1, 2, 2-Tetrachloroethane	7U
108-88-3	Toluene	3JB
108-90-7	Chlorobenzene	7U
100-41-4	Ethylbenzene	7U
100-42-5	Styrene	7U
	Total Xylenes	7U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit

Value If this result is a value greater than or equal to the detection limit, report the value

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g., 10J). If limit of detection is 10 µg/l and a concentration of 3 µg/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report

Laboratory Name: HAZLETON LABORATORIES

Case No: 8142

Sample Number
EN 548

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 10/5/87

Date Analyzed: 10/28/87

Conc/Dil Factor: 1

Percent Moisture (Decanted): 23.7

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)
108-95-2	Phenol	440u
111-44-4	bis(-2-Chloroethyl)Ether	
95-57-8	2-Chlorophenol	
541-73-1	1, 3-Dichlorobenzene	
106-46-7	1, 4-Dichlorobenzene	
100-51-6	Benzyl Alcohol	
95-50-1	1, 2-Dichlorobenzene	
95-48-7	2-Methylphenol	
39638-32-9	bis(2-chloroisopropyl)Ether	
106-44-5	4-Methylphenol	
621-64-7	N-Nitroso-Di-n-Propylamine	
67-72-1	Hexachloroethane	
98-95-3	Nitrobenzene	
78-59-1	Isophorone	
88-75-5	2-Nitrophenol	
105-67-9	2, 4-Dimethylphenol	
65-85-0	Benzoic Acid	2200u
111-91-1	bis(-2-Chloroethoxy)Methane	440u
120-83-2	2, 4-Dichlorophenol	
120-82-1	1, 2, 4-Trichlorobenzene	
91-20-3	Naphthalene	
106-47-8	4-Chloroaniline	
87-68-3	Hexachlorobutadiene	
59-50-7	4-Chloro-3-Methylphenol	
91-57-6	2-Methylnaphthalene	
77-47-4	Hexachlorocyclopentadiene	
88-06-2	2, 4, 6-Trichlorophenol	
95-95-4	2, 4, 5-Trichlorophenol	2200u
91-58-7	2-Chloronaphthalene	440u
88-74-4	2-Nitroaniline	2200u
131-11-3	Dimethyl Phthalate	440u
208-96-8	Acenaphthylene	
99-09-2	3-Nitroaniline	2200u

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	440u
51-28-5	2, 4-Dinitrophenol	2200u
100-02-7	4-Nitrophenol	2200u
132-64-9	Dibenzofuran	440u
121-14-2	2, 4-Dinitrotoluene	
606-20-2	2, 6-Dinitrotoluene	
84-66-2	Diethylphthalate	27BJ
7005-72-3	4-Chlorophenyl-phenylether	440u
86-73-7	Fluorene	
100-01-6	4-Nitroaniline	2200u
534-52-1	4, 6-Dinitro-2-Methylphenol	2200u
86-30-6	N-Nitrosodiphenylamine (1)	36BJ
101-55-3	4-Bromophenyl-phenylether	440u
118-74-1	Hexachlorobenzene	
87-86-5	Pentachlorophenol	2200u
85-01-8	Phenanthrene	440u
120-12-7	Anthracene	
84-74-2	Di-n-Butylphthalate	3900u
206-44-0	Fluoranthene	13J
129-00-0	Pyrene	12J
85-68-7	Butylbenzylphthalate	440u
91-94-1	3, 3'-Dichlorobenzidine	880u
56-55-3	Benzo(a)Anthracene	440u
117-81-7	bis(2-Ethylhexyl)Phthalate	
218-01-9	Chrysene	
117-84-0	Di-n-Octyl Phthalate	
205-99-2	Benzo(b)Fluoranthene	
207-08-9	Benzo(k)Fluoranthene	
50-32-8	Benzo(a)Pyrene	
193-39-5	Indeno(1, 2, 3-cd)Pyrene	
53-70-3	Dibenzo(a,h)Anthracene	
191-24-2	Benzo(g,h,i)Perylene	

(1)-Cannot be separated from diphenylamine

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN 548

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 10.5.87

Date Analyzed: 10.22.87

Conc/Dil Factor: 1

Percent Moisture (decanted) 23.7

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or (ug/Kg) (Circle One)
319-84-6	Alpha-BHC	10u
319-85-7	Beta-BHC	10u
319-86-8	Delta-BHC	10u
58-89-9	Gamma-BHC (Lindane)	10u
76-44-8	Heptachlor	10u
309-00-2	Aldrin	10u
1024-57-3	Heptachlor Epoxide	10u
959-98-8	Endosulfan I	10u
60-57-1	Dieldrin	21u
72-55-9	4, 4'-DDE	21u
72-20-8	Endrin	21u
33213-65-9	Endosulfan II	21u
72-54-8	4, 4'-DDD	21u
1031-07-8	Endosulfan Sulfate	21u
50-29-3	4, 4'-DDT	21u
72-43-5	Methoxychlor	100u
53494-70-5	Endrin Ketone	21u
57-74-9	Chlordane	100u
8001-35-2	Toxaphene	210u
12674-11-2	Aroclor-1016	100u
11104-28-2	Aroclor-1221	100u
11141-16-5	Aroclor-1232	100u
53469-21-9	Aroclor-1242	100u
12672-29-6	Aroclor-1248	100u
11097-69-1	Aroclor-1254	210u
11096-82-5	Aroclor-1260	210u

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s ——— or W_s 23g V_t 20,000 µl V_i 4.0 µl

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN 548

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	No volatiles found	VOA	—	—
2. 57-15-8	2-Propanol, 1,1,1-Trichloro-2-Methyl	BNA	353	220
3. 17851-53-5	1,2-Benzenedicarboxylic Acid, Butyl		1308	360
4.	2-Methylpropyl Ester			
5. 7206-25-9	9-Octadecene		1764	180
6. 74264-11-7	Iron, Tricarbonyl[N-(Phenyl-2-Pyridinylmethylene)		1929	250
7.	Benzenamine-N,N']-			
8. 1454-85-0	1-Heptadecanol		1996	580
9. 629-99-2	Pentacosane		2083	470
10.	Unknown		2101	560
11.	Unknown		2145	890
12.	Unknown		2154	360
13.	Unknown		2159	370
14.	Unknown		2170	340
15.	Unknown		2179	360
16.	Unknown		2199	960
17.	Unknown		2216	1400
18.	Unknown		2220	1300
19.	Unknown		2231	1700
20.	Unknown		2252	260
21. —	No pesticides found	PEST	—	—
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

Sample Number
EN550

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: HAZLETON LABORATORIES

Case No: 8142

Lab Sample ID No: 71000459

QC Report No:

Sample Matrix: Soil

Contract No: 68-01-7146

Data Release Authorized By: David C. Gill

Date Sample Received: 10/02/87

Volatile Compounds

Concentration: (Low) Medium (Circle One)

Date Extracted/Prepared: 10/07/87

Date Analyzed: 10/07/87

Conc/Dil Factor: 1 pH 8.1

Percent Moisture: (Not Decanted) 17.5 CF = 1.21

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	12U
74-83-9	Bromomethane	12U
75-01-4	Vinyl Chloride	12U
75-00-3	Chloroethane*	12U
75-09-2	Methylene Chloride	20 B
67-64-1	Acetone	24 B
75-15-0	Carbon Disulfide	6U
75-35-4	1, 1-Dichloroethene	6U
75-34-3	1, 1-Dichloroethane	6U
156-60-5	Trans-1, 2-Dichloroethene	6U
67-66-3	Chloroform	3 J
107-06-2	1, 2-Dichloroethane	6U
78-93-3	2-Butanone	12U
71-55-6	1, 1, 1-Trichloroethane	6U
56-23-5	Carbon Tetrachloride	6U
108-05-4	Vinyl Acetate	12U
75-27-4	Bromodichloromethane	6U

CAS Number		ug/l or ug/Kg (Circle One)
78-87-5	1, 2-Dichloropropane	6U
10061-02-6	Trans-1, 3-Dichloropropene	6U
79-01-6	Trichloroethene	6U
124-48-1	Dibromochloromethane	6U
79-00-5	1, 1, 2-Trichloroethane	6U
71-43-2	Benzene	6U
10061-01-5	cis-1, 3-Dichloropropene	6U
110-75-8	2-Chloroethylvinylether	12U
75-25-2	Bromoform	6U
108-10-1	4-Methyl-2-Pentanone	12U
591-78-6	2-Hexanone	12U
127-18-4	Tetrachloroethene	6U
79-34-5	1, 1, 2, 2-Tetrachloroethane	6U
108-88-3	Toluene	6 B
108-90-7	Chlorobenzene	6U
100-41-4	Ethylbenzene	6U
100-42-5	Styrene	6U
	Total Xylenes	6U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution action. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g., 10J). If limit of detection is 10 µg/l and a concentration of 3 µg/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report

Laboratory Name: HAZLETON LABORATORIES

Case No: 8142

Sample Number
EN550

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 10/5/82

Date Analyzed: 10/27/87

Conc/Dil Factor: 1

Percent Moisture (Decanted) 175

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)	
108-95-2	Phenol	400 u	
111-44-4	bis(2-Chloroethyl)Ether		
95-57-8	2-Chlorophenol		
541-73-1	1,3-Dichlorobenzene		
106-46-7	1,4-Dichlorobenzene		
100-51-6	Benzyl Alcohol		
95-50-1	1,2-Dichlorobenzene		
95-48-7	2-Methylphenol		
39638-32-9	bis(2-chloroisopropyl)Ether		
106-44-5	4-Methylphenol		
621-64-7	N-Nitroso-Di-n-Propylamine		
67-72-1	Hexachloroethane		
98-95-3	Nitrobenzene		
78-59-1	Isophorone		
88-75-5	2-Nitrophenol		
105-67-9	2,4-Dimethylphenol	✓	
65-85-0	Benzoic Acid	2000 u	•
111-91-1	bis(2-Chloroethoxy)Methane	400 u	
120-83-2	2,4-Dichlorophenol		
120-82-1	1,2,4-Trichlorobenzene		
91-20-3	Naphthalene		
106-47-8	4-Chloroaniline		
87-68-3	Hexachlorobutadiene		
59-50-7	4-Chloro-3-Methylphenol		
91-57-6	2-Methylnaphthalene		
77-47-4	Hexachlorocyclopentadiene		
88-06-2	2,4,6-Trichlorophenol	✓	
95-95-4	2,4,5-Trichlorophenol	2000 u	•
91-58-7	2-Chloronaphthalene	400 u	
88-74-4	2-Nitroaniline	2000 u	•
131-11-3	Dimethyl Phthalate	400 u	
208-96-8	Acenaphthylene	14 J	
99-09-2	3-Nitroaniline	2000 u	•

CAS Number		ug/l or ug/Kg (Circle One)	
83-32-9	Acenaphthene	110 J	
51-28-5	2,4-Dinitrophenol	2000 u	•
100-02-7	4-Nitrophenol	2000 u	•
132-64-9	Dibenzofuran	55 J	
121-14-2	2,4-Dinitrotoluene	400 u	
606-20-2	2,6-Dinitrotoluene		
84-66-2	Diethylphthalate	20 BJ	
7005-72-3	4-Chlorophenyl-phenylether	400 u	
86-73-7	Fluorene	140 J	
100-01-6	4-Nitroaniline	2000 u	•
534-52-1	4,6-Dinitro-2-Methylphenol	2000 u	•
86-30-6	N-Nitrosodiphenylamine (1)	400 u	
101-55-3	4-Bromophenyl-phenylether		
118-74-1	Hexachlorobenzene		
87-86-5	Pentachlorophenol	2000 u	•
85-01-8	Phenanthrene	2100	
120-12-7	Anthracene	420	
84-74-2	Di-n-Butylphthalate	2900 B	
206-44-0	Fluoranthene	400	HRS
129-00-0	Pyrene	3100	
85-68-7	Butylbenzylphthalate	400 u	
91-94-1	3,3'-Dichlorobenzidine	800 u	•
56-55-3	Benzo(a)Anthracene	1600	
117-81-7	bis(2-Ethylhexyl)Phthalate	140 BJ	
218-01-9	Chrysene	1600	
117-84-0	Di-n-Octyl Phthalate	400 u	HRS
205-99-2	Benzo(b)Fluoranthene	3500	edelute
207-08-9	Benzo(k)Fluoranthene		
50-32-8	Benzo(a)Pyrene	1200	
193-39-5	Indeno(1,2,3-cd)Pyrene	1400	J ZGK*
53-70-3	Dibenzo(a,h)Anthracene	400 u	
191-24-2	Benzo(g,h,i)Perylene	1100	

DL= 400

(1)-Cannot be separated from diphenylamine

Form I 7/85

*data "J'd due to initial calibration - high RSD ZGK

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN 550

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration (Low) Medium (Circle One)

Date Extracted/Prepared: 10.5.87

Date Analyzed: 10.22.87

Conc/Dil Factor: 1

Percent Moisture (decanted) 17.5%

GPC Cleanup ☐Yes ☒No

Separatory Funnel Extraction ☐Yes

Continuous Liquid - Liquid Extraction ☐Yes

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	9.7u
319-85-7	Beta-BHC	9.7u
319-86-8	Delta-BHC	9.7u
58-89-9	Gamma-BHC (Lindane)	9.7u
76-44-8	Heptachlor	9.7u
309-00-2	Aldrin	9.7u
1024-57-3	Heptachlor Epoxide	9.7u
959-98-8	Endosulfan I	9.7u
60-57-1	Dieldrin	19u
72-55-9	4, 4'-DDE	19u
72-20-8	Endrin	19u
33213-65-9	Endosulfan II	19u
72-54-8	4, 4'-DDD	19u
1031-07-8	Endosulfan Sulfate	19u
50-29-3	4, 4'-DDT	19u
72-43-5	Methoxychlor	97u
53494-70-5	Endrin Ketone	19u
57-74-9	Chlordane	97u
8001-35-2	Toxaphene	190u
12674-11-2	Aroclor-1016	97u
11104-28-2	Aroclor-1221	97u
11141-16-5	Aroclor-1232	97u
53469-21-9	Aroclor-1242	97u
12672-29-6	Aroclor-1248	97u
11097-69-1	Aroclor-1254	190u
11096-82-5	Aroclor-1260	190u

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s — or W_s 25 g V_t 20,000 µl V_i 4.0 µl

Laboratory Name HAZLETON LABORATORIES

Case No 8142

Sample Number
EN 550

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 17851-53-5	1,2-Benzenedicarboxylic Acid Butyl 2-Ethylpropyl Ester	BNA	1306	200
2.	Unknown		1332	340
3. 10544-50-0	Sulfur		1412	610
4. 22360-37-6	Naphthalene, 1,8-Di-1-propynyl		1484	360
5. 243-42-5	Benzo [B] Naphtho [2,3-D] Furan		1508	200
6. 238-84-6	11H-Benzo[A] Fluorene		1548	250
7. 243-17-4	11H-Benzo[B] Fluorene		1560	230
8. 203-12-3	Benzo [GHI] Fluoranthene		1664	220
9. 195-19-7	Benzo [C] Phenanthrene		1722	220
10.	Unknown		1866	210
11. 205-82-3	Benzo [J] Fluoranthene		1907	310
12. 205-99-2	Benz [E] Acephenanthrylene		1933	1700
13. 18435-45-5	n-Nonadecane		1981	2800
14. 629-99-2	Pentacosane		2081	350
15.	Unknown		2093	900
16.	Unknown		2144	3400
17.	Unknown		2157	1300
18.	Unknown		2190	1600
19.	Unknown		2208	400
20.	Unknown		2221	340
21. 629-14-1	Ethane, 1,2-diethoxy	VOA	187	10
22. 109-66-0	Pentane		224	12
23. 110-54-3	Hexane		332	6
24. —	No Pesticides found	PEST	—	—
25.				
26.				
27.				
28.				
29.				
30.				