US EPA RECORDS CENTER REGION 5
457683

Marble Cliff Quarries

METALS

	BACKGROUND		SAMPLE	5X LIMIT
BARIUM	186	S7	4590	200
CADMIUM	0	S7	4.2	
LEAD	30.6 NJ	S7	320 NJ	5
MAGNESIUM	5590	S5	11,000	5000
ZINC	89.6	S7	4300	20

ORGANIC

TETRACHLOROETHANE	0 -	S1	16J	
1.1,2,2-tetrachloroethane	0 -	S1	17J	
bis (2-ethylhexyl) phthalate	0 -	S7	51,000D	1650
(di-n-octylphthalate)	0 -	S7	12,000	1650
~~benzo[b] fluoranthene~~	0 -	~~S8~~	~~3600~~	1650
benzo[k] fluoranthene	0 .	S6	2300	1650
~~benzo[a] pyrene~~	0 .	~~S8~~	~~2600~~	1650
ideno [1,2,3-cd] pyrene	0 .	~~S8~~	~~2500J~~	1650
benzo [g,h,i] perylene	0 ..	S8	3800J	1650

PAH

Poly Aromatic Hydrocarbon

COLUMBUS TESTING LABORATORY, INC.
ENGINEERING TESTING, INSPECTION and INVESTIGATION
2860 FISHER RD., COLUMBUS, OHIO 43204 / 276-8123

D. B. WARNER, President
B. KVAMMEN JR., Ph.D., P.E., Technical Director

NSPE, ACIL, ASTM, ACI
AWS, ASNT, AAPT, ANS

March 5, 1974

City of Upper Arlington
3600 Tremont Road
Columbus, Ohio 43221

Attn: Mr. D. Craven

Gentlemen:

Enclosed you will find a representative curve for glacial till. This curve, according to reference #1*, represents CL soils according to the Unified Soils Classification System, having a permeability coefficient of about .01 x 10^{-4} cm./sec. or 1 foot/year or .1 foot/month.

We appreciate the opportunity to serve you on this project. If you have any questions, please feel free to contact us.

Respectfully submitted,

COLUMBUS TESTING LABORATORY, INC.

Dr. Bjorn Kvammen, Jr., Ph.D., P.E.
Technical Director and
Chief Soils Engineer

BK/rc

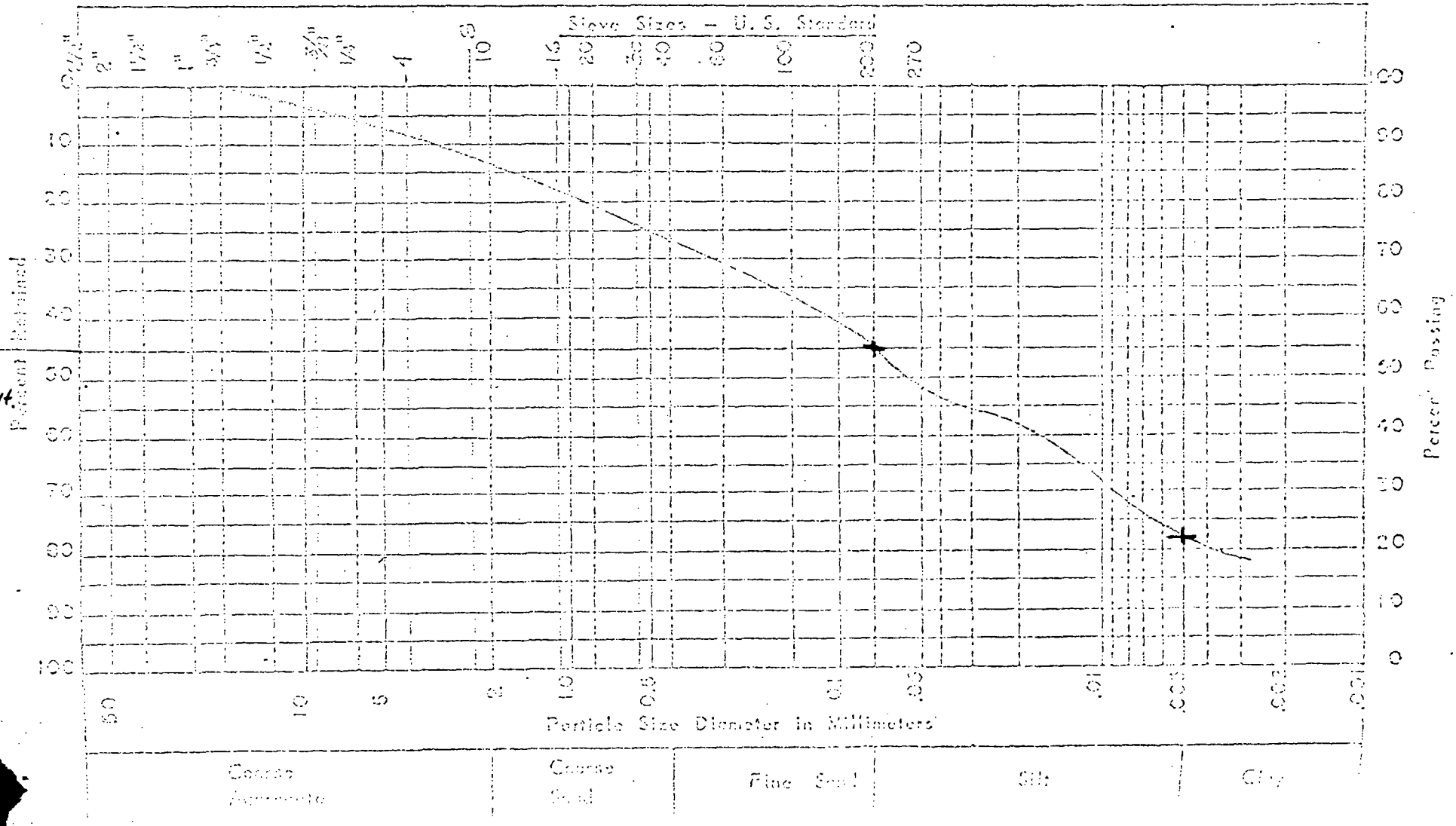
* Hough, B.K., Basic Soils Engineering, Second Edition, 1969, Ronald Press Company, New York

OUR JOB NO. _____

Project:	Date: 1-30-74	DESCRIPTION: CL - Acc
	Sample No. TB 3 P -2	Unif. S. C. S.
	Tested by: A. Holbein	DEPTH: 8.0' - 10.0'

MECHANICAL ANALYSIS GRAIN SIZE ACCUMULATION CURVE

LL 21, PL 13, PI 8



MARBLE CLIFF QUARRY

	Elevations		Elev. S.L / Depth	DISTANCE FR FILL
1)	ROCK FLOOR -	740 - 735 - 720 -	S.L	
2)	RIVER -	710 - 715'	715 ±	
3)	TRABUE + McKINLEY -	800 ±	~~765-34~~	
4)	" + So End -	780 ±		
5)	DUBLIN RD AREA -	730 - 760		
6)	SCIOTO CC -	790 - 820	727-93	2800'
7)	RAYMOND MEM. -	825 ±		5000-5500
8)	Residential -	805		300-500
	Helipart	780 gr. Elev.	718' Btm WELL Elev 62	

GPH	DEPTH		~~DISTANCE~~ Imperial			
25	Imperial Hs	100 -	730'	- 718-12'	630'	7000'
50-135	Scioto Lanes	200+	755	727-28'	555 -	5500'
500	Scioto CC	250±	800		550 ±	—

Quarry operation upper 40 Cols Ls.
Elev. Cols-BI = 675± ?

U

(7 drops)

HELICOPTER MINIT MEN COND 440 NaCl ~~[illegible]~~
TEMP. 58° Cl 53 ppm

MCQ office well
Temp. 57° Cond. 1000
NaCl 27 drops Cl 203 ppm
Fe .7 Ph 8

MCQ Shop Well Temp 62° Cond 800
NaCl 3 drops Cl 23 ppm

Arco Concrete Temp 52° Cond 700

,O DEPARTMENT OF HEALTH
WATER QUALITY DATA

Date Received: 3-7-74
Date Reported: 3-26-74
Laboratory:
Laboratory Number: 3351
Analyst: RB

Station: MCQ INVESTIGATION
Station Code:
County: FRANKLIN
Collected by: J. NOYES / D. JOHE

Identification of Sample: WELL AT MCQ MAINT. SHOP
Sample Code:
Date of grab sample (or last date of composite sample): Year 74 Month 03 Day 07 Hour Minute
Compos

Sample Types: ☒ Industrial ☐ Sewage ☐ Water Supply ☐ Stream
Beginning Date of Composite Sample: Year Month Day C Hour Minute
Frequ

Analysis to be Reported to: ~~☐ OD~~ ☐ SEDO ☐ NEDO ☐ SWDO ☐ NWDO

REASON FOR TAKING SAMPLE – ADDITIONAL INFORMATION – REMARKS BY ANALYST:
☒ GROUND-WATER ☒ ANALYSIS TO RUSS STEIN - OEPA 361 E. BROAD SENECA TOWERS

☐ Regular (or indicate by checking boxes)					
☐ Flow		CFS	☒ Calcium Total, Ca	78	mg/l
☒ Water Temperature, Field	62	F°	☒ Magnesium Total, Mg	53	mg/l
☐ pH, Field		S. U.	☒ Potassium Total, K	2.5	mg/l
☐ Dissolved Oxygen, Field		mg/l	☒ Sodium Total, Na	13	mg/l
☐ Hydrogen Sulfide, Field		mg/l	☐ Aluminum Total, Al		ug/l
☐ Chlorine Free Avl, Field		mg/l	☐ Antimony Total, Sb		ug/l
☐ Chlorine Tot Resd, Field		mg/l	☐ Arsenic Total, As		ug/l
☐ Color		Pt-Co Units	☐ Barium Total, Ba		ug/l
☐ Odor		T. N.	☐ Beryllium Total, Be		ug/l
☐ Turbidity		J. U.	☐ Bismuth Total, Bi		ug/l
☒ Conductivity at 25 C°	1026	Micromhos	☐ Boron Total, B		ug/l
☒ pH, Lab	7.4	S. U.	☒ Cadmium Total, Cd	0	ug/l
☐ pH, $CaCO_3$ Stability		S. U.	☒ Chromium Total, Cr	0	ug/l
☒ Alkalinity Total, $CaCO_3$	348	mg/l	☐ Chromium Hex, Cr		ug/l
☐ Alkalinity Phth, $CaCO_3$		mg/l	☐ Cobalt Total, Co		ug/l
☐ Alkalinity, $CaCO_3$ Stabl		mg/l	☐ Copper Total, Cu		ug/l
☐ Carbon Dioxide, CO_2		mg/l	☒ Iron Total, Fe	5800	ug/l
☐ Acidity Total, $CaCO_3$		mg/l	☐ Iron Diss, Fe		ug/l
☐ Acidity M.O., $CaCO_3$		mg/l	☐ Iron Ferrous, Fe		ug/l
☐ Hardness Total, $CaCO_3$		mg/l	☒ Lead Total, Pb	0	ug/l
☐ Residue, Total		mg/l	☐ Lithium Total, Li		ug/l
☐ Residue, Total Volatile		mg/l	☐ Manganese Total, Mn		ug/l
☐ Residue, Total Nflt (Sus)		mg/l	☐ Mercury Total, Hg		ug/l
☐ Residue, Vol Nflt		mg/l	☐ Molybdenum Total, Mo		ug/l
☒ Residue, Total Flt (Diss)	699	mg/l	☐ Nickel Total, Ni		ug/l
☐ Residue, Vol Flt		mg/l	☐ Selenium Total, Se		ug/l
☐ Residue, Settlable		mg/l	☐ Silver Total, Ag		ug/l
☒ Nitrogen Organic, N		mg/l	☐ Strontium Total, Sr		ug/l
☒ Nitrogen Ammonia, N	0.20	mg/l	☐ Thallium Total, Tl		ug/l
☐ Nitrite, N		mg/l	☐ Tin Total, Sn		ug/l
☒ Nitrate, N	0.0	mg/l	☐ Titanium Total, Ti		ug/l
☐ Phosphorus Total, P		mg/l	☐ Tungsten Total, T		ug/l
☐ Phosphorus Soluble, P		mg/l	☐ Vanadium Total, V		ug/l
☒ Phosphate Total, PO_4	0.0	mg/l	☐ Zinc Total, Zn		ug/l
☐ Phosphate Ortho, PO_4		mg/l	☐ Zirconium Total, Zr		ug/l
☒ Sulfate, SO_4	203	mg/l	☐ BOD, 5-Day		mg/l
☐ Sulfite, SO_3		mg/l	☒ COD	0	mg/l
☐ Sulfide, S		mg/l	☐ Chlorine Demand, 15 min		mg/l
☒ Chloride, Cl	13	mg/l	☒ Carbon Total Org, C	0.5	mg/l

☐ Cyanide, CN		
☒ MBAS	0.0	
☐ Oil-Grease, Total		
☐ Phenols		
☐ Tannin Lignin		
☐ Aldrin, Whl Smpl		
☐ DDD, Whl Smpl		
☐ DDE, Whl Smpl		
☐ DDT, Whl Smpl		
☐ Dieldrin, Whl Smpl		
☐ Chlordane, Whl Smpl		
☐ Endrin, Whl Smpl		
☐ Heptachlor, Whl Smpl		
☐ Hchtr-Epoxide, Whl Smpl		
☐ Lindane, Whl Smpl		
☐ Methoxychlor, Whl Smpl		
☐ Malathion, Whl Smpl		
☐ Parathion, Whl Smpl		
☐ Methyl Parathn, Whl Smpl		
☐ Beta, Total		
☐ Beta, Diss		
☐ Beta, Suspd		
☐ Alpha, Total		
☐ Alpha, Diss		
☐ Alpha, Suspd		
☐ Radium 226, Total		
☐ Strontium 90, Total		
☐ Coliform Total, MF		#/
☐ Coliform Total MPN, Conf		#/
☐ Fecal Coli Total, MF		#/
☐ Fecal Strep Total, MF		#/
☐ Plate Count, Total		#/
☐ Algae, Total		#/
☐ TKN	0.	
☐		
☐		
☐		
☐		
☐		

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O DEPARTMENT OF HEALTH
WATER QUALITY DATA

Date Received: 3-7-74
Date Reported: 3-25-74
Laboratory:
Laboratory Number: 3349
Analyst: [illegible]

Station: MCQ INVESTIGATION
Station Code:
County: FRANKLIN
Collected by: J. NOYES / D. JOHE

Identification of Sample: WELL AT HELICOPTER MINIT-MEN INC
Sample Code:
Date of grab sample (or last date of composite sample): Year 74 Month 03 Day 07 Hour Minute
Composite

Sample Types: ☒ Industrial ☐ Sewage ☐ Water Supply ☐ Stream
Analysis to be Reported to: ☒ ~~CO~~ ☐ SEDO ☐ NEDO ☐ SWDO ☐ NWDO
Beginning Date of Composite Sample: Year Month Day C Hour Minute
Frequency

REASON FOR TAKING SAMPLE – ADDITIONAL INFORMATION – REMARKS BY ANALYST:
☒ GROUND-WATER ☒ ANALYSIS TO RUSS STEIN OEPA
361 E. BROAD ST
SENECA TOWERS
DEPTH 102'

☐ Regular (or indicate by checking boxes)									☐ Fluoride Diss, F															
☐ Flow								CFS	☒ Calcium Total, Ca							8	3							mg/l
☒ Water Temperature, Field					5	8		F°	☒ Magnesium Total, Mg							2	5							mg/l
☐ pH, Field								S. U.	☒ Potassium Total, K								2	0						mg/l
☐ Dissolved Oxygen, Field								mg/l	☒ Sodium Total, Na							1	8							mg/l
☐ Hydrogen Sulfide, Field								mg/l	☐ Aluminum Total, Al															ug/l
☐ Chlorine Free Avl, Field								mg/l	☐ Antimony Total, Sb															ug/l
☐ Chlorine Tot Resd, Field								mg/l	☐ Arsenic Total, As															ug/l
☐ Color								Pt-Co Units	☐ Barium Total, Ba															ug/l
☐ Odor								T. N.	☐ Berylium Total, Be															ug/l
☐ Turbidity								J. U.	☐ Bismuth Total, Bi															ug/l
☒ Conductivity at 25 C°					7	3	0	Micromhos	☐ Boron Total, B															ug/l
☒ pH, Lab					7	5		S. U.	☒ Cadmium Total, Cd									0						ug/l
☐ pH, $CaCO_3$ Stability								S. U.	☒ Chromium Total, Cr									0						ug/l
☒ Alkalinity Total, $CaCO_3$					1	7	5	mg/l	☐ Chromium Hex, Cr															ug/l
☐ Alkalinity Phth, $CaCO_3$								mg/l	☐ Cobalt Total, Co															ug/l
☐ Alkalinity, $CaCO_3$ Stabl								mg/l	☐ Copper Total, Cu															ug/l
☐ Carbon Dioxide, CO_2								mg/l	☒ Iron Total, Fe									0						ug/l
☐ Acidity Total, $CaCO_3$								mg/l	☐ Iron Diss, Fe															ug/l
☐ Acidity M.O., $CaCO_3$								mg/l	☐ Iron Ferrous, Fe															ug/l
☐ Hardness Total, $CaCO_3$								mg/l	☒ Lead Total, Pb									0						ug/l
☐ Residue, Total								mg/l	☐ Lithium Total, Li															ug/l
☐ Residue, Total Volatile								mg/l	☐ Manganese Total, Mn															ug/l
☐ Residue, Total Nflt (Sus)								mg/l	☐ Mercury Total, Hg															ug/l
☐ Residue, Vol Nflt								mg/l	☐ Molybdenum Total, Mo															ug/l
☒ Residue, Total Flt (Diss)					4	5	2	mg/l	☐ Nickel Total, Ni															ug/l
☐ Residue, Vol Flt								mg/l	☐ Selenium Total, Se															ug/l
☐ Residue, Settlable								mg/l	☐ Silver Total, Ag															ug/l
☒ Nitrogen Organic, N								mg/l	☐ Strontium Total, Sr															ug/l
☒ Nitrogen Ammonia, N					0	1	0	mg/l	☐ Thallium Total, Tl															ug/l
☐ Nitrite, N								mg/l	☐ Tin Total, Sn															ug/l
☒ Nitrate, N					3	3		mg/l	☐ Titanium Total, Ti															ug/l
☐ Phosphorus Total, P								mg/l	☐ Tungsten Total, T															ug/l
☐ Phosphorus Soluble, P								mg/l	☐ Vanadium Total, V															ug/l
☒ Phosphate Total, PO_4					0	1		mg/l	☐ Zinc Total, Zn															ug/l
☐ Phosphate Ortho, PO_4								mg/l	☐ Zirconium Total, Zr															ug/l
☒ Sulfate, SO_4				1	3	5		mg/l	☐ BOD, 5-Day															mg/l
☐ Sulfite, SO_3								mg/l	☒ COD								4							mg/l
☐ Sulfide, S								mg/l	☐ Chlorine Demand, 15 min															mg/l
☒ Chloride, Cl					4	0		mg/l	☒ Carbon Total Org, C								0	5						mg/l

☐ Cyanide, CN																								mg/l
☒ MBAS											0	1	7											mg/l
☐ Oil-Grease, Total																								mg/l
☐ Phenols																								ug/l
☐ Tannin Lignin																								mg/l
☐ Aldrin, Whl Smpl																								ug/l
☐ DDD, Whl Smpl																								ug/l
☐ DDE, Whl Smpl																								ug/l
☐ DDT, Whl Smpl																								ug/l
☐ Dieldrin, Whl Smpl																								ug/l
☐ Chlordane, Whl Smpl																								ug/l
☐ Endrin, Whl Smpl																								ug/l
☐ Heptachlor, Whl Smpl																								ug/l
☐ Hchlr-Epoxide, Whl Smpl																								ug/l
☐ Lindane, Whl Smpl																								ug/l
☐ Methoxychlor, Whl Smpl																								ug/l
☐ Malathion, Whl Smpl																								ug/l
☐ Parathion, Whl Smpl																								ug/l
☐ Methyl Parathn, Whl Smpl																								ug/l
☐ Beta, Total																								pc/l
☐ Beta, Diss																								pc/l
☐ Beta, Suspd																								pc/l
☐ Alpha, Total																								pc/l
☐ Alpha, Diss																								pc/l
☐ Alpha, Suspd																								pc/l
☐ Radium 226, Total																								pc/l
☐ Strontium 90, Total																								pc/l
☐ Coliform Total, MF																								#/100ml
☐ Coliform Total MPN, Conf																								#/100ml
☐ Fecal Coli Total, MF																								#/100ml
☐ Fecal Strep Total, MF																								#/100ml
☐ Plate Count, Total																								#/ml
☐ Algae, Total																								#/ml
☐ TKN																							1.	
☐																								
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OHIO DEPARTMENT OF HEALTH
WATER QUALITY DATA

Date Received: 3-7-74
Date Reported: 3-26-74
Laboratory:
Laboratory Number: 3347
Analyst: AA

Station: MCQ investigation
Station Code:
County: Franklin
Collected by: J. Noyes / D. Johe

Identification of Sample: office
Sample Code:
Date of grab sample (or last date of composite sample): Year 74 Month 03 Day 07 Hour Minute
Composite Type:

Sample Types: ☐ Industrial ☐ Sewage ☐ Water Supply ☐ Stream
Beginning Date of Composite Sample: Year Month Day Hour Minute
Frequency:

Analysis to be Reported to: ☐ CO ☐ SEDO ☐ NEDO ☐ SWDO ☐ NWDO

REASON FOR TAKING SAMPLE – ADDITIONAL INFORMATION – REMARKS BY ANALYST:
☒ groundwater
R. Stein
OEPA Surveillance
Seneca Towers

☐ Regular (or indicate by checking boxes)				☐ Fluoride Diss, F		mg/l		☐ Cyanide, CN		mg/l
☐ Flow		CFS		☒ Calcium Total, Ca	149	mg/l		☒ MBAS	0.10	mg/l
☒ Water Temperature, Field	52	F°		☒ Magnesium Total, Mg	48	mg/l		☐ Oil-Grease, Total		mg/l
☐ pH, Field		S. U.		☒ Potassium Total, K	4.4	mg/l		☐ Phenols		ug/l
☐ Dissolved Oxygen, Field		mg/l		☒ Sodium Total, Na	75	mg/l		☐ Tannin Lignin		mg/l
☐ Hydrogen Sulfide, Field		mg/l		☐ Aluminum Total, Al		ug/l		☐ Aldrin, Whl Smpl		ug/l
☐ Chlorine Free Avl, Field		mg/l		☐ Antimony Total, Sb		ug/l		☐ DDD, Whl Smpl		ug/l
☐ Chlorine Tot Resd, Field		mg/l		☐ Arsenic Total, As		ug/l		☐ DDE, Whl Smpl		ug/l
☐ Color		Pt-Co Units		☐ Barium Total, Ba		ug/l		☐ DDT, Whl Smpl		ug/l
☐ Odor		T. N.		☐ Beryllium Total, Be		ug/l		☐ Dieldrin, Whl Smpl		ug/l
☐ Turbidity		J. U.		☐ Bismuth Total, Bi		ug/l		☐ Chlordane, Whl Smpl		ug/l
☒ Conductivity at 25 C°	1400	Micromhos		☐ Boron Total, B		ug/l		☐ Endrin, Whl Smpl		ug/l
☒ pH, Lab	7.3	S. U.		☒ Cadmium Total, Cd	0	ug/l		☐ Heptachlor, Whl Smpl		ug/l
☐ pH, $CaCO_3$ Stability		S. U.		☒ Chromium Total, Cr	0	ug/l		☐ Hchlr-Epoxide, Whl Smpl		ug/l
☒ Alkalinity Total, $CaCO_3$	260	mg/l		☐ Chromium Hex, Cr		ug/l		☐ Lindane, Whl Smpl		ug/l
☐ Alkalinity Phth, $CaCO_3$		mg/l		☐ Cobalt Total, Co		ug/l		☐ Methoxychlor, Whl Smpl		ug/l
☐ Alkalinity, $CaCO_3$ Stabl		mg/l		☐ Copper Total, Cu		ug/l		☐ Malathion, Whl Smpl		ug/l
☐ Carbon Dioxide, CO_2		mg/l		☒ Iron Total, Fe	0	ug/l		☐ Parathion, Whl Smpl		ug/l
☐ Acidity Total, $CaCO_3$		mg/l		☐ Iron Diss, Fe		ug/l		☐ Methyl Parathn, Whl Smpl		ug/l
☐ Acidity M.O., $CaCO_3$		mg/l		☐ Iron Ferrous, Fe		ug/l		☐ Beta, Total		pc/l
☐ Hardness Total, $CaCO_3$		mg/l		☒ Lead Total, Pb	0	ug/l		☐ Beta, Diss		pc/l
☐ Residue, Total		mg/l		☐ Lithium Total, Li		ug/l		☐ Beta, Suspd		pc/l
☐ Residue, Total Volatile		mg/l		☐ Manganese Total, Mn		ug/l		☐ Alpha, Total		pc/l
☐ Residue, Total Nflt (Sus)		mg/l		☐ Mercury Total, Hg		ug/l		☐ Alpha, Diss		pc/l
☐ Residue, Vol Nflt		mg/l		☐ Molybdenum Total, Mo		ug/l		☐ Alpha, Suspd		pc/l
☒ Residue, Total Flt (Diss)	926	mg/l		☐ Nickel Total, Ni		ug/l		☐ Radium 226, Total		pc/l
☐ Residue, Vol Flt		mg/l		☐ Selenium Total, Se		ug/l		☐ Strontium 90, Total		pc/l
☐ Residue, Settlable		mg/l		☐ Silver Total, Ag		ug/l		☐ Coliform Total, MF		#/100ml
☒ Nitrogen Organic, N		mg/l		☐ Strontium Total, Sr		ug/l		☐ Coliform Total MPN, Conf		#/100ml
☒ Nitrogen Ammonia, N	0.01	mg/l		☐ Thallium Total, Tl		ug/l		☐ Fecal Coli Total, MF		#/100ml
☐ Nitrite, N		mg/l		☐ Tin Total, Sn		ug/l		☐ Fecal Strep Total, MF		#/100ml
☒ Nitrate, N	1.7	mg/l		☐ Titanium Total, Ti		ug/l		☐ Plate Count, Total		#/ml
☐ Phosphorus Total, P		mg/l		☐ Tungsten Total, T		ug/l		☐ Algae, Total		#/ml
☐ Phosphorus Soluble, P		mg/l		☐ Vanadium Total, V		ug/l		☐ [illegible]	0.	
☒ Phosphate Total, PO_4	0.0	mg/l		☐ Zinc Total, Zn		ug/l		☐		
☐ Phosphate Ortho, PO_4		mg/l		☐ Zirconium Total, Zr	1.	ug/l		☐		
☒ Sulfate, SO_4	227	mg/l		☐ BOD, 5-Day		mg/l		☐		
☐ Sulfite, SO_3		mg/l		☒ COD	4.	mg/l		☐		
☐ Sulfide, S		mg/l		☐ Chlorine Demand, 15 min		mg/l		☐		
☒ Chloride, Cl	170	mg/l		☒ Carbon Total Org, C	20	mg/l		☐		

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O DEPARTMENT OF HEALTH
WATER QUALITY DATA

Date Received: 3-7-74
Date Reported: 3-6-74
Laboratory:
Laboratory Number: 3346
Analyst: AA

Station: MCQ Investigation
Station Code:
County: Franklin
Collected by: J. Noyes D. Johe

Identification of Sample: Decker Construction
Sample Code:
Date of grab sample (or last date of composite sample): Year Month Day Hour Minute
Comp

Sample Types: ☐ Industrial ☐ Sewage ☐ Water Supply ☐ Stream
Beginning Date of Composite Sample: Year Month Day Hour Minute
Fr

Analysis to be Reported to: ☐ CO ☐ SEDO ☐ NEDO ☐ SWDO ☐ NWDO

REASON FOR TAKING SAMPLE – ADDITIONAL INFORMATION – REMARKS BY ANALYST:
Ground-water
R. Stein
DEPA Surveillance
Seneca Towers

☐ Regular	(or indicate by checking boxes)	☐ Fluoride Diss, F		mg/l	☐ Cyanide, CN		
☐ Flow		CFS	☒ Calcium Total, Ca	70.	mg/l	☒ MBAS	0.04
☒ Water Temperature, Field	51.	F°	☒ Magnesium Total, Mg	47.	mg/l	☐ Oil-Grease, Total	
☐ pH, Field		S. U.	☒ Potassium Total, K	3.7	mg/l	☐ Phenols	
☐ Dissolved Oxygen, Field		mg/l	☒ Sodium Total, Na	22.	mg/l	☐ Tannin Lignin	
☐ Hydrogen Sulfide, Field		mg/l	☐ Aluminum Total, Al		ug/l	☐ Aldrin, Whl Smpl	
☐ Chlorine Free Avl, Field		mg/l	☐ Antimony Total, Sb		ug/l	☐ DDD, Whl Smpl	
☐ Chlorine Tot Resd, Field		mg/l	☐ Arsenic Total, As		ug/l	☐ DDE, Whl Smpl	
☐ Color		Pt-Co Units	☐ Barium Total, Ba		ug/l	☐ DDT, Whl Smpl	
☐ Odor		T. N.	☐ Beryllium Total, Be		ug/l	☐ Dieldrin, Whl Smpl	
☐ Turbidity		J. U.	☐ Bismuth Total, Bi		ug/l	☐ Chlordane, Whl Smpl	
☒ Conductivity at 25 C°	310.	Micromhos	☐ Boron Total, B		ug/l	☐ Endrin, Whl Smpl	
☒ pH, Lab	7.6	S. U.	☒ Cadmium Total, Cd	0.	ug/l	☐ Heptachlor, Whl Smpl	
☐ pH, $CaCO_3$ Stability		S. U.	☒ Chromium Total, Cr	0.	ug/l	☐ Hchlr-Epoxide, Whl Smpl	
☒ Alkalinity Total, $CaCO_3$	202.	mg/l	☐ Chromium Hex, Cr		ug/l	☐ Lindane, Whl Smpl	
☐ Alkalinity Phth, $CaCO_3$		mg/l	☐ Cobalt Total, Co		ug/l	☐ Methoxychlor, Whl Smpl	
☐ Alkalinity, $CaCO_3$ Stabl		mg/l	☐ Copper Total, Cu		ug/l	☐ Malathion, Whl Smpl	
☐ Carbon Dioxide, CO_2		mg/l	☒ Iron Total, Fe	100.	ug/l	☐ Parathion, Whl Smpl	
☐ Acidity Total, $CaCO_3$		mg/l	☐ Iron Diss, Fe		ug/l	☐ Methyl Parathn, Whl Smpl	
☐ Acidity M.O., $CaCO_3$		mg/l	☐ Iron Ferrous, Fe		ug/l	☐ Beta, Total	
☐ Hardness Total, $CaCO_3$		mg/l	☒ Lead Total, Pb	0.	ug/l	☐ Beta, Diss	
☐ Residue, Total		mg/l	☐ Lithium Total, Li		ug/l	☐ Beta, Suspd	
☐ Residue, Total Volatile		mg/l	☐ Manganese Total, Mn		ug/l	☐ Alpha, Total	
☐ Residue, Total Nflt (Sus)		mg/l	☐ Mercury Total, Hg		ug/l	☐ Alpha, Diss	
☐ Residue, Vol Nflt		mg/l	☐ Molybdenum Total, Mo		ug/l	☐ Alpha, Suspd	
☒ Residue, Total Flt (Diss)	622.	mg/l	☐ Nickel Total, Ni		ug/l	☐ Radium 226, Total	
☐ Residue, Vol Flt		mg/l	☐ Selenium Total, Se		ug/l	☐ Strontium 90, Total	
☐ Residue, Settlable		mg/l	☐ Silver Total, Ag		ug/l	☐ Coliform Total, MF	
☒ Nitrogen Organic, N		mg/l	☐ Strontium Total, Sr		ug/l	☐ Coliform Total MPN, Conf	
☒ Nitrogen Ammonia, N	0.04	mg/l	☐ Thallium Total, Tl		ug/l	☐ Fecal Coli Total, MF	
☐ Nitrite, N		mg/l	☐ Tin Total, Sn		ug/l	☐ Fecal Strep Total, MF	
☒ Nitrate, N	0.3	mg/l	☐ Titanium Total, Ti		ug/l	☐ Plate Count, Total	
☐ Phosphorus Total, P		mg/l	☐ Tungsten Total, T		ug/l	☐ Algae, Total	
☐ Phosphorus Soluble, P		mg/l	☐ Vanadium Total, V		ug/l	☐ TKN	1.
☒ Phosphate Total, PO_4	0.1	mg/l	☐ Zinc Total, Zn		ug/l	☐	
☐ Phosphate Ortho, PO_4		mg/l	☐ Zirconium Total, Zr		ug/l	☐	
☒ Sulfate, SO_4	238.	mg/l	☐ BOD, 5-Day		mg/l	☐	
☐ Sulfite, SO_3		mg/l	☒ COD	4.	mg/l	☐	
☐ Sulfide, S		mg/l	☐ Chlorine Demand, 15 min		mg/l	☐	
☒ Chloride, Cl	38.	mg/l	☒ Carbon Total Org, C	0.5	mg/l	☐	

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O DEPARTMENT OF HEALTH
WATER QUALITY DATA

Date Received: 3-7-74

Date Reported: ~~3-6-74~~ 3-26-74

Laboratory:

Laboratory Number: 3350

Analyst: [illegible]

Station: MCQ INVESTIGATION

Station Code:

County: FRANKLIN

Collected by: J. NOYES / D. JOHE

Identification of Sample: WELL AT MCQ - ARROW CONCRETE

Sample Code:

Date of grab sample (or last date of composite sample): Year 74 Month 03 Day 07 Hour Minute

Composit

Sample Types: ☒ Industrial ☐ Sewage ☐ Water Supply ☐ Stream

Beginning Date of Composite Sample: Year Month Day Hour Minute

Freque

Analysis to be Reported to: ☒ CO ☐ SEDO ☐ NEDO ☐ SWDO ☐ NWDO

REASON FOR TAKING SAMPLE – ADDITIONAL INFORMATION – REMARKS BY ANALYST:

☒ GROUND-WATER ☒ ANALYSIS TO RUSS STEIN - OEPA
361 E. BROAD.
SEARCH TOWER

☐ Regular (or indicate by checking boxes)

☐ Flow		CFS
☒ Water Temperature, Field	52	C° F°
☐ pH, Field		S. U.
☐ Dissolved Oxygen, Field		mg/l
☐ Hydrogen Sulfide, Field		mg/l
☐ Chlorine Free Avl, Field		mg/l
☐ Chlorine Tot Resd, Field		mg/l
☐ Color		Pt-Co Units
☐ Odor		T. N.
☐ Turbidity		J. U.
☒ Conductivity at 25 C°	1120	Micromhos
☒ pH, Lab	7.4	S. U.
☐ pH, $CaCO_3$ Stability		S. U.
☒ Alkalinity Total, $CaCO_3$	222	mg/l
☐ Alkalinity Phth, $CaCO_3$		mg/l
☐ Alkalinity, $CaCO_3$ Stabl		mg/l
☐ Carbon Dioxide, CO_2		mg/l
☐ Acidity Total, $CaCO_3$		mg/l
☐ Acidity M.O., $CaCO_3$		mg/l
☐ Hardness Total, $CaCO_3$		mg/l
☐ Residue, Total		mg/l
☐ Residue, Total Volatile		mg/l
☐ Residue, Total Nflt (Sus)		mg/l
☐ Residue, Vol Nflt		mg/l
☒ Residue, Total Flt (Diss)	809	mg/l
☐ Residue, Vol Flt		mg/l
☐ Residue, Settlable		mg/l
☒ Nitrogen Organic, N		mg/l
☒ Nitrogen Ammonia, N	012	mg/l
☐ Nitrite, N		mg/l
☒ Nitrate, N	0.9	mg/l
☐ Phosphorus Total, P		mg/l
☐ Phosphorus Soluble, P		mg/l
☒ Phosphate Total, PO_4	00	mg/l
☐ Phosphate Ortho, PO_4		mg/l
☒ Sulfate, SO_4	350	mg/l
☐ Sulfite, SO_3		mg/l
☐ Sulfide, S		mg/l
☒ Chloride, Cl	28	mg/l

☐ Fluoride Diss, F		mg/l
☒ Calcium Total, Ca	78	mg/l
☒ Magnesium Total, Mg	53	mg/l
☒ Potassium Total, K	4.6	mg/l
☒ Sodium Total, Na	10	mg/l
☐ Aluminum Total, Al		ug/l
☐ Antimony Total, Sb		ug/l
☐ Arsenic Total, As		ug/l
☐ Barium Total, Ba		ug/l
☐ Berylium Total, Be		ug/l
☐ Bismuth Total, Bi		ug/l
☐ Boron Total, B		ug/l
☒ Cadmium Total, Cd	0	ug/l
☒ Chromium Total, Cr	0	ug/l
☐ Chromium Hex, Cr		ug/l
☐ Cobalt Total, Co		ug/l
☐ Copper Total, Cu		ug/l
☒ Iron Total, Fe	500	ug/l
☐ Iron Diss, Fe		ug/l
☐ Iron Ferrous, Fe		ug/l
☒ Lead Total, Pb	0	ug/l
☐ Lithium Total, Li		ug/l
☐ Manganese Total, Mn		ug/l
☐ Mercury Total, Hg		ug/l
☐ Molybdenum Total, Mo		ug/l
☐ Nickel Total, Ni		ug/l
☐ Selenium Total, Se		ug/l
☐ Silver Total, Ag		ug/l
☐ Strontium Total, Sr		ug/l
☐ Thallium Total, Tl		ug/l
☐ Tin Total, Sn		ug/l
☐ Titanium Total, Ti		ug/l
☐ Tungsten Total, T		ug/l
☐ Vanadium Total, V		ug/l
☐ Zinc Total, Zn		ug/l
☐ Zirconium Total, Zr		ug/l
☐ BOD, 5-Day		mg/l
☒ COD	4	mg/l
☐ Chlorine Demand, 15 min		mg/l
☒ Carbon Total Org, C	05	mg/l

☐ Cyanide, CN		mg
☒ MBAS	0.05	mg
☐ Oil-Grease, Total		mg
☐ Phenols		ug
☐ Tannin Lignin		mg
☐ Aldrin, Whl Smpl		ug
☐ DDD, Whl Smpl		ug
☐ DDE, Whl Smpl		ug
☐ DDT, Whl Smpl		ug
☐ Dieldrin, Whl Smpl		ug
☐ Chlordane, Whl Smpl		ug
☐ Endrin, Whl Smpl		ug
☐ Heptachlor, Whl Smpl		ug
☐ Hchlr-Epoxide, Whl Smpl		ug
☐ Lindane, Whl Smpl		ug
☐ Methoxychlor, Whl Smpl		ug
☐ Malathion, Whl Smpl		ug
☐ Parathion, Whl Smpl		ug
☐ Methyl Parathn, Whl Smpl		ug
☐ Beta, Total		pc
☐ Beta, Diss		pc
☐ Beta, Suspd		pc
☐ Alpha, Total		pc
☐ Alpha, Diss		pc
☐ Alpha, Suspd		pc
☐ Radium 226, Total		pc
☐ Strontium 90, Total		pc
☐ Coliform Total, MF		#/100
☐ Coliform Total MPN, Conf		#/100
☐ Fecal Coli Total, MF		#/100
☐ Fecal Strep Total, MF		#/100
☐ Plate Count, Total		#/ml
☐ Algae, Total		#/ml
☐ TKN	1.	
☐		
☐		
☐		
☐		
☐		

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IO DEPARTMENT OF HEALTH
WATER QUALITY DATA

Date Received: 3-7-74
Date Reported: 3-26-74
Laboratory:
Laboratory Number: 3348
Analyst: [illegible]

Station: MCQ Investigation
Station Code:
County: Franklin
Collected by: J. Noyes

Identification of Sample: Leachate-stream
Sample Code:
Date of grab sample (or last date of composite sample): Year 74 Month 03 Day 07 Hour Minute
Composite Type:

Sample Types: ☐ Industrial ☐ Sewage ☐ Water Supply ☐ Stream
Beginning Date of Composite Sample: Year Month Day C Hour Minute
Frequency:

Analysis to be Reported to: ☐ CO ☐ SEDO ☐ NEDO ☐ SWDO ☐ NWDO

REASON FOR TAKING SAMPLE – ADDITIONAL INFORMATION – REMARKS BY ANALYST:
☒ groundwater
R. Stein
DEPA Surveillance
Seneca Towers

☐ Regular (or indicate by checking boxes)		☐ Fluoride Diss, F	mg/l	☐ Cyanide, CN	mg/l
☐ Flow	CFS	☒ Calcium Total, Ca	167 mg/l	☒ MBAS	0.24 mg/l
☐ Water Temperature, Field	C°	☒ Magnesium Total, Mg	75 mg/l	☐ Oil-Grease, Total	mg/l
☐ pH, Field	S. U.	☒ Potassium Total, K	25 mg/l	☐ Phenols	ug/l
☐ Dissolved Oxygen, Field	mg/l	☒ Sodium Total, Na	79 mg/l	☐ Tannin Lignin	mg/l
☐ Hydrogen Sulfide, Field	mg/l	☐ Aluminum Total, Al	ug/l	☐ Aldrin, Whl Smpl	ug/l
☐ Chlorine Free Avl, Field	mg/l	☐ Antimony Total, Sb	ug/l	☐ DDD, Whl Smpl	ug/l
☐ Chlorine Tot Resd, Field	mg/l	☐ Arsenic Total, As	ug/l	☐ DDE, Whl Smpl	ug/l
☐ Color	Pt-Co Units	☐ Barium Total, Ba	ug/l	☐ DDT, Whl Smpl	ug/l
☐ Odor	T. N.	☐ Beryllium Total, Be	ug/l	☐ Dieldrin, Whl Smpl	ug/l
☐ Turbidity	J. U.	☐ Bismuth Total, Bi	ug/l	☐ Chlordane, Whl Smpl	ug/l
☒ Conductivity at 25 C°	Micromhos	☐ Boron Total, B	ug/l	☐ Endrin, Whl Smpl	ug/l
☒ pH, Lab	S. U.	☒ Cadmium Total, Cd	0 ug/l	☐ Heptachlor, Whl Smpl	ug/l
☐ pH, $CaCO_3$ Stability	S. U.	☒ Chromium Total, Cr	0 ug/l	☐ Hchlr-Epoxide, Whl Smpl	ug/l
☒ Alkalinity Total, $CaCO_3$	545 mg/l	☐ Chromium Hex, Cr	ug/l	☐ Lindane, Whl Smpl	ug/l
☐ Alkalinity Phth, $CaCO_3$	mg/l	☐ Cobalt Total, Co	ug/l	☐ Methoxychlor, Whl Smpl	ug/l
☐ Alkalinity, $CaCO_3$ Stabl	mg/l	☐ Copper Total, Cu	ug/l	☐ Malathion, Whl Smpl	ug/l
☐ Carbon Dioxide, CO_2	mg/l	☒ Iron Total, Fe	44000 ug/l	☐ Parathion, Whl Smpl	ug/l
☐ Acidity Total, $CaCO_3$	mg/l	☐ Iron Diss, Fe	ug/l	☐ Methyl Parathn, Whl Smpl	ug/l
☐ Acidity M.O., $CaCO_3$	mg/l	☐ Iron Ferrous, Fe	ug/l	☐ Beta, Total	pc/l
☐ Hardness Total, $CaCO_3$	mg/l	☒ Lead Total, Pb	0 ug/l	☐ Beta, Diss	pc/l
☐ Residue, Total	mg/l	☐ Lithium Total, Li	ug/l	☐ Beta, Suspd	pc/l
☐ Residue, Total Volatile	mg/l	☐ Manganese Total, Mn	ug/l	☐ Alpha, Total	pc/l
☐ Residue, Total Nflt (Sus)	mg/l	☐ Mercury Total, Hg	ug/l	☐ Alpha, Diss	pc/l
☐ Residue, Vol Nflt	mg/l	☐ Molybdenum Total, Mo	ug/l	☐ Alpha, Suspd	pc/l
☒ Residue, Total Flt (Diss)	1030 mg/l	☐ Nickel Total, Ni	ug/l	☐ Radium 226, Total	pc/l
☐ Residue, Vol Flt	mg/l	☐ Selenium Total, Se	ug/l	☐ Strontium 90, Total	pc/l
☐ Residue, Settlable	mg/l	☐ Silver Total, Ag	ug/l	☐ Coliform Total, MF	#/100ml
☒ Nitrogen Organic, N	mg/l	☐ Strontium Total, Sr	ug/l	☐ Coliform Total MPN, Conf	#/100ml
☒ Nitrogen Ammonia, N	156 mg/l	☐ Thallium Total, Tl	ug/l	☐ Fecal Coli Total, MF	#/100ml
☐ Nitrite, N	mg/l	☐ Tin Total, Sn	ug/l	☐ Fecal Strep Total, MF	#/100ml
☒ Nitrate, N	01 mg/l	☐ Titanium Total, Ti	ug/l	☐ Plate Count, Total	#/ml
☐ Phosphorus Total, P	mg/l	☐ Tungsten Total, T	ug/l	☐ Algae, Total	#/ml
☐ Phosphorus Soluble, P	mg/l	☐ Vanadium Total, V	ug/l	☐ TKN	15.
☒ Phosphate Total, PO_4	00 mg/l	☐ Zinc Total, Zn	ug/l	☐	
☐ Phosphate Ortho, PO_4	mg/l	☐ Zirconium Total, Zr	ug/l	☐	
☒ Sulfate, SO_4	0 mg/l	☐ BOD, 5-Day	mg/l	☐	
☐ Sulfite, SO_3	mg/l	☒ COD	728 mg/l	☐	
☐ Sulfide, S	mg/l	☐ Chlorine Demand, 15 min	mg/l	☐	
☒ Chloride, Cl	120 mg/l	☒ Carbon Total Org, C	226 mg/l	☐	

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OHIO DEPARTMENT OF HEALTH
WATER QUALITY DATA

Date Received: 4-8-74

Date Reported: 4-17-74

Laboratory:

Laboratory Number: 3704

Analyst: RA

Influent

Station: MARBLE CLIFF QUARRY TEST

Station Code:

County: FRANKLIN

Collected by: OSHMAN - MAUGHT

Identification of Sample: LANDFILL DRAINAGE BEFORE TEST

Sample Code:

Date of grab sample (or last date of composite sample): Year Month Day Hour Minute

Composite Typ

Sample Types: ☒ Industrial ☐ Sewage ☐ Water Supply ☐ Stream

Beginning Date of Composite Sample: Year Month Day Hour Minute C

Frequency

Analysis to be Reported to: ☒ CO ☐ SEDO ☐ NEDO ☐ SWDO ☐ NWDO

REASON FOR TAKING SAMPLE – ADDITIONAL INFORMATION – REMARKS BY ANALYST:

Solid Waste Test Report To: M. OSHMAN PLANNING

IF INSUFFICIENT SAMPLE CALL STEVE - 5313

☐ Regular (or indicate by checking boxes)		☐ Fluoride Diss, F	mg/l	☐ Cyanide, CN	mg/l
☐ Flow	CFS	☐ Calcium Total, Ca	mg/l	☒ MBAS	40 mg/l
☐ Water Temperature, Field	C°	☐ Magnesium Total, Mg	mg/l	☐ Oil-Grease, Total	mg/l
☐ pH, Field	S. U.	☐ Potassium Total, K	mg/l	☐ Phenols	ug/l
☐ Dissolved Oxygen, Field	mg/l	☒ Sodium Total, Na	920 mg/l	☐ Tannin Lignin	mg/l
☐ Hydrogen Sulfide, Field	mg/l	☐ Aluminum Total, Al	ug/l	☐ Aldrin, Whl Smpl	ug/l
☐ Chlorine Free Avl, Field	mg/l	☐ Antimony Total, Sb	ug/l	☐ DDD, Whl Smpl	ug/l
☐ Chlorine Tot Resd, Field	mg/l	☐ Arsenic Total, As	ug/l	☐ DDE, Whl Smpl	ug/l
☐ Color	Pt-Co Units	☐ Barium Total, Ba	ug/l	☐ DDT, Whl Smpl	ug/l
☐ Odor	T. N.	☐ Berylium Total, Be	ug/l	☐ Dieldrin, Whl Smpl	ug/l
☐ Turbidity	J. U.	☐ Bismuth Total, Bi	ug/l	☐ Chlordane, Whl Smpl	ug/l
☒ Conductivity at 25 C°	13600 Micromhos	☐ Boron Total, B	ug/l	☐ Endrin, Whl Smpl	ug/l
☒ pH, Lab	5.7 S. U.	☐ Cadmium Total, Cd	ug/l	☐ Heptachlor, Whl Smpl	ug/l
☐ pH, $CaCO_3$ Stability	S. U.	☒ Chromium Total, Cr	600 ug/l	☐ Hchlr-Epoxide, Whl Smpl	ug/l
☒ Alkalinity Total, $CaCO_3$	7140 mg/l	☐ Chromium Hex, Cr	ug/l	☐ Lindane, Whl Smpl	ug/l
☐ Alkalinity Phth, $CaCO_3$	mg/l	☐ Cobalt Total, Co	ug/l	☐ Methoxychlor, Whl Smpl	ug/l
☐ Alkalinity, $CaCO_3$ Stabl	mg/l	☐ Copper Total, Cu	ug/l	☐ Malathion, Whl Smpl	ug/l
☐ Carbon Dioxide, CO_2	mg/l	☒ Iron Total, Fe	110000 ug/l	☐ Parathion, Whl Smpl	ug/l
☐ Acidity Total, $CaCO_3$	mg/l	☐ Iron Diss, Fe	ug/l	☐ Methyl Parathn, Whl Smpl	ug/l
☐ Acidity M.O., $CaCO_3$	mg/l	☐ Iron Ferrous, Fe	ug/l	☐ Beta, Total	pc/l
☒ Hardness Total, $CaCO_3$	5700 mg/l	☐ Lead Total, Pb	ug/l	☐ Beta, Diss	pc/l
☐ Residue, Total	mg/l	☐ Lithium Total, Li	ug/l	☐ Beta, Suspd	pc/l
☐ Residue, Total Volatile	mg/l	☐ Manganese Total, Mn	ug/l	☐ Alpha, Total	pc/l
☐ Residue, Total Nflt (Sus)	mg/l	☐ Mercury Total, Hg	ug/l	☐ Alpha, Diss	pc/l
☐ Residue, Vol Nflt	mg/l	☐ Molybdenum Total, Mo	ug/l	☐ Alpha, Suspd	pc/l
☐ Residue, Total Flt (Diss)	mg/l	☐ Nickel Total, Ni	ug/l	☐ Radium 226, Total	pc/l
☐ Residue, Vol Flt	mg/l	☐ Selenium Total, Se	ug/l	☐ Strontium 90, Total	pc/l
☐ Residue, Settlable	mg/l	☐ Silver Total, Ag	ug/l	☐ Coliform Total, MF	#/100ml
☐ Nitrogen Organic, N	mg/l	☐ Strontium Total, Sr	ug/l	☐ Coliform Total MPN, Conf	#/100ml
☐ Nitrogen Ammonia, N	mg/l	☐ Thallium Total, Tl	ug/l	☐ Fecal Coli Total, MF	#/100ml
☐ Nitrite, N	mg/l	☐ Tin Total, Sn	ug/l	☐ Fecal Strep Total, MF	#/100ml
☒ Nitrate, N	0.0 mg/l	☐ Titanium Total, Ti	ug/l	☐ Plate Count, Total	#/ml
☐ Phosphorus Total, P	mg/l	☐ Tungsten Total, T	ug/l	☐ Algae, Total	#/ml
☐ Phosphorus Soluble, P	mg/l	☐ Vanadium Total, V	ug/l	☐	
☐ Phosphate Total, PO_4	mg/l	☒ Zinc Total, Zn	55000 ug/l	☐	
☐ Phosphate Ortho, PO_4	mg/l	☐ Zirconium Total, Zr	ug/l	☐	
☐ Sulfate, SO_4	mg/l	☐ BOD, 5-Day	mg/l	☐	
☐ Sulfite, SO_3	mg/l	☐ COD	mg/l	☐	
☐ Sulfide, S	mg/l	☐ Chlorine Demand, 15 min	mg/l	☐	
☒ Chloride, Cl	1500 mg/l	☒ Carbon Total Org, C	12900 mg/l	☐	

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Sept. - EE - CPO

OHIO DEPARTMENT OF HEALTH

WATER QUALITY DATA

Date Received: 4-8-74
Date Reported: 4-?-74
Laboratory:
Laboratory Number: 3705
Analyst: [signature]

Station: MARBLE CLIFF QUARRY TEST
Station Code:
County: FRANKLIN
Collected by: OSSMAN - Planning

Identification of Sample: DISTILLED WATER FILTRATE THRU STONE DUST
Sample Code:

Date of grab sample (or last date of composite sample): Year | Month | Day | Hour | Minute

Sample Types: ☐ Industrial ☐ Sewage ☐ Water Supply ☐ Stream

Beginning Date of Composite Sample: Year | Month | Day | C | Hour | Minute

Analysis to be Reported to: ☒ CO ☐ SEDO ☐ NEDO ☐ SWDO ☐ NWDO

REASON FOR TAKING SAMPLE – ADDITIONAL INFORMATION – REMARKS BY ANALYST:

[illegible] Test

Report To: N. OSSMAN

Planning

Parameter	Value	Units	Parameter	Value	Units	Parameter	Value
☐ Regular (or indicate by checking boxes)			☐ Fluoride Diss, F		mg/l	☐ Cyanide, CN	
☐ Flow		CFS	☐ Calcium Total, Ca		mg/l	☐ MBAS	
☐ Water Temperature, Field		C°	☐ Magnesium Total, Mg		mg/l	☐ Oil-Grease, Total	
☐ pH, Field		S. U.	☐ Potassium Total, K		mg/l	☐ Phenols	
☐ Dissolved Oxygen, Field		mg/l	☒ ~~Sodium Total,~~ Na		mg/l	☐ Tannin Lignin	
☐ Hydrogen Sulfide, Field		mg/l	☐ Aluminum Total, Al		ug/l	☐ Aldrin, Whl Smpl	
☐ Chlorine Free Avl, Field		mg/l	☐ Antimony Total, Sb		ug/l	☐ DDD, Whl Smpl	
☐ Chlorine Tot Resd, Field		mg/l	☐ Arsenic Total, As		ug/l	☐ DDE, Whl Smpl	
☐ Color		Pt-Co Units	☐ Barium Total, Ba		ug/l	☐ DDT, Whl Smpl	
☐ Odor		T. N.	☐ Berylium Total, Be		ug/l	☐ Dieldrin, Whl Smpl	
☐ Turbidity		J. U.	☐ Bismuth Total, Bi		ug/l	☐ Chlordane, Whl Smpl	
☒ Conductivity at 25 C°	[illegible]	Micromhos	☐ Boron Total, B		ug/l	☐ Endrin, Whl Smpl	
☒ pH, Lab	[illegible]	S. U.	☐ Cadmium Total, Cd		ug/l	☐ Heptachlor, Whl Smpl	
☐ pH, $CaCO_3$ Stability		S. U.	☐ Chromium Total, Cr		ug/l	☐ Hchlr-Epoxide, Whl Smpl	
☒ Alkalinity Total, $CaCO_3$		mg/l	☐ Chromium Hex, Cr		ug/l	☐ Lindane, Whl Smpl	
☐ Alkalinity Phth, $CaCO_3$		mg/l	☐ Cobalt Total, Co		ug/l	☐ Methoxychlor, Whl Smpl	
☐ Alkalinity, $CaCO_3$ Stabl		mg/l	☐ Copper Total, Cu		ug/l	☐ Malathion, Whl Smpl	
☐ Carbon Dioxide, CO_2		mg/l	☒ ~~Iron Total,~~ Fe		ug/l	☐ Parathion, Whl Smpl	
☐ Acidity Total, $CaCO_3$		mg/l	☐ Iron Diss, Fe		ug/l	☐ Methyl Parathn, Whl Smpl	
☐ Acidity M.O., $CaCO_3$		mg/l	☐ Iron Ferrous, Fe		ug/l	☐ Beta, Total	
☒ Hardness Total, $CaCO_3$	[illegible]	mg/l	☐ Lead Total, Pb		ug/l	☐ Beta, Diss	
☐ Residue, Total		mg/l	☐ Lithium Total, Li		ug/l	☐ Beta, Suspd	
☐ Residue, Total Volatile		mg/l	☐ Manganese Total, Mn		ug/l	☐ Alpha, Total	
☐ Residue, Total Nflt (Sus)		mg/l	☐ Mercury Total, Hg		ug/l	☐ Alpha, Diss	
☐ Residue, Vol Nflt		mg/l	☐ Molybdenum Total, Mo		ug/l	☐ Alpha, Suspd	
☐ Residue, Total Flt (Diss)		mg/l	☐ Nickel Total, Ni		ug/l	☐ Radium 226, Total	
☐ Residue, Vol Flt		mg/l	☐ Selenium Total, Se		ug/l	☐ Strontium 90, Total	
☐ Residue, Settlable		mg/l	☐ Silver Total, Ag		ug/l	☐ Coliform Total, MF	
☐ Nitrogen Organic, N		mg/l	☐ Strontium Total, Sr		ug/l	☐ Coliform Total MPN, Conf	
☐ Nitrogen Ammonia, N		mg/l	☐ Thallium Total, Tl		ug/l	☐ Fecal Coli Total, MF	
☐ Nitrite, N		mg/l	☐ Tin Total, Sn		ug/l	☐ Fecal Strep Total, MF	
☐ Nitrate, N		mg/l	☐ Titanium Total, Ti		ug/l	☐ Plate Count, Total	
☐ Phosphorus Total, P		mg/l	☐ Tungsten Total, T		ug/l	☐ Algae, Total	
☐ Phosphorus Soluble, P		mg/l	☐ Vanadium Total, V		ug/l	☐	
☐ Phosphate Total, PO_4		mg/l	☐ Zinc Total, Zn		ug/l	☐	
☐ Phosphate Ortho, PO_4		mg/l	☐ Zirconium Total, Zr		ug/l	☐	
☐ Sulfate, SO_4		mg/l	☐ BOD, 5-Day		mg/l	☐	
☐ Sulfite, SO_3		mg/l	☐ COD		mg/l	☐	
☐ Sulfide, S		mg/l	☐ Chlorine Demand, 15 min		mg/l	☐	
☒ Chloride, Cl		mg/l	☐ Carbon Total Org, C		mg/l	☐	

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SURV. – EF. CDO

OHIO DEPARTMENT OF HEALTH
WATER QUALITY DATA

Date Received: 4-25-74

Date Reported: 5/15/74

Laboratory:

Laboratory Number: 3921

Analyst: [illegible]

Station: Marble Cliff Quarry Test

Station Code:

County: Franklin

Collected by: Russ Stein

Identification of Sample: Distilled water Filtrate

Sample Code:

Date of grab sample (or last date of composite sample): Year 74 Month 04 Day 18 Hour Minute

Composit

Sample Types: ☐ Industrial ☐ Sewage ☐ Water Supply ☐ Stream

Beginning Date of Composite Sample: Year Month Day C Hour Minute

Freque

Analysis to be Reported to: ☐ CO ☐ SEDO ☐ NEDO ☐ SWDO ☐ NWDO

REASON FOR TAKING SAMPLE – ADDITIONAL INFORMATION – REMARKS BY ANALYST:

Ground water

Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit
☐ Regular (or indicate by checking boxes)			☐ Fluoride Diss, F		mg/l	☐ Cyanide, CN		mg
☐ Flow		CFS	☐ Calcium Total, Ca		mg/l	☐ MBAS		mg
☐ Water Temperature, Field		C°	☐ Magnesium Total, Mg		mg/l	☐ Oil-Grease, Total		mg
☐ pH, Field		S. U.	☐ Potassium Total, K		mg/l	☐ Phenols		ug
☐ Dissolved Oxygen, Field		mg/l	☐ Sodium Total, Na	7	mg/l	☐ Tannin Lignin		mg
☐ Hydrogen Sulfide, Field		mg/l	☐ Aluminum Total, Al		ug/l	☐ Aldrin, Whl Smpl		ug
☐ Chlorine Free Avl, Field		mg/l	☐ Antimony Total, Sb		ug/l	☐ DDD, Whl Smpl		ug
☐ Chlorine Tot Resd, Field		mg/l	☐ Arsenic Total, As		ug/l	☐ DDE, Whl Smpl		ug
☐ Color		Pt-Co Units	☐ Barium Total, Ba		ug/l	☐ DDT, Whl Smpl		ug
☐ Odor		T. N.	☐ Berylium Total, Be		ug/l	☐ Dieldrin, Whl Smpl		ug
☐ Turbidity		J. U.	☐ Bismuth Total, Bi		ug/l	☐ Chlordane, Whl Smpl		ug
☐ Conductivity at 25 C°		Micromhos	☐ Boron Total, B		ug/l	☐ Endrin, Whl Smpl		ug
☐ pH, Lab		S. U.	☐ Cadmium Total, Cd		ug/l	☐ Heptachlor, Whl Smpl		ug
☐ pH, $CaCO_3$ Stability		S. U.	☐ Chromium Total, Cr		ug/l	☐ Hchlr-Epoxide, Whl Smpl		ug
☐ Alkalinity Total, $CaCO_3$		mg/l	☐ Chromium Hex, Cr		ug/l	☐ Lindane, Whl Smpl		ug
☐ Alkalinity Phth, $CaCO_3$		mg/l	☐ Cobalt Total, Co		ug/l	☐ Methoxychlor, Whl Smpl		ug
☐ Alkalinity, $CaCO_3$ Stabl		mg/l	☐ Copper Total, Cu		ug/l	☐ Malathion, Whl Smpl		ug
☐ Carbon Dioxide, CO_2		mg/l	☐ Iron Total, Fe		ug/l	☐ Parathion, Whl Smpl		ug
☐ Acidity Total, $CaCO_3$		mg/l	☐ Iron Diss, Fe		ug/l	☐ Methyl Parathn, Whl Smpl		ug
☐ Acidity M.O., $CaCO_3$		mg/l	☐ Iron Ferrous, Fe		ug/l	☐ Beta, Total		pc
☐ Hardness Total, $CaCO_3$		mg/l	☐ Lead Total, Pb		ug/l	☐ Beta, Diss		pc
☐ Residue, Total		mg/l	☐ Lithium Total, Li		ug/l	☐ Beta, Suspd		pc
☐ Residue, Total Volatile		mg/l	☐ Manganese Total, Mn		ug/l	☐ Alpha, Total		pc/
☐ Residue, Total Nflt (Sus)		mg/l	☐ Mercury Total, Hg		ug/l	☐ Alpha, Diss		pc/
☐ Residue, Vol Nflt		mg/l	☐ Molybdenum Total, Mo		ug/l	☐ Alpha, Suspd		pc/
☐ Residue, Total Flt (Diss)		mg/l	☐ Nickel Total, Ni		ug/l	☐ Radium 226, Total		pc/
☐ Residue, Vol Flt		mg/l	☐ Selenium Total, Se		ug/l	☐ Strontium 90, Total		pc/
☐ Residue, Settlable		mg/l	☐ Silver Total, Ag		ug/l	☐ Coliform Total, MF		#/100
☐ Nitrogen Organic, N		mg/l	☐ Strontium Total, Sr		ug/l	☐ Coliform Total MPN, Conf		#/100
☐ Nitrogen Ammonia, N		mg/l	☐ Thallium Total, Tl		ug/l	☐ Fecal Coli Total, MF		#/100
☐ Nitrite, N		mg/l	☐ Tin Total, Sn		ug/l	☐ Fecal Strep Total, MF		#/100
☐ Nitrate, N		mg/l	☐ Titanium Total, Ti		ug/l	☐ Plate Count, Total		#/ml
☐ Phosphorus Total, P		mg/l	☐ Tungsten Total, T		ug/l	☐ Algae, Total		#/ml
☐ Phosphorus Soluble, P		mg/l	☐ Vanadium Total, V		ug/l	☐		
☐ Phosphate Total, PO_4		mg/l	☐ Zinc Total, Zn		ug/l	☐		
☐ Phosphate Ortho, PO_4		mg/l	☐ Zirconium Total, Zr		ug/l	☐		
☐ Sulfate, SO_4		mg/l	☐ BOD, 5-Day		mg/l	☐		
☐ Sulfite, SO_3		mg/l	☐ COD		mg/l	☐		
☐ Sulfide, S		mg/l	☐ Chlorine Demand, 15 min		mg/l	☐		
☐ Chloride, Cl		mg/l	☐ Carbon Total Org, C		mg/l	☐		

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OHIO DEPARTMENT OF HEALTH
WATER QUALITY DATA

Date Received: 4-25-74

Date Reported: 5/20/74

Laboratory:

Laboratory Number: 3923

Analyst: MB

Station: Marble Cliff Quarry Test

Station Code:

County: Franklin

Collected by: Russ Stein

Identification of Sample: Landfill Drainage After Test

Sample Code:

Date of grab sample (or last date of composite sample): Year 74 Month 04 Day 18 Hour Minute

Composite

Sample Types: ☒ Industrial ☐ Sewage ☐ Water Supply ☐ Stream

Beginning Date of Composite Sample: Year Month Day C Hour Minute

Frequen

Analysis to be Reported to: ☐ CO ☐ SEDO ☐ NEDO ☐ SWDO ☐ NWDO

REASON FOR TAKING SAMPLE – ADDITIONAL INFORMATION – REMARKS BY ANALYST:

ground water

☐ Regular (or indicate by checking boxes)			Fluoride Diss, F	mg/l	Cyanide, CN	mg
☐ Flow		CFS	Calcium Total, Ca	mg/l	MBAS	mg
☐ Water Temperature, Field		C°	Magnesium Total, Mg	mg/l	Oil-Grease, Total	mg
☐ pH, Field		S. U.	Potassium Total, K	mg/l	Phenols	ug
☐ Dissolved Oxygen, Field		mg/l	Sodium Total, Na	mg/l	Tannin Lignin	mg
☐ Hydrogen Sulfide, Field		mg/l	Aluminum Total, Al	ug/l	Aldrin, Whl Smpl	ug
☐ Chlorine Free Avl, Field		mg/l	Antimony Total, Sb	ug/l	DDD, Whl Smpl	ug
☐ Chlorine Tot Resd, Field		mg/l	Arsenic Total, As	ug/l	DDE, Whl Smpl	ug
☐ Color		Pt-Co Units	Barium Total, Ba	ug/l	DDT, Whl Smpl	ug
☐ Odor		T. N.	Beryllium Total, Be	ug/l	Dieldrin, Whl Smpl	ug
☐ Turbidity		J. U.	Bismuth Total, Bi	ug/l	Chlordane, Whl Smpl	ug
☐ Conductivity at 25 C°	7	Micromhos	Boron Total, B	ug/l	Endrin, Whl Smpl	ug
☐ pH, Lab	9.1	S. U.	Cadmium Total, Cd	ug/l	Heptachlor, Whl Smpl	ug
☐ pH, $CaCO_3$ Stability		S. U.	Chromium Total, Cr	ug/l	Hchlr-Epoxide, Whl Smpl	ug
☐ Alkalinity Total, $CaCO_3$	3	mg/l	Chromium Hex, Cr	ug/l	Lindane, Whl Smpl	ug
☐ Alkalinity Phth, $CaCO_3$		mg/l	Cobalt Total, Co	ug/l	Methoxychlor, Whl Smpl	ug
☐ Alkalinity, $CaCO_3$ Stabl		mg/l	Copper Total, Cu	ug/l	Malathion, Whl Smpl	ug
☐ Carbon Dioxide, CO_2		mg/l	Iron Total, Fe	114000 ug/l	Parathion, Whl Smpl	ug
☐ Acidity Total, $CaCO_3$		mg/l	Iron Diss, Fe	ug/l	Methyl Parathn, Whl Smpl	ug
☐ Acidity M.O., $CaCO_3$		mg/l	Iron Ferrous, Fe	ug/l	Beta, Total	pc
☐ Hardness Total, $CaCO_3$	250	mg/l	Lead Total, Pb	ug/l	Beta, Diss	pc
☐ Residue, Total		mg/l	Lithium Total, Li	ug/l	Beta, Suspd	pc
☐ Residue, Total Volatile		mg/l	Manganese Total, Mn	ug/l	Alpha, Total	pc
☐ Residue, Total Nflt (Sus)		mg/l	Mercury Total, Hg	ug/l	Alpha, Diss	pc
☐ Residue, Vol Nflt		mg/l	Molybdenum Total, Mo	ug/l	Alpha, Suspd	pc
☐ Residue, Total Flt (Diss)		mg/l	Nickel Total, Ni	ug/l	Radium 226, Total	pc
☐ Residue, Vol Flt		mg/l	Selenium Total, Se	ug/l	Strontium 90, Total	pc
☐ Residue, Settlable		mg/l	Silver Total, Ag	ug/l	Coliform Total, MF	#/100
☐ Nitrogen Organic, N		mg/l	Strontium Total, Sr	ug/l	Coliform Total MPN, Conf	#/100
☐ Nitrogen Ammonia, N		mg/l	Thallium Total, Tl	ug/l	Fecal Coli Total, MF	#/100
☐ Nitrite, N		mg/l	Tin Total, Sn	ug/l	Fecal Strep Total, MF	#/100
☐ Nitrate, N		mg/l	Titanium Total, Ti	ug/l	Plate Count, Total	#/ml
☐ Phosphorus Total, P		mg/l	Tungsten Total, T	ug/l	Algae, Total	#/ml
☐ Phosphorus Soluble, P		mg/l	Vanadium Total, V	ug/l	☐	
☐ Phosphate Total, PO_4		mg/l	Zinc Total, Zn	9000 ug/l	☐	
☐ Phosphate Ortho, PO_4		mg/l	Zirconium Total, Zr	ug/l	☐	
☐ Sulfate, SO_4		mg/l	BOD, 5-Day	mg/l	☐	
☐ Sulfite, SO_3		mg/l	COD	mg/l	☐	
☐ Sulfide, S		mg/l	Chlorine Demand, 15 min	mg/l	☐	
☐ Chloride, Cl	440	mg/l	Carbon Total Org, C	37 mg/l	☐	

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SAMPLE PROPOSAL
FIT REGION V

1. Date Form Completed March 14, 1988

2. Account # F8H0027SA TDD # F05-8710-062

EPA I.D. # OHD980510226

3. Site Name, City, State Marble Cliff Quarries Dump
Columbus, Ohio

4. Team Leader Gold Sampler Smith

5. Number and Type of Samples:

Soil/Sediment 8 Surface Water 0 Ground Water 0

Residential/Municipal Wells 3 Other 0

Number of Blanks 1 Number of Duplicates 1

6. RAS Parameters Requested:

A/B/N ✓ Pest/PCB ✓ Volatiles ✓ Metals ✓ Cyanide ✓

SAS Parameters Requested: None

7. Expected Sampling Date(s): wk. of 4/25/88

Expected Shipping Date(s): Same

8. Lab Used For Analysis: Organic ITSTU Rev Enseco/CAL

Inorganic Keystone TX Rev Chemtech

SAS

9. Case Number 94169 SAS Number 3758E/3554E

10. Airbill Numbers: 4/28

Organic Lab ITSTU 7844394972 # Coolers 1 # Samples 8 soils

Inorganic Lab Key 7844394983 # Coolers 1 # Samples 8 soils

CRL/SAS Lab # Coolers # Samples

4/27 CAL 7844394950 2 5 res

Chem 7844394961 1 5 res

complete

SAMPLE DESCRIPTION —

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION RW1 - MSD

SAMPLING DATE 4/27/88 SAMPLING TIME 1515

ORGANIC TRAFFIC NUMBER EX022

INORGANIC TRAFFIC NUMBER MEX226

	BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
RW1	1 l amber	Extractable	157033, 37, 34	H8015034
	40 ml VOA	VOA	157035, 36	B7274071
	1 l plastic	metals	157038	C8048034
	1 l plastic	CN⁻	157039	C8048034
MSD	1 l amber	Extractables	157040, 41, 42	H8015034
	1 l plastic	Metals	—	—
	1 l plastic	CN⁻	—	—
	40 ml	VOA	157043, 44	B7274071

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: — clear

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH 6.85

CONDUCTIVITY 110 µU

TEMPERATURE 16° C

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION RW2

SAMPLING DATE 4/27/88 SAMPLING TIME 1530

ORGANIC TRAFFIC NUMBER EX023

INORGANIC TRAFFIC NUMBER ME x 227

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1 l amber C-	Extractable	157045 - 7	H8015034
40 ml VOA	VOA	157048 - 9	B7274071
1 l plastic	metals	157050	C8048034
1 l plastic	CN-	157051	C8048034

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: - clear

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH 6.71

CONDUCTIVITY 140 µU

TEMPERATURE 13° C

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION Rev2 Dup

SAMPLING DATE 4/27/88 SAMPLING TIME 1530

ORGANIC TRAFFIC NUMBER Ex 024

INORGANIC TRAFFIC NUMBER ME x 228

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1 l amber C-	Extractable	157052 - 4	H8015034
40 ml VOA	VOA	157055 - 6	B7274071
1 l plastic	metals	157057	C8048034
1 l plastic	CN-	157058	C8048034

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: - clear

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH 6.71

CONDUCTIVITY 140 µU

TEMPERATURE 13°C

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION RW3

SAMPLING DATE 4/27/88 SAMPLING TIME 1610

ORGANIC TRAFFIC NUMBER EX 025

INORGANIC TRAFFIC NUMBER MEx 229

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1 l amber	Extractable	157059 - 61	H8015034
40 ml VOA	VOA	157062 - 63	B7274071
1 l plastic	metals	157064	C8048034
1 l plastic	CN⁻	157065	C8048034

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: clear

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH 6.97

CONDUCTIVITY 90 µU

TEMPERATURE 13°C

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION BLK

SAMPLING DATE 4/27/88 SAMPLING TIME 1415

ORGANIC TRAFFIC NUMBER EX 026

INORGANIC TRAFFIC NUMBER MEX 230

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1 l amber C-	Extractable	157066 - 68	H8015034
40 ml VOA	VOA	157069 - 70	B7274071
1 l plastic	metals	157071	C8048034
1 l plastic	CN-	157072	C8048034

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: clear

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH not taken

CONDUCTIVITY "

TEMPERATURE "

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION S1

SAMPLING DATE 4/28/88 SAMPLING TIME 1240

ORGANIC TRAFFIC NUMBER EX014

INORGANIC TRAFFIC NUMBER MEX218

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz	extractables	157001	65283042
120 ml	VOA	157002 - 3	D8084094
~~16 oz~~	~~extractables~~	—	—
8 oz	metals/CN	157004	65283042

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: moist brown pebbly sandy clay

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION S2

SAMPLING DATE 4/28/88 SAMPLING TIME 1325

ORGANIC TRAFFIC NUMBER EX 015

INORGANIC TRAFFIC NUMBER ME X 219

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz	extractables	157005	65283042
120 ml	VOA	157006 - 7	
16 oz	extractables	—	—
8 oz	metals / CN^-	157008	65283042

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: moist brown sand

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TOD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION S3

SAMPLING DATE 4/28/88 SAMPLING TIME 1320

ORGANIC TRAFFIC NUMBER EX 016

INORGANIC TRAFFIC NUMBER ME X 220

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz	extractables	157009	65283042
120 ml	VOA	157010-11	D8084094
16 oz	extractables	—	—
8 oz	mtals / CN^-	157012	65283042

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: wet tan silt

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION S 4

SAMPLING DATE 4/28/88 SAMPLING TIME 1340

ORGANIC TRAFFIC NUMBER EX 017

INORGANIC TRAFFIC NUMBER ME X 221

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz	extractables	157013	65283042
120 ml	VOA	157014-15	D8084094
16 oz	extractables	—	—
8 oz	metals / CN^-	157016	65283042

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: wet brown sandy clay

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION S5

SAMPLING DATE 4/28/88 SAMPLING TIME 1425

ORGANIC TRAFFIC NUMBER EX 018

INORGANIC TRAFFIC NUMBER ME 222

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz	extractables	157017	65283042
120 ml	VOA	157018-19	B8084094
16 oz	extractables	—	—
8 oz	metals/CN	157020	65283042

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: wet tan clay

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION S6

SAMPLING DATE 4/28/88 SAMPLING TIME 1410

ORGANIC TRAFFIC NUMBER EX019

INORGANIC TRAFFIC NUMBER MEX223

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz	extractables	157021	65283042
120 ml	VOA	157022-23	D8084094
16 oz	extractables	—	—
8 oz	metals/CN-	157024	65283042

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: moist brown sand

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION S7

SAMPLING DATE 4/28/88 SAMPLING TIME 1420

ORGANIC TRAFFIC NUMBER EE020

INORGANIC TRAFFIC NUMBER MEX224

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz	extractables	—	—
120 ml	VOA	157026-27	D80841094
16 oz	extractables	157025	E7273242
16 oz	metals / CN^-	157028	E7273242

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: moist brown silty sand

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION S 8

SAMPLING DATE 4/28/88 SAMPLING TIME 1515

ORGANIC TRAFFIC NUMBER EX021

INORGANIC TRAFFIC NUMBER MEX225

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz	extractables	—	—
120 ml	VOA	157030-31	D8084094
16 oz	extractables	157029	E7273242
16 oz	metals/CN^-	157032	E7273242

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: moist black silty clay

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

Low soils & drinking H_2O

Site Name Marble Cliff Quarries Dump TDD F5-3710-062 OH0027 Case Number 9469/3758E/3554E

OTR	ITR	CRL	NEIC TAG NUMBER	ORG CHAIN OF CUSTODY	INO CHAIN OF CUSTODY	SAS NUMBER
EX014	MEX218			13163	13164	
EX015	MEX219			13163	13164	
EX016	MEX220			13163	13164	
EX017	MEX221			13163	13164	
EX018	MEX222			13163	13164	
EX019	MEX223			13163	13164	
EX020	MEX224			13163	13164	
EX021	MEX225			13163	13164	
EX022	MEX226			13165	13167	
EX023	MEX227			13165	13167	
EX024	MEX228			13165	13167	
EX025	MEX229			13166	13167	
EX026	MEX230			13166	13167	

1, KG/df
-30-81

SMP-002

F I T S A M P L E P R O P O S A L F O R M R E G I O N V

DATE FORM COMPLETED 5/15/90 PAN# FOH0843SB TDD# F05-8905-012 EPA I.D.# OHD980510226

SITE NAME (PRINT) MARBLE CLIFF QUARRIES DUMP CITY COLUMBUS STATE OHIO

TEAM LEADER RANDY EARLYWINE SAMPLER JULIE VISSER DATE SENT TO RSCC

****

CASE # 14298 DRINKING WATER SAS # ORGANIC INORGANIC

****

ROUTINE ANALYTICAL SERVICES (RAS)

LOW WATERS **MONITORING WELLS**

FRACTION	NUMBER OF FIELD SAMPLES+ BLANKS+ DUPLICATE= TOTAL	EXPECTED DATE TO SAMPLE	LABORATORY NAME	NUMBER OF COOLERS SHIPPED	NUMBER OF SAMPLES SHIPPED	AIR BILL NUMBERS	DATE SHIPPED TO LAB
VOA							
ABNs							
PEST/PCB							
METALS							
CN							

****

LOW WATERS **SURFACE WATERS**

FRACTION	NUMBER OF FIELD SAMPLES+ BLANKS+ DUPLICATE= TOTAL	EXPECTED DATE TO SAMPLE	LABORATORY NAME	NUMBER OF COOLERS SHIPPED	NUMBER OF SAMPLES SHIPPED	AIR BILL NUMBERS	DATE SHIPPED TO LAB
VOA							
ABNs							
PEST/PCB							
METALS							
CN							

****

LOW SOILS/SEDIMENTS/SLUDGES

FRACTION	NUMBER OF FIELD SAMPLES+ BLANKS+ DUPLICATE= TOTAL	EXPECTED DATE TO SAMPLE	LABORATORY NAME	NUMBER OF COOLERS SHIPPED	NUMBER OF SAMPLES SHIPPED ✓	AIR BILL NUMBERS	DATE SHIPPED TO LAB
VOA							
ABNs							
PEST/PCB	11 + 0 + 0 = 11	w/o 6/11/90	PEI	1	11	1060857534	6/12
METALS			BETZDA	1		1060857490	
CN							

****

TX Complete

RESIDENTIAL/ MUNICIPAL WELL WATERS (**DRINKING WATER SAMPLES**)

LOW DETECTION LIMITS/FAST TURN AROUND

FRACTION	NUMBER OF FIELD SAMPLES+ BLANKS+ DUPLICATE= TOTAL	EXPECTED DATE TO SAMPLE	LABORATORY NAME	NUMBER OF COOLERS SHIPPED	NUMBER OF SAMPLES SHIPPED	AIR BILL NUMBERS	DATE SHIPPED TO LAB
VOA							
ABNs							
PEST/PCB							
METALS							
CN							

****

I _____ ISEE NEXT PAGE FOR SPECIAL ANALYTICAL SERVICE REQUEST FOR THIS SITE

SAS #

* Samples trans-shipped - our mistake gave wrong acronym.

Confirmed ✓

SAMPLER CHECKLIST

ALL LOW CONCENTRATION SAMPLES

Site Name Marble Cliff Quarries

All the below procedures have been followed and all coolers properly packaged for shipment.

Julie Visser — Sampler Signature

Randy Carlyon — Team Leader Signature

✓ 1. Is **date shipped** filled in on the **OTR/ITR**?

✓ 2. Is **date** and **time** of sample collection **(Letter "F)** filled in on the **OTR/ITR**?

✓ 3. Has either **Shipment Complete** or **Shipment Not Complete** been marked on the OTR/ITR?

✓ 4. On the C.O.C. form, is PAN in **project no.**; TDD/Case/SAS (if applicable) in **project name** for CLP and site name/case for CRL?

✓ 5. Are all **dates** and **times** on the **C.O.C.** form?

✓ 6. Has either **grab** or **composite** sample been marked on the C.O.C.?

✓ 7. Is the **matrix** filled out on each line of the **C.O.C.** form? (i.e., Soil, Water, Drinking Water) DO NOT USE ARROWS.

✓ 8. Is the **Cooler #** written on top of the **C.O.C.** form?

✓ 9. Is it referenced on the C.O.C.s which cooler # the OTR/ITR or the CRL tracking forms are in?

✓ 10. Are **relinquish date, time,** and **signature** on the bottom of the **C.O.C.**?

✓ 11. Is there one C.O.C. per cooler?

✓ 12. Has the proper **paperwork** been put in a plastic bag and taped to the inside of the **cooler lid**?

- o C.O.C. - Send white copy, bring back pink and yellow.
- o OTR/ITR - Send white and yellow copies and bring back blue/green and pink.
- o CRL tracking forms - send all of them.

SA002(04/18/90)

✓ 13. Is sample number, date, and time of collection permanently labeled on each sample bottle?

✓ 14. Are samples packaged in such a way to prevent breakage?

✓ 15. Have photographs been taken of each cooler showing ice, custody seals, and paperwork?

✓ 16. Are the coolers acceptable at Fed Ex?

- o Condition
- o Drain plug taped
- o Correctly labeled with address stickers

✓ 17. Are you sending the coolers to the correct lab? Are you using the correct lab acronym?

✓ 18. Did you call the SMC before 10:00 a.m. on the day after the sample shipment?

Table 4-1 (Cont.)

Sample Collection Information and Parameters	Sample Number											
	S 1	S 2	S 3	S 4	S 5	S 6	S 7	S 8	S 9	S 10	S 11	12
TICs†												
FREON 113							52J		230J	36J	93J	
(76-13-1)												
DICHLORODIFLUOROMETHANE									57J		4400J	
(75-43-4)												
TRICHLOROFLUOROMETHANE									43J		180J	
(359-29-5)												
1,2 DICHLORO-1,1,2-TRIFLUORO									8.9J		76J	
(354-23-4)												
TRIMETHYL SILANOL											7.0J	
(1066-40-6)												
( )												
( )												
( )												
( )												
( )												
( )												
( )												
( )												
( )												
( )												
( )												
( )												
( )												

† TIC Chemical Abstracts Service (CAS) numbers, if available, are provided in parentheses.

Table 4- (Cont.)

COMPOUND QUALIFIERS	DEFINITION	INTERPRETATION
U	Indicates compound was analyzed for but not detected.	Compound was not detected at or above the CRDL.
J	Indicates an estimated value.	Compound value may be semiquantitative.
UJ	Quantitation limit is estimated due to a quality control (QC) protocol.	Compound was not detected if value is at CRQL, e.g., 10U UJ. If a value is reported with a UJ above CRQL and it is <5x blank concentration (10x for common laboratory artifacts), the compound is detected but may be a laboratory artifact and not attributable to the sample.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/µL in the final extract shall be confirmed by GC/MS.	Compound was confirmed by GC/MS and is quantitative. Use pesticide/PCB listed value.
B	This flag is used when the compound is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.	Compound value may be semiquantitative if it is <5x the blank concentration (<10x the blank concentrations for common laboratory artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone).
E	This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods.	Compound value may be semiquantitative. There should be another analysis with a D qualifier, which is to be used.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.	Alerts data user to a possible change in the CRQL. Data is quantitative.
A	This flag indicates that a TIC is a suspected aldol-condensation product.	Alerts data user of a laboratory artifact in the TICs only.
R	Results are unusable due to a major violation of QC protocol.	Compound value is not usable.

ANALYTE QUALIFIERS		DEFINITION	INTERPRETATION
E	E	Estimated or not reported due to interference. See laboratory narrative.	Analyte or element was not detected, or value may be semiquantitative.
S	S	Analysis by Method of Standard Additions.	Value is quantitative.
R	N	Spike recoveries outside QC protocols, which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative.	Value may be quantitative or semi-quantitative.
*	*	Duplicate value outside QC protocols which indicates a possible matrix problem.	Value may be quantitative or semiquantitative.
+	+	Correlation coefficient for standard additions is less than 0.995. See review and laboratory narrative.	Data value may be biased.
[ ]	B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
UJ		DL is estimated because of a QC protocol. DL is possibly above or below CRDL.	Compound or element was not detected.
J		Value is above CRDL and is an estimated value because of a QC protocol.	Value may be semiquantitative.
U	U	Compound was analyzed for but not detected.	Compound was not detected at or above the CRDL.
	M	Duplicate injection precision not met.	Value may be semiquantitative.
	W	Post-digestion spike for furnace AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance.	Value may be semiquantitative.
	R	Results are unusable due to a major violation of QC protocols.	Analyte value is not usable.

Source: Ecology and Environment, Inc. 1989.

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S1

SAMPLING DATE June 12, 1990 SAMPLING TIME 1250

ORGANIC TRAFFIC NUMBER EKN 65

INORGANIC TRAFFIC NUMBER MEKN 50

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186101	0135033
2-120ml VOA	volatile organics	186102 - 186103	W0085013
1-8oz glass	metals/cyanide	186104	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: brown gravely sand

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S2

SAMPLING DATE June 12, 1990 SAMPLING TIME 1320

ORGANIC TRAFFIC NUMBER EKN 66

INORGANIC TRAFFIC NUMBER MEKN 51

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186105	0135033
2-120ml VOA	volatile organics	186106-186107	W0085013
1-8oz glass	metals/cyanide	186108	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: brown clay covered with peat moss

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S3

SAMPLING DATE June 12, 1990 SAMPLING TIME 1330

ORGANIC TRAFFIC NUMBER EKN 67

INORGANIC TRAFFIC NUMBER MEKN 52

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186109	0135033
2-120ml VOA	volatile organics	186110 - 186111	W0085013
1-8oz glass	metals/cyanide	186112	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: pale silty clay

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S4

SAMPLING DATE June 12, 1990 SAMPLING TIME 1500

ORGANIC TRAFFIC NUMBER EKN 68

INORGANIC TRAFFIC NUMBER MEKN 53

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186113	0135023
2-120ml VOA	volatile organics	186114 - 186115	W0085013
1-8oz glass	metals/cyanide	186116	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: wet brown clay

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S5

SAMPLING DATE June 12, 1990 SAMPLING TIME 1510

ORGANIC TRAFFIC NUMBER EKN 69

INORGANIC TRAFFIC NUMBER MEKN 54

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186117	135033
2-120ml VOA	volatile organics	186118 - 186119	W0085013
1-8oz glass	metals/cyanide	186120	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: Silty clay

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S6

SAMPLING DATE June 12, 1990 SAMPLING TIME 1450

ORGANIC TRAFFIC NUMBER EKN 70

INORGANIC TRAFFIC NUMBER MEKN 55

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186121	0135033
2-120ml VOA	volatile organics	186122 - 186123	W0085013
1-8oz glass	metals / cyanide	186124	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: layered black & brown soil with gravel

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S7

SAMPLING DATE June 12, 1990 SAMPLING TIME 1530

ORGANIC TRAFFIC NUMBER EKN 71

INORGANIC TRAFFIC NUMBER MEKN 56

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186125	0135033
2-120ml VOA	volatile organics	186126-186127	W0085013
1-8oz glass	metals/cyanide	186128	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: gray clay with white powder

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S8

SAMPLING DATE June 12, 1990 SAMPLING TIME 1545

ORGANIC TRAFFIC NUMBER EKN 72

INORGANIC TRAFFIC NUMBER MEKN 57

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186129	0135033
2-120ml VOA	volatile organics	186130-186131	W0085013
1-8oz glass	metals/cyanide	186132	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: black sandy soil

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S9

SAMPLING DATE June 12, 1990 SAMPLING TIME 1600

ORGANIC TRAFFIC NUMBER EKN 73

INORGANIC TRAFFIC NUMBER MEKN 58

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186133	0135033
2-120ml VOA	volatile organics	186134-186135	W0085013
1-8oz glass	metals/cyanide	186136-	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: light brown clay

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S10

SAMPLING DATE June 12, 1990 SAMPLING TIME 1600

ORGANIC TRAFFIC NUMBER EKN 74

INORGANIC TRAFFIC NUMBER MEKN 59

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186137	0135033
2-120ml VOA	volatile organics	186138-186139	W0085013
1-8oz glass	metals/cyanide	186140	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: brown clay sediment

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S11

SAMPLING DATE June 12, 1990 SAMPLING TIME 1630

ORGANIC TRAFFIC NUMBER EKN 75

INORGANIC TRAFFIC NUMBER MEKN 60

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186141	0135033
2-120ml VOA	volatile organics	186142-186143	W0085013
1-8oz glass	metals/cyanide	186144	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: brown/black soil

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

ecology and environment, inc.

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

International Specialists in the Environment

CRL Receipt Date 7/23/90 FIT Receipt Date 8/1/90 Review Completed 8/7/90

TO: R. Earlywine

FROM: ~~Mary Gzyra~~ C. Kouris

SUBJECT: Marble Cliff Quarries

PAN: FOH08435B (1 hour charged for review) Case # 14298

Sample Description

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

Project Data Status _____ Completed!!

X Incomplete, awaiting Soil inorg

FIT Data Review Findings:

Check Data Sheets for Transcription Errors

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

Book No. 9 Page No. _____ Date Sampled 6/12/90

0759:2

recycled paper

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 7/31/90

8/1/90

SUBJECT: Review of Region V CLP Data
Received for Review on July 23, 1990

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

TO: Data User: FIT

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

SITE NAME: MARBLE CLIFF QUARRIES (OH) SMO Case No. 14298

EPA Data Set No. _____ No. of Samples: 11 D.U./Activity Numbers 1

CRL No. _____

SMO Traffic No. EKN65-75

CLP Laboratory: PEI Hrs. Required for Review: 10.+0.5 = 10.5

Following are our findings.

Eleven (11) soil samples were determined for low-level volatile organics, semivolatile organics, and pesticides/PCB's. All the volatile organics results are estimated because of holding time non-compliance. Some semivolatile organics are estimated because of calibration outliers, but most other QC problems with this set of samples are relatively minor.

The reviewer's narrative and data qualifiers follow.

Ronald J. Zanger

Ronald J. Zanger

Roy F. Weston, Inc.

26 July 1990

( ) 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: Dr. Alfred Haeberer/Joan Fisk/Gary Ward, EPA Support Services
Ross K. Robeson, EMSL-Las Vegas
Don Trees, CLP/Sample Management Office

DPO: [ ] ACTION [ ] FYI REGION V

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. 14298 LABORATORY PEI

SDG NO(s). EFN65 DATA USER FIT

SOW 2/88 REVIEW COMPLETION DATE 26 July 1990

NO. OF SAMPLES Eleven MATRIX Soil (SPECIFY WATER, SOIL, OR OTHER)

REVIEWER [ ] ESD [X] ESAT [X] OTHER, CONTRACT/CONTRACTOR Ronald J. Zanger

IS LABORATORY CERTIFICATION STATEMENT SIGNED? [ ] YES [ ] NO

IS DATA PACKAGE CONSISTENT WITH THE LABORATORY'S CERTIFIED NARRATIVE? [X] YES [ ] NO

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	M	O	O	
2. GC-MS TUNE/ GC PERFORMANCE	O	O	O	
3. INITIAL CALIBRATIONS	O	O	O	
4. CONTINUING CALIBRATIONS	M	M	O	
5. FIELD BLANKS ("F" = not applicable)	F	F	F	
6. LABORATORY BLANKS	O	O	O	
7. SURROGATES	M	O	O	
8. MS/MSD	O	O	X	
9. REGIONAL QC ("F" = not applicable)	F	F	~~O~~ F RJZ 26 July 90	
10. INTERNAL STANDARDS	M	O		
11. COMPOUND IDENTIFICATION	O	O	O	
12. COMPOUND QUANTITATION	O	O	O	
13. SYSTEM PERFORMANCE	O	O		

O = No problems or minor problems that do not affect data usability.
X = No more than *about* 5% of the data points are qualified as either estimated or unusable.
M = More than *about* 5% of the data points are qualified as estimated.
Z = More than *about* 5% of the data points are qualified as unusable.
A = Used *in conjunction with* above codes to indicate that item requires DPO action.

DPO ACTION ITEMS:

AREAS OF CONCERN: Excessive TCL compounds in volatiles blanks. Excessive volatile and semivolatile calibration outliers.

DATA QUALIFIERS

Contractor: PEI

Case/SAS number: 14298

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

(1) Holding Times:

The Organic Traffic Report lists the sample collection date as 12 June, 1990, for all samples.

All volatile organics samples were analyzed after the seven-day limit for the analysis of volatile organics in soil samples. Results for all volatile organics samples are estimated, "J" or "UJ", for positive and negative results, respectively.

All semivolatile organics and pesticide/PCB samples were extracted within the fourteen-day limit for the extraction of soil samples for semivolatile organics and pesticide/PCB's. All semivolatile organics and pesticide/PCB extracts were analyzed within the forty limit.

(2) GC/MS Tuning and Mass Calibration:

All GC/MS ion abundance and percent relative abundance criteria were met, both in the bromofluorobenzene tunes for volatile organics analysis and in the decafluorotriphenylphosphine tunes for semivolatile organics analysis. No problems indicated.

(3) Calibration:

GC/MS calibration outliers are listed on the attached forms.

(4) Method Blanks:

The volatile organics method blank VBLKH0 was reported to contain acetone, 2-butanone, 4-methyl-2-pentanone, and 2-hexanone, affecting samples EKN65, EKN67, EKN68, EKN69, EKN73, and EKN74. The volatile organics method blank VBLKH4 was reported to contain acetone, 2-butanone, 4-methyl-2-pentanone, 2-hexanone, and one TIC, affecting samples EKN75MS, EKN69RE, EKN70, and EKN73RE. The volatile organics method blank VBLKH5 was reported to contain acetone, 4-methyl-2-pentanone, 2-hexanone, and one TIC, affecting samples EKN71, EKN72, and EKN66. The volatile organics method blank VBLKH7 was reported to contain 4-methyl-2-pentanone, 2-hexanone, and two TIC compounds, affecting samples EKN75MSD and EKN75.

The semivolatile organics method blank SBLKQ5 was reported to contain two TIC compounds, affecting samples EKN68, EKN69, EKN70, EKN71, and EKN72. The semivolatile organics method blank SPBLKQ5 was reported to contain one TIC compound, affecting samples EKN65, EKN67, EKN66, EKN 71DL, EKN73, EKN73MS, EKN73MSD, EKN74, and EKN75.

The pesticide/PCB method blank PBLKQ5 was reported to be free of contamination.

Reviewed by: Ronald J. Zanger

Phone: (312) 353-2960

Date: 25 July 1990

DATA QUALIFIERS

Contractor: PEI

Case/SAS number: 14298

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

(8) Internal Standards:

All semivolatile organics internal standards met the -50%/+100% criterion for internal standard area counts, as well as the +/- 30-second criterion for internal standard retention time variation. No problems indicated.

The volatile organics internal standard chlorobenzene-d5 was low, below contract-required QC limits, for sample EKN69 and EKN73. These were reanalyzed to the same result; in addition, 1,4-difluorobenzene was low, below contract-required QC limits, for sample EKN73RE. Results for the affected analytes, in the affected samples, are estimated, "J" or "UJ", for positive and negative results, respectively. For a list of analytes affected by each internal standard outlier, refer to Table 4, attached.

Pesticides/PCB's: In the evaluation checks for linearity, %RSD was within the 10% limit for each compound for both the primary quantitation column and secondary confirmation column. Combined Endrin and 4,4'-DDT degradation was reported as less than 20% for each column. Dibutylchlorendate retention time shifts were within the 2.0% limit required for packed columns, for both the primary and secondary columns. For the Individual Standards "A" and "B", the 15% limit for %D was met by all compounds on the primary column. The 20% limit for %D was exceeded by *alpha*-BHC, *delta*-BHC, Endrin, and Endosulfan sulfate on the secondary column, but no positives were identified on the primary column: confirmation was not necessary and no data is affected. No problems indicated.

(9) Compound Quantitation and Reported Detection Limits:

An inspection of the positive results reveal no errors in calculation in any fraction. Comparisons of chromatograms of positives with the reported results, particularly for the semivolatile organics, indicate that the positives reported are at least in the correct range. The effect of dilution is properly reflected in the detection limits and positive results in the semivolatile organics sample EKN71. The moisture content of each sample appears to have been correctly factored into the positive results and the detection limits. No problems indicated.

(10) Other Case-Specific Problems:

The semivolatile organics sample EKN71 was diluted to allow on-scale quantitation of *bis*-(2-ethylhexyl) phthalate. While the surrogates are diluted out in EKN71DL, in the opinion of the reviewer this is only a technical lapse in QC compliance: the result for *bis*-(2-ethylhexyl) phthalate reported for EKN71DL will probably be more reliable than that reported in EKN71. Between EKN71 and EKN71DL the results are fairly comparable. On the other hand, in EKN71 the concentration of the compound not only exceeds the established linear range but may also have saturated the mass spectrometer, resulting in a low reported value. Among other problems, volatile and semivolatile calibration outliers are excessive. In addition, the presence of TCL compounds in the volatiles blanks indicates some degree of lab or instrument contamination, which should be addressed by the contract lab.

Reviewed by: Ronald J. Zanger

Phone : (312) 353-2960

Date : 26 July 1990

CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS # 14298 CONTRACTOR PEI

Instrument # Y	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	6/23/90 18:49			6/26/90 14:19			6/30/90 10:12			-					
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane	0.486			0.488			0.322	33.8	J						
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride															
Acetone	0.953	42.5	J	1.303	36.7	J	1.265	32.7	J						
Carbon Disulfide															
1,1-Dichloroethane															
1,1-Dichloroethene															
Total ~~Trans-1,2-Dichloroethene~~	1.163			1.137			1.516	30.4	J						
RJZ 26 July 1990 Chloroform															
2-Butanone	0.081			0.104	28.4	J	0.073								
1,2-Dichloroethane															
1,1,1-Trichloroethane															
Carbon Tetrachloride															
Vinyl Acetate	0.733			0.491	33.0	J	0.437	40.4	J						
Bromodichloromethane															
1,2-Dichloropropane															
Trans-1,3-Dichloropropene	0.399			0.330			0.287	28.1	J						
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane															
Benzene															
cis-1,3-Dichloropropene															
2-Chloroethylvinylether															
Bromoform															
4-Methyl-2-Pentanone	1.027			0.755	26.5	J	0.702	31.7	J						
2-Hexanone															
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene	0.962			1.029			1.204	25.2	J						
Ethylbenzene															
Styrene															
m-Xylene Total	0.554			1.223	120.7	J	1.440	159.9	J						
o/p-Xylene RJZ 26 July 1990															

AFFECTED SAMPLES:

VBLKH0	VBLKH4
EKN65	EKN75MS
EKN67	EKN69RE
EKN68	EKN70
EKN69	EKN73RE
EKN73	
EKN74	

Reviewer's Initials/Date: RJZ 26 July 90

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

CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS # 14298 CONTRACTOR PEI

Instrument # Y	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	7/2/90 11:38														
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane															
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride															
Acetone	1.763	37.1	J												
Carbon Disulfide															
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:

VBLKHS
EKN71
EKN72
EKN66

Reviewer's Initials/Date: ATE
26 July 90

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

CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS # 14298 CONTRACTOR PEI

Instrument # Y	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	7/10/90 14:53														
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane															
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride															
Acetone															
Carbon Disulfide															
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:

VBLKH7
EKN75MSD
EKN75

Reviewer's Initials/Date: RJZ 26 July 90

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

CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

CASE/SAS # 14298 CONTRACTOR PEI

Instrument # N	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	7/13/90 16:20			7/16/90 12:59											
	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															
1,2-Dichlorobenzene															
2-Methylphenol															
bis(2-chloroisopropyl)Ether	2.027			1.510	25.5	J									
4-Methylphenol															
N-Nitroso-Di-n-Propylamine															
Hexachloroethane															
Nitrobenzene															
Isophorone															
2-Nitrophenol															
2,4-Dimethylphenol															
Benzoic Acid															
bis(2-Chloroethoxy)Methane															
2,4-Dichlorophenol															
1,2,4-Trichlorobenzene															
Naphthalene															
4-Chloroaniline															
Hexachlorobutadiene															
4-Chloro-3-Methylphenol															
2-Methylnaphthalene															
Hexachlorocyclopentadiene															
2,4,6-Trichlorophenol								--							
2,4,5-Trichlorophenol															
2-Chloronaphthalene															
2-Nitroaniline															
Dimethyl Phthalate															
Acenaphthylene															
3-Nitroaniline															
Acenaphthene															
2,4-Dinitrophenol	0.083			0.105	26.5	J									
4-Nitrophenol	0.041	32.4	J											-	
Dibenzofuran															

RJZ 26 July 1990

AFFECTED SAMPLES:

~~SBLKQS~~	EKN66
EKN65	EKN71DL
EKN67	
SPBLKQS	

Reviewer Initials/Date: RJZ 26 July 1990

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

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Lab File ID: VBLKH5 Lab Sample ID: VBLKH5

Date Analyzed: 7/ 2/90 Time Analyzed: 12:19

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: ____Y

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	EKN71	X0-06-137-07B	EKN71	14:08
2	EKN72	X0-06-137-08B	EKN72RE	14:43
3	EKN66	X0-06-137-02B	EKN66RE2	15:19
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				

COMMENTS:

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Lab File ID: VBLKH7 Lab Sample ID: VBLKH7

Date Analyzed: 7/10/90 Time Analyzed: 14:53

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: ____Y

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	EKN75MSD	X0-06-137-11B	EKN75MSR	15:39
2	EKN75	X0-06-137-11B	EKN75RE2	16:17
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
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17				
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26				
27				
28				
29				
30				

COMMENTS:

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKH0

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: VBLKH0

Sample wt/vol: 5.000 (g/mL) G Lab File ID: VBLKH0

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 6/26/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

0253

VBLKH4

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: VBLKH4

Sample wt/vol: 5.000 (g/mL) G Lab File ID: VBLKH4

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 6/30/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	10.	U
74-83-9	BROMOMETHANE	10.	U
75-01-4	VINYL CHLORIDE	10.	U
75-00-3	CHLOROETHANE	10.	U
75-09-2	METHYLENE CHLORIDE	5.	U
67-64-1	ACETONE	2.	J
75-15-0	CARBON DISULFIDE	5.	U
75-35-4	1,1-DICHLOROETHENE	5.	U
75-34-3	1,1-DICHLOROETHANE	5.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	5.	U
67-66-3	CHLOROFORM	5.	U
107-06-2	1,2-DICHLOROETHANE	5.	U
78-93-3	2-BUTANONE	10.	U
71-55-6	1,1,1-TRICHLOROETHANE	5.	U
56-23-5	CARBON TETRACHLORIDE	5.	U
108-05-4	VINYL ACETATE	4.	J
75-27-4	BROMODICHLOROMETHANE	5.	U
78-87-5	1,2-DICHLOROPROPANE	5.	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	5.	U
79-01-6	TRICHLOROETHENE	5.	U
124-48-1	DIBROMOCHLOROMETHANE	5.	U
79-00-5	1,1,2-TRICHLOROETHANE	5.	U
71-43-2	BENZENE	5.	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.	U
75-25-2	BROMOFORM	5.	U
108-10-1	4-METHYL-2-PENTANONE	1.	J
591-78-6	2-HEXANONE	3.	J
127-18-4	TETRACHLOROETHENE	5.	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	U
108-88-3	TOLUENE	5.	U
108-90-7	CHLOROBENZENE	5.	U
100-41-4	ETHYLBENZENE	5.	U
100-42-5	STYRENE	5.	U
1330-20-7	XYLENE (TOTAL)	5.	U

DATA QUALIFIERS

Contractor: PEI

Case/SAS number: 14298

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

(4) Method Blanks (continued):

Affected samples containing an amount of acetone less than, or equal to, ten times the amount of acetone found in the asociated blank are qualified "U", undetected, for acetone in those samples. Affected samples containing an amount less than, or equal to, five times the amount of any other compound found in the associated blank are qualified "U", undetected, for that compound in that sample.

(5) Surrogate Spike Recoveries:

Volatile organics surrogate spike recovery was high, above contract-required QC limits, for toluene-d8 in sample EKN73, and was low, below contract-required QC limits, in samples EKN69 and EKN73. These two samples were reanalyzed to the same result. Results for samples EKN69, EKN73, EKN69RE, and EKN73RE are estimated, "J" or "UJ", for positive and negative results, respectively.

All semivolatile organics surrogate spike recoveries were within contract-required QC limits with the exception of EKN71DL, for which all surrogates were diluted out except terphenyl-d14. Surrogate spike recoveries met QC limits for the undiluted sample, EKN71. Results for EKN71DL are estimated, "J" or "UJ", for positive and negative results, respectively.

All pesticide/PCB surrogate (dibutylchlorendate) recoveries were within contract-required QC limits with the exception of EKN71, which was high, above advisory QC limits, apparently the result of co-eluting interferences. Results for sample EKN71 are estimated, "J" or "UJ", for positive and negative results, respectively.

(6) Matrix Spike/Matrix Spike Duplicate Recoveries:

Sample EKN75 was used for the volatile organics matrix spikes; sample EKN73 was used for the semivolatile organics and pesticide/PCB matrix spikes.

All volatile organics and semivolatile organics matrix spikes, duplicates, and their associated RPD's, were within advisory QC limits. No problems indicated.

All pesticide/PCB matrix spikes, duplicates, and their associated RPD's, were within advisory QC limits with the exception of the Heptachlor recoveries, which were both high, above advisory QC limits. In the unspiked sample, EKN73, results for Heptachlor are estimated, "J" or "UJ", for positive and negative results, respectively.

(7) Field Blanks and Field Duplicate Samples:

No field blanks or field duplicate samples were included in this sample set.

Reviewed by: Ronald J. Zanger

Phone: (312) 353-2960

Date: 26 July 1990

DATA REPORTING QUALIFIERS

For reporting results to EPA, the following result 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 but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture. For example, 10 U for phenol in water if the sample final volume is the protocol-specified final volume. If a 1 to 10 dilution of extract is necessary, the reported limit is 100 U. For a soil sample, the value must also be adjusted for percent moisture. For example, if the sample had 24% moisture and a 1 to 10 dilution factor, the sample quantitation limit for phenol (330 U) would be corrected to:

$$\frac{(330\ U)}{D} \times df \qquad \text{where } D = \frac{100 - \%\ \text{moisture}}{100}$$

and df = dilution factor

$$\text{at 24\% moisture, } D = \frac{100-24}{100} - 0.76$$

$$\frac{(330\ U)}{.76} \times 10 = 4300\ U$$ rounded to the appropriate number of significant figures

For soil sample subjected to GPC clean-up procedures, the CRQL is also multiplied by 2, to account for the fact that only half of the extract is recovered.

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 indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero. For example, if the sample quantitation limit is 10 ug/L, but a concentration is 3 ug/L is calculated, report it as 3J. The sample quantitation limit must be adjusted for both dilution and percent moisture as discussed for the U flag, so that if a sample with 24% moisture and a 1 to 10 dilution factor has a calculated concentration of 300 ug/L and a sample quantitation limit of 430 ug/kg, report the concentration as 300J on Form I.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides $\geq$10 ng/ul in the final extract shall be confirmed by GC/MS.

2

B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified TCL compound.

E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. If one or more compounds have a response greater than full scale, the sample or extract must be diluted and re-analyzed according to the specifications. All such compounds with a response greater than full scale should have the concentration flagged with an "E" on the Form I for the original analysis. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate Forms I. The Form I for the diluted sample shall have the "DL" suffix appended to the sample number.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample and all concentration values reported on that Form I are flagged with the "D" flag.

A - This flag indicates that TIC is a suspected aldol-condensation product.

X - 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 Sample Data Summary Package and the Case Narrative. If more than one is required, use "Y" and "Z", as needed. If more than five qualifiers are required for a sample result, use the "X" flag to combine several flags, as needed. For instance, the "X" flag might combine the "A", "B", and "D" flags for some sample.

PEI ASSOCIATES, INC.
11499 CHESTER ROAD
CINCINNATI, OHIO 45246
(513) 782-4700
TELECOPIER (513) 782-4807

July 20, 1990

Mr. Emmanuel Nocon
U.S. EPA Contract Lab Program
Sample Management Office (SMO)
209 Madison St., Suite 200
Alexandria, VA 22314

RECEIVED
JUL 2 1990
US EPA ... AL LAB.
CHICAGO, ILLINOIS 60605

Re: Contract No. 68-D9-0037
PN 3791
Case Narrative for Case 14298, SDG EKN65
SOW: 2/88

Dear Emmanuel:

Enclosed is the data package for the above SDG, whose eleven soil samples were received June 13, 1990. The SMO sample numbers are EKN65-75. The samples were analyzed for the full TCL.

The volatile fraction of samples EKN69 and EKN73 exhibited low area counts for Internal Standard #3 and had surrogates outside of acceptance windows. These samples were reanalyzed with similar results proving the matrix effect. Two analyses are payable for each of these samples.

The semivolatile fraction of sample EKN71 required dilution for bis(2-ethylhexyl)phthalate. Two analyses are payable for this sample.

The semivolatile fraction of all samples were spiked with a surrogate whose concentration was one half of normal. Surrogate recoveries were calculated from the actual amount spiked.

The semivolatile analyses were performed on instruments "N" and "J". Forms IV, V, VI, VII, VIII, and the raw calibration and tuning date are arranged chronologically for "N" and then "J".

The enclosed sheet describing limitations in the Format B and Extrel software is an integral part of this case narrative.

Please call me if you have any questions.

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

Craig H Caldwell
7/20/90

Sincerely,

PEI/IT

Craig 7/20
Craig H. Caldwell
Laboratory Manager

2B
SOIL VOLATILE SURROGATE RECOVERY

0012

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
1	VBLKH0	102	88	93		0
2	EKN65	105	84	81		0
3	EKN67	106	83	82		0
4	EKN68	110	80	83		0
5	EKN69	117	70 *	78		1
6	EKN73	134 *	62 *	81		2
7	EKN74	107	81	83		0
8	VBLKH4	100	92	93		0
9	EKN75MS	95	74	90		0
10	EKN69 RE	114	69 *	91		1
11	EKN70	106	77	89		0
12	EKN73 RE	120 *	56 *	85		2
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

	QC LIMITS
S1 (TOL) = TOLUENE-D8	(81-117)
S2 (BFB) = BROMOFLUOROBENZENE	(74-121)
S3 (DCE) = 1,2-DICHLOROETHANE-D4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

FORM II VOA-2 1/87 Rev.

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
1	VBLKH5	102	95	93		0
2	EKN71	100	81	88		0
3	EKN72	113	76	88		0
4	EKN66	108	82	89		0
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		QC LIMITS
S1 (TOL)	= TOLUENE-D8	(81-117)
S2 (BFB)	= BROMOFLUOROBENZENE	(74-121)
S3 (DCE)	= 1,2-DICHLOROETHANE-D4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
1	VBLKH7	106	106	93		0
2	EKN75MSD	108	77	92		0
3	EKN75	115	91	103		0
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	QC LIMITS
S1 (TOL) = TOLUENE-D8	(81-117)
S2 (BFB) = BROMOFLUOROBENZENE	(74-121)
S3 (DCE) = 1,2-DICHLOROETHANE-D4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

FORM II VOA-2 1/87 Rev.

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	OTHER	TOT OUT
1	EKN73	88	81	101	75	69	63		0
2	EKN73MS	94	80	96	96	76	67		0
3	EKN73MSD	85	76	92	91	73	73		0
4	EKN74	88	79	90	76	64	55		0
5	EKN75	86	83	96	73	57	47		0
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		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(23-120)
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)
S3 (TPH)	= Terphenyl-d14	(18-137)
S4 (PHL)	= Phenol-d6	(24-113)
S5 (2FP)	= 2-Fluorophenol	(25-121)
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

FORM II SV-2 1/87 Rev.

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

0290

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	OTHER	TOT OUT
1	SBLKQ5	68	70	98	55	46	27		0
2	EKN68	73	77	98	71	71	51		0
3	EKN69	60	71	97	65	65	46		0
4	EKN70	79	81	102	78	90	53		0
5	EKN71	72	76	103	69	67	45		0
6	EKN72	80	81	103	77	86	53		0
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		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(23-120)
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)
S3 (TPH)	= Terphenyl-d14	(18-137)
S4 (PHL)	= Phenol-d6	(24-113)
S5 (2FP)	= 2-Fluorophenol	(25-121)
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

FORM II SV-2 1/87 Rev.

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (DBC)#	OTHER
1	PBLKQ5	113	
2	EKN65	118	
3	EKN66	107	
4	EKN67	113	
5	EKN68	110	
6	EKN69	113	
7	EKN70	98	
8	EKN71	206 *	
9	EKN72	101	
10	EKN73	89	
11	EKN73MS	91	
12	EKN73MSD	104	
13	EKN74	110	
14	EKN75	108	
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S1 (DBC) = DBC

ADVISORY
QC LIMITS
(20-150)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

3B
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix Spike - EPA Sample No.: EKN75 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC LIMITS REC.
1,1-DICHLOROETHENE	68.	0.	69.	102	59-172
TRICHLOROETHENE	68.	0.	71.	105	62-137
BENZENE	68.	0.	79.	117	66-142
TOLUENE	68.	0.	69.	102	59-139
CHLOROBENZENE	68.	0.	68.	100	60-133

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-DICHLOROETHENE	68.	58.	86	17	22	59-172
TRICHLOROETHENE	68.	66.	97	8	22	62-137
BENZENE	68.	70.	103	13	21	66-142
TOLUENE	68.	72.	106	4	21	59-139
CHLOROBENZENE	68.	68.	100	0	21	60-133

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

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS:

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix Spike - EPA Sample No.: EKN73 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC LIMITS REC.
Phenol	16280.	0.	11166.	69	26- 90
2-Chlorophenol	16280.	0.	10804.	66	25-102
1,4-Dichlorobenzene	8140.	0.	5076.	62	28-104
N-Nitroso-di-n-prop. (1)	8140.	0.	5054.	62	41-126
1,2,4-Trichlorobenzene	8140.	0.	4894.	60	38-107
4-Chloro-3-methylphenol	16280.	0.	11165.	69	26-103
Acenaphthene	8140.	0.	5031.	62	31-137
4-Nitrophenol	16280.	0.	13351.	82	11-114
2,4-Dinitrotoluene	8140.	0.	6095.	75	28- 89
Pentachlorophenol	16280.	0.	8200.	50	17-109
Pyrene	8140.	0.	6212.	76	35-142

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	16280.	10752.	66	4	35	26- 90
2-Chlorophenol	16280.	10114.	62	7	50	25-102
1,4-Dichlorobenzene	8140.	4668.	57	8	27	28-104
N-Nitroso-di-n-prop. (1)	8140.	4623.	57	9	38	41-126
1,2,4-Trichlorobenzene	8140.	4471.	55	9	23	38-107
4-Chloro-3-methylphenol	16280.	10894.	67	2	33	26-103
Acenaphthene	8140.	4612.	57	9	19	31-137
4-Nitrophenol	16280.	14464.	89	8	50	11-114
2,4-Dinitrotoluene	8140.	5789.	71	5	47	28- 89
Pentachlorophenol	16280.	11230.	69	31	47	17-109
Pyrene	8140.	5818.	71	7	36	35-142

(1) N-Nitroso-di-n-propylamine

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

* Values outside of QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

COMMENTS:

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix Spike - EPA Sample No.: EKN73 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC	#	QC LIMITS REC.
gamma-BHC	65.04	.00	39.16	60		46-127
Heptachlor	65.04	.00	124.23	191	*	35-130
Aldrin	65.04	.00	45.07	69		34-132
Dieldrin	162.61	.00	121.28	75		31-134
Endrin	162.61	.00	101.21	62		42-139
4,4'-DDT	162.61	.00	140.75	87		23-134

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC	#	% RPD	#	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC	65.08	37.48	58		4		50	46-127
Heptachlor	65.08	99.40	153	*	22		31	35-130
Aldrin	65.08	44.53	68		1		43	34-132
Dieldrin	162.71	120.90	74		0		38	31-134
Endrin	162.71	92.52	57		9		45	42-139
4,4'-DDT	162.71	105.96	65		28		50	23-134

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

* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 2 out of 12 outside limits

COMMENTS:

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Lab File ID: VBLKH0 Lab Sample ID: VBLKH0

Date Analyzed: 6/26/90 Time Analyzed: 15:06

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: ____Y

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	EKN65	X0-06-137-01B	EKN65	17:33
2	EKN67	X0-06-137-03B	EKN67	18:45
3	EKN68	X0-06-137-04B	EKN68	19:21
4	EKN69	X0-06-137-05B	EKN69	19:57
5	EKN73	X0-06-137-09B	EKN73	22:22
6	EKN74	X0-06-137-10B	EKN74	22:58
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COMMENTS:

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Lab File ID: VBLKH4 Lab Sample ID: VBLKH4

Date Analyzed: 6/30/90 Time Analyzed: 11:00

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: ____Y

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	EKN75MS	X0-06-137-11B	EKN75MSD	14:15
2	EKN69 RE	X0-06-137-05B	EKN69RE	15:26
3	EKN70	X0-06-137-06B	EKN70	16:02
4	EKN73 RE	X0-06-137-09B	EKN73RE	16:49
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COMMENTS:

4B

SEMIVOLATILE METHOD BLANK SUMMARY

0293

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Lab File ID: SPBLKQ5 Lab Sample ID: SPBLKQ5

Date Extracted: 6/23/90 Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed: 7/13/90 Time Analyzed: 19:51

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: ____N

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
1	EKN65	X0-06-137-01A	EKN65	7/13/90
2	EKN67	X0-05-137-03A	EKN67	7/13/90
3	EKN66	X0-06-137-02A	EKN66RE	7/16/90
4	EKN71 DL	X0-06-137-07A	EKN71DL	7/16/90
5	EKN73	X0-06-137-09A	EKN73	7/18/90
6	EKN73MS	X0-06-137-09A	EKN73MS	7/18/90
7	EKN73MSD	X0-06-137-09A	EKN73MSD	7/18/90
8	EKN74	X0-06-137-10A	EKN74	7/18/90
9	EKN75	X0-06-137-11A	EKN75	7/18/90
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COMMENTS:

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Lab File ID: SBLKQ5 Lab Sample ID: SBLKQ5

Date Extracted: 6/23/90 Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed: 7/17/90 Time Analyzed: 16:47

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: ____J

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
1	EKN68	X0-06-137-04A	EKN68	7/17/90
2	EKN69	X0-06-137-05A	EKN69	7/17/90
3	EKN70	X0-06-137-06A	EKN70	7/17/90
4	EKN71	X0-06-137-07A	EKN71	7/17/90
5	EKN72	X0-06-137-08A	EKN72	7/17/90
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COMMENTS:

FORM IV SV 1/87 Rev.

4C
PESTICIDE METHOD BLANK SUMMARY

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Lab Sample ID: PBLKQ5 Lab File ID: EKPBQ005

Matrix: (soil/water) SOIL Level:(low/med) LOW

Date Extracted: 6/23/90 Extraction: (SepF/Cont/Sonc) SON

Date Analyzed (1): 7/ 4/90 Date Analyzed (2): 7/11/90

Time Analyzed (1): 22:17 Time Analyzed (2): 14:38

Instrument ID (1): _ B Instrument ID (2): _ V

GC Column ID (1): 2100 GC Column ID (2): 22502401

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

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	EKN65	X0-06-137-01A	7/ 4/90	7/11/90
2	EKN66	X0-06-137-02A	7/ 4/90	7/11/90
3	EKN67	X0-06-137-03A	7/ 4/90	7/11/90
4	EKN68	X0-06-137-04A	7/ 5/90	7/11/90
5	EKN69	X0-06-137-05A	7/ 5/90	7/11/90
6	EKN70	X0-06-137-06A	7/ 5/90	7/11/90
7	EKN71	X0-06-137-07A	7/ 5/90	7/11/90
8	EKN72	X0-06-137-08A	7/ 5/90	7/11/90
9	EKN73	X0-06-137-09A	7/ 5/90	7/11/90
10	EKN73MS	X0-06-137-09A	7/ 5/90	7/12/90
11	EKN73MSD	X0-06-137-09A	7/ 5/90	7/12/90
12	EKN74	X0-06-137-10A	7/ 5/90	7/12/90
13	EKN75	X0-06-137-11A	7/ 5/90	7/12/90
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Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKH0

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: VBLKH0

Sample wt/vol: 5.000 (g/mL) G Lab File ID: VBLKH0

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 6/26/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	10.	U
74-83-9	BROMOMETHANE	10.	U
75-01-4	VINYL CHLORIDE	10.	U
75-00-3	CHLOROETHANE	10.	U
75-09-2	METHYLENE CHLORIDE	5.	U
67-64-1	ACETONE	4.	J
75-15-0	CARBON DISULFIDE	5.	U
75-35-4	1,1-DICHLOROETHENE	5.	U
75-34-3	1,1-DICHLOROETHANE	5.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	5.	U
67-66-3	CHLOROFORM	5.	U
107-06-2	1,2-DICHLOROETHANE	5.	U
78-93-3	2-BUTANONE	3.	J
71-55-6	1,1,1-TRICHLOROETHANE	5.	U
56-23-5	CARBON TETRACHLORIDE	5.	U
108-05-4	VINYL ACETATE	10.	U
75-27-4	BROMODICHLOROMETHANE	5.	U
78-87-5	1,2-DICHLOROPROPANE	5.	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	5.	U
79-01-6	TRICHLOROETHENE	5.	U
124-48-1	DIBROMOCHLOROMETHANE	5.	U
79-00-5	1,1,2-TRICHLOROETHANE	5.	U
71-43-2	BENZENE	5.	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.	U
75-25-2	BROMOFORM	5.	U
108-10-1	4-METHYL-2-PENTANONE	4.	J
591-78-6	2-HEXANONE	8.	J
127-18-4	TETRACHLOROETHENE	5.	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	U
108-88-3	TOLUENE	5.	U
108-90-7	CHLOROBENZENE	5.	U
100-41-4	ETHYLBENZENE	5.	U
100-42-5	STYRENE	5.	U
1330-20-7	XYLENE (TOTAL)	5.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKH4

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: VBLKH4

Sample wt/vol: 5.000 (g/mL) G Lab File ID: VBLKH4

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 6/30/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	9.73	10.	J
2.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKH5

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: VBLKH5

Sample wt/vol: 5.000 (g/mL) G Lab File ID: VBLKH5

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 7/ 2/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	10.	U
74-83-9	BROMOMETHANE	10.	U
75-01-4	VINYL CHLORIDE	10.	U
75-00-3	CHLOROETHANE	10.	U
75-09-2	METHYLENE CHLORIDE	5.	U
67-64-1	ACETONE	3.	J
75-15-0	CARBON DISULFIDE	5.	U
75-35-4	1,1-DICHLOROETHENE	5.	U
75-34-3	1,1-DICHLOROETHANE	5.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	5.	U
67-66-3	CHLOROFORM	5.	U
107-06-2	1,2-DICHLOROETHANE	5.	U
78-93-3	2-BUTANONE	10.	U
71-55-6	1,1,1-TRICHLOROETHANE	5.	U
56-23-5	CARBON TETRACHLORIDE	5.	U
108-05-4	VINYL ACETATE	10.	U
75-27-4	BROMODICHLOROMETHANE	5.	U
78-87-5	1,2-DICHLOROPROPANE	5.	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	5.	U
79-01-6	TRICHLOROETHENE	5.	U
124-48-1	DIBROMOCHLOROMETHANE	5.	U
79-00-5	1,1,2-TRICHLOROETHANE	5.	U
71-43-2	BENZENE	5.	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.	U
75-25-2	BROMOFORM	5.	U
108-10-1	4-METHYL-2-PENTANONE	2.	J
591-78-6	2-HEXANONE	4.	J
127-18-4	TETRACHLOROETHENE	5.	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	U
108-88-3	TOLUENE	5.	U
108-90-7	CHLOROBENZENE	5.	U
100-41-4	ETHYLBENZENE	5.	U
100-42-5	STYRENE	5.	U
1330-20-7	XYLENE (TOTAL)	5.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKH5

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: VBLKH5

Sample wt/vol: 5.000 (g/mL) G Lab File ID: VBLKH5

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 7/ 2/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	9.28	10.	J
2.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKH7

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: VBLKH7

Sample wt/vol: 5.000 (g/mL) G Lab File ID: VBLKH7

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 7/10/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	10.	U
74-83-9	BROMOMETHANE	10.	U
75-01-4	VINYL CHLORIDE	10.	U
75-00-3	CHLOROETHANE	10.	U
75-09-2	METHYLENE CHLORIDE	5.	U
67-64-1	ACETONE	10.	U
75-15-0	CARBON DISULFIDE	5.	U
75-35-4	1,1-DICHLOROETHENE	5.	U
75-34-3	1,1-DICHLOROETHANE	5.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	5.	U
67-66-3	CHLOROFORM	5.	U
107-06-2	1,2-DICHLOROETHANE	5.	U
78-93-3	2-BUTANONE	10.	U
71-55-6	1,1,1-TRICHLOROETHANE	5.	U
56-23-5	CARBON TETRACHLORIDE	5.	U
108-05-4	VINYL ACETATE	10.	U
75-27-4	BROMODICHLOROMETHANE	5.	U
78-87-5	1,2-DICHLOROPROPANE	5.	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	5.	U
79-01-6	TRICHLOROETHENE	5.	U
124-48-1	DIBROMOCHLOROMETHANE	5.	U
79-00-5	1,1,2-TRICHLOROETHANE	5.	U
71-43-2	BENZENE	5.	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.	U
75-25-2	BROMOFORM	5.	U
108-10-1	4-METHYL-2-PENTANONE	5.	J
591-78-6	2-HEXANONE	10.	J
127-18-4	TETRACHLOROETHENE	5.	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	U
108-88-3	TOLUENE	5.	U
108-90-7	CHLOROBENZENE	5.	U
100-41-4	ETHYLBENZENE	5.	U
100-42-5	STYRENE	5.	U
1330-20-7	XYLENE (TOTAL)	5.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
VBLKH7

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: VBLKH7

Sample wt/vol: 5.000 (g/mL) G Lab File ID: VBLKH7

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 7/10/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	9.93	20.	J
2.	- -	UNKNOWN	13.12	30.	J
3.					
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKQ5

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: SPBLKQ5

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SPBLKQ5

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/13/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	660.	U
111-44-4	bis(2-Chloroethyl)ether	660.	U
95-57-8	2-Chlorophenol	660.	U
541-73-1	1,3-Dichlorobenzene	660.	U
106-46-7	1,4-Dichlorobenzene	660.	U
100-51-6	Benzyl alcohol	660.	U
95-50-1	1,2-Dichlorobenzene	660.	U
95-48-7	2-Methylphenol	660.	U
108-60-1	bis(2-Chloroisopropyl)ether	660.	U
106-44-5	4-Methylphenol	660.	U
621-64-7	N-Nitroso-di-n-propylamine	660.	U
67-72-1	Hexachloroethane	660.	U
98-95-3	Nitrobenzene	660.	U
78-59-1	Isophorone	660.	U
88-75-5	2-Nitrophenol	660.	U
105-67-9	2,4-Dimethylphenol	660.	U
65-85-0	Benzoic acid	3200.	U
111-91-1	bis(2-Chloroethoxy)methane	660.	U
120-83-2	2,4-Dichlorophenol	660.	U
120-82-1	1,2,4-Trichlorobenzene	660.	U
91-20-3	Naphthalene	660.	U
106-47-8	4-Chloroaniline	660.	U
87-68-3	Hexachlorobutadiene	660.	U
59-50-7	4-Chloro-3-methylphenol	660.	U
91-57-6	2-Methylnaphthalene	660.	U
77-47-4	Hexachlorocyclopentadiene	660.	U
88-06-2	2,4,6-Trichlorophenol	660.	U
95-95-4	2,4,5-Trichlorophenol	3200.	U
91-58-7	2-Chloronaphthalene	660.	U
88-74-4	2-Nitroaniline	3200.	U
131-11-3	Dimethylphthalate	660.	U
208-96-8	Acenaphthylene	660.	U
606-20-2	2,6-Dinitrotoluene	660.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKQ5

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: SPBLKQ5

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SPBLKQ5

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/13/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3200.	U
83-32-9	Acenaphthene	660.	U
51-28-5	2,4-Dinitrophenol	3200.	U
100-02-7	4-Nitrophenol	3200.	U
132-64-9	Dibenzofuran	660.	U
121-14-2	2,4-Dinitrotoluene	660.	U
84-66-2	Diethylphthalate	660.	U
7005-72-3	4-Chlorophenyl-phenylether	660.	U
86-73-7	Fluorene	660.	U
100-01-6	4-Nitroaniline	3200.	U
534-52-1	4,6-Dinitro-2-methylphenol	3200.	U
86-30-6	N-Nitrosodiphenylamine (1)	660.	U
101-55-3	4-Bromophenyl-phenylether	660.	U
118-74-1	Hexachlorobenzene	660.	U
87-86-5	Pentachlorophenol	3200.	U
85-01-8	Phenanthrene	660.	U
120-12-7	Anthracene	660.	U
84-74-2	Di-n-butylphthalate	660.	U
206-44-0	Fluoranthene	660.	U
129-00-0	Pyrene	660.	U
85-68-7	Butylbenzylphthalate	660.	U
91-94-1	3,3'-Dichlorobenzidine	1300.	U
56-55-3	Benzo(a)anthracene	660.	U
218-01-9	Chrysene	660.	U
117-81-7	bis(2-Ethylhexyl)phthalate	660.	U
117-84-0	Di-n-octylphthalate	660.	U
205-99-2	Benzo(b)fluoranthene	660.	U
207-08-9	Benzo(k)fluoranthene	660.	U
50-32-8	Benzo(a)pyrene	660.	U
193-39-5	Indeno(1,2,3-cd)pyrene	660.	U
53-70-3	Dibenz(a,h)anthracene	660.	U
191-24-2	Benzo(g,h,i)perylene	660.	U

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKQ5

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: SPBLKQ5

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SPBLKQ5

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/13/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN	9.05	1000.	J
2. - -	UNKNOWN	38.80	500.	J
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKQ5

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: SBLKQ5

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SBLKQ5

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	660.	U
111-44-4	bis(2-Chloroethyl)ether	660.	U
95-57-8	2-Chlorophenol	660.	U
541-73-1	1,3-Dichlorobenzene	660.	U
106-46-7	1,4-Dichlorobenzene	660.	U
100-51-6	Benzyl alcohol	660.	U
95-50-1	1,2-Dichlorobenzene	660.	U
95-48-7	2-Methylphenol	660.	U
108-60-1	bis(2-Chloroisopropyl)ether	660.	U
106-44-5	4-Methylphenol	660.	U
621-64-7	N-Nitroso-di-n-propylamine	660.	U
67-72-1	Hexachloroethane	660.	U
98-95-3	Nitrobenzene	660.	U
78-59-1	Isophorone	660.	U
88-75-5	2-Nitrophenol	660.	U
105-67-9	2,4-Dimethylphenol	660.	U
65-85-0	Benzoic acid	3200.	U
111-91-1	bis(2-Chloroethoxy)methane	660.	U
120-83-2	2,4-Dichlorophenol	660.	U
120-82-1	1,2,4-Trichlorobenzene	660.	U
91-20-3	Naphthalene	660.	U
106-47-8	4-Chloroaniline	660.	U
87-68-3	Hexachlorobutadiene	660.	U
59-50-7	4-Chloro-3-methylphenol	660.	U
91-57-6	2-Methylnaphthalene	660.	U
77-47-4	Hexachlorocyclopentadiene	660.	U
88-06-2	2,4,6-Trichlorophenol	660.	U
95-95-4	2,4,5-Trichlorophenol	3200.	U
91-58-7	2-Chloronaphthalene	660.	U
88-74-4	2-Nitroaniline	3200.	U
131-11-3	Dimethylphthalate	660.	U
208-96-8	Acenaphthylene	660.	U
606-20-2	2,6-Dinitrotoluene	660.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKQ5

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: SBLKQ5

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SBLKQ5

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3200.	U
83-32-9	Acenaphthene	660.	U
51-28-5	2,4-Dinitrophenol	3200.	U
100-02-7	4-Nitrophenol	3200.	U
132-64-9	Dibenzofuran	660.	U
121-14-2	2,4-Dinitrotoluene	660.	U
84-66-2	Diethylphthalate	660.	U
7005-72-3	4-Chlorophenyl-phenylether	660.	U
86-73-7	Fluorene	660.	U
100-01-6	4-Nitroaniline	3200.	U
534-52-1	4,6-Dinitro-2-methylphenol	3200.	U
86-30-6	N-Nitrosodiphenylamine (1)	660.	U
101-55-3	4-Bromophenyl-phenylether	660.	U
118-74-1	Hexachlorobenzene	660.	U
87-86-5	Pentachlorophenol	3200.	U
85-01-8	Phenanthrene	660.	U
120-12-7	Anthracene	660.	U
84-74-2	Di-n-butylphthalate	660.	U
206-44-0	Fluoranthene	660.	U
129-00-0	Pyrene	660.	U
85-68-7	Butylbenzylphthalate	660.	U
91-94-1	3,3'-Dichlorobenzidine	1300.	U
56-55-3	Benzo(a)anthracene	660.	U
218-01-9	Chrysene	660.	U
117-81-7	bis(2-Ethylhexyl)phthalate	660.	U
117-84-0	Di-n-octylphthalate	660.	U
205-99-2	Benzo(b)fluoranthene	660.	U
207-08-9	Benzo(k)fluoranthene	660.	U
50-32-8	Benzo(a)pyrene	660.	U
193-39-5	Indeno(1,2,3-cd)pyrene	660.	U
53-70-3	Dibenz(a,h)anthracene	660.	U
191-24-2	Benzo(g,h,i)perylene	660.	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKQ5

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: SBLKQ5

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SBLKQ5

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	26.20	300.	J
2.					
3.					
4.					
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0951

EPA SAMPLE NO.

PBLKQ5

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: PBLKQ5

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKPBQ005

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 4/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	16.	U
319-85-7	beta-BHC	16.	U
319-86-8	delta-BHC	16.	U
58-89-9	gamma-BHC	16.	U
76-44-8	Heptachlor	16.	U
309-00-2	Aldrin	16.	U
1024-57-3	Heptachlor epoxide	16.	U
959-98-8	Endosulfan I	16.	U
60-57-1	Dieldrin	32.	U
72-55-9	4,4'-DDE	32.	U
72-20-8	Endrin	32.	U
33213-65-9	Endosulfan II	32.	U
72-54-8	4,4'-DDD	32.	U
1031-07-8	Endosulfan sulfate	32.	U
50-29-3	4,4'-DDT	32.	U
72-43-5	Methoxychlor	160.	U
53494-70-5	Endrin ketone	32.	U
5103-71-9	alpha-Chlordane	160.	U
5103-74-2	gamma-Chlordane	160.	U
8001-35-2	Toxaphene	320.	U
12674-11-2	Aroclor-1016	160.	U
11104-28-2	Aroclor-1221	160.	U
11141-16-5	Aroclor-1232	160.	U
53469-21-9	Aroclor-1242	160.	U
12672-29-6	Aroclor-1248	160.	U
11097-69-1	Aroclor-1254	320.	U
11096-82-5	Aroclor-1260	320.	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN65

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-01B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN65

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 16. Date Analyzed: 6/26/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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	65.	
67-64-1	ACETONE	12 ~~8~~.	~~BJ~~ U
75-15-0	CARBON DISULFIDE	6.	U
75-35-4	1,1-DICHLOROETHENE	6.	U
75-34-3	1,1-DICHLOROETHANE	6.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	6.	U
67-66-3	CHLOROFORM	6.	U
107-06-2	1,2-DICHLOROETHANE	2.	J
78-93-3	2-BUTANONE	12.	U
71-55-6	1,1,1-TRICHLOROETHANE	2.	J
56-23-5	CARBON TETRACHLORIDE	6.	U
108-05-4	VINYL ACETATE	12.	U
75-27-4	BROMODICHLOROMETHANE	6.	U
78-87-5	1,2-DICHLOROPROPANE	6.	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	6.	U
79-01-6	TRICHLOROETHENE	4.	J
124-48-1	DIBROMOCHLOROMETHANE	6.	U
79-00-5	1,1,2-TRICHLOROETHANE	1.	J
71-43-2	BENZENE	2.	J
10061-02-6	TRANS-1,3-DICHLOROPROPENE	6.	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	16.	
79-34-5	1,1,2,2-TETRACHLOROETHANE	17.	
108-88-3	TOLUENE	1.	J
108-90-7	CHLOROBENZENE	1.	J
100-41-4	ETHYLBENZENE	6.	U
100-42-5	STYRENE	6.	U
1330-20-7	XYLENE (TOTAL)	6.	U

RJZ 26 July 1990

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN65

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-01B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN65

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 16. Date Analyzed: 6/26/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

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

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

EPA SAMPLE NO.

EKN66

0046

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-02B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN66RE2

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 28. Date Analyzed: 7/ 2/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	14.	U
74-83-9	BROMOMETHANE	14.	U
75-01-4	VINYL CHLORIDE	14.	U
75-00-3	CHLOROETHANE	14.	U
75-09-2	METHYLENE CHLORIDE	60.	
67-64-1	ACETONE	14. ~~11.~~	~~B~~ U
75-15-0	CARBON DISULFIDE	7.	U
75-35-4	1,1-DICHLOROETHENE	7.	U
75-34-3	1,1-DICHLOROETHANE	7.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	7.	U
67-66-3	CHLOROFORM	7.	U
107-06-2	1,2-DICHLOROETHANE	7.	U
78-93-3	2-BUTANONE	14.	U
71-55-6	1,1,1-TRICHLOROETHANE	7.	U
56-23-5	CARBON TETRACHLORIDE	7.	U
108-05-4	VINYL ACETATE	14.	U
75-27-4	BROMODICHLOROMETHANE	7.	U
78-87-5	1,2-DICHLOROPROPANE	7.	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	7.	U
79-01-6	TRICHLOROETHENE	7.	U
124-48-1	DIBROMOCHLOROMETHANE	7.	U
79-00-5	1,1,2-TRICHLOROETHANE	7.	U
71-43-2	BENZENE	7.	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	7.	U
75-25-2	BROMOFORM	7.	U
108-10-1	4-METHYL-2-PENTANONE	14.	U
591-78-6	2-HEXANONE	14.	U
127-18-4	TETRACHLOROETHENE	7.	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	7.	U
108-88-3	TOLUENE	2.	J
108-90-7	CHLOROBENZENE	7.	U
100-41-4	ETHYLBENZENE	7.	U
100-42-5	STYRENE	7.	U
1330-20-7	XYLENE (TOTAL)	7.	U

RJZ 26 July 1990

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN66

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-02B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN66RE2

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 28. Date Analyzed: 7/ 2/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	8.92	20.	J
2.	- -	UNKNOWN AROMATIC	13.05	8.	J
3.					
4.					
5.					
6.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN67

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-03B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN67

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 16. Date Analyzed: 6/26/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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	70.	
67-64-1	ACETONE	12. ~~8.~~	~~BJ~~ U
75-15-0	CARBON DISULFIDE	1.	J
75-35-4	1,1-DICHLOROETHENE	6.	U
75-34-3	1,1-DICHLOROETHANE	6.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	6.	U
67-66-3	CHLOROFORM	6.	U
107-06-2	1,2-DICHLOROETHANE	6.	U
78-93-3	2-BUTANONE	12.	U
71-55-6	1,1,1-TRICHLOROETHANE	1.	J
56-23-5	CARBON TETRACHLORIDE	6.	U
108-05-4	VINYL ACETATE	12.	U
75-27-4	BROMODICHLOROMETHANE	6.	U
78-87-5	1,2-DICHLOROPROPANE	6.	U
10061-01-5	CIS-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
10061-02-6	TRANS-1,3-DICHLOROPROPENE	6.	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
108-90-7	CHLOROBENZENE	6.	U
100-41-4	ETHYLBENZENE	6.	U
100-42-5	STYRENE	6.	U
1330-20-7	XYLENE (TOTAL)	6.	U

RJZ 26 July 1990

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN67

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-03B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN67

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 16. Date Analyzed: 6/26/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	8.10	10.	J
2.					
3.					
4.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN68

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-04B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN68

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 28. Date Analyzed: 6/26/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
74-87-3	CHLOROMETHANE	14.	U	
74-83-9	BROMOMETHANE	14.	U	
75-01-4	VINYL CHLORIDE	14.	U	
75-00-3	CHLOROETHANE	14.	U	
75-09-2	METHYLENE CHLORIDE	74.		
67-64-1	ACETONE	14 ~~10.~~	~~B~~ J U	RJZ 26 July 1990
75-15-0	CARBON DISULFIDE	7.	U	
75-35-4	1,1-DICHLOROETHENE	7.	U	
75-34-3	1,1-DICHLOROETHANE	7.	U	
540-59-0	1,2-DICHLOROETHENE (TOTAL)	7.	U	
67-66-3	CHLOROFORM	7.	U	
107-06-2	1,2-DICHLOROETHANE	7.	U	
78-93-3	2-BUTANONE	14.	U	
71-55-6	1,1,1-TRICHLOROETHANE	2.	J	
56-23-5	CARBON TETRACHLORIDE	7.	U	
108-05-4	VINYL ACETATE	14.	U	
75-27-4	BROMODICHLOROMETHANE	7.	U	
78-87-5	1,2-DICHLOROPROPANE	7.	U	
10061-01-5	CIS-1,3-DICHLOROPROPENE	7.	U	
79-01-6	TRICHLOROETHENE	7.	U	
124-48-1	DIBROMOCHLOROMETHANE	7.	U	
79-00-5	1,1,2-TRICHLOROETHANE	7.	U	
71-43-2	BENZENE	7.	U	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	7.	U	
75-25-2	BROMOFORM	7.	U	
108-10-1	4-METHYL-2-PENTANONE	14.	U	
591-78-6	2-HEXANONE	14.	U	
127-18-4	TETRACHLOROETHENE	7.	U	
79-34-5	1,1,2,2-TETRACHLOROETHANE	7.	U	
108-88-3	TOLUENE	1.	J	
108-90-7	CHLOROBENZENE	7.	U	
100-41-4	ETHYLBENZENE	7.	U	
100-42-5	STYRENE	7.	U	
1330-20-7	XYLENE (TOTAL)	7.	U	

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN68

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-04B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN68

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 28. Date Analyzed: 6/26/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

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

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

EPA SAMPLE NO.

EKN69

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-05B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN69

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 23. Date Analyzed: 6/26/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	13.	U
74-83-9	BROMOMETHANE	13.	U
75-01-4	VINYL CHLORIDE	13.	U
75-00-3	CHLOROETHANE	13.	U
75-09-2	METHYLENE CHLORIDE	67.	
67-64-1	ACETONE	13. ~~3.~~	BJ U
75-15-0	CARBON DISULFIDE	2.	J
75-35-4	1,1-DICHLOROETHENE	7.	U
75-34-3	1,1-DICHLOROETHANE	7.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	7.	U
67-66-3	CHLOROFORM	7.	U
107-06-2	1,2-DICHLOROETHANE	7.	U
78-93-3	2-BUTANONE	13.	U
71-55-6	1,1,1-TRICHLOROETHANE	2.	J
56-23-5	CARBON TETRACHLORIDE	7.	U
108-05-4	VINYL ACETATE	13.	U
75-27-4	BROMODICHLOROMETHANE	7.	U
78-87-5	1,2-DICHLOROPROPANE	7.	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	7.	U
79-01-6	TRICHLOROETHENE	7.	U
124-48-1	DIBROMOCHLOROMETHANE	7.	U
79-00-5	1,1,2-TRICHLOROETHANE	7.	U
71-43-2	BENZENE	7.	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	7.	U
75-25-2	BROMOFORM	7.	U
108-10-1	4-METHYL-2-PENTANONE	13.	U
591-78-6	2-HEXANONE	13.	U
127-18-4	TETRACHLOROETHENE	2.	J
79-34-5	1,1,2,2-TETRACHLOROETHANE	7.	U
108-88-3	TOLUENE	2.	J
108-90-7	CHLOROBENZENE	7.	U
100-41-4	ETHYLBENZENE	7.	U
100-42-5	STYRENE	7.	U
1330-20-7	XYLENE (TOTAL)	7.	U

RJZ 26 July 1990

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN69

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-05B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN69

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 23. Date Analyzed: 6/26/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

0087

EKN65 RE

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-05B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN69RE

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 23. Date Analyzed: 6/30/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	13.	U
74-83-9	BROMOMETHANE	13.	U
75-01-4	VINYL CHLORIDE	13.	U
75-00-3	CHLOROETHANE	13.	U
75-09-2	METHYLENE CHLORIDE	16.	
67-64-1	ACETONE	13.	U
75-15-0	CARBON DISULFIDE	7.	U
75-35-4	1,1-DICHLOROETHENE	7.	U
75-34-3	1,1-DICHLOROETHANE	7.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	7.	U
67-66-3	CHLOROFORM	7.	U
107-06-2	1,2-DICHLOROETHANE	7.	U
78-93-3	2-BUTANONE	13.	U
71-55-6	1,1,1-TRICHLOROETHANE	7.	U
56-23-5	CARBON TETRACHLORIDE	7.	U
108-05-4	VINYL ACETATE	13.	U
75-27-4	BROMODICHLOROMETHANE	7.	U
78-87-5	1,2-DICHLOROPROPANE	7.	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	7.	U
79-01-6	TRICHLOROETHENE	7.	U
124-48-1	DIBROMOCHLOROMETHANE	7.	U
79-00-5	1,1,2-TRICHLOROETHANE	7.	U
71-43-2	BENZENE	7.	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	7.	U
75-25-2	BROMOFORM	7.	U
108-10-1	4-METHYL-2-PENTANONE	13.	U
591-78-6	2-HEXANONE	13.	U
127-18-4	TETRACHLOROETHENE	7.	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	7.	U
108-88-3	TOLUENE	7.	U
108-90-7	CHLOROBENZENE	7.	U
100-41-4	ETHYLBENZENE	7.	U
100-42-5	STYRENE	7.	U
1330-20-7	XYLENE (TOTAL)	7.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN69 RE

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-05B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN69RE

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 23. Date Analyzed: 6/30/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	8.87	10.	J
2.	- -	UNKNOWN	9.15	30.	J
3.	- -	UNKNOWN	9.48	20.	J
4.	- -	UNKNOWN	13.05	8.	J
5.					
6.					
7.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN70

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-06B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN70

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 18. Date Analyzed: 6/30/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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	14.	
67-64-1	ACETONE	12.	U
75-15-0	CARBON DISULFIDE	6.	U
75-35-4	1,1-DICHLOROETHENE	6.	U
75-34-3	1,1-DICHLOROETHANE	6.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	6.	U
67-66-3	CHLOROFORM	6.	U
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
78-87-5	1,2-DICHLOROPROPANE	6.	U
10061-01-5	CIS-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
10061-02-6	TRANS-1,3-DICHLOROPROPENE	6.	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.	U
108-90-7	CHLOROBENZENE	6.	U
100-41-4	ETHYLBENZENE	6.	U
100-42-5	STYRENE	6.	U
1330-20-7	XYLENE (TOTAL)	6.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN70

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-06B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN70

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 18. Date Analyzed: 6/30/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	9.32	20.	J
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN71

0104

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-07B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN71

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 25. Date Analyzed: 7/ 2/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/KG	Q
74-87-3	CHLOROMETHANE	13.	U
74-83-9	BROMOMETHANE	13.	U
75-01-4	VINYL CHLORIDE	13.	U
75-00-3	CHLOROETHANE	13.	U
75-09-2	METHYLENE CHLORIDE	51.	
67-64-1	ACETONE	20.	~~B~~ U
75-15-0	CARBON DISULFIDE	7.	U
75-35-4	1,1-DICHLOROETHENE	7.	U
75-34-3	1,1-DICHLOROETHANE	7.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	7.	U
67-66-3	CHLOROFORM	7.	U
107-06-2	1,2-DICHLOROETHANE	7.	U
78-93-3	2-BUTANONE	13.	U
71-55-6	1,1,1-TRICHLOROETHANE	7.	U
56-23-5	CARBON TETRACHLORIDE	7.	U
108-05-4	VINYL ACETATE	13.	U
75-27-4	BROMODICHLOROMETHANE	7.	U
78-87-5	1,2-DICHLOROPROPANE	7.	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	7.	U
79-01-6	TRICHLOROETHENE	7.	U
124-48-1	DIBROMOCHLOROMETHANE	7.	U
79-00-5	1,1,2-TRICHLOROETHANE	7.	U
71-43-2	BENZENE	7.	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	7.	U
75-25-2	BROMOFORM	7.	U
108-10-1	4-METHYL-2-PENTANONE	13.	U
591-78-6	2-HEXANONE	13.	U
127-18-4	TETRACHLOROETHENE	7.	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	7.	U
108-88-3	TOLUENE	2.	J
108-90-7	CHLOROBENZENE	7.	U
100-41-4	ETHYLBENZENE	7.	U
100-42-5	STYRENE	7.	U
1330-20-7	XYLENE (TOTAL)	7.	U

RJR 26 July 1990

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EMN71

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14290 SAS No.: SDG No.: EMN85

Matrix: (soil/water) SOIL Lab Sample ID: 90-06-137-07B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EMN71

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 2% Date Analyzed: 7/ 2/90

Column: (pack/cap) CAP Dilution Factor: 1.00

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

Number TICs found: 2

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN	6.68	20.	J
2. - -	UNKNOWN AROMATIC	13.05	9.	J
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN72

0114

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-08B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN72RE

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 14. Date Analyzed: 7/ 2/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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	49.	
67-64-1	ACETONE	12. ~~11.~~	~~EJ~~ U
75-15-0	CARBON DISULFIDE	6.	U
75-35-4	1,1-DICHLOROETHENE	6.	U
75-34-3	1,1-DICHLOROETHANE	6.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	6.	U
67-66-3	CHLOROFORM	6.	U
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
78-87-5	1,2-DICHLOROPROPANE	6.	U
10061-01-5	CIS-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
10061-02-6	TRANS-1,3-DICHLOROPROPENE	6.	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.	U
108-90-7	CHLOROBENZENE	6.	U
100-41-4	ETHYLBENZENE	6.	U
100-42-5	STYRENE	6.	U
1330-20-7	XYLENE (TOTAL)	6.	U

RJZ 26 July 1990

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
EKN72

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-08B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN72RE

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 14. Date Analyzed: 7/ 2/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 3

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	8.47	7.	J
2.	- -	UNKNOWN	8.68	10.	J
3.	- -	UNKNOWN AROMATIC	13.05	7.	J
4.					
5.					
6.					
7.					
8.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN73

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-09B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN73

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 18. Date Analyzed: 6/26/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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	21.	
67-64-1	ACETONE	12. ~~5.~~	~~B~~ U
75-15-0	CARBON DISULFIDE	6.	U
75-35-4	1,1-DICHLOROETHENE	6.	U
75-34-3	1,1-DICHLOROETHANE	6.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	6.	U
67-66-3	CHLOROFORM	6.	U
107-06-2	1,2-DICHLOROETHANE	6.	U
78-93-3	2-BUTANONE	12.	U
71-55-6	1,1,1-TRICHLOROETHANE	3.	J
56-23-5	CARBON TETRACHLORIDE	6.	U
108-05-4	VINYL ACETATE	12.	U
75-27-4	BROMODICHLOROMETHANE	6.	U
78-87-5	1,2-DICHLOROPROPANE	6.	U
10061-01-5	CIS-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
10061-02-6	TRANS-1,3-DICHLOROPROPENE	6.	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	3.	J
79-34-5	1,1,2,2-TETRACHLOROETHANE	6.	U
108-88-3	TOLUENE	2.	J
108-90-7	CHLOROBENZENE	6.	U
100-41-4	ETHYLBENZENE	6.	U
100-42-5	STYRENE	6.	U
1330-20-7	XYLENE (TOTAL)	6.	U

RJZ 26 July 1990

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN73

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-09B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN73

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 18. Date Analyzed: 6/26/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN	8.10	20.	J
2.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN73 RE

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-09B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN73RE

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 18. Date Analyzed: 6/30/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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	12.	
67-64-1	ACETONE	12.	U
75-15-0	CARBON DISULFIDE	6.	U
75-35-4	1,1-DICHLOROETHENE	6.	U
75-34-3	1,1-DICHLOROETHANE	6.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	6.	U
67-66-3	CHLOROFORM	6.	U
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
78-87-5	1,2-DICHLOROPROPANE	6.	U
10061-01-5	CIS-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
10061-02-6	TRANS-1,3-DICHLOROPROPENE	6.	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.	U
108-90-7	CHLOROBENZENE	6.	U
100-41-4	ETHYLBENZENE	6.	U
100-42-5	STYRENE	6.	U
1330-20-7	XYLENE (TOTAL)	6.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN73 RE

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-09B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN73RE

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 18. Date Analyzed: 6/30/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	8.80	10.	J
2.	- -	UNKNOWN	9.00	10.	J
3.	- -	UNKNOWN	9.25	10.	J
4.	- -	UNKNOWN	13.05	10.	J
5.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN74

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-10B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN74

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 20. Date Analyzed: 6/26/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	13.	U
74-83-9	BROMOMETHANE	13.	U
75-01-4	VINYL CHLORIDE	13.	U
75-00-3	CHLOROETHANE	13.	U
75-09-2	METHYLENE CHLORIDE	22.	
67-64-1	ACETONE	13. ~~6.~~	~~B~~ U RJT 26 July 1990
75-15-0	CARBON DISULFIDE	6.	U
75-35-4	1,1-DICHLOROETHENE	6.	U
75-34-3	1,1-DICHLOROETHANE	6.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	6.	U
67-66-3	CHLOROFORM	6.	U
107-06-2	1,2-DICHLOROETHANE	6.	U
78-93-3	2-BUTANONE	13.	U
71-55-6	1,1,1-TRICHLOROETHANE	2.	J
56-23-5	CARBON TETRACHLORIDE	6.	U
108-05-4	VINYL ACETATE	13.	U
75-27-4	BROMODICHLOROMETHANE	6.	U
78-87-5	1,2-DICHLOROPROPANE	6.	U
10061-01-5	CIS-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
10061-02-6	TRANS-1,3-DICHLOROPROPENE	6.	U
75-25-2	BROMOFORM	6.	U
108-10-1	4-METHYL-2-PENTANONE	13.	U
591-78-6	2-HEXANONE	13.	U
127-18-4	TETRACHLOROETHENE	6.	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	6.	U
108-88-3	TOLUENE	6.	U
108-90-7	CHLOROBENZENE	6.	U
100-41-4	ETHYLBENZENE	6.	U
100-42-5	STYRENE	6.	U
1330-20-7	XYLENE (TOTAL)	6.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN74

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-10B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN74

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 20. Date Analyzed: 6/26/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN75

0153

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-11B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN75RE2

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 26. Date Analyzed: 7/10/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	14.	U
74-83-9	BROMOMETHANE	14.	U
75-01-4	VINYL CHLORIDE	14.	U
75-00-3	CHLOROETHANE	14.	U
75-09-2	METHYLENE CHLORIDE	47.	
67-64-1	ACETONE	14.	U
75-15-0	CARBON DISULFIDE	7.	U
75-35-4	1,1-DICHLOROETHENE	7.	U
75-34-3	1,1-DICHLOROETHANE	7.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	7.	U
67-66-3	CHLOROFORM	7.	U
107-06-2	1,2-DICHLOROETHANE	7.	U
78-93-3	2-BUTANONE	14.	U
71-55-6	1,1,1-TRICHLOROETHANE	7.	U
56-23-5	CARBON TETRACHLORIDE	7.	U
108-05-4	VINYL ACETATE	14.	U
75-27-4	BROMODICHLOROMETHANE	7.	U
78-87-5	1,2-DICHLOROPROPANE	7.	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	7.	U
79-01-6	TRICHLOROETHENE	7.	U
124-48-1	DIBROMOCHLOROMETHANE	7.	U
79-00-5	1,1,2-TRICHLOROETHANE	7.	U
71-43-2	BENZENE	7.	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	7.	U
75-25-2	BROMOFORM	7.	U
108-10-1	4-METHYL-2-PENTANONE	14.	U
591-78-6	2-HEXANONE	14.	U
127-18-4	TETRACHLOROETHENE	7.	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	7.	U
108-88-3	TOLUENE	7.	U
108-90-7	CHLOROBENZENE	7.	U
100-41-4	ETHYLBENZENE	7.	U
100-42-5	STYRENE	7.	U
1330-20-7	XYLENE (TOTAL)	7.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN75

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-11B

Sample wt/vol: 5.000 (g/mL) G Lab File ID: EKN75RE2

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 26. Date Analyzed: 7/10/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	9.83	40.	BJ
2.	- -	UNKNOWN	13.08	40.	BJ
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4.					
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN65

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-01A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN65

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 16. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/13/90

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	780.	U
111-44-4	bis(2-Chloroethyl)ether	780.	U
95-57-8	2-Chlorophenol	780.	U
541-73-1	1,3-Dichlorobenzene	780.	U
106-46-7	1,4-Dichlorobenzene	780.	U
100-51-6	Benzyl alcohol	780.	U
95-50-1	1,2-Dichlorobenzene	780.	U
95-48-7	2-Methylphenol	780.	U
108-60-1	bis(2-Chloroisopropyl)ether	780.	U
106-44-5	4-Methylphenol	780.	U
621-64-7	N-Nitroso-di-n-propylamine	780.	U
67-72-1	Hexachloroethane	780.	U
98-95-3	Nitrobenzene	780.	U
78-59-1	Isophorone	780.	U
88-75-5	2-Nitrophenol	780.	U
105-67-9	2,4-Dimethylphenol	780.	U
65-85-0	Benzoic acid	3800.	U
111-91-1	bis(2-Chloroethoxy)methane	780.	U
120-83-2	2,4-Dichlorophenol	780.	U
120-82-1	1,2,4-Trichlorobenzene	780.	U
91-20-3	Naphthalene	780.	U
106-47-8	4-Chloroaniline	780.	U
87-68-3	Hexachlorobutadiene	780.	U
59-50-7	4-Chloro-3-methylphenol	780.	U
91-57-6	2-Methylnaphthalene	780.	U
77-47-4	Hexachlorocyclopentadiene	780.	U
88-06-2	2,4,6-Trichlorophenol	780.	U
95-95-4	2,4,5-Trichlorophenol	3800.	U
91-58-7	2-Chloronaphthalene	780.	U
88-74-4	2-Nitroaniline	3800.	U
131-11-3	Dimethylphthalate	780.	U
208-96-8	Acenaphthylene	780.	U
606-20-2	2,6-Dinitrotoluene	780.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN65

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-01A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN65

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 16. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/13/90

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3800.	U
83-32-9	Acenaphthene	780.	U
51-28-5	2,4-Dinitrophenol	3800.	U
100-02-7	4-Nitrophenol	3800.	U
132-64-9	Dibenzofuran	780.	U
121-14-2	2,4-Dinitrotoluene	780.	U
84-66-2	Diethylphthalate	780.	U
7005-72-3	4-Chlorophenyl-phenylether	780.	U
86-73-7	Fluorene	780.	U
100-01-6	4-Nitroaniline	3800.	U
534-52-1	4,6-Dinitro-2-methylphenol	3800.	U
86-30-6	N-Nitrosodiphenylamine (1)	780.	U
101-55-3	4-Bromophenyl-phenylether	780.	U
118-74-1	Hexachlorobenzene	780.	U
87-86-5	Pentachlorophenol	3800.	U
85-01-8	Phenanthrene	780.	U
120-12-7	Anthracene	780.	U
84-74-2	Di-n-butylphthalate	780.	U
206-44-0	Fluoranthene	780.	U
129-00-0	Pyrene	780.	U
85-68-7	Butylbenzylphthalate	780.	U
91-94-1	3,3'-Dichlorobenzidine	1600.	U
56-55-3	Benzo(a)anthracene	780.	U
218-01-9	Chrysene	780.	U
117-81-7	bis(2-Ethylhexyl)phthalate	780.	U
117-84-0	Di-n-octylphthalate	780.	U
205-99-2	Benzo(b)fluoranthene	780.	U
207-08-9	Benzo(k)fluoranthene	780.	U
50-32-8	Benzo(a)pyrene	780.	U
193-39-5	Indeno(1,2,3-cd)pyrene	780.	U
53-70-3	Dibenz(a,h)anthracene	780.	U
191-24-2	Benzo(g,h,i)perylene	780.	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN65

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-01A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN65

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 16. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/13/90

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

Number TICs found: 10

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	5.98	400.	J
2.	- -	UNKNOWN	7.43	300.	J A
3.	- -	UNKNOWN	8.15	1000.	J A
4.	- -	UNKNOWN	9.07	2000.	~~J~~ U
5.	- -	UNKNOWN	10.23	4000.	J A
6.	- -	UNKNOWN	22.30	1000.	J
7.	- -	UNKNOWN FATTY ACID	22.40	1000.	J
8.	- -	UNKNOWN HYDROCARBON	24.22	1000.	J
9.	57-11-4	Octadecanoic acid	24.38	300.	J
10.	- -	UNKNOWN	38.33	4000.	J
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RJE 26 July 1990

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN66

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-02A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN66RE

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 28. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/16/90

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	920.	U
111-44-4	bis(2-Chloroethyl)ether	920.	U
95-57-8	2-Chlorophenol	920.	U
541-73-1	1,3-Dichlorobenzene	920.	U
106-46-7	1,4-Dichlorobenzene	920.	U
100-51-6	Benzyl alcohol	920.	U
95-50-1	1,2-Dichlorobenzene	920.	U
95-48-7	2-Methylphenol	920.	U
108-60-1	bis(2-Chloroisopropyl)ether	920.	U
106-44-5	4-Methylphenol	920.	U
621-64-7	N-Nitroso-di-n-propylamine	920.	U
67-72-1	Hexachloroethane	920.	U
98-95-3	Nitrobenzene	920.	U
78-59-1	Isophorone	920.	U
88-75-5	2-Nitrophenol	920.	U
105-67-9	2,4-Dimethylphenol	920.	U
65-85-0	Benzoic acid	4400.	U
111-91-1	bis(2-Chloroethoxy)methane	920.	U
120-83-2	2,4-Dichlorophenol	920.	U
120-82-1	1,2,4-Trichlorobenzene	920.	U
91-20-3	Naphthalene	920.	U
106-47-8	4-Chloroaniline	920.	U
87-68-3	Hexachlorobutadiene	920.	U
59-50-7	4-Chloro-3-methylphenol	920.	U
91-57-6	2-Methylnaphthalene	920.	U
77-47-4	Hexachlorocyclopentadiene	920.	U
88-06-2	2,4,6-Trichlorophenol	920.	U
95-95-4	2,4,5-Trichlorophenol	4400.	U
91-58-7	2-Chloronaphthalene	920.	U
88-74-4	2-Nitroaniline	4400.	U
131-11-3	Dimethylphthalate	920.	U
208-96-8	Acenaphthylene	920.	U
606-20-2	2,6-Dinitrotoluene	920.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN66

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-02A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN66RE

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 28. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/16/90

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4400.	U
83-32-9	Acenaphthene	920.	U
51-28-5	2,4-Dinitrophenol	4400.	U
100-02-7	4-Nitrophenol	4400.	U
132-64-9	Dibenzofuran	920.	U
121-14-2	2,4-Dinitrotoluene	920.	U
84-66-2	Diethylphthalate	920.	U
7005-72-3	4-Chlorophenyl-phenylether	920.	U
86-73-7	Fluorene	920.	U
100-01-6	4-Nitroaniline	4400.	U
534-52-1	4,6-Dinitro-2-methylphenol	4400.	U
86-30-6	N-Nitrosodiphenylamine (1)	920.	U
101-55-3	4-Bromophenyl-phenylether	920.	U
118-74-1	Hexachlorobenzene	920.	U
87-86-5	Pentachlorophenol	4400.	U
85-01-8	Phenanthrene	920.	U
120-12-7	Anthracene	920.	U
84-74-2	Di-n-butylphthalate	920.	U
206-44-0	Fluoranthene	190.	J
129-00-0	Pyrene	190.	J
85-68-7	Butylbenzylphthalate	920.	U
91-94-1	3,3'-Dichlorobenzidine	1800.	U
56-55-3	Benzo(a)anthracene	93.	J
218-01-9	Chrysene	140.	J
117-81-7	bis(2-Ethylhexyl)phthalate	920.	U
117-84-0	Di-n-octylphthalate	920.	U
205-99-2	Benzo(b)fluoranthene	920.	U
207-08-9	Benzo(k)fluoranthene	920.	U
50-32-8	Benzo(a)pyrene	920.	U
193-39-5	Indeno(1,2,3-cd)pyrene	920.	U
53-70-3	Dibenz(a,h)anthracene	920.	U
191-24-2	Benzo(g,h,i)perylene	920.	U

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
EKN66

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-02A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN66RE

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 28. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/16/90

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.00

Number TICs found: 9

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.	- -	UNKNOWN	5.87	400.	J	
2.	- -	UNKNOWN	7.35	400.	J	A
3.	- -	UNKNOWN	7.70	400.	J	A
4.	- -	UNKNOWN	8.10	2000.	J	A
5.	- -	UNKNOWN	8.32	400.	J	
6.	- -	UNKNOWN	9.03	4000.	~~BJ~~ U	RJZ 26 July 1990
7.	- -	UNKNOWN	10.18	4000.	J	
8.	- -	UNKNOWN FATTY ACID	22.37	400.	J	
9.	- -	UNKNOWN	39.58	1000.	J	
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN67

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-05-137-03A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN67

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 16. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/13/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	790.	U
111-44-4	bis(2-Chloroethyl)ether	790.	U
95-57-8	2-Chlorophenol	790.	U
541-73-1	1,3-Dichlorobenzene	790.	U
106-46-7	1,4-Dichlorobenzene	790.	U
100-51-6	Benzyl alcohol	790.	U
95-50-1	1,2-Dichlorobenzene	790.	U
95-48-7	2-Methylphenol	790.	U
108-60-1	bis(2-Chloroisopropyl)ether	790.	U
106-44-5	4-Methylphenol	790.	U
621-64-7	N-Nitroso-di-n-propylamine	790.	U
67-72-1	Hexachloroethane	790.	U
98-95-3	Nitrobenzene	790.	U
78-59-1	Isophorone	790.	U
88-75-5	2-Nitrophenol	790.	U
105-67-9	2,4-Dimethylphenol	790.	U
65-85-0	Benzoic acid	3800.	U
111-91-1	bis(2-Chloroethoxy)methane	790.	U
120-83-2	2,4-Dichlorophenol	790.	U
120-82-1	1,2,4-Trichlorobenzene	790.	U
91-20-3	Naphthalene	790.	U
106-47-8	4-Chloroaniline	790.	U
87-68-3	Hexachlorobutadiene	790.	U
59-50-7	4-Chloro-3-methylphenol	790.	U
91-57-6	2-Methylnaphthalene	790.	U
77-47-4	Hexachlorocyclopentadiene	790.	U
88-06-2	2,4,6-Trichlorophenol	790.	U
95-95-4	2,4,5-Trichlorophenol	3800.	U
91-58-7	2-Chloronaphthalene	790.	U
88-74-4	2-Nitroaniline	3800.	U
131-11-3	Dimethylphthalate	790.	U
208-96-8	Acenaphthylene	790.	U
606-20-2	2,6-Dinitrotoluene	790.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN67

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-05-137-03A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN67

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 16. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/13/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3800.	U
83-32-9	Acenaphthene	790.	U
51-28-5	2,4-Dinitrophenol	3800.	U
100-02-7	4-Nitrophenol	3800.	U
132-64-9	Dibenzofuran	790.	U
121-14-2	2,4-Dinitrotoluene	790.	U
84-66-2	Diethylphthalate	790.	U
7005-72-3	4-Chlorophenyl-phenylether	790.	U
86-73-7	Fluorene	790.	U
100-01-6	4-Nitroaniline	3800.	U
534-52-1	4,6-Dinitro-2-methylphenol	3800.	U
86-30-6	N-Nitrosodiphenylamine (1)	790.	U
101-55-3	4-Bromophenyl-phenylether	790.	U
118-74-1	Hexachlorobenzene	790.	U
87-86-5	Pentachlorophenol	3800.	U
85-01-8	Phenanthrene	790.	U
120-12-7	Anthracene	790.	U
84-74-2	Di-n-butylphthalate	790.	U
206-44-0	Fluoranthene	790.	U
129-00-0	Pyrene	790.	U
85-68-7	Butylbenzylphthalate	790.	U
91-94-1	3,3'-Dichlorobenzidine	1600.	U
56-55-3	Benzo(a)anthracene	790.	U
218-01-9	Chrysene	790.	U
117-81-7	bis(2-Ethylhexyl)phthalate	790.	U
117-84-0	Di-n-octylphthalate	790.	U
205-99-2	Benzo(b)fluoranthene	790.	U
207-08-9	Benzo(k)fluoranthene	790.	U
50-32-8	Benzo(a)pyrene	790.	U
193-39-5	Indeno(1,2,3-cd)pyrene	790.	U
53-70-3	Dibenz(a,h)anthracene	790.	U
191-24-2	Benzo(g,h,i)perylene	790.	U

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
EKN67

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-05-137-03A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN67

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 16. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/13/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

Number TICs found: 5

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.	- -	UNKNOWN	7.42	400.	J A	
2.	- -	UNKNOWN	7.75	400.	J A	
3.	- -	UNKNOWN	8.13	700.	J A	
4.	- -	UNKNOWN	9.08	4000.	~~BJ~~ U	RJZ 26 July 1990
5.	- -	UNKNOWN	10.25	6000.	J A	
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN68

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-04A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN68

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 28. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	910.	U
111-44-4	bis(2-Chloroethyl)ether	910.	U
95-57-8	2-Chlorophenol	910.	U
541-73-1	1,3-Dichlorobenzene	910.	U
106-46-7	1,4-Dichlorobenzene	910.	U
100-51-6	Benzyl alcohol	910.	U
95-50-1	1,2-Dichlorobenzene	910.	U
95-48-7	2-Methylphenol	910.	U
108-60-1	bis(2-Chloroisopropyl)ether	910.	U
106-44-5	4-Methylphenol	910.	U
621-64-7	N-Nitroso-di-n-propylamine	910.	U
67-72-1	Hexachloroethane	910.	U
98-95-3	Nitrobenzene	910.	U
78-59-1	Isophorone	910.	U
88-75-5	2-Nitrophenol	910.	U
105-67-9	2,4-Dimethylphenol	910.	U
65-85-0	Benzoic acid	4400.	U
111-91-1	bis(2-Chloroethoxy)methane	910.	U
120-83-2	2,4-Dichlorophenol	910.	U
120-82-1	1,2,4-Trichlorobenzene	910.	U
91-20-3	Naphthalene	910.	U
106-47-8	4-Chloroaniline	910.	U
87-68-3	Hexachlorobutadiene	910.	U
59-50-7	4-Chloro-3-methylphenol	910.	U
91-57-6	2-Methylnaphthalene	910.	U
77-47-4	Hexachlorocyclopentadiene	910.	U
88-06-2	2,4,6-Trichlorophenol	910.	U
95-95-4	2,4,5-Trichlorophenol	4400.	U
91-58-7	2-Chloronaphthalene	910.	U
88-74-4	2-Nitroaniline	4400.	U
131-11-3	Dimethylphthalate	910.	U
208-96-8	Acenaphthylene	910.	U
606-20-2	2,6-Dinitrotoluene	910.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN68

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-04A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN68

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 28. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4400.	U
83-32-9	Acenaphthene	910.	U
51-28-5	2,4-Dinitrophenol	4400.	U
100-02-7	4-Nitrophenol	4400.	U
132-64-9	Dibenzofuran	910.	U
121-14-2	2,4-Dinitrotoluene	910.	U
84-66-2	Diethylphthalate	910.	U
7005-72-3	4-Chlorophenyl-phenylether	910.	U
86-73-7	Fluorene	910.	U
100-01-6	4-Nitroaniline	4400.	U
534-52-1	4,6-Dinitro-2-methylphenol	4400.	U
86-30-6	N-Nitrosodiphenylamine (1)	910.	U
101-55-3	4-Bromophenyl-phenylether	910.	U
118-74-1	Hexachlorobenzene	910.	U
87-86-5	Pentachlorophenol	4400.	U
85-01-8	Phenanthrene	910.	U
120-12-7	Anthracene	910.	U
84-74-2	Di-n-butylphthalate	910.	U
206-44-0	Fluoranthene	910.	U
129-00-0	Pyrene	910.	U
85-68-7	Butylbenzylphthalate	910.	U
91-94-1	3,3'-Dichlorobenzidine	1800.	U
56-55-3	Benzo(a)anthracene	910.	U
218-01-9	Chrysene	910.	U
117-81-7	bis(2-Ethylhexyl)phthalate	910.	U
117-84-0	Di-n-octylphthalate	910.	U
205-99-2	Benzo(b)fluoranthene	910.	U
207-08-9	Benzo(k)fluoranthene	910.	U
50-32-8	Benzo(a)pyrene	910.	U
193-39-5	Indeno(1,2,3-cd)pyrene	910.	U
53-70-3	Dibenz(a,h)anthracene	910.	U
191-24-2	Benzo(g,h,i)perylene	910.	U

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN68

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-04A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN68

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 28. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.00

Number TICs found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	7.87	500.	J
2.	- -	UNKNOWN	8.82	3000.	J A
3.	- -	UNKNOWN	9.93	2000.	J
4.	- -	UNKNOWN	26.20	500.	~~BJ~~ U
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RJZ 26 July 1990

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN69

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-05A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN69

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 23. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	860.	U
111-44-4	bis(2-Chloroethyl)ether	860.	U
95-57-8	2-Chlorophenol	860.	U
541-73-1	1,3-Dichlorobenzene	860.	U
106-46-7	1,4-Dichlorobenzene	860.	U
100-51-6	Benzyl alcohol	860.	U
95-50-1	1,2-Dichlorobenzene	860.	U
95-48-7	2-Methylphenol	860.	U
108-60-1	bis(2-Chloroisopropyl)ether	860.	U
106-44-5	4-Methylphenol	860.	U
621-64-7	N-Nitroso-di-n-propylamine	860.	U
67-72-1	Hexachloroethane	860.	U
98-95-3	Nitrobenzene	860.	U
78-59-1	Isophorone	860.	U
88-75-5	2-Nitrophenol	860.	U
105-67-9	2,4-Dimethylphenol	860.	U
65-85-0	Benzoic acid	4200.	U
111-91-1	bis(2-Chloroethoxy)methane	860.	U
120-83-2	2,4-Dichlorophenol	860.	U
120-82-1	1,2,4-Trichlorobenzene	860.	U
91-20-3	Naphthalene	860.	U
106-47-8	4-Chloroaniline	860.	U
87-68-3	Hexachlorobutadiene	860.	U
59-50-7	4-Chloro-3-methylphenol	860.	U
91-57-6	2-Methylnaphthalene	860.	U
77-47-4	Hexachlorocyclopentadiene	860.	U
88-06-2	2,4,6-Trichlorophenol	860.	U
95-95-4	2,4,5-Trichlorophenol	4200.	U
91-58-7	2-Chloronaphthalene	860.	U
88-74-4	2-Nitroaniline	4200.	U
131-11-3	Dimethylphthalate	860.	U
208-96-8	Acenaphthylene	860.	U
606-20-2	2,6-Dinitrotoluene	860.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN69

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-05A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN69

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 23. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4200.	U
83-32-9	Acenaphthene	860.	U
51-28-5	2,4-Dinitrophenol	4200.	U
100-02-7	4-Nitrophenol	4200.	U
132-64-9	Dibenzofuran	860.	U
121-14-2	2,4-Dinitrotoluene	860.	U
84-66-2	Diethylphthalate	860.	U
7005-72-3	4-Chlorophenyl-phenylether	860.	U
86-73-7	Fluorene	860.	U
100-01-6	4-Nitroaniline	4200.	U
534-52-1	4,6-Dinitro-2-methylphenol	4200.	U
86-30-6	N-Nitrosodiphenylamine (1)	860.	U
101-55-3	4-Bromophenyl-phenylether	860.	U
118-74-1	Hexachlorobenzene	860.	U
87-86-5	Pentachlorophenol	4200.	U
85-01-8	Phenanthrene	860.	U
120-12-7	Anthracene	860.	U
84-74-2	Di-n-butylphthalate	860.	U
206-44-0	Fluoranthene	860.	U
129-00-0	Pyrene	860.	U
85-68-7	Butylbenzylphthalate	860.	U
91-94-1	3,3'-Dichlorobenzidine	1700.	U
56-55-3	Benzo(a)anthracene	860.	U
218-01-9	Chrysene	860.	U
117-81-7	bis(2-Ethylhexyl)phthalate	860.	U
117-84-0	Di-n-octylphthalate	860.	U
205-99-2	Benzo(b)fluoranthene	860.	U
207-08-9	Benzo(k)fluoranthene	860.	U
50-32-8	Benzo(a)pyrene	860.	U
193-39-5	Indeno(1,2,3-cd)pyrene	860.	U
53-70-3	Dibenz(a,h)anthracene	860.	U
191-24-2	Benzo(g,h,i)perylene	860.	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN69

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-05A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN69

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 23. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.00

Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN	8.80	2000.	J
2. - -	UNKNOWN	9.95	1000.	J
3. - -	UNKNOWN HYDROCARBON	10.80	400.	J
4. - -	UNKNOWN FATTY ACID	22.10	700.	J
5. - -	UNKNOWN	32.05	800.	J
6. - -	UNKNOWN	39.03	2000.	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN70

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-06A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN70

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 18. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	800.	U
111-44-4	bis(2-Chloroethyl)ether	800.	U
95-57-8	2-Chlorophenol	800.	U
541-73-1	1,3-Dichlorobenzene	800.	U
106-46-7	1,4-Dichlorobenzene	800.	U
100-51-6	Benzyl alcohol	800.	U
95-50-1	1,2-Dichlorobenzene	800.	U
95-48-7	2-Methylphenol	800.	U
108-60-1	bis(2-Chloroisopropyl)ether	800.	U
106-44-5	4-Methylphenol	800.	U
621-64-7	N-Nitroso-di-n-propylamine	800.	U
67-72-1	Hexachloroethane	800.	U
98-95-3	Nitrobenzene	800.	U
78-59-1	Isophorone	800.	U
88-75-5	2-Nitrophenol	800.	U
105-67-9	2,4-Dimethylphenol	800.	U
65-85-0	Benzoic acid	3900.	U
111-91-1	bis(2-Chloroethoxy)methane	800.	U
120-83-2	2,4-Dichlorophenol	800.	U
120-82-1	1,2,4-Trichlorobenzene	800.	U
91-20-3	Naphthalene	800.	U
106-47-8	4-Chloroaniline	800.	U
87-68-3	Hexachlorobutadiene	800.	U
59-50-7	4-Chloro-3-methylphenol	800.	U
91-57-6	2-Methylnaphthalene	800.	U
77-47-4	Hexachlorocyclopentadiene	800.	U
88-06-2	2,4,6-Trichlorophenol	800.	U
95-95-4	2,4,5-Trichlorophenol	3900.	U
91-58-7	2-Chloronaphthalene	800.	U
88-74-4	2-Nitroaniline	3900.	U
131-11-3	Dimethylphthalate	800.	U
208-96-8	Acenaphthylene	800.	U
606-20-2	2,6-Dinitrotoluene	800.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN70

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-06A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN70

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 18. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3900.	U
83-32-9	Acenaphthene	800.	U
51-28-5	2,4-Dinitrophenol	3900.	U
100-02-7	4-Nitrophenol	3900.	U
132-64-9	Dibenzofuran	800.	U
121-14-2	2,4-Dinitrotoluene	800.	U
84-66-2	Diethylphthalate	800.	U
7005-72-3	4-Chlorophenyl-phenylether	800.	U
86-73-7	Fluorene	800.	U
100-01-6	4-Nitroaniline	3900.	U
534-52-1	4,6-Dinitro-2-methylphenol	3900.	U
86-30-6	N-Nitrosodiphenylamine (1)	800.	U
101-55-3	4-Bromophenyl-phenylether	800.	U
118-74-1	Hexachlorobenzene	800.	U
87-86-5	Pentachlorophenol	3900.	U
85-01-8	Phenanthrene	260.	J
120-12-7	Anthracene	100.	J
84-74-2	Di-n-butylphthalate	800.	U
206-44-0	Fluoranthene	430.	J
129-00-0	Pyrene	920.	
85-68-7	Butylbenzylphthalate	800.	U
91-94-1	3,3'-Dichlorobenzidine	1600.	U
56-55-3	Benzo(a)anthracene	680.	J
218-01-9	Chrysene	920.	
117-81-7	bis(2-Ethylhexyl)phthalate	800.	U
117-84-0	Di-n-octylphthalate	800.	U
205-99-2	Benzo(b)fluoranthene	2000.	
207-08-9	Benzo(k)fluoranthene	2300.	
50-32-8	Benzo(a)pyrene	2500.	
193-39-5	Indeno(1,2,3-cd)pyrene	1700.	
53-70-3	Dibenz(a,h)anthracene	800.	U
191-24-2	Benzo(g,h,i)perylene	2100.	

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN70

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-06A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN70

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 18. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

Number TICs found: 8

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN	7.88	300.	J
2. - -	UNKNOWN	8.82	2000.	J A
3. - -	UNKNOWN	9.97	2000.	J
4. - -	UNKNOWN AROMATIC	26.53	1000.	J
5. - -	UNKNOWN AROMATIC	27.45	300.	J
6. - -	UNKNOWN AROMATIC	31.05	400.	J
7. - -	UNKNOWN AROMATIC	31.80	2000.	J
8. - -	UNKNOWN	37.43	600.	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN71

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-07A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN71

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 25. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	870.	U
111-44-4	bis(2-Chloroethyl)ether	870.	U
95-57-8	2-Chlorophenol	870.	U
541-73-1	1,3-Dichlorobenzene	870.	U
106-46-7	1,4-Dichlorobenzene	870.	U
100-51-6	Benzyl alcohol	870.	U
95-50-1	1,2-Dichlorobenzene	870.	U
95-48-7	2-Methylphenol	870.	U
108-60-1	bis(2-Chloroisopropyl)ether	870.	U
106-44-5	4-Methylphenol	870.	U
621-64-7	N-Nitroso-di-n-propylamine	870.	U
67-72-1	Hexachloroethane	870.	U
98-95-3	Nitrobenzene	870.	U
78-59-1	Isophorone	870.	U
88-75-5	2-Nitrophenol	870.	U
105-67-9	2,4-Dimethylphenol	870.	U
65-85-0	Benzoic acid	4200.	U
111-91-1	bis(2-Chloroethoxy)methane	870.	U
120-83-2	2,4-Dichlorophenol	870.	U
120-82-1	1,2,4-Trichlorobenzene	870.	U
91-20-3	Naphthalene	870.	U
106-47-8	4-Chloroaniline	870.	U
87-68-3	Hexachlorobutadiene	870.	U
59-50-7	4-Chloro-3-methylphenol	870.	U
91-57-6	2-Methylnaphthalene	870.	U
77-47-4	Hexachlorocyclopentadiene	870.	U
88-06-2	2,4,6-Trichlorophenol	870.	U
95-95-4	2,4,5-Trichlorophenol	4200.	U
91-58-7	2-Chloronaphthalene	870.	U
88-74-4	2-Nitroaniline	4200.	U
131-11-3	Dimethylphthalate	870.	U
208-96-8	Acenaphthylene	870.	U
606-20-2	2,6-Dinitrotoluene	870.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN71

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-07A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN71

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 25. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4200.	U
83-32-9	Acenaphthene	870.	U
51-28-5	2,4-Dinitrophenol	4200.	U
100-02-7	4-Nitrophenol	4200.	U
132-64-9	Dibenzofuran	870.	U
121-14-2	2,4-Dinitrotoluene	870.	U
84-66-2	Diethylphthalate	870.	U
7005-72-3	4-Chlorophenyl-phenylether	870.	U
86-73-7	Fluorene	870.	U
100-01-6	4-Nitroaniline	4200.	U
534-52-1	4,6-Dinitro-2-methylphenol	4200.	U
86-30-6	N-Nitrosodiphenylamine (1)	870.	U
101-55-3	4-Bromophenyl-phenylether	870.	U
118-74-1	Hexachlorobenzene	870.	U
87-86-5	Pentachlorophenol	4200.	U
85-01-8	Phenanthrene	110.	J
120-12-7	Anthracene	870.	U
84-74-2	Di-n-butylphthalate	870.	U
206-44-0	Fluoranthene	870.	U
129-00-0	Pyrene	140.	J
85-68-7	Butylbenzylphthalate	870.	U
91-94-1	3,3'-Dichlorobenzidine	1700.	U
56-55-3	Benzo(a)anthracene	870.	U
218-01-9	Chrysene	100.	J
117-81-7	bis(2-Ethylhexyl)phthalate	39000.	E
117-84-0	Di-n-octylphthalate	12000.	
205-99-2	Benzo(b)fluoranthene	870.	U
207-08-9	Benzo(k)fluoranthene	870.	U
50-32-8	Benzo(a)pyrene	870.	U
193-39-5	Indeno(1,2,3-cd)pyrene	870.	U
53-70-3	Dibenz(a,h)anthracene	870.	U
191-24-2	Benzo(g,h,i)perylene	870.	U

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
EKN71

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-07A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN71

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 25. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

Number TICs found: 13

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.	- -	UNKNOWN	7.88	500.	J	
2.	- -	UNKNOWN	8.83	2000.	J A	
3.	- -	UNKNOWN	9.97	2000.	J	
4.	- -	UNKNOWN	18.00	400.	J	
5.	- -	UNKNOWN HYDROCARBON	19.22	400.	J	
6.	- -	UNKNOWN HYDROCARBON	19.28	400.	J	
7.	- -	UNKNOWN FATTY ACID	22.10	400.	J	
8.	- -	UNKNOWN	26.22	500.	~~BJ~~ U	EJZ 26 July 1990
9.	- -	UNKNOWN	26.60	500.	J	
10.	- -	UNKNOWN HYDROCARBON	32.03	600.	J	
11.	- -	UNKNOWN PHTHALATE	32.87	20000.	J	
12.	- -	UNKNOWN PHTHALATE	37.07	5000.	J	
13.	- -	UNKNOWN	39.02	500.	J	
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN71 DL

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-07A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN71DL

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 25. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/16/90

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	8700.	U
111-44-4	bis(2-Chloroethyl)ether	8700.	U
95-57-8	2-Chlorophenol	8700.	U
541-73-1	1,3-Dichlorobenzene	8700.	U
106-46-7	1,4-Dichlorobenzene	8700.	U
100-51-6	Benzyl alcohol	8700.	U
95-50-1	1,2-Dichlorobenzene	8700.	U
95-48-7	2-Methylphenol	8700.	U
108-60-1	bis(2-Chloroisopropyl)ether	8700.	U
106-44-5	4-Methylphenol	8700.	U
621-64-7	N-Nitroso-di-n-propylamine	8700.	U
67-72-1	Hexachloroethane	8700.	U
98-95-3	Nitrobenzene	8700.	U
78-59-1	Isophorone	8700.	U
88-75-5	2-Nitrophenol	8700.	U
105-67-9	2,4-Dimethylphenol	8700.	U
65-85-0	Benzoic acid	42000.	U
111-91-1	bis(2-Chloroethoxy)methane	8700.	U
120-83-2	2,4-Dichlorophenol	8700.	U
120-82-1	1,2,4-Trichlorobenzene	8700.	U
91-20-3	Naphthalene	8700.	U
106-47-8	4-Chloroaniline	8700.	U
87-68-3	Hexachlorobutadiene	8700.	U
59-50-7	4-Chloro-3-methylphenol	8700.	U
91-57-6	2-Methylnaphthalene	8700.	U
77-47-4	Hexachlorocyclopentadiene	8700.	U
88-06-2	2,4,6-Trichlorophenol	8700.	U
95-95-4	2,4,5-Trichlorophenol	42000.	U
91-58-7	2-Chloronaphthalene	8700.	U
88-74-4	2-Nitroaniline	42000.	U
131-11-3	Dimethylphthalate	8700.	U
208-96-8	Acenaphthylene	8700.	U
606-20-2	2,6-Dinitrotoluene	8700.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN71 DL

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-07A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN71DL

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 25. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/16/90

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	42000.	U
83-32-9	Acenaphthene	8700.	U
51-28-5	2,4-Dinitrophenol	42000.	U
100-02-7	4-Nitrophenol	42000.	U
132-64-9	Dibenzofuran	8700.	U
121-14-2	2,4-Dinitrotoluene	8700.	U
84-66-2	Diethylphthalate	8700.	U
7005-72-3	4-Chlorophenyl-phenylether	8700.	U
86-73-7	Fluorene	8700.	U
100-01-6	4-Nitroaniline	42000.	U
534-52-1	4,6-Dinitro-2-methylphenol	42000.	U
86-30-6	N-Nitrosodiphenylamine (1)	8700.	U
101-55-3	4-Bromophenyl-phenylether	8700.	U
118-74-1	Hexachlorobenzene	8700.	U
87-86-5	Pentachlorophenol	42000.	U
85-01-8	Phenanthrene	8700.	U
120-12-7	Anthracene	8700.	U
84-74-2	Di-n-butylphthalate	8700.	U
206-44-0	Fluoranthene	8700.	U
129-00-0	Pyrene	8700.	U
85-68-7	Butylbenzylphthalate	8700.	U
91-94-1	3,3'-Dichlorobenzidine	17000.	U
56-55-3	Benzo(a)anthracene	8700.	U
218-01-9	Chrysene	8700.	U
117-81-7	bis(2-Ethylhexyl)phthalate	51000.	D
117-84-0	Di-n-octylphthalate	8200.	J D
205-99-2	Benzo(b)fluoranthene	8700.	U
207-08-9	Benzo(k)fluoranthene	8700.	U
50-32-8	Benzo(a)pyrene	8700.	U
193-39-5	Indeno(1,2,3-cd)pyrene	8700.	U
53-70-3	Dibenz(a,h)anthracene	8700.	U
191-24-2	Benzo(g,h,i)perylene	8700.	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN71 DL

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-07A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN71DL

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 25. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/16/90

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 10.00

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN PHTHALATE	33.50	10000.	J
2.				
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN72

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-08A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN72

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 14. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	770.	U
111-44-4	bis(2-Chloroethyl)ether	770.	U
95-57-8	2-Chlorophenol	770.	U
541-73-1	1,3-Dichlorobenzene	770.	U
106-46-7	1,4-Dichlorobenzene	770.	U
100-51-6	Benzyl alcohol	770.	U
95-50-1	1,2-Dichlorobenzene	770.	U
95-48-7	2-Methylphenol	770.	U
108-60-1	bis(2-Chloroisopropyl)ether	770.	U
106-44-5	4-Methylphenol	770.	U
621-64-7	N-Nitroso-di-n-propylamine	770.	U
67-72-1	Hexachloroethane	770.	U
98-95-3	Nitrobenzene	770.	U
78-59-1	Isophorone	770.	U
88-75-5	2-Nitrophenol	770.	U
105-67-9	2,4-Dimethylphenol	770.	U
65-85-0	Benzoic acid	3700.	U
111-91-1	bis(2-Chloroethoxy)methane	770.	U
120-83-2	2,4-Dichlorophenol	770.	U
120-82-1	1,2,4-Trichlorobenzene	770.	U
91-20-3	Naphthalene	770.	U
106-47-8	4-Chloroaniline	770.	U
87-68-3	Hexachlorobutadiene	770.	U
59-50-7	4-Chloro-3-methylphenol	770.	U
91-57-6	2-Methylnaphthalene	770.	U
77-47-4	Hexachlorocyclopentadiene	770.	U
88-06-2	2,4,6-Trichlorophenol	770.	U
95-95-4	2,4,5-Trichlorophenol	3700.	U
91-58-7	2-Chloronaphthalene	770.	U
88-74-4	2-Nitroaniline	3700.	U
131-11-3	Dimethylphthalate	770.	U
208-96-8	Acenaphthylene	770.	U
606-20-2	2,6-Dinitrotoluene	770.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN72

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-08A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN72

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 14. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3700.	U
83-32-9	Acenaphthene	770.	U
51-28-5	2,4-Dinitrophenol	3700.	U
100-02-7	4-Nitrophenol	3700.	U
132-64-9	Dibenzofuran	770.	U
121-14-2	2,4-Dinitrotoluene	770.	U
84-66-2	Diethylphthalate	770.	U
7005-72-3	4-Chlorophenyl-phenylether	770.	U
86-73-7	Fluorene	770.	U
100-01-6	4-Nitroaniline	3700.	U
534-52-1	4,6-Dinitro-2-methylphenol	3700.	U
86-30-6	N-Nitrosodiphenylamine (1)	770.	U
101-55-3	4-Bromophenyl-phenylether	770.	U
118-74-1	Hexachlorobenzene	770.	U
87-86-5	Pentachlorophenol	3700.	U
85-01-8	Phenanthrene	510.	J
120-12-7	Anthracene	180.	J
84-74-2	Di-n-butylphthalate	770.	U
206-44-0	Fluoranthene	490.	J
129-00-0	Pyrene	1300.	
85-68-7	Butylbenzylphthalate	770.	U
91-94-1	3,3'-Dichlorobenzidine	1500.	U
56-55-3	Benzo(a)anthracene	550.	J
218-01-9	Chrysene	560.	J
117-81-7	bis(2-Ethylhexyl)phthalate	770.	U
117-84-0	Di-n-octylphthalate	770.	U
205-99-2	Benzo(b)fluoranthene	3600.	
207-08-9	Benzo(k)fluoranthene	770.	U
50-32-8	Benzo(a)pyrene	2600.	
193-39-5	Indeno(1,2,3-cd)pyrene	2500.	
53-70-3	Dibenz(a,h)anthracene	770.	U
191-24-2	Benzo(g,h,i)perylene	3800.	

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN72

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-08A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN72

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 14. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/17/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

Number TICs found: 11

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	7.88	500.	J
2.	- -	UNKNOWN AROMATIC	8.07	600.	J
3.	- -	UNKNOWN	8.82	2000.	J A
4.	- -	UNKNOWN	9.95	1000.	J
5.	- -	UNKNOWN AROMATIC	26.52	1000.	J
6.	- -	UNKNOWN AROMATIC	30.72	4000.	J
7.	- -	UNKNOWN AROMATIC	31.82	6000.	J
8.	- -	UNKNOWN	32.08	2000.	J
9.	- -	UNKNOWN AROMATIC	37.43	1000.	J
10.	- -	UNKNOWN	38.07	2000.	J
11.	- -	UNKNOWN	39.02	500.	J
12.					
13.					
14.					
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN73

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-09A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN73

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 18. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/18/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	810.	U
111-44-4	bis(2-Chloroethyl)ether	810.	U
95-57-8	2-Chlorophenol	810.	U
541-73-1	1,3-Dichlorobenzene	810.	U
106-46-7	1,4-Dichlorobenzene	810.	U
100-51-6	Benzyl alcohol	810.	U
95-50-1	1,2-Dichlorobenzene	810.	U
95-48-7	2-Methylphenol	810.	U
108-60-1	bis(2-Chloroisopropyl)ether	810.	U
106-44-5	4-Methylphenol	810.	U
621-64-7	N-Nitroso-di-n-propylamine	810.	U
67-72-1	Hexachloroethane	810.	U
98-95-3	Nitrobenzene	810.	U
78-59-1	Isophorone	810.	U
88-75-5	2-Nitrophenol	810.	U
105-67-9	2,4-Dimethylphenol	810.	U
65-85-0	Benzoic acid	3900.	U
111-91-1	bis(2-Chloroethoxy)methane	810.	U
120-83-2	2,4-Dichlorophenol	810.	U
120-82-1	1,2,4-Trichlorobenzene	810.	U
91-20-3	Naphthalene	810.	U
106-47-8	4-Chloroaniline	810.	U
87-68-3	Hexachlorobutadiene	810.	U
59-50-7	4-Chloro-3-methylphenol	810.	U
91-57-6	2-Methylnaphthalene	810.	U
77-47-4	Hexachlorocyclopentadiene	810.	U
88-06-2	2,4,6-Trichlorophenol	810.	U
95-95-4	2,4,5-Trichlorophenol	3900.	U
91-58-7	2-Chloronaphthalene	810.	U
88-74-4	2-Nitroaniline	3900.	U
131-11-3	Dimethylphthalate	810.	U
208-96-8	Acenaphthylene	810.	U
606-20-2	2,6-Dinitrotoluene	810.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN73

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-09A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN73

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 18. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/18/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3900.	U
83-32-9	Acenaphthene	810.	U
51-28-5	2,4-Dinitrophenol	3900.	U
100-02-7	4-Nitrophenol	3900.	U
132-64-9	Dibenzofuran	810.	U
121-14-2	2,4-Dinitrotoluene	810.	U
84-66-2	Diethylphthalate	810.	U
7005-72-3	4-Chlorophenyl-phenylether	810.	U
86-73-7	Fluorene	810.	U
100-01-6	4-Nitroaniline	3900.	U
534-52-1	4,6-Dinitro-2-methylphenol	3900.	U
86-30-6	N-Nitrosodiphenylamine (1)	810.	U
101-55-3	4-Bromophenyl-phenylether	810.	U
118-74-1	Hexachlorobenzene	810.	U
87-86-5	Pentachlorophenol	3900.	U
85-01-8	Phenanthrene	810.	U
120-12-7	Anthracene	810.	U
84-74-2	Di-n-butylphthalate	810.	U
206-44-0	Fluoranthene	810.	U
129-00-0	Pyrene	810.	U
85-68-7	Butylbenzylphthalate	810.	U
91-94-1	3,3'-Dichlorobenzidine	1600.	U
56-55-3	Benzo(a)anthracene	810.	U
218-01-9	Chrysene	810.	U
117-81-7	bis(2-Ethylhexyl)phthalate	93.	J
117-84-0	Di-n-octylphthalate	810.	U
205-99-2	Benzo(b)fluoranthene	810.	U
207-08-9	Benzo(k)fluoranthene	810.	U
50-32-8	Benzo(a)pyrene	810.	U
193-39-5	Indeno(1,2,3-cd)pyrene	810.	U
53-70-3	Dibenz(a,h)anthracene	810.	U
191-24-2	Benzo(g,h,i)perylene	810.	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN73

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-09A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN73

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 18. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/18/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

Number TICs found: 5

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	7.28	400.	J
2.	- -	UNKNOWN	8.02	400.	J A
3.	- -	UNKNOWN	8.95	3000.	~~BJ~~ U
4.	- -	UNKNOWN	10.12	3000.	J
5.	- -	UNKNOWN	26.40	700.	J
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN74

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-10A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN74

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 20. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/18/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	820.	U
111-44-4	bis(2-Chloroethyl)ether	820.	U
95-57-8	2-Chlorophenol	820.	U
541-73-1	1,3-Dichlorobenzene	820.	U
106-46-7	1,4-Dichlorobenzene	820.	U
100-51-6	Benzyl alcohol	820.	U
95-50-1	1,2-Dichlorobenzene	820.	U
95-48-7	2-Methylphenol	820.	U
108-60-1	bis(2-Chloroisopropyl)ether	820.	U
106-44-5	4-Methylphenol	820.	U
621-64-7	N-Nitroso-di-n-propylamine	820.	U
67-72-1	Hexachloroethane	820.	U
98-95-3	Nitrobenzene	820.	U
78-59-1	Isophorone	820.	U
88-75-5	2-Nitrophenol	820.	U
105-67-9	2,4-Dimethylphenol	820.	U
65-85-0	Benzoic acid	4000.	U
111-91-1	bis(2-Chloroethoxy)methane	820.	U
120-83-2	2,4-Dichlorophenol	820.	U
120-82-1	1,2,4-Trichlorobenzene	820.	U
91-20-3	Naphthalene	820.	U
106-47-8	4-Chloroaniline	820.	U
87-68-3	Hexachlorobutadiene	820.	U
59-50-7	4-Chloro-3-methylphenol	820.	U
91-57-6	2-Methylnaphthalene	820.	U
77-47-4	Hexachlorocyclopentadiene	820.	U
88-06-2	2,4,6-Trichlorophenol	820.	U
95-95-4	2,4,5-Trichlorophenol	4000.	U
91-58-7	2-Chloronaphthalene	820.	U
88-74-4	2-Nitroaniline	4000.	U
131-11-3	Dimethylphthalate	820.	U
208-96-8	Acenaphthylene	820.	U
606-20-2	2,6-Dinitrotoluene	820.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN74

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-10A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN74

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 20. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/18/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4000.	U
83-32-9	Acenaphthene	820.	U
51-28-5	2,4-Dinitrophenol	4000.	U
100-02-7	4-Nitrophenol	4000.	U
132-64-9	Dibenzofuran	820.	U
121-14-2	2,4-Dinitrotoluene	820.	U
84-66-2	Diethylphthalate	820.	U
7005-72-3	4-Chlorophenyl-phenylether	820.	U
86-73-7	Fluorene	820.	U
100-01-6	4-Nitroaniline	4000.	U
534-52-1	4,6-Dinitro-2-methylphenol	4000.	U
86-30-6	N-Nitrosodiphenylamine (1)	820.	U
101-55-3	4-Bromophenyl-phenylether	820.	U
118-74-1	Hexachlorobenzene	820.	U
87-86-5	Pentachlorophenol	4000.	U
85-01-8	Phenanthrene	820.	U
120-12-7	Anthracene	820.	U
84-74-2	Di-n-butylphthalate	820.	U
206-44-0	Fluoranthene	820.	U
129-00-0	Pyrene	820.	U
85-68-7	Butylbenzylphthalate	820.	U
91-94-1	3,3'-Dichlorobenzidine	1600.	U
56-55-3	Benzo(a)anthracene	820.	U
218-01-9	Chrysene	820.	U
117-81-7	bis(2-Ethylhexyl)phthalate	820.	U
117-84-0	Di-n-octylphthalate	820.	U
205-99-2	Benzo(b)fluoranthene	820.	U
207-08-9	Benzo(k)fluoranthene	820.	U
50-32-8	Benzo(a)pyrene	820.	U
193-39-5	Indeno(1,2,3-cd)pyrene	820.	U
53-70-3	Dibenz(a,h)anthracene	820.	U
191-24-2	Benzo(g,h,i)perylene	820.	U

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
EKN74

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-10A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN74

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 20. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/18/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN	7.32	400.	J
2. - -	UNKNOWN	8.98	4000.	~~BJ~~ U
3. - -	UNKNOWN	10.12	3000.	J
4. - -	UNKNOWN	23.40	600.	J
5. - -	UNKNOWN	30.53	600.	J
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN75

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-11A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN75

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 26. dec.____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/18/90

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	890.	U
111-44-4	bis(2-Chloroethyl)ether	890.	U
95-57-8	2-Chlorophenol	890.	U
541-73-1	1,3-Dichlorobenzene	890.	U
106-46-7	1,4-Dichlorobenzene	890.	U
100-51-6	Benzyl alcohol	890.	U
95-50-1	1,2-Dichlorobenzene	890.	U
95-48-7	2-Methylphenol	890.	U
108-60-1	bis(2-Chloroisopropyl)ether	890.	U
106-44-5	4-Methylphenol	890.	U
621-64-7	N-Nitroso-di-n-propylamine	890.	U
67-72-1	Hexachloroethane	890.	U
98-95-3	Nitrobenzene	890.	U
78-59-1	Isophorone	890.	U
88-75-5	2-Nitrophenol	890.	U
105-67-9	2,4-Dimethylphenol	890.	U
65-85-0	Benzoic acid	4300.	U
111-91-1	bis(2-Chloroethoxy)methane	890.	U
120-83-2	2,4-Dichlorophenol	890.	U
120-82-1	1,2,4-Trichlorobenzene	890.	U
91-20-3	Naphthalene	890.	U
106-47-8	4-Chloroaniline	890.	U
87-68-3	Hexachlorobutadiene	890.	U
59-50-7	4-Chloro-3-methylphenol	890.	U
91-57-6	2-Methylnaphthalene	890.	U
77-47-4	Hexachlorocyclopentadiene	890.	U
88-06-2	2,4,6-Trichlorophenol	890.	U
95-95-4	2,4,5-Trichlorophenol	4300.	U
91-58-7	2-Chloronaphthalene	890.	U
88-74-4	2-Nitroaniline	4300.	U
131-11-3	Dimethylphthalate	890.	U
208-96-8	Acenaphthylene	890.	U
606-20-2	2,6-Dinitrotoluene	890.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN75

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-11A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN75

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 26. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/18/90

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4300.	U
83-32-9	Acenaphthene	890.	U
51-28-5	2,4-Dinitrophenol	4300.	U
100-02-7	4-Nitrophenol	4300.	U
132-64-9	Dibenzofuran	890.	U
121-14-2	2,4-Dinitrotoluene	890.	U
84-66-2	Diethylphthalate	890.	U
7005-72-3	4-Chlorophenyl-phenylether	890.	U
86-73-7	Fluorene	890.	U
100-01-6	4-Nitroaniline	4300.	U
534-52-1	4,6-Dinitro-2-methylphenol	4300.	U
86-30-6	N-Nitrosodiphenylamine (1)	890.	U
101-55-3	4-Bromophenyl-phenylether	890.	U
118-74-1	Hexachlorobenzene	890.	U
87-86-5	Pentachlorophenol	4300.	U
85-01-8	Phenanthrene	890.	U
120-12-7	Anthracene	890.	U
84-74-2	Di-n-butylphthalate	890.	U
206-44-0	Fluoranthene	890.	U
129-00-0	Pyrene	890.	U
85-68-7	Butylbenzylphthalate	890.	U
91-94-1	3,3'-Dichlorobenzidine	1800.	U
56-55-3	Benzo(a)anthracene	890.	U
218-01-9	Chrysene	890.	U
117-81-7	bis(2-Ethylhexyl)phthalate	890.	U
117-84-0	Di-n-octylphthalate	890.	U
205-99-2	Benzo(b)fluoranthene	890.	U
207-08-9	Benzo(k)fluoranthene	890.	U
50-32-8	Benzo(a)pyrene	890.	U
193-39-5	Indeno(1,2,3-cd)pyrene	890.	U
53-70-3	Dibenz(a,h)anthracene	890.	U
191-24-2	Benzo(g,h,i)perylene	890.	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EKN75

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-11A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKN75

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 26. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/18/90

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

Number TICs found: 16

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	7.32	500.	J
2.	- -	UNKNOWN	7.67	400.	J
3.	- -	UNKNOWN	8.05	2000.	J
4.	- -	UNKNOWN	8.27	500.	J
5.	- -	UNKNOWN	8.98	3000.	~~BJ~~ U
6.	- -	UNKNOWN	10.12	3000.	J
7.	- -	UNKNOWN FATTY ACID	20.82	400.	J
8.	- -	UNKNOWN HYDROCARBON	22.08	600.	J
9.	- -	UNKNOWN	22.17	400.	J
10.	- -	UNKNOWN FATTY ACID	22.27	1000.	J
11.	- -	UNKNOWN	22.73	700.	J
12.	- -	UNKNOWN	24.10	1000.	J
13.	- -	UNKNOWN HYDROCARBON	29.37	500.	J
14.	- -	UNKNOWN	32.48	2000.	J
15.	- -	UNKNOWN	39.72	800.	J
16.	- -	UNKNOWN	41.70	700.	J
17.					
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN65

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-01A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKP065

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 16. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 4/90

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	19.	U
319-85-7	beta-BHC	19.	U
319-86-8	delta-BHC	19.	U
58-89-9	gamma-BHC	19.	U
76-44-8	Heptachlor	19.	U
309-00-2	Aldrin	19.	U
1024-57-3	Heptachlor epoxide	19.	U
959-98-8	Endosulfan I	19.	U
60-57-1	Dieldrin	38.	U
72-55-9	4,4'-DDE	38.	U
72-20-8	Endrin	38.	U
33213-65-9	Endosulfan II	38.	U
72-54-8	4,4'-DDD	38.	U
1031-07-8	Endosulfan sulfate	38.	U
50-29-3	4,4'-DDT	38.	U
72-43-5	Methoxychlor	190.	U
53494-70-5	Endrin ketone	38.	U
5103-71-9	alpha-Chlordane	190.	U
5103-74-2	gamma-Chlordane	190.	U
8001-35-2	Toxaphene	380.	U
12674-11-2	Aroclor-1016	190.	U
11104-28-2	Aroclor-1221	190.	U
11141-16-5	Aroclor-1232	190.	U
53469-21-9	Aroclor-1242	190.	U
12672-29-6	Aroclor-1248	190.	U
11097-69-1	Aroclor-1254	380.	U
11096-82-5	Aroclor-1260	380.	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN66

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-02A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKP066

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 28. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 4/90

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	22.	U
319-85-7	beta-BHC	22.	U
319-86-8	delta-BHC	22.	U
58-89-9	gamma-BHC	22.	U
76-44-8	Heptachlor	22.	U
309-00-2	Aldrin	22.	U
1024-57-3	Heptachlor epoxide	22.	U
959-98-8	Endosulfan I	22.	U
60-57-1	Dieldrin	44.	U
72-55-9	4,4'-DDE	44.	U
72-20-8	Endrin	44.	U
33213-65-9	Endosulfan II	44.	U
72-54-8	4,4'-DDD	44.	U
1031-07-8	Endosulfan sulfate	44.	U
50-29-3	4,4'-DDT	44.	U
72-43-5	Methoxychlor	220.	U
53494-70-5	Endrin ketone	44.	U
5103-71-9	alpha-Chlordane	220.	U
5103-74-2	gamma-Chlordane	220.	U
8001-35-2	Toxaphene	440.	U
12674-11-2	Aroclor-1016	220.	U
11104-28-2	Aroclor-1221	220.	U
11141-16-5	Aroclor-1232	220.	U
53469-21-9	Aroclor-1242	220.	U
12672-29-6	Aroclor-1248	220.	U
11097-69-1	Aroclor-1254	440.	U
11096-82-5	Aroclor-1260	440.	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN67

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-03A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKP067

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 16. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 4/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	19.	U
319-85-7	beta-BHC	19.	U
319-86-8	delta-BHC	19.	U
58-89-9	gamma-BHC	19.	U
76-44-8	Heptachlor	19.	U
309-00-2	Aldrin	19.	U
1024-57-3	Heptachlor epoxide	19.	U
959-98-8	Endosulfan I	19.	U
60-57-1	Dieldrin	38.	U
72-55-9	4,4'-DDE	38.	U
72-20-8	Endrin	38.	U
33213-65-9	Endosulfan II	38.	U
72-54-8	4,4'-DDD	38.	U
1031-07-8	Endosulfan sulfate	38.	U
50-29-3	4,4'-DDT	38.	U
72-43-5	Methoxychlor	190.	U
53494-70-5	Endrin ketone	38.	U
5103-71-9	alpha-Chlordane	190.	U
5103-74-2	gamma-Chlordane	190.	U
8001-35-2	Toxaphene	380.	U
12674-11-2	Aroclor-1016	190.	U
11104-28-2	Aroclor-1221	190.	U
11141-16-5	Aroclor-1232	190.	U
53469-21-9	Aroclor-1242	190.	U
12672-29-6	Aroclor-1248	190.	U
11097-69-1	Aroclor-1254	380.	U
11096-82-5	Aroclor-1260	380.	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

\# 0789
EPA SAMPLE NO.

EKN68

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-04A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKP068

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 28. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/90

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	22.	U
319-85-7	beta-BHC	22.	U
319-86-8	delta-BHC	22.	U
58-89-9	gamma-BHC	22.	U
76-44-8	Heptachlor	22.	U
309-00-2	Aldrin	22.	U
1024-57-3	Heptachlor epoxide	22.	U
959-98-8	Endosulfan I	22.	U
60-57-1	Dieldrin	44.	U
72-55-9	4,4'-DDE	44.	U
72-20-8	Endrin	44.	U
33213-65-9	Endosulfan II	44.	U
72-54-8	4,4'-DDD	44.	U
1031-07-8	Endosulfan sulfate	44.	U
50-29-3	4,4'-DDT	44.	U
72-43-5	Methoxychlor	220.	U
53494-70-5	Endrin ketone	44.	U
5103-71-9	alpha-Chlordane	220.	U
5103-74-2	gamma-Chlordane	220.	U
8001-35-2	Toxaphene	440.	U
12674-11-2	Aroclor-1016	220.	U
11104-28-2	Aroclor-1221	220.	U
11141-16-5	Aroclor-1232	220.	U
53469-21-9	Aroclor-1242	220.	U
12672-29-6	Aroclor-1248	220.	U
11097-69-1	Aroclor-1254	440.	U
11096-82-5	Aroclor-1260	440.	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN69

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-05A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: EKP069

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 23. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	21.	IU
319-85-7	beta-BHC	21.	IU
319-86-8	delta-BHC	21.	IU
58-89-9	gamma-BHC	21.	IU
76-44-8	Heptachlor	21.	IU
309-00-2	Aldrin	21.	IU
1024-57-3	Heptachlor epoxide	21.	IU
959-98-8	Endosulfan I	21.	IU
60-57-1	Dieldrin	42.	IU
72-55-9	4,4'-DDE	42.	IU
72-20-8	Endrin	42.	IU
33213-65-9	Endosulfan II	42.	IU
72-54-8	4,4'-DDD	42.	IU
1031-07-8	Endosulfan sulfate	42.	IU
50-29-3	4,4'-DDT	42.	IU
72-43-5	Methoxychlor	210.	IU
53494-70-5	Endrin ketone	42.	IU
5103-71-9	alpha-Chlordane	210.	IU
5103-74-2	gamma-Chlordane	210.	IU
8001-35-2	Toxaphene	420.	IU
12674-11-2	Aroclor-1016	210.	IU
11104-28-2	Aroclor-1221	210.	IU
11141-16-5	Aroclor-1232	210.	IU
53469-21-9	Aroclor-1242	210.	IU
12672-29-6	Aroclor-1248	210.	IU
11097-69-1	Aroclor-1254	420.	IU
11096-82-5	Aroclor-1260	420.	IU

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN70

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-06A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: EKP070

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 18. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	20.	U
319-85-7	beta-BHC	20.	U
319-86-8	delta-BHC	20.	U
58-89-9	gamma-BHC	20.	U
76-44-8	Heptachlor	20.	U
309-00-2	Aldrin	20.	U
1024-57-3	Heptachlor epoxide	20.	U
959-98-8	Endosulfan I	20.	U
60-57-1	Dieldrin	39.	U
72-55-9	4,4'-DDE	39.	U
72-20-8	Endrin	39.	U
33213-65-9	Endosulfan II	39.	U
72-54-8	4,4'-DDD	39.	U
1031-07-8	Endosulfan sulfate	39.	U
50-29-3	4,4'-DDT	39.	U
72-43-5	Methoxychlor	200.	U
53494-70-5	Endrin ketone	39.	U
5103-71-9	alpha-Chlordane	200.	U
5103-74-2	gamma-Chlordane	200.	U
8001-35-2	Toxaphene	390.	U
12674-11-2	Aroclor-1016	200.	U
11104-28-2	Aroclor-1221	200.	U
11141-16-5	Aroclor-1232	200.	U
53469-21-9	Aroclor-1242	200.	U
12672-29-6	Aroclor-1248	200.	U
11097-69-1	Aroclor-1254	390.	U
11096-82-5	Aroclor-1260	390.	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN71

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-07A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKP071

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 25. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/90

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	21.	U
319-85-7	beta-BHC	21.	U
319-86-8	delta-BHC	21.	U
58-89-9	gamma-BHC	21.	U
76-44-8	Heptachlor	21.	U
309-00-2	Aldrin	21.	U
1024-57-3	Heptachlor epoxide	21.	U
959-98-8	Endosulfan I	21.	U
60-57-1	Dieldrin	42.	U
72-55-9	4,4'-DDE	42.	U
72-20-8	Endrin	42.	U
33213-65-9	Endosulfan II	42.	U
72-54-8	4,4'-DDD	42.	U
1031-07-8	Endosulfan sulfate	42.	U
50-29-3	4,4'-DDT	42.	U
72-43-5	Methoxychlor	210.	U
53494-70-5	Endrin ketone	42.	U
5103-71-9	alpha-Chlordane	210.	U
5103-74-2	gamma-Chlordane	210.	U
8001-35-2	Toxaphene	420.	U
12674-11-2	Aroclor-1016	210.	U
11104-28-2	Aroclor-1221	210.	U
11141-16-5	Aroclor-1232	210.	U
53469-21-9	Aroclor-1242	210.	U
12672-29-6	Aroclor-1248	210.	U
11097-69-1	Aroclor-1254	420.	U
11096-82-5	Aroclor-1260	420.	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN72

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-08A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKP072

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 14. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	19.	U
319-85-7	beta-BHC	19.	U
319-86-8	delta-BHC	19.	U
58-89-9	gamma-BHC	19.	U
76-44-8	Heptachlor	19.	U
309-00-2	Aldrin	19.	U
1024-57-3	Heptachlor epoxide	19.	U
959-98-8	Endosulfan I	19.	U
60-57-1	Dieldrin	37.	U
72-55-9	4,4'-DDE	37.	U
72-20-8	Endrin	37.	U
33213-65-9	Endosulfan II	37.	U
72-54-8	4,4'-DDD	37.	U
1031-07-8	Endosulfan sulfate	37.	U
50-29-3	4,4'-DDT	37.	U
72-43-5	Methoxychlor	190.	U
53494-70-5	Endrin ketone	37.	U
5103-71-9	alpha-Chlordane	190.	U
5103-74-2	gamma-Chlordane	190.	U
8001-35-2	Toxaphene	370.	U
12674-11-2	Aroclor-1016	190.	U
11104-28-2	Aroclor-1221	190.	U
11141-16-5	Aroclor-1232	190.	U
53469-21-9	Aroclor-1242	190.	U
12672-29-6	Aroclor-1248	190.	U
11097-69-1	Aroclor-1254	370.	U
11096-82-5	Aroclor-1260	370.	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN73

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-09A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKP073

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 18. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	20.	U
319-85-7	beta-BHC	20.	U
319-86-8	delta-BHC	20.	U
58-89-9	gamma-BHC	20.	U
76-44-8	Heptachlor	20.	U
309-00-2	Aldrin	20.	U
1024-57-3	Heptachlor epoxide	20.	U
959-98-8	Endosulfan I	20.	U
60-57-1	Dieldrin	39.	U
72-55-9	4,4'-DDE	39.	U
72-20-8	Endrin	39.	U
33213-65-9	Endosulfan II	39.	U
72-54-8	4,4'-DDD	39.	U
1031-07-8	Endosulfan sulfate	39.	U
50-29-3	4,4'-DDT	39.	U
72-43-5	Methoxychlor	200.	U
53494-70-5	Endrin ketone	39.	U
5103-71-9	alpha-Chlordane	200.	U
5103-74-2	gamma-Chlordane	200.	U
8001-35-2	Toxaphene	390.	U
12674-11-2	Aroclor-1016	200.	U
11104-28-2	Aroclor-1221	200.	U
11141-16-5	Aroclor-1232	200.	U
53469-21-9	Aroclor-1242	200.	U
12672-29-6	Aroclor-1248	200.	U
11097-69-1	Aroclor-1254	390.	U
11096-82-5	Aroclor-1260	390.	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EKN74

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-10A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKP074

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 20. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/90

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	20.	U
319-85-7	beta-BHC	20.	U
319-86-8	delta-BHC	20.	U
58-89-9	gamma-BHC	20.	U
76-44-8	Heptachlor	20.	U
309-00-2	Aldrin	20.	U
1024-57-3	Heptachlor epoxide	20.	U
959-98-8	Endosulfan I	20.	U
60-57-1	Dieldrin	40.	U
72-55-9	4,4'-DDE	40.	U
72-20-8	Endrin	40.	U
33213-65-9	Endosulfan II	40.	U
72-54-8	4,4'-DDD	40.	U
1031-07-8	Endosulfan sulfate	40.	U
50-29-3	4,4'-DDT	40.	U
72-43-5	Methoxychlor	200.	U
53494-70-5	Endrin ketone	40.	U
5103-71-9	alpha-Chlordane	200.	U
5103-74-2	gamma-Chlordane	200.	U
8001-35-2	Toxaphene	400.	U
12674-11-2	Aroclor-1016	200.	U
11104-28-2	Aroclor-1221	200.	U
11141-16-5	Aroclor-1232	200.	U
53469-21-9	Aroclor-1242	200.	U
12672-29-6	Aroclor-1248	200.	U
11097-69-1	Aroclor-1254	400.	U
11096-82-5	Aroclor-1260	400.	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO
EKN75

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Matrix: (soil/water) SOIL Lab Sample ID: X0-06-137-11A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EKP075

Level: (low/med) LOW Date Received: 6/13/90

% Moisture: not dec. 26. dec._____ Date Extracted: 6/23/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/90

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	22.	U
319-85-7	beta-BHC	22.	U
319-86-8	delta-BHC	22.	U
58-89-9	gamma-BHC	22.	U
76-44-8	Heptachlor	22.	U
309-00-2	Aldrin	22.	U
1024-57-3	Heptachlor epoxide	22.	U
959-98-8	Endosulfan I	22.	U
60-57-1	Dieldrin	43.	U
72-55-9	4,4'-DDE	43.	U
72-20-8	Endrin	43.	U
33213-65-9	Endosulfan II	43.	U
72-54-8	4,4'-DDD	43.	U
1031-07-8	Endosulfan sulfate	43.	U
50-29-3	4,4'-DDT	43.	U
72-43-5	Methoxychlor	220.	U
53494-70-5	Endrin ketone	43.	U
5103-71-9	alpha-Chlordane	220.	U
5103-74-2	gamma-Chlordane	220.	U
8001-35-2	Toxaphene	430.	U
12674-11-2	Aroclor-1016	220.	U
11104-28-2	Aroclor-1221	220.	U
11141-16-5	Aroclor-1232	220.	U
53469-21-9	Aroclor-1242	220.	U
12672-29-6	Aroclor-1248	220.	U
11097-69-1	Aroclor-1254	430.	U
11096-82-5	Aroclor-1260	430.	U

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

0291

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 14298 SAS No.: SDG No.: EKN65

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	OTHER	TOT OUT
1	SBLKQ5	63	51	87	44	34	30		0
2	EKN65	81	69	104	64	65	63		0
3	EKN67	101	75	100	70	71	75		0
4	EKN66	108	89	119	78	81	53		0
5	EKN71 DL	0 D	0 D	98	0 D	0 D	0 D		0
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									

		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(23-120)
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)
S3 (TPH)	= Terphenyl-d14	(18-137)
S4 (PHL)	= Phenol-d6	(24-113)
S5 (2FP)	= 2-Fluorophenol	(25-121)
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

FORM II SV-2 1/87 Rev.

CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
Page 2

CASE/SAS # 14298 CONTRACTOR PEI

Instrument # N	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	7/13/90 16:20			7/16/90 12:59											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
2,4-Dinitrotoluene		-													
2,6-Dinitrotoluene	0.244			0.310	26.8	J									
Diethylphthalate															
4-Chlorophenyl-phenylether															
Fluorene															
4-Nitroaniline															
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															
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: RJZ 26 July 1990

CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

CASE/SAS # 14298 CONTRACTOR PEI

Instrument # N	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	7/18/90 16:25			7/18/90 18:26											
	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	0.762			0.537	29.5	J									
1,2-Dichlorobenzene															
2-Methylphenol															
bis(2-chloroisopropyl)Ether															
4-Methylphenol															
N-Nitroso-Di-n-Propylamine															
Hexachloroethane															
Nitrobenzene															
Isophorone															
2-Nitrophenol															
2,4-Dimethylphenol															
Benzoic Acid															
bis(2-Chloroethoxy)Methane															
2,4-Dichlorophenol															
1,2,4-Trichlorobenzene															
Naphthalene															
4-Chloroaniline															
Hexachlorobutadiene															
4-Chloro-3-Methylphenol															
2-Methylnaphthalene	0.444	55.7	J	0.581	31.0	J									
Hexachlorocyclopentadiene															
2,4,6-Trichlorophenol								--							
2,4,5-Trichlorophenol															
2-Chloronaphthalene															
2-Nitroaniline															
Dimethyl Phthalate															
Acenaphthylene															
3-Nitroaniline															
Acenaphthene															
2,4-Dinitrophenol															
4-Nitrophenol	0.114	66.9	J	0.150	31.4	J									
Dibenzofuran															

AFFECTED SAMPLES:

EKN73
EKN73MS
EKN73MSD
EKN74
EKN75

Reviewer Initials/Date: RJZ
24 July 1990

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

RJZ
26 July 90

CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
Page 2

CASE/SAS # 14298 CONTRACTOR PEI

Instrument # N	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	7/18/90 16:25			7/18/90 18:26											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
2,4-Dinitrotoluene		-													
2,6-Dinitrotoluene															
Diethylphthalate															
4-Chlorophenyl-phenylether															
Fluorene															
4-Nitroaniline															
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															
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: RJZ 26 July 1990

CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

CASE/SAS # 14298 CONTRACTOR PEI

Instrument # J	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	7/12/90 15:51			7/17/90 9:35											
	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	0.462	56.0	J	0.662	43.4	J									
1,2-Dichlorobenzene															
2-Methylphenol	1.198			1.524	27.2	J									
bis(2-chloroisopropyl)Ether															
4-Methylphenol	1.266			1.595	26.0	J									
N-Nitroso-Di-n-Propylamine															
Hexachloroethane	0.565			0.771	36.5	J									
Nitrobenzene															
Isophorone															
2-Nitrophenol															
2,4-Dimethylphenol															
Benzoic Acid															
bis(2-Chloroethoxy)Methane															
2,4-Dichlorophenol															
1,2,4-Trichlorobenzene															
Naphthalene															
4-Chloroaniline	0.387			0.247	36.0	J									
Hexachlorobutadiene															
4-Chloro-3-Methylphenol															
2-Methylnaphthalene	0.583			0.776	33.2	J									
Hexachlorocyclopentadiene															
2,4,6-Trichlorophenol								--							
2,4,5-Trichlorophenol															
2-Chloronaphthalene															
2-Nitroaniline															
Dimethyl Phthalate															
Acenaphthylene															
3-Nitroaniline															
Acenaphthene															
2,4-Dinitrophenol															
4-Nitrophenol															
Dibenzofuran															

AFFECTED SAMPLES:

SBLKQS
EKN 68
EKN 69
EKN 70
EKN 71
EKN 72

Reviewer Initials/Date: RJZ
24 July '90

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

CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
Page 2

CASE/SAS # 14298 CONTRACTOR PEI

Instrument # J	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	7/12/90 15:51			7/17/90 9:35											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
2,4-Dinitrotoluene		-													
2,6-Dinitrotoluene															
Diethylphthalate															
4-Chlorophenyl-phenylether															
Fluorene															
4-Nitroaniline															
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	1.512	41.4	J												
Benzo(a)Pyrene															
Indeno(1,2,3-cd)Pyrene	0.624			1.248	99.9	J									
Dibenz(a,h)Anthracene	0.657			1.096	66.9	J									
Benzo(g,h,i) Perylene	0.488			1.178	141.4	J									

SEE PAGE 1 FOR AFFECTED SAMPLES.

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

Reviewer's Initials/Date: R.J.Z. 26 July 1990

Duane Srieder
OEPA - CDO
614 771 7505

"Michele Holtem"
"20 Questions"

2-13-90

1.) Are upper Arlington and MCQ the same place? NO
(Arlington dump next to Mainterance building.)
Are CCF and MCQ the same site.
CCF dumped at Marblecliff
2.) 3700 ft North of Trabue Rd. How close to River?
River 300'-500'

3.) Don't Know How deep was quarry (bottom of Landfill) Was it in the Aquifer.
* depth to Aquifer of Concern.

4.) Liner or Diversion System (No LINER)

5) Is site currently (level) builtup, pit. → nicely reclaimed
South of Dump
North of Dump.
working

6.) Adequate Cover? Material?

7.) Errosion

IN YOUR OPINION:
8.) Possible Surface Water Contamination

Blue is Michele Holtem.

9.) Fire and Explosion

Circle denotes Duane Srieder.

10.) Air Route.

11.) How Many Acres is Actual Site? (Landfill)

11.) Active / Inactive.

12.) Are there 2 site together

13.) Does Kaufman still own site. Specialty Rest.

Westinghouse

FOR SALE

14.) ~~How long did Kaufman Investment Company own it.~~ ?

15.) Capping Covering ? NO

16.) Upper Arlington / Municipal water City Grandview.

No idea

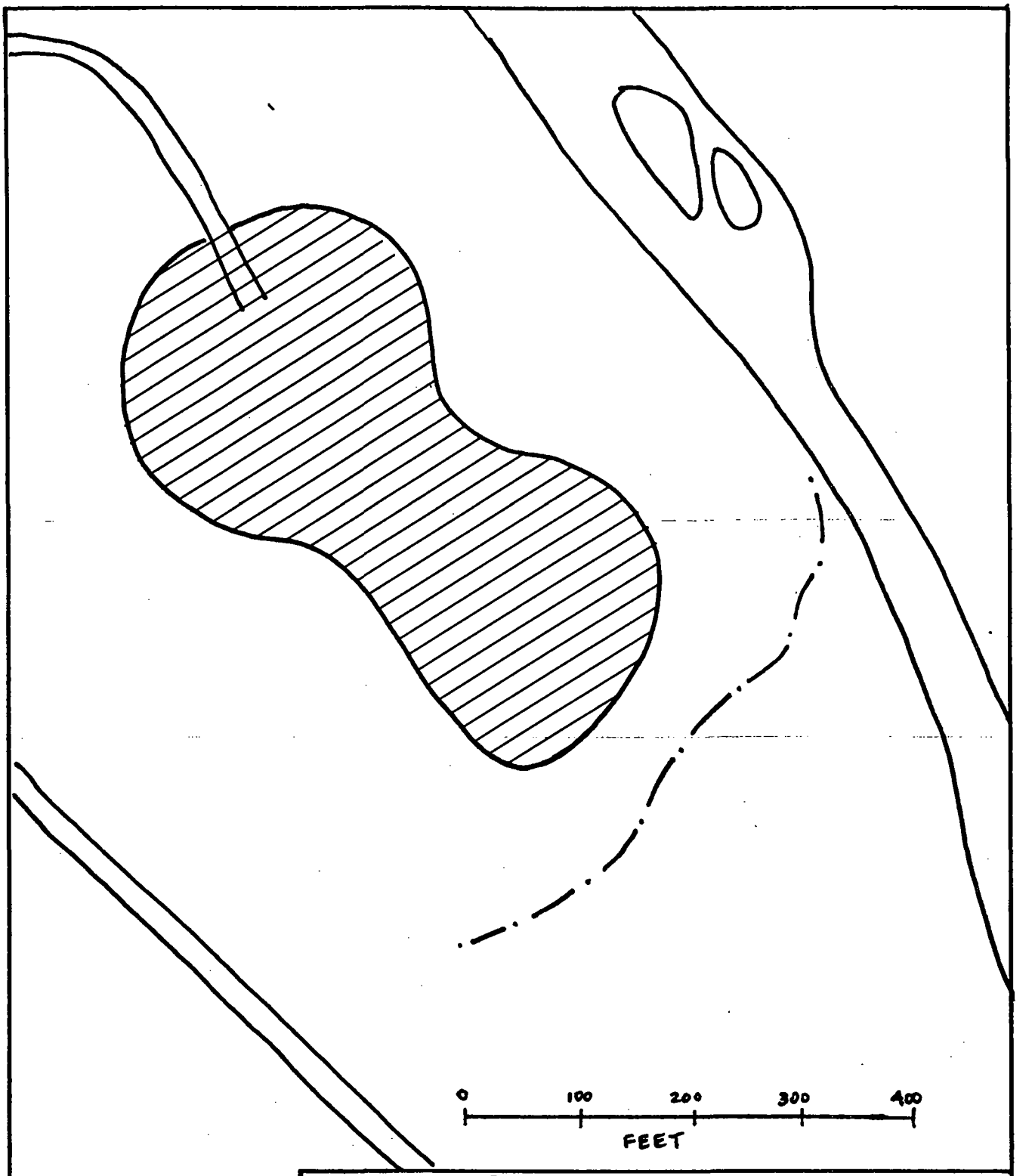
1/4 mile from river

Speciality Rest. OWNS IT

Who owns it

How many dumps.

American Aggregates



ecology and environment, inc.

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

TITLE	FIGURE #
SITE	SCALE
CITY STATE	P.A.N.
SOURCE	DATE
	REVISED

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Inorganic Traffic Report
(For CLP Use Only)

Case Number: 14298
SAS No. (if applicable): N/A

1. Type of Activity (Check one): ☐ ENF ☐ NPLD ☐ RA ☒ SI ☐ STSI ☐ ER ☐ O&M ☐ RD ☐ ST ☐ Other *(Specify)* ☐ ESI ☐ PA ☐ RIFS ☐ STPA

2. Region Number: V
Sampling Co.: FIT
Sampler (Name): Julie Visser

4. Date Shipped: 6/12/90
Carrier: F
Airbill Number: F JV 6/5/90 1060857490

5. Sample Description *(Enter in Column A)*
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS)
7. Waste (SAS)
8. Other (SAS) *(Specify)*

Non-Superfund Program

Site Name: Marble Cliff Quarries Dump
City, State: Columbus OH
Site Spill ID: N/A

3. Ship To: Betz Lab Inc. (BETZPA)
4636 Somerton Rd.
Trevose, PA 19047
ATTN: Anne Kennelly

Double volume required for matrix spike/duplicate aqueous sample.
Ship medium and high concentration samples in paint cans.
See reverse for additional instructions.

CLP Sample Number *(From labels)*	(A) Sample Description *(From box 5)*	(B) Concentration L=low M=med H=high	(C) List Preservative Used/Vol	(D) RAS Analysis: Total or Dissolved Metals	Cyanide	Low Conc. Sow: Nitrate/Nitrite	Fluoride	(E) Special Handling	(F) Station Location	(G) Date/Time of Sample Collection	(H) Corresponding Organic Sample Number
MEKN 50	5	L		X	X				S1	6/12/90-1250	EKN 65
MEKN 51	5	L		X	X				S2	6/12/90-1320	EKN 66
MEKN 52	5	L		X	X				S3	6/12/90-1330	EKN 67
MEKN 53	5	L		X	X				S4	6/12/90-1500	EKN 68
MEKN 54	5	L		X	X				S5	6/12/90-1510	EKN 69
MEKN 55	5	L		X	X				S6	6/12/90-1450	EKN 70
MEKN 56	5	L		X	X				S7	6/12/90-1530	EKN 71
MEKN 57	5	L		X	X				S8	6/12/90-1545	EKN 72
MEKN 58	5	L		X	X				S9	6/12/90-1600	EKN 73
MEKN 59	5	L		X	X				S10	6/12/90-1600	EKN 74
MEKN 60	5	L		X	X				S11	6/12/90-1630	EKN 75

Shipment is Complete

EPA Form 9110-1 (11-89) Replaces EPA Form 2075-6, which may be used. Green - Region Copy Pink - SMO Copy White - Lab Copy for Return to SMO Yellow - Lab Copy

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Organic Traffic Report
(For CLP Use Only)

Case Number: 14298
SAS No. (if applicable): N/A

1. Type of Activity (Check one)
☐ ENF ☐ NPLD ☐ RA ☒ SI ☐ STSI
☐ ER ☐ O&M ☐ RD ☐ ST ☐ Other *(Specify)*
☐ ESI ☐ PA ☐ RIFS ☐ STPA

Non-Superfund Program

Site Name: Marble Cliff Quarries Dump
City, State: Columbus OH
Site Spill ID: N/A

2. Region Number: V
Sampling Co.: FIT
Sampler (Name): Julie Visser

3. Ship To:
PEI Assoc. Inc.
11499 Chester Rd.
Cincinnati, OH 45246
ATTN: Dawn Weber

4. Date Shipped: 6/12/90
Carrier: F
Airbill Number: 1060857534

Triple volume required for matrix spike/duplicate aqueous sample.

Ship medium and high concentration samples in paint cans.

See reverse for additional instructions.

5. Sample Description *(Enter in Column A)*
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS)
7. Waste (SAS)
8. Other (SAS) *(Specify)*

IF VOA SAMPLE PRESERVED INDICATE IN COLUMN C WITH Y OR N.

CLP Sample Number *(From labels)*	(A) Sample Description *(From box 5)*	(B) Concentration L=low M=med H=high	(C) RAS Analysis VOA	BNA	Pest/PCB	ARO/TOX	(D) Special Handling	(E) Station Location	(F) Date/Time of Sample Collection	(G) Corresponding CLP Inorganic Sample Number
EKN 65	5	L	X	X	X			S1	6/12/90-1250	MEKN 50
EKN 66	5	L	X	X	X			S2	6/12/90-1320	MEKN 51
EKN 67	5	L	X	X	X			S3	6/12/90-1330	MEKN 52
EKN 68	5	L	X	X	X			S4	6/12/90-1500	MEKN 53
EKN 69	5	L	X	X	X			S5	6/12/90-1510	MEKN 54
EKN 70	5	L	X	X	X			S6	6/12/90-1450	MEKN 55
EKN 71	5	L	X	X	X			S7	6/12/90-1530	MEKN 56
EKN 72	5	L	X	X	X			S8	6/12/90-1545	MEKN 57
EKN 73	5	L	X	X	X			S9	6/12/90-1600	MEKN 58
EKN 74	5	L	X	X	X			S10	6/12/90-1600	MEKN 59
EKN 75	5	L	X	X	X			S11	6/12/90-1630	MEKN 60

Shipment is Complete

EPA Form 9110-2 (11-89) Replaces EPA Form 2075-7, which may be used. Blue - Region Copy Pink - SMO Copy White - Lab Copy for Return to SMO Yellow - Lab Copy

F I T S A M P L E P R O P O S A L F O R M R E G I O N V

DATE FORM COMPLETED 5/15/90 PAN# FOH0843 TDD# F05-8905-012 EPA I.D.# OHD980510226

SITE NAME (PRINT) MARBLE CLIFF QUARRIES DUMP CITY COLUMBUS STATE OHIO

TEAM LEADER RANDY EARLYWINE SAMPLER JULIE VISSER DATE SENT TO RSCC

****

CASE # 14298 DRINKING WATER SAS # ORGANIC INORGANIC

****

ROUTINE ANALYTICAL SERVICES (RAS)

LOW WATERS FRACTION	MONITORING WELLS NUMBER OF FIELD SAMPLES+ BLANKS+ DUPLICATE= TOTAL	EXPECTED DATE TO SAMPLE	LABORATORY NAME	NUMBER OF COOLERS SHIPPED	NUMBER OF SAMPLES SHIPPED	AIR BILL NUMBERS	DATE SHIPPED TO LAB
VOA							
ABNs							
PEST/PCB							
METALS							
CN							

****

LOW WATERS FRACTION	SURFACE WATERS NUMBER OF FIELD SAMPLES+ BLANKS+ DUPLICATE= TOTAL	EXPECTED DATE TO SAMPLE	LABORATORY NAME	NUMBER OF COOLERS SHIPPED	NUMBER OF SAMPLES SHIPPED	AIR BILL NUMBERS	DATE SHIPPED TO LAB
VOA							
ABNs							
PEST/PCB							
METALS							
CN							

****

LOW SOILS/SEDIMENTS/SLUDGES FRACTION	NUMBER OF FIELD SAMPLES+ BLANKS+ DUPLICATE= TOTAL	EXPECTED DATE TO SAMPLE	LABORATORY NAME	NUMBER OF COOLERS SHIPPED	NUMBER OF SAMPLES SHIPPED	AIR BILL NUMBERS	DATE SHIPPED TO LAB
VOA							
ABNs							
PEST/PCB	11 + 0 + 0 = 11	w/o	PEI				
METALS		6/11/90	BETZPA				
CN							

****

RESIDENTIAL/ MUNICIPAL WELL WATERS (DRINKING WATER SAMPLES)

LOW DETECTION LIMITS/FAST TURN AROUND FRACTION	NUMBER OF FIELD SAMPLES+ BLANKS+ DUPLICATE= TOTAL	EXPECTED DATE TO SAMPLE	LABORATORY NAME	NUMBER OF COOLERS SHIPPED	NUMBER OF SAMPLES SHIPPED	AIR BILL NUMBERS	DATE SHIPPED TO LAB
VOA							
ABNs							
PEST/PCB							
METALS							
CN							

****

I ISEE NEXT PAGE FOR SPECIAL ANALYTICAL SERVICE REQUEST FOR THIS SITE

SAS #

Confirmed ✓

ecology and environment

recycled paper

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S1

SAMPLING DATE June 12, 1990 SAMPLING TIME 1250

ORGANIC TRAFFIC NUMBER EKN 65

INORGANIC TRAFFIC NUMBER MEKN 50

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186101	0135033
2-120ml VOA	volatile organics	186102 - 186103	W0085013
1-8oz glass	metals/cyanide	186104	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: brown gravely sand

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S2

SAMPLING DATE June 12, 1990 SAMPLING TIME 1320

ORGANIC TRAFFIC NUMBER EKN 66

INORGANIC TRAFFIC NUMBER MEKN 51

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186105	0135033
2-120ml VOA	volatile organics	186106-186107	W0085013
1-8oz glass	metals/cyanide	186108	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: brown clay covered with peat moss

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S3

SAMPLING DATE June 12, 1990 SAMPLING TIME 1330

ORGANIC TRAFFIC NUMBER EKN 67

INORGANIC TRAFFIC NUMBER MEKN 52

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186109	0135033
2-120ml VOA	volatile organics	186110 - 186111	W0085013
1-8oz glass	metals/cyanide	186112	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: pale silty clay

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S4

SAMPLING DATE June 12, 1990 SAMPLING TIME 1500

ORGANIC TRAFFIC NUMBER EKN 68

INORGANIC TRAFFIC NUMBER MEKN 53

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186113	0135033
2-120ml VOA	volatile organics	186114 - 186115	W0085013
1-8oz glass	metals/cyanide	186116	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: wet brown clay

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S5

SAMPLING DATE June 12, 1990 SAMPLING TIME 1510

ORGANIC TRAFFIC NUMBER EKN 69

INORGANIC TRAFFIC NUMBER MEKN 54

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186117	135033
2-120ml VOA	volatile organics	186118-186119	W0085013
1-8oz glass	metals/cyanide	186120	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: Silty clay

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S6

SAMPLING DATE June 12, 1990 SAMPLING TIME 1450

ORGANIC TRAFFIC NUMBER EKN 70

INORGANIC TRAFFIC NUMBER MEKN 55

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186121	0135033
2-120ml VOA	volatile organics	186122 - 186123	W0085013
1-8oz glass	metals / cyanide	186124	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: layered black & brown soil with gravel

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S7

SAMPLING DATE June 12, 1990 SAMPLING TIME 1530

ORGANIC TRAFFIC NUMBER EKN 71

INORGANIC TRAFFIC NUMBER MEKN 56

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186125	0135033
2-120ml VOA	volatile organics	186126-186127	W0085013
1-8oz glass	metals/cyanide	186128	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: gray clay with white powder

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S8

SAMPLING DATE June 12, 1990 SAMPLING TIME 1545

ORGANIC TRAFFIC NUMBER EKN 72

INORGANIC TRAFFIC NUMBER MEKN 57

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186129	0135033
2-120ml VOA	volatile organics	186130-186131	W0085013
1-8oz glass	metals/cyanide	186132	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: black sandy soil

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S9

SAMPLING DATE June 12, 1990 SAMPLING TIME 1600

ORGANIC TRAFFIC NUMBER EKN 73

INORGANIC TRAFFIC NUMBER MEKN 58

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186133	0135033
2-120ml VOA	volatile organics	186134-186135	W0085013
1-8oz glass	metals/cyanide	186136-	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: light brown clay

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S10

SAMPLING DATE June 12, 1990 SAMPLING TIME 1600

ORGANIC TRAFFIC NUMBER EKN 74

INORGANIC TRAFFIC NUMBER MEKN 59

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186137	0135033
2-120ml VOA	volatile organics	186138-186139	W0085013
1-8oz glass	metals/cyanide	186140	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: brown clay sediment

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries / F05-8905-012

CASE NUMBER 14298

SAMPLE #/STATION LOCATION S11

SAMPLING DATE June 12, 1990 SAMPLING TIME 1630

ORGANIC TRAFFIC NUMBER EKN 75

INORGANIC TRAFFIC NUMBER MEKN 60

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1-8oz glass	extractables	186141	0135033
2-120ml VOA	volatile organics	186142 - 186143	W0085013
1-8oz glass	metals/cyanide	186144	0075023

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: brown/black soil

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: None

INSTRUMENT READINGS None

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLER CHECKLIST

ALL LOW CONCENTRATION SAMPLES

Site Name Marble Cliff Quarries

All the below procedures have been followed and all coolers properly packaged for shipment.

Julie Visser
Sampler Signature

Randy Carlyon
Team Leader Signature

✓ 1. Is date shipped filled in on the OTR/ITR?

✓ 2. Is date and time of sample collection (Letter "F) filled in on the OTR/ITR?

✓ 3. Has either Shipment Complete or Shipment Not Complete been marked on the OTR/ITR?

✓ 4. On the C.O.C. form, is PAN in project no.; TDD/Case/SAS (if applicable) in project name for CLP and site name/case for CRL?

✓ 5. Are all dates and times on the C.O.C. form?

✓ 6. Has either grab or composite sample been marked on the C.O.C.?

✓ 7. Is the matrix filled out on each line of the C.O.C. form? (i.e., Soil, Water, Drinking Water) DO NOT USE ARROWS.

✓ 8. Is the Cooler # written on top of the C.O.C. form?

✓ 9. Is it referenced on the C.O.C.s which cooler # the OTR/ITR or the CRL tracking forms are in?

✓ 10. Are relinquish date, time, and signature on the bottom of the C.O.C.?

✓ 11. Is there one C.O.C. per cooler?

✓ 12. Has the proper paperwork been put in a plastic bag and taped to the inside of the cooler lid?

- o C.O.C. - Send white copy, bring back pink and yellow.
- o OTR/ITR - Send white and yellow copies and bring back blue/green and pink.
- o CRL tracking forms - send all of them.

SA002(04/18/90)

✓ 13. Is sample number, date, and time of collection permanently labeled on each sample bottle?

✓ 14. Are samples packaged in such a way to prevent breakage?

✓ 15. Have photographs been taken of each cooler showing ice, custody seals, and paperwork?

✓ 16. Are the coolers acceptable at Fed Ex?

- o Condition
- o Drain plug taped
- o Correctly labeled with address stickers

✓ 17. Are you sending the coolers to the correct lab? Are you using the correct lab acronym?

✓ 18. Did you call the SMC before 10:00 a.m. on the day after the sample shipment?

MEMORANDUM

DATE: November 23, 1988

TO: William Messenger, U.S. EPA

FROM: Jeryl Kolb

SUBJECT: Drinking Water Sample Results

Sample RW1

Site Name Marble Cliff Quarries Dump

PAN # F0H0027SA

TDD # F05-8710-062

EPA ID # OHD980510226

Please find attached the data summary sheets.

Name Solarium Systems of Ohio, Inc.

Address 2161 S. Dublin Rd.

City Columbus

State Ohio

Zip Code 43228

Phone Number 614-481-0691

Action Level

No Contamination ✓
No hits above any health-related standards.

Low Level Contamination _____
Hits just above health-related standards.

Significant Contamination _____
Hits are above health-related standards.

0099:3

Table 1

DATA OF RESIDENTIAL WELL SAMPLE ANALYSIS
AND APPLICABLE FEDERAL DRINKING WATER STANDARDS
AND HEALTH ADVISORIES

SAMPLE: RW1 / CONTAMINANT / VOLATILE ORGANIC COMPOUNDS	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
BENZENE		5	NR					1.5	
BROMODICHLOROMETHANE								1.5	
BROMOFORM								1.5	
BROMOMETHANE								10	
CARBON TETRACHLORIDE		5	NR					1.5	
CHLOROBENZENE			300					1.5	
CHLOROETHANE								1.5	
2-CHLOROETHYL VINYL ETHER								1.5	
CHLOROFORM								1.5	
CHLOROMETHANE								10	
DIBROMOCHLOROMETHANE								1.5	
1,1-DICHLOROETHANE								1.5	
1,2-DICHLOROETHANE		5	NR					1.5	
1,1-DICHLOROETHENE		7	7					1.5	
trans-1,2-DICHLOROETHENE			70					1.5	
1,2-DICHLOROPROPANE			NA					1.5	
cis-1,3-DICHLOPROPROPENE								2	
trans-1,3-DICHLOROPROPENE								1	
ETHYL BENZENE			680					1.5	
METHYLENE CHLORIDE			NR					1	
1,1,2,2-TETRACHLOROETHANE								1.5	
TETRACHLOROETHENE			NR					1.5	
TOLUENE			2420			2		1.5	
1,1,1-TRICHLOROETHANE		200	200					1.5	
1,1,2-TRICHLOROETHANE								1.5	
TRICHLOROETHENE		5	NR					1.5	
VINYL CHLORIDE		2	NR					10	

Table 1 (cont.)

CONTAMINANT	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
VOLATILE ORGANIC COMPOUNDS									
ACROLEIN								100	
ACETONE								75	
ACRYLONITRILE								50	
CARBON DISULFIDE								3	
2-BUTANONE			170					(50)	
VINYL ACETATE								15	
4-METHYL-2-PENTANONE								(3)	
2-HEXANONE								(50)	
STYRENE			140					1	
XYLENE, TOTAL			440					2	
SEMI-VOLATILE ORGANIC COMPOUNDS									
ANILINE								1.5	
BIS(2-CHLOROETHYL)ETHER								1.5	
PHENOL								2	
2-CHLOROPHENOL								2	
1,3-DICHLOROBENZENE			620					2	
1,4-DICHLOROBENZENE		75	75					2	
1,2-DICHLOROBENZENE			620					2.5	
BENZYL ALCOHOL								2	
BIS(2-CHLOROISOPROPYL) ETHER								2.5	
2-METHYLPHENOL								1	
HEXACHLOROETHANE								2	
N-NITROSODIPROPYLAMINE								1.5	
NITROBENZENE								2.5	
4-METHYLPHENOL								1	

Table 1 (cont.)

CONTAMINANT SEMI-VOLATILE ORGANIC COMPOUNDS	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
ISOPHORONE								2.5	
2-NITROPHENOL								2	
2,4-DIMETHYLPHENOL								2	
BIS(2-CHLOROETHOXY) METHANE								2.5	
2,4-DICHLOROPHENOL								2	
1,2,4-TRICHLOROBENZENE								2	
NAPHTHALENE								2	
4-CHLOROANILINE								2	
HEXACHLOROBUTADIENE								2.5	
BENZOIC ACID								(30)	
2-METHYLNAPTHALENE								2	
4-CHLORO-3-METHYLPHENOL								1.5	
HEXACHLOROCYCLOPENTADIENE								2	
2,4,6-TRICHLOROPHENOL								1.5	
2,4,5-TRICHLOROPHENOL		10	52					1.5	
2-CHLORONAPTHALENE								1.5	
ACENAPTHYLENE								1.5	
DIMETHYL PHTHALATE								1.5	
2,6-DINITROTOLUENE								1	
ACENAPHTHENE								1.5	
3-NITROANILINE								2.5	
DIBENZOFURAN								1	
2,4-DINITROPHENOL								(15)	
2,4-DINITROTOLUENE								1	

Table 1 (cont.)

CONTAMINANT SEMI-VOLATILE ORGANIC COMPOUNDS	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
FLUORENE								1	
4-NITROPHENOL								1.5	
4-CHLOROPHENYL PHENYL ETHER								1	
DIETHYL PHTHALATE								1	
4,6-DINITRO-2-METHYLPHENOL								(15)	
1,2-DIPHENYLHYDRAZINE								1	
N-NITROSODIPHENYLAMINE									
DIPHENYLAMINE								1.5	
4-NITROANILINE								3	
4-BROMOPHENYL PHENYL ETHER								1.5	
HEXACHLOROBENZENE			NR					1.5	
PENTACHLOROPHENOL			220					2	
PHENANTHRENE								1	
ANTHRACENE								2.5	
DI-n-BUTYL PHTHALATE								2	
FLUORANTHENE								1.5	
PYRENE								1.5	
BUTYL BENZYL PHTHALATE								3.5	
CHRYSENE									
BENZO(a)ANTHRACENE								1.5	
BIS(2-ETHYLHEXYL) PHTHALATE								1	
DI-n-OCTYL PHTHALATE								1.5	
BENZO(b)FLUORANTHENE									
BENZO(k)FLUORANTHENE								1.5	
BENZO(a)PYRENE								2	

Table 1 (cont.)

CONTAMINANT	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
SEMI-VOLATILE ORGANIC COMPOUNDS									
INDENO(1,2,3-cd)PYRENE								3.5	
DIBENZO(a,h)ANTHRACENE								2.5	
BENZO(g,h,i)PERYLENE								4	
2-NITROANILINE								1	
PESTICIDES AND PCBS									
ALDRIN								0.005	
alpha BHC								(0.010)	
beta BHC								(0.005)	
delta BHC								(0.005)	
gama BHC(LINDANE)		4	2					0.005	
CHLORDANE			NR					(0.020)	
4,4'-DDD								(0.020)	
4,4'-DDE								(0.005)	
4,4'-DDT								0.020	
DIELDRIN								0.010	
ENDOSULFAN I								0.010	
ENDOSULFAN II								0.010	
ENDOSULFAN SULFATE								(0.10)	
ENDRIN		0.2	0.32					0.010	
ENDRIN ALDEHYDE								(0.030)	
ENDRIN KETONE								(0.030)	
HEPTACHLOR			NR					0.030	
HEPTACHLOR EPOXIDE			NR					0.005	
4,4'-METHOXYCHLOR		5	340					0.020	
TOXAPHENE		100	NA					(0.25)	
PCB-1242			NA					(0.10)	

Table 1 (cont.)

CONTAMINANT	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
PESTICIDES AND PCBS									
PCB-1248			NA					(0.10)	
PCB-1254			NA					(0.10)	
PCB-1260			NA					(0.10)	
INORGANIC ANALYTES									
ALUMINUM								80	
ANTIMONY								2	
ARSENIC		50	50R					2	
BARIUM	[23]	1000	1500			[6.7]		6	
BERYLLIUM								1	
BORON								80	
CADMIUM		10	5					10	
CADMIUM		10	5					0.2	
CALCIUM	118,000 JN							0.5	
CHROMIUM		50	120					8	
COBALT								6	
COPPER	37 JN	1000				34 JN		6	
IRON	548 JN					126 JN		80	
LEAD	4.7 J	50				4.3 J		2	
LEAD		50						70	
LITHIUM								10	
MAGNESIUM	43,000 JN							0.1	
MANGANESE	23							5	
MERCURY		2	1 1					0.1	
MOLYBDENUM								15	
NICKEL	[14]		150					15	
POTASSIUM	2,700 JN					3,600 JN		2	

Table 1 (cont.)

CONTAMINANT	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
INORGANIC ANALYTES									
SELENIUM		10						2	
SILVER		50						6	
SODIUM	19,100			20,000				1	
STRONTIUM								10	
SULFIDE								1	
SULFATE		250,000						0.05	
THALLIUM								2	
TITANIUM								25	
TIN								40	
VANADIUM								5	
YTTRIUM								5	
ZINC	1,120					[11]		40	
CYANIDE			154					8	
SPECIAL ORGANIC ANALYSIS									
ANILINE								50	
ACROLEIN								100	
ACRYLONITRILE								10	

D. Analytical Method Qualifiers for Inorganic

"P" for ICP

"A" for Flame AA

"F" for Furnance AA

"CV" for Manual Cold Vapor AA

"AV" for Automated Cold Vapor AA

"AS" for Semi-automated Spectrophotometric

"C" for Manual Spectrophotometric

"T" for Titrimetric

"NR" if the analyte is not required to be analyzed.

A SURVEY OF THE ANALYTICAL RESULTS FOR SAMPLES WHICH WERE TAKEN DURING FIELD ACTIVITIES CAN BE FOUND IN THE FOLLOWING TABLES. ONLY DETECTABLE CONCENTRATIONS ARE REPORTED. HOWEVER, IF THE COMPOUND HAS A FOOTNOTE FOLLOWING THE VALUE, CONSULT THE DEFINITION OF THE FOOTNOTE PROVIDED BELOW. ADDITIONAL QA/QC IS PROVIDED IN THE ATTACHED DATA SHEETS.

I. REPORTING UNITS

A. Organics

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - ug/kg or ppb (parts per billion)

B. Metals

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - mg/kg or ppm (parts per million)

II. DEFINITION OF FOOTNOTES TO ANALYTICAL DATA

A. Organics

FOOTNOTE	DEFINITION	INTERPRETATION
U	Indicates compound was analyzed for but not detected.	Compound was not detected.
J	Indicates an estimated value.	Compound value may be semi-quantitative.
UJ	Quantitation limit is estimated due to a Quality Control (QC) protocol.	Compound was not detected.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides >10 ng/ul in the final extract shall be confirmed by GC/MS.	Compound was confirmed by mass spectroscopy
B	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.	Compound value may be semi-quantitative if it is <5x the blank concentration (<10x the blank concentrations for common lab artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone).
E	This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods.	Compound value may be semi-quantitative.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.	Alerts data user to a possible change in the CRQL.
A	This flag indicates that a TIC is a suspected aldol-condensation product.	Alerts data user of a lab artifact.
R	Results are unusable due to a major violation of QC protocol.	Compound value is not usable.

B. Inorganics

FOOTNOTE OLD	FOOTNOTE NEW	DEFINITION	INTERPRETATION
E	E	Estimated or not reported due to inteference. See laboratory narrative.	Compound or element was not detected or value may be semi-quantitative.
S	S	Analysis by Method of Standard Additions.	Value may be quantitative.
N	N	Spike recoveries outside QC protocols which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative.	Value may be quantitative or semi-quantitative.
*	*	Duplicate value outside QC protocols which indicates a possible matrix problem.	Value may be semi-quantitative.
+	+	Correlation coefficient for standard additions in less than 0.995. See review and laboratory narrative.	Data value may be biased.
[ ]	B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
UJ		DL is estimated because of a QC protocol. DL is possibly above or below CRDL.	Compound or element was not detected.
J		Value is above CRDL and is an estimated value because of a QC Protocol.	Value may be semi-quantitative.
U	U	Compound was analyzed for but not detected.	Compound was not detected.
	M	Duplicate injection precision not met.	Value may be semi-quantitative.
	W	Post digestion spike for furnance AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance.	Value may be semi-quantitative.

C. Other Symbols Used

NA Value not available due to insufficient data.
NR Value not recommended to be calculated, since chemical has proven to be a human carcinogen.
( ) Estimated value.

MEMORANDUM

DATE: November 23, 1988

TO: William Messenger, U.S. EPA

FROM: Jeryl Kolb

SUBJECT: Drinking Water Sample Results

Sample RW2

Site Name Marble Cliff Quarries Dump

PAN # FOH00275A

TDD # F05-8710-062

EPA ID # OHD980510226

Please find attached the data summary sheets.

Name Peabody Landscape Construction

Address 3135 Trabue Ave.

City Columbus

State Ohio

Zip Code 43228

Phone Number 614-488-2877

Action Level

No Contamination _____
No hits above any health-related standards.

Low Level Contamination _____
Hits just above health-related standards.

Significant Contamination ✓ Sodium
Hits are above health-related standards.

0099:3

det on Chromium

Table 1

DATA OF RESIDENTIAL WELL SAMPLE ANALYSIS AND APPLICABLE FEDERAL DRINKING WATER STANDARDS AND HEALTH ADVISORIES

SAMPLE: RW2 CONTAMINANT VOLATILE ORGANIC COMPOUNDS	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb): LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	COMMENTS
BENZENE		5	NR					1.5	
BROMODICHLOROMETHANE								1.5	
BROMOFORM								1.5	
BROMOMETHANE								10	
CARBON TETRACHLORIDE		5	NR					1.5	
CHLOROBENZENE			300					1.5	
CHLOROETHANE								1.5	
2-CHLOROETHYL VINYL ETHER								1.5	
CHLOROFORM								1.5	
CHLOROMETHANE								10	
DIBROMOCHLOROMETHANE								1.5	
1,1-DICHLOROETHANE								1.5	
1,2-DICHLOROETHANE		5	NR					1.5	
1,1-DICHLOROETHENE		7	7					1.5	
trans-1,2-DICHLOROETHENE			70					1.5	
1,2-DICHLOROPROPANE			NA					1.5	
cis-1,3-DICHLOPROPROPENE								2	
trans-1,3-DICHLOROPROPENE								1	
ETHYL BENZENE			680					1.5	
METHYLENE CHLORIDE	~~J~~		NR					1	artifact
1,1,2,2-TETRACHLOROETHANE								1.5	
TETRACHLOROETHENE			NR					1.5	
TOLUENE	~~J~~		2420			(2)	3	1.5	artifact
1,1,1-TRICHLOROETHANE		200	200					1.5	
1,1,2-TRICHLOROETHANE								1.5	
TRICHLOROETHENE		5	NR					1.5	
VINYL CHLORIDE		2	NR					10	

Table 1 (cont.)

CONTAMINANT	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
VOLATILE ORGANIC COMPOUNDS									
ACROLEIN								100	
ACETONE								75	
ACRYLONITRILE								50	
CARBON DISULFIDE								3	
2-BUTANONE			170					(50)	
VINYL ACETATE								15	
4-METHYL-2-PENTANONE								(3)	
2-HEXANONE								(50)	
STYRENE			140					1	
XYLENE, TOTAL			440					2	
SEMI-VOLATILE ORGANIC COMPOUNDS									
ANILINE								1.5	
BIS(2-CHLOROETHYL)ETHER								1.5	
PHENOL								2	
2-CHLOROPHENOL								2	
1,3-DICHLOROBENZENE			620					2	
1,4-DICHLOROBENZENE		75	75					2	
1,2-DICHLOROBENZENE			620					2.5	
BENZYL ALCOHOL								2	
BIS(2-CHLOROISOPROPYL) ETHER								2.5	
2-METHYLPHENOL								1	
HEXACHLOROETHANE								2	
N-NITROSODIPROPYLAMINE								1.5	
NITROBENZENE								2.5	
4-METHYLPHENOL								1	

Table 1 (cont.)

CONTAMINANT SEMI-VOLATILE ORGANIC COMPOUNDS	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
ISOPHORONE								2.5	
2-NITROPHENOL								2	
2,4-DIMETHYLPHENOL								2	
BIS(2-CHLOROETHOXY) METHANE								2.5	
2,4-DICHLOROPHENOL								2	
1,2,4-TRICHLOROBENZENE								2	
NAPHTHALENE								2	
4-CHLOROANILINE								2	
HEXACHLOROBUTADIENE								2.5	
BENZOIC ACID								(30)	
2-METHYLNAPTHALENE								2	
4-CHLORO-3-METHYLPHENOL								1.5	
HEXACHLOROCYCLOPENTADIENE								2	
2,4,6-TRICHLOROPHENOL								1.5	
2,4,5-TRICHLOROPHENOL		10	52					1.5	
2-CHLORONAPTHALENE								1.5	
ACENAPTHYLENE								1.5	
DIMETHYL PHTHALATE								1.5	
2,6-DINITROTOLUENE								1	
ACENAPHTHENE								1.5	
3-NITROANILINE								2.5	
DIBENZOFURAN								1	
2,4-DINITROPHENOL								(15)	
2,4-DINITROTOLUENE								1	

Table 1 (cont.)

CONTAMINANT SEMI-VOLATILE ORGANIC COMPOUNDS	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
FLUORENE								1	
4-NITROPHENOL								1.5	
4-CHLOROPHENYL PHENYL ETHER								1	
DIETHYL PHTHALATE								1	
4,6-DINITRO-2-METHYLPHENOL								(15)	
1,2-DIPHENYLHYDRAZINE								1	
N-NITROSODIPHENYLAMINE DIPHENYLAMINE								1.5	
4-NITROANILINE								3	
4-BROMOPHENYL PHENYL ETHER								1.5	
HEXACHLOROBENZENE			NR					1.5	
PENTACHLOROPHENOL			220					2	
PHENANTHRENE								1	
ANTHRACENE								2.5	
DI-n-BUTYL PHTHALATE								2	
FLUORANTHENE								1.5	
PYRENE								1.5	
BUTYL BENZYL PHTHALATE								3.5	
CHRYSENE									
BENZO(a)ANTHRACENE								1.5	
BIS(2-ETHYLHEXYL) PHTHALATE								1	
DI-n-OCTYL PHTHALATE								1.5	
BENZO(b)FLUORANTHENE									
BENZO(k)FLUORANTHENE								1.5	
BENZO(a)PYRENE								2	

Table 1 (cont.)

CONTAMINANT	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
SEMI-VOLATILE ORGANIC COMPOUNDS									
INDENO(1,2,3-cd)PYRENE								3.5	
DIBENZO(a,h)ANTHRACENE								2.5	
BENZO(g,h,i)PERYLENE								4	
2-NITROANILINE								1	
PESTICIDES AND PCBS									
ALDRIN								0.005	
alpha BHC								(0.010)	
beta BHC								(0.005)	
delta BHC								(0.005)	
gama BHC(LINDANE)		4	2					0.005	
CHLORDANE			NR					(0.020)	
4,4'-DDD								(0.020)	
4,4'-DDE								(0.005)	
4,4'-DDT								0.020	
DIELDRIN								0.010	
ENDOSULFAN I								0.010	
ENDOSULFAN II								0.010	
ENDOSULFAN SULFATE								(0.10)	
ENDRIN		0.2	0.32					0.010	
ENDRIN ALDEHYDE								(0.030)	
ENDRIN KETONE								(0.030)	
HEPTACHLOR			NR					0.030	
HEPTACHLOR EPOXIDE			NR					0.005	
4,4'-METHOXYCHLOR		5	340					0.020	
TOXAPHENE		100	NA					(0.25)	
PCB-1242			NA					(0.10)	

Table 1 (cont.)

CONTAMINANT	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
PESTICIDES AND PCBS									
PCB-1248			NA					(0.10)	
PCB-1254			NA					(0.10)	
PCB-1260			NA					(0.10)	
INORGANIC ANALYTES									
ALUMINUM								80	
ANTIMONY								2	
ARSENIC		50	50R					2	
BARIUM	[45]	1000	1500			[6.7]	[48]	6	
BERYLLIUM								1	
BORON								80	
CADMIUM		10	5					10	
CADMIUM		10	5					0.2	
CALCIUM	114,000JN						120,000JN	0.5	
CHROMIUM	[4.2]N	50	120				11N	8	
COBALT								6	
COPPER	91 JN	1000				34 JN	46 JN	6	
IRON	506JN					176 JN	362JN	80	
LEAD	3.0 J	50				4.3 J	2.5 J	2	
LEAD		50						70	
LITHIUM								10	
MAGNESIUM	33,600JN						35,500JN	0.1	
MANGANESE	26						27	5	
MERCURY	0.60	2	11				0.60	0.1	
MOLYBDENUM								15	
NICKEL			150					15	
POTASSIUM	2,000JN					3,600JN	7,800JN	2	

Table 1 (cont.)

CONTAMINANT INORGANIC ANALYTES	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
SELENIUM		10						2	
SILVER	6.4 N	50						6	
SODIUM	73,900			20,000			78,200	1	
STRONTIUM								10	
SULFIDE								1	
SULFATE		250,000						0.05	
THALLIUM								2	
TITANIUM								25	
TIN								40	
VANADIUM								5	
YTTRIUM								5	
ZINC	45					[11]	49	40	
CYANIDE			154					8	
SPECIAL ORGANIC ANALYSIS									
ANILINE								50	
ACROLEIN								100	
ACRYLONITRILE								10	

D. Analytical Method Qualifiers for Inorganic

"P" for ICP

"A" for Flame AA

"F" for Furnance AA

"CV" for Manual Cold Vapor AA

"AV" for Automated Cold Vapor AA

"AS" for Semi-automated Spectrophotometric

"C" for Manual Spectrophotometric

"T" for Titrimetric

"NR" if the analyte is not required to be analyzed.

A SURVEY OF THE ANALYTICAL RESULTS FOR SAMPLES WHICH WERE TAKEN DURING FIELD ACTIVITIES CAN BE FOUND IN THE FOLLOWING TABLES. ONLY DETECTABLE CONCENTRATIONS ARE REPORTED. HOWEVER, IF THE COMPOUND HAS A FOOTNOTE FOLLOWING THE VALUE, CONSULT THE DEFINITION OF THE FOOTNOTE PROVIDED BELOW. ADDITIONAL QA/QC IS PROVIDED IN THE ATTACHED DATA SHEETS.

I. REPORTING UNITS

A. Organics

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - ug/kg or ppb (parts per billion)

B. Metals

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - mg/kg or ppm (parts per million)

II. DEFINITION OF FOOTNOTES TO ANALYTICAL DATA

A. Organics

FOOTNOTE	DEFINITION	INTERPRETATION
U	Indicates compound was analyzed for but not detected.	Compound was not detected.
J	Indicates an estimated value.	Compound value may be semi-quantitative.
UJ	Quantitation limit is estimated due to a Quality Control (QC) protocol.	Compound was not detected.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract shall be confirmed by GC/MS.	Compound was confirmed by mass spectroscopy
B	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.	Compound value may be semi-quantitative if it is <5x the blank concentration (<10x the blank concentrations for common lab artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone).
E	This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods.	Compound value may be semi-quantitative.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.	Alerts data user to a possible change in the CRQL.
A	This flag indicates that a TIC is a suspected aldol-condensation product.	Alerts data user of a lab artifact.
R	Results are unusable due to a major violation of QC protocol.	Compound value is not usable.

B. Inorganics

FOOTNOTE OLD	FOOTNOTE NEW	DEFINITION	INTERPRETATION
E	E	Estimated or not reported due to inteference. See laboratory narrative.	Compound or element was not detected or value may be semi-quantitative.
S	S	Analysis by Method of Standard Additions.	Value may be quantitative.
R	N	Spike recoveries outside QC protocols which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative.	Value may be quantitative or semi-quantitative.
*	*	Duplicate value outside QC protocols which indicates a possible matrix problem.	Value may be semi-quantitative.
+	+	Correlation coefficient for standard additions in less than 0.995. See review and laboratory narrative.	Data value may be biased.
[ ]	B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
UJ		DL is estimated because of a QC protocol. DL is possibly above or below CRDL.	Compound or element was not detected.
J		Value is above CRDL and is an estimated value because of a QC Protocol.	Value may be semi-quantitative.
U	U	Compound was analyzed for but not detected.	Compound was not detected.
	M	Duplicate injection precision not met.	Value may be semi-quantitative.
	W	Post digestion spike for furnance AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance.	Value may be semi-quantitative.

C. Other Symbols Used

NA Value not available due to insufficient data.
NR Value not recommended to be calculated, since chemical has proven to be a human carcinogen.
( ) Estimated value.

MEMORANDUM

DATE: November 23, 1988

TO: William Messenger, U.S. EPA

FROM: Jeryl Kolb

SUBJECT: Drinking Water Sample Results

Sample RW3

Site Name Marble Cliff Quarries Dump

PAN # FOH0027SA

TDD # F05-8710-062

EPA ID # OHD980510226

Please find attached the data summary sheets.

Name Riepenhoff Landscaping

Address 3872 Scioto-Darby Rd.

City Columbus

State Ohio

Zip Code 43228

Phone Number 614-876-4683

Action Level

No Contamination _____
No hits above any health-related standards.

Low Level Contamination ✓ ~~Fluoride~~ Sodium
Hits just above health-related standards.

Significant Contamination _____
Hits are above health-related standards.

0099:3

check on arsenic

Table 1

DATA OF RESIDENTIAL WELL SAMPLE ANALYSIS AND APPLICABLE FEDERAL DRINKING WATER STANDARDS AND HEALTH ADVISORIES

SAMPLE: RW3 / CONTAMINANT / VOLATILE ORGANIC COMPOUNDS	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb): LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	COMMENTS
BENZENE		5	NR					1.5	
BROMODICHLOROMETHANE								1.5	
BROMOFORM								1.5	
BROMOMETHANE								10	
CARBON TETRACHLORIDE		5	NR					1.5	
CHLOROBENZENE			300					1.5	
CHLOROETHANE								1.5	
2-CHLOROETHYL VINYL ETHER								1.5	
CHLOROFORM								1.5	
CHLOROMETHANE								10	
DIBROMOCHLOROMETHANE								1.5	
1,1-DICHLOROETHANE								1.5	
1,2-DICHLOROETHANE		5	NR					1.5	
1,1-DICHLOROETHENE		7	7					1.5	
trans-1,2-DICHLOROETHENE			70					1.5	
1,2-DICHLOROPROPANE			NA					1.5	
cis-1,3-DICHLOPROPROPENE								2	
trans-1,3-DICHLOROPROPENE								1	
ETHYL BENZENE			680					1.5	
METHYLENE CHLORIDE			NR					1	
1,1,2,2-TETRACHLOROETHANE								1.5	
TETRACHLOROETHENE			NR					1.5	
TOLUENE	3		2420			2		1.5	orlpart
1,1,1-TRICHLOROETHANE		200	200					1.5	
1,1,2-TRICHLOROETHANE								1.5	
TRICHLOROETHENE		5	NR					1.5	
VINYL CHLORIDE		2	NR					10	

Table 1 (cont.)

CONTAMINANT	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
VOLATILE ORGANIC COMPOUNDS									
ACROLEIN								100	
ACETONE								75	
ACRYLONITRILE								50	
CARBON DISULFIDE								3	
2-BUTANONE			170					(50)	
VINYL ACETATE								15	
4-METHYL-2-PENTANONE								(3)	
2-HEXANONE								(50)	
STYRENE			140					1	
XYLENE, TOTAL			440					2	
SEMI-VOLATILE ORGANIC COMPOUNDS									
ANILINE								1.5	
BIS(2-CHLOROETHYL)ETHER								1.5	
PHENOL								2	
2-CHLOROPHENOL								2	
1,3-DICHLOROBENZENE			620					2	
1,4-DICHLOROBENZENE		75	75					2	
1,2-DICHLOROBENZENE			620					2.5	
BENZYL ALCOHOL								2	
BIS(2-CHLOROISOPROPYL) ETHER								2.5	
2-METHYLPHENOL								1	
HEXACHLOROETHANE								2	
N-NITROSODIPROPYLAMINE								1.5	
NITROBENZENE								2.5	
4-METHYLPHENOL								1	

Table 1 (cont.)

CONTAMINANT SEMI-VOLATILE ORGANIC COMPOUNDS	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
ISOPHORONE								2.5	
2-NITROPHENOL								2	
2,4-DIMETHYLPHENOL								2	
BIS(2-CHLOROETHOXY) METHANE								2.5	
2,4-DICHLOROPHENOL								2	
1,2,4-TRICHLOROBENZENE								2	
NAPHTHALENE								2	
4-CHLOROANILINE								2	
HEXACHLOROBUTADIENE								2.5	
BENZOIC ACID								(30)	
2-METHYLNAPTHALENE								2	
4-CHLORO-3-METHYLPHENOL								1.5	
HEXACHLOROCYCLOPENTADIENE								2	
2,4,6-TRICHLOROPHENOL								1.5	
2,4,5-TRICHLOROPHENOL		10	52					1.5	
2-CHLORONAPTHALENE								1.5	
ACENAPTHYLENE								1.5	
DIMETHYL PHTHALATE								1.5	
2,6-DINITROTOLUENE								1	
ACENAPHTHENE								1.5	
3-NITROANILINE								2.5	
DIBENZOFURAN								1	
2,4-DINITROPHENOL								(15)	
2,4-DINITROTOLUENE								1	

Table 1 (cont.)

CONTAMINANT SEMI-VOLATILE ORGANIC COMPOUNDS	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
FLUORENE								1	
4-NITROPHENOL								1.5	
4-CHLOROPHENYL PHENYL ETHER								1	
DIETHYL PHTHALATE								1	
4,6-DINITRO-2-METHYLPHENOL								(15)	
1,2-DIPHENYLHYDRAZINE								1	
N-NITROSODIPHENYLAMINE									
DIPHENYLAMINE								1.5	
4-NITROANILINE								3	
4-BROMOPHENYL PHENYL ETHER								1.5	
HEXACHLOROBENZENE			NR					1.5	
PENTACHLOROPHENOL			220					2	
PHENANTHRENE								1	
ANTHRACENE								2.5	
DI-n-BUTYL PHTHALATE								2	
FLUORANTHENE								1.5	
PYRENE								1.5	
BUTYL BENZYL PHTHALATE								3.5	
CHRYSENE									
BENZO(a)ANTHRACENE								1.5	
BIS(2-ETHYLHEXYL) PHTHALATE								1	
DI-n-OCTYL PHTHALATE								1.5	
BENZO(b)FLUORANTHENE									
BENZO(k)FLUORANTHENE								1.5	
BENZO(a)PYRENE								2	

Table 1 (cont.)

CONTAMINANT	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
SEMI-VOLATILE ORGANIC COMPOUNDS									
INDENO(1,2,3-cd)PYRENE								3.5	
DIBENZO(a,h)ANTHRACENE								2.5	
BENZO(g,h,i)PERYLENE								4	
2-NITROANILINE								1	
PESTICIDES AND PCBS									
ALDRIN								0.005	
alpha BHC								(0.010)	
beta BHC								(0.005)	
delta BHC								(0.005)	
gama BHC(LINDANE)		4	2					0.005	
CHLORDANE			NR					(0.020)	
4,4'-DDD								(0.020)	
4,4'-DDE								(0.005)	
4,4'-DDT								0.020	
DIELDRIN								0.010	
ENDOSULFAN I								0.010	
ENDOSULFAN II								0.010	
ENDOSULFAN SULFATE								(0.10)	
ENDRIN		0.2	0.32					0.010	
ENDRIN ALDEHYDE								(0.030)	
ENDRIN KETONE								(0.030)	
HEPTACHLOR			NR					0.030	
HEPTACHLOR EPOXIDE			NR					0.005	
4,4'-METHOXYCHLOR		5	340					0.020	
TOXAPHENE		100	NA					(0.25)	
PCB-1242			NA					(0.10)	

Table 1 (cont.)

CONTAMINANT	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
PESTICIDES AND PCBS									
PCB-1248			NA					(0.10)	
PCB-1254			NA					(0.10)	
PCB-1260			NA					(0.10)	
INORGANIC ANALYTES									
ALUMINUM								80	
ANTIMONY								2	
ARSENIC	14	50	50R					2	
BARIUM	215	1000	1500			[6.7]		6	
BERYLLIUM								1	
BORON								80	
CADMIUM		10	5					10	
CADMIUM		10	5					0.2	
CALCIUM	106,000 JN							0.5	
CHROMIUM		50	120					8	
COBALT								6	
COPPER	74 JN	1000				34 JN		6	
IRON	2,400 JN					126 JN		80	
LEAD	3.1 J	50				4.3 J		2	
LEAD		50						70	
LITHIUM								10	
MAGNESIUM	31,500 JN							0.1	
MANGANESE	138							5	
MERCURY		2	11					0.1	
MOLYBDENUM								15	
NICKEL			150					15	
POTASSIUM	3,600 JN					3,600 JN		2	

Table 1 (cont.)

CONTAMINANT	CONCENTRATION OF DETECTED CONTAMINANT (ppb)	MAXIMUM CONTAMINANT LEVEL (ppb)	HEALTH ADVISORY LEVEL (ppb)	OTHER HEALTH-RELATED GUIDANCE VALUE	RANGE	LABORATORY QUALITY CONTROL DATA (ppb)			COMMENTS
						LAB BLANK	SAMPLE DUPLICATE	DETECTION LIMIT	
INORGANIC ANALYTES									
SELENIUM		10						2	
SILVER		50						6	
SODIUM	21,700			20,000				1	
STRONTIUM								10	
SULFIDE								1	
SULFATE		250,000						0.05	
THALLIUM								2	
TITANIUM								25	
TIN								40	
VANADIUM								5	
YTTRIUM								5	
ZINC	32					LID		40	
CYANIDE			154					8	
SPECIAL ORGANIC ANALYSIS									
ANILINE								50	
ACROLEIN								100	
ACRYLONITRILE								10	

D. Analytical Method Qualifiers for Inorganic

"P" for ICP

"A" for Flame AA

"F" for Furnance AA

"CV" for Manual Cold Vapor AA

"AV" for Automated Cold Vapor AA

"AS" for Semi-automated Spectrophotometric

"C" for Manual Spectrophotometric

"T" for Titrimetric

"NR" if the analyte is not required to be analyzed.

A SURVEY OF THE ANALYTICAL RESULTS FOR SAMPLES WHICH WERE TAKEN DURING FIELD ACTIVITIES CAN BE FOUND IN THE FOLLOWING TABLES. ONLY DETECTABLE CONCENTRATIONS ARE REPORTED. HOWEVER, IF THE COMPOUND HAS A FOOTNOTE FOLLOWING THE VALUE, CONSULT THE DEFINITION OF THE FOOTNOTE PROVIDED BELOW. ADDITIONAL QA/QC IS PROVIDED IN THE ATTACHED DATA SHEETS.

I. REPORTING UNITS

A. Organics

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - ug/kg or ppb (parts per billion)

B. Metals

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - mg/kg or ppm (parts per million)

II. DEFINITION OF FOOTNOTES TO ANALYTICAL DATA

A. Organics

FOOTNOTE	DEFINITION	INTERPRETATION
U	Indicates compound was analyzed for but not detected.	Compound was not detected.
J	Indicates an estimated value.	Compound value may be semi-quantitative.
UJ	Quantitation limit is estimated due to a Quality Control (QC) protocol.	Compound was not detected.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides >10 ng/ul in the final extract shall be confirmed by GC/MS.	Compound was confirmed by mass spectroscopy
B	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.	Compound value may be semi-quantitative if it is <5x the blank concentration (<10x the blank concentrations for common lab artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone).
E	This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods.	Compound value may be semi-quantitative.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.	Alerts data user to a possible change in the CRQL.
A	This flag indicates that a TIC is a suspected aldol-condensation product.	Alerts data user of a lab artifact.
R	Results are unusable due to a major violation of QC protocol.	Compound value is not usable.

B. Inorganics

FOOTNOTE OLD	FOOTNOTE NEW	DEFINITION	INTERPRETATION
E	E	Estimated or not reported due to inteference. See laboratory narrative.	Compound or element was not detected or value may be semi-quantitative.
S	S	Analysis by Method of Standard Additions.	Value may be quantitative.
R	N	Spike recoveries outside QC protocols which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative.	Value may be quantitative or semi-quantitative.
*	*	Duplicate value outside QC protocols which indicates a possible matrix problem.	Value may be semi-quantitative.
+	+	Correlation coefficient for standard additions in less than 0.995. See review and laboratory narrative.	Data value may be biased.
[ ]	B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
UJ		DL is estimated because of a QC protocol. DL is possibly above or below CRDL.	Compound or element was not detected.
J		Value is above CRDL and is an estimated value because of a QC Protocol.	Value may be semi-quantitative.
U	U	Compound was analyzed for but not detected.	Compound was not detected.
	M	Duplicate injection precision not met.	Value may be semi-quantitative.
	W	Post digestion spike for furnance AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance.	Value may be semi-quantitative.

C. Other Symbols Used

NA Value not available due to insufficient data.
NR Value not recommended to be calculated, since chemical has proven to be a human carcinogen.
( ) Estimated value.

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION S1

SAMPLING DATE 4/28/88 SAMPLING TIME 1240

ORGANIC TRAFFIC NUMBER EX014

INORGANIC TRAFFIC NUMBER MEX218

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz	extractables	157001	65283042
120 ml	VOA	157002 - 3	D8084094
~~16 oz~~	~~extractables~~	—	—
8 oz	metals/CN	157004	65283042

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: moist brown pebbly sandy clay

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION Sa

SAMPLING DATE 4/28/88 SAMPLING TIME 1325

ORGANIC TRAFFIC NUMBER EX 015

INORGANIC TRAFFIC NUMBER ME x 219

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz	extractables	157005	65283042
120 ml	VOA	157006 - 7	
16 oz	extractables	—	—
8 oz	metals/CN^-	157008	65283042

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: moist brown sand

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION S3

SAMPLING DATE 4/28/88 SAMPLING TIME 1320

ORGANIC TRAFFIC NUMBER EX016

INORGANIC TRAFFIC NUMBER ME X 220

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz	extractables	157009	65283042
120 ml	VOA	157010-11	D8084094
16 oz	extractables	—	—
8 oz	metals / CN^-	157012	65283042

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: wet tan silt

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION S4

SAMPLING DATE 4/28/88 SAMPLING TIME 1340

ORGANIC TRAFFIC NUMBER EX 017

INORGANIC TRAFFIC NUMBER ME X 221

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz	extractables	157013	65283042
120 ml	VOA	157014-15	D8084094
16 oz	extractables	—	—
8 oz	metals / CN^-	157016	65283042

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: wet brown sandy clay

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION S5

SAMPLING DATE 4/28/88 SAMPLING TIME 1425

ORGANIC TRAFFIC NUMBER EX 018

INORGANIC TRAFFIC NUMBER ME 222

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz	extractables	157017	65283042
120 ml	VOA	157018-19	08084094
16 oz	extractables	—	—
8 oz	metals/CN	157020	65283042

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: wet tan clay

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION S6

SAMPLING DATE 4/28/88 SAMPLING TIME 1410

ORGANIC TRAFFIC NUMBER EX019

INORGANIC TRAFFIC NUMBER MEX223

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz	extractables	157021	65283042
120 ml	VOA	157022-23	D8084094
16 oz	extractables	—	—
8 oz	metals/CN^-	157024	65283042

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: moist brown sand

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION S7

SAMPLING DATE 4/28/88 SAMPLING TIME 1420

ORGANIC TRAFFIC NUMBER EE020

INORGANIC TRAFFIC NUMBER MEX224

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz	extractables	—	—
120 ml	VOA	157026-27	D80841094
16 oz	extractables	157025	E7273242
16 oz	metals / CN^-	157028	E7273242

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: moist brown silty sand

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION S 8

SAMPLING DATE 4/28/88 SAMPLING TIME 1515

ORGANIC TRAFFIC NUMBER EX021

INORGANIC TRAFFIC NUMBER MEX225

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz	extractables	—	—
120 ml	VOA	157030-31	D8084094
16 oz	extractables	157029	E7273242
16 oz	metals/CN^-	157032	E7273242

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: moist black silty clay

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH N/A

CONDUCTIVITY N/A

TEMPERATURE N/A

SAMPLE DESCRIPTION —

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION RW1 - MSD

SAMPLING DATE 4/27/88 SAMPLING TIME 1515

ORGANIC TRAFFIC NUMBER EX022

INORGANIC TRAFFIC NUMBER MEX226

	BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
RW1	1 l amber	Extractable	157033, 37, 34	H8015034
	40 ml VOA	VOA	157035, 36	B7274071
	1 l plastic	metals	157038	C8048034
	1 l plastic	CN⁻	157039	C8048034
MSD	1 l amber	Extractables	157040, 41, 42	H8015034
	1 l plastic	Metals	—	—
	1 l plastic	CN⁻	—	—
	40 ml	VOA	157043, 44	B7274071

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: — clear

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH 6.85

CONDUCTIVITY 110 µU

TEMPERATURE 16° C

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION RW2

SAMPLING DATE 4/27/88 SAMPLING TIME 1530

ORGANIC TRAFFIC NUMBER EX023

INORGANIC TRAFFIC NUMBER ME x 227

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1 l amber (-	Extractable	157045 - 7	H8015034
40 ml VOA	VOA	157048 - 9	B7274071
1 l plastic	metals	157050	C8048034
1 l plastic	CN-	157051	C8048034

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: - clear

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH 6.71

CONDUCTIVITY 140 µU

TEMPERATURE 13° C

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION DUP

SAMPLING DATE 4/27/88 SAMPLING TIME 1530

ORGANIC TRAFFIC NUMBER EX 024

INORGANIC TRAFFIC NUMBER ME x 228

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1 l amber C-	Extractable	157052 - 4	H8015034
40 ml VOA	VOA	157055 - 6	B7274071
1 l plastic	metals	157057	C8048034
1 l plastic	CN-	157058	C8048034

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: — clear

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH 6.71

CONDUCTIVITY 140 µU

TEMPERATURE 13°C

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION RW3

SAMPLING DATE 4/27/88 SAMPLING TIME 1610

ORGANIC TRAFFIC NUMBER EX 025

INORGANIC TRAFFIC NUMBER MEX 229

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1 l amber	Extractable	157059 - 61	H8015034
40 ml VOA	VOA	157062 - 63	B7274071
1 l plastic	metals	157064	C8048034
1 l plastic	CN^-	157065	C8048034

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: clear

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH 6.97

CONDUCTIVITY 90 µU

TEMPERATURE 13°C

SAMPLE DESCRIPTION

SITE NAME/TDD# Marble Cliff Quarries Dump

CASE NUMBER 9469

SAMPLE #/STATION LOCATION BLK

SAMPLING DATE 4/27/88 SAMPLING TIME 1415

ORGANIC TRAFFIC NUMBER EX 026

INORGANIC TRAFFIC NUMBER MEX 230

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
1 l amber C-	Extractable	157066 - 68	H8015034
40 ml VOA	VOA	157069 - 70	B7274071
1 l plastic	metals	157071	C8048034
1 l plastic	CN-	157072	C8048034

PHYSICAL DESCRIPTION AT TIME OF COLLECTION: clear

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT: none

INSTRUMENT READINGS none

pH not taken

CONDUCTIVITY "

TEMPERATURE "

SITE Marble Cliff Quarries Dump

CITY Columbus STATE Ohio

SAMPLE S1

DATE 4/28/88

TIME 12:40 AM PM

SITE Marble Cliff Quarries Dump

CITY Columbus STATE Ohio

SAMPLE 52

DATE 4/28/88

TIME 1:25 AM PM

SITE Marble Cliff Quarries Dump

CITY Columbus STATE Ohio

SAMPLE S3

DATE 4/28/88

TIME 1:20 AM PM

SITE Marble Cliff Quarries Dump

CITY Columbus STATE Ohio

SAMPLE S4

DATE 4/28/88

TIME 1:40 AM PM

SITE Marble Cliff Quarries Dump

CITY Columbus STATE Ohio

SAMPLE S5

DATE 4/28/88

TIME 2:25 AM PM

SITE Marble Cliff Quarries Dump

CITY Columbus STATE Ohio

SAMPLE 56

DATE 4/28/88

TIME 2:10 AM PM

SITE Marble Cliff Quarries Dump

CITY Columbus STATE Ohio

SAMPLE S7

DATE 4/28/88

TIME 2:20 AM PM

SITE Marble Cliff Quarries Dump

CITY Columbus STATE Ohio

SAMPLE S8 - BACKGROUND

DATE 4/28/88

TIME 3:15 AM PM

SITE Marble Cliff Quarries Dump

CITY Columbus STATE OHIO

SAMPLE RW1

DATE 4/27/88

TIME 15:15 AM PM

SITE Marble Cliff Quarries Dump

CITY Columbus STATE Ohio

SAMPLE RW2

DATE 4/27/88

TIME 1530 AM PM

SITE Marble Cliff Quarries Dump

CITY Columbus STATE Ohio

SAMPLE RW3

DATE 4/27/88

TIME 4:10 AM PM

...ABORATORY PROGRAM
...E
...VA 22313

CASE NO: 9469

SAS NO: (IF APPLICABLE)

SOILS

...RGANIC TRAFFIC REPORT

(FOR CLP USE ONLY)

TYPE ... ①
SUPERFUND—FA ... ER
NPLD O&M OTHER ____
NON-SUPERFUND—____ PROGRAM

SITE NAME: Marble Cliff Quarry Dump
CITY, STATE: Columbus, OH
SITE SPILL ID: ____

REGION NO: V
SAMPLING COMPANY ②: FIT
SAMPLER: (NAME) Philip A. Smith

SHIP TO: ③
IT Analytical Services
5815 Middlebrook Pike
Knoxville, TN 37921
ATTN: Paula Rogers

SAMPLING DATE: ④
BEGIN: 4/28/88 END: 4/28/88

DATE SHIPPED: 4/28/88 CARRIER: F ⑤
AIRBILL NO: 7844394972

SAMPLE DESCRIPTION ⑥
(ENTER IN BOX A)
1. SURFACE WATER
2. GROUND WATER
3. LEACHATE
4. SOIL
5. SEDIMENT
6. OIL (SAS)
7. WASTE (SAS)

TRIPLE VOLUME REQUIRED FOR MATRIX SPIKE/DUPLICATE AQUEOUS SAMPLE

SHIP MEDIUM AND HIGH CONCENTRATION SAMPLES IN PAINT CANS

SEE REVERSE FOR ADDITIONAL INSTRUCTIONS

CLP SAMPLE NUMBER (FROM LABELS)	Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7	Ⓑ CONCENTRATION L = LOW/MED. H = HIGH (SAS)	Ⓒ RAS ANALYSIS: VOLATILE	BASE/NEUT /ACID	PESTICIDE /PCB's		Ⓓ SPECIAL HANDLING	Ⓔ STATION LOCATION
EX014	4	L	✓	✓	✓			SOIL 1
EX015	4	L	✓	✓	✓			SOIL 2
EX016	4	L	✓	✓	✓			SOIL 3
EX017	4	L	✓	✓	✓			SOIL 4
EX018	4	L	✓	✓	✓			SOIL 5
EX019	4	L	✓	✓	✓			SOIL 6
EX020	4	L	✓	✓	✓			SOIL 7
EX021	4	L	✓	✓	✓			SOIL 8

EPA Form 2075-7 (8-87)

WHITE — SMO COPY PINK — CLIENT COPY WHITE — LAB COPY FOR RETURN TO SMO YELLOW — LAB COPY

USEPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 ALEXANDRIA, VA 22313
703/557-2490 FTS-557-2490

CASE NO: 9469

SAS NO: (IF APPLICABLE)

INORGANIC TRAFFIC REPORT

(FOR CLP USE ONLY)

TYPE OF ACTIVITY (CIRCLE ONE) ①
SUPERFUND—PA SI ESI RIFS RD RA ER
NPLD O&M OTHER _____
NON-SUPERFUND—_____ PROGRAM

SITE NAME: Marble Cliff Quarry Dump
CITY, STATE: Columbus, OH
SITE SPILL ID: _____

REGION NO: V
SAMPLING COMPANY ②: FIT
SAMPLER: (NAME) Philip A. Smith

SHIP TO: ③
Keystone Environ. Resources
3911 Fondren Suite 100
Houston, Tx 77063
ATTN: Mary Cruz

SAMPLING DATE: ④
BEGIN: 4/28/88 END: 4/28/88

DATE SHIPPED: 4/28/88 CARRIER: F ⑤
AIRBILL NO: 7844394983

SAMPLE DESCRIPTION ⑥
(ENTER IN BOX A)
1. SURFACE WATER
2. GROUND WATER
3. LEACHATE
4. SOIL
5. SEDIMENT
6. OIL (SAS)
7. WASTE (SAS)

DOUBLE VOLUME REQUIRED FOR MATRIX SPIKE/DUPLICATE AQUEOUS SAMPLE

SHIP MEDIUM AND HIGH CONCENTRATION SAMPLES IN PAINT CANS

SEE REVERSE FOR ADDITIONAL INSTRUCTIONS

CLP SAMPLE NUMBER (FROM LABELS)	Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7	Ⓑ CONCENTRATION L = LOW M = MED H = HIGH (SAS)	Ⓒ RAS ANALYSIS: TOTAL METALS	CYANIDE	DISSOLVED METALS	HIGH ONLY (SAS): SULFIDE	pH	CONDUCTIVITY	OXIDANTS	Ⓓ SPECIAL HANDLING	Ⓔ STATION LOCATION
MEX218	4	L	✓	✓							Soil 1
MEX219	4	L	✓	✓							Soil 2
MEX220	4	L	✓	✓							Soil 3
MEX221	4	L	✓	✓							Soil 4
MEX222	4	L	✓	✓							Soil 5
MEX223	4	L	✓	✓							Soil 6
MEX224	4	L	✓	✓							Soil 7
MEX225	4	L	✓	✓							Soil 8

EPA Form 2075-6 (8-87)

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ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: F05-8710-062
PROJECT NAME: FOH0027 Case: 9469
SAMPLERS: (Signature) P.A. Smith

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	8 oz extractables	120 ml VOA	16 oz extractables				REMARKS: OTR	ITR	LOW CONC. MATRIX
S1	4/28/88	1240		✓	Soil 1	3	1	2					EX014	MEX218	Soil
S2	4/28/88	1325		✓	Soil 2	3	1	2					EX015	MEX219	Soil
S3	4/28/88	1320		✓	Soil 3	3	1	2					EX016	MEX220	Soil
S4	4/28/88	1340		✓	Soil 4	3	1	2					EX017	MEX221	Soil
S5	4/28/88	1425		✓	Soil 5	3	1	2					EX018	MEX222	Soil
S6	4/28/88	1410		✓	Soil 6	3	1	2					EX019	MEX223	Soil
S7	4/28/88	1470		✓	Soil 7	3	~~1~~ BS	2	1				EX020	MEX224	Soil
S8	4/28/88	1515		✓	Soil 8	3	~~1~~ BS	2	1				EX021	MEX225	Soil

lot #
8 oz 65283042 (S1 → S6)
120 ml D8084094 (S1 → S8)
16 oz 7773242 (S7 → S8)

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
P.A. Smith	4/28/88 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Shipped Fedex to IT Analyt. Serv. AIRBILL 7844394972 CUSTODY SEALS 10796, 10797	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

Shipment complete

5-13163

Cooler # 87-513

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: F05-8710-062
PROJECT NAME: FOH0027 Case 9469
SAMPLERS (Signature): P.A. Smal

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	8 oz metals/CN-	16 oz metals/CN-					REMARKS ITR	OTR	Low Conc. Matrix
S1	4/28/88	1240		✓	Soil 1	1	1						MEX218	EX014	SOIL
S2	4/28/88	1325		✓	Soil 2	1	1						MEX219	EX015	SOIL
S3	4/28/88	1320		✓	Soil 3	1	1						MEX220	EX016	SOIL
S4	4/28/88	1340		✓	Soil 4	1	1						MEX221	EX017	SOIL
S5	4/28/88	1425		✓	Soil 5	1	1						MEX222	EX018	SOIL
S6	4/28/88	1410		✓	Soil 6	1	1						MEX223	EX019	SOIL
S7	4/28/88	1420		✓	Soil 7	1	~~1~~ PB	1					MEX224	EX020	SOIL
S8	4/28/88	1515		✓	Soil 8	1	~~1~~ PB	1					MEX225	EX021	SOIL

lot #
~~8oz~~ PB
(120 ml D8084094) VOA
8oz 65283042 (S1 → S6)
16oz 7273242 (S7 → S8)

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
P.A. Smal	4/28/88 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Shipped Fedex to: Keystone Env. Res. AIRBILL 7844394983 CUSTODY SEALS 10798, 10799	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

Shipment complete

5-13164

WATERS

TORY PROGRAM
CE
VA 22313
0

CASE NO: 9469

SAS NO: 3758E
(IF APPLICABLE)

RGANIC TRAFFIC REPORT
(FOR CLP USE ONLY)

TYPE ①
SUPERFUND—PA SI ESI RIFS RD RA ER
NPLD O&M OTHER
NON-SUPERFUND— PROGRAM

SITE NAME: Marble Cliff Quarries Dump
CITY, STATE: Columbus OH
SITE SPILL ID:

REGION NO: V
SAMPLING COMPANY ②: FIT
SAMPLER: (NAME) Philip A. Smith

SHIP TO: ③
Enseco/Cal. Analytical Labs
2544 Industrial Blvd.
W. Sacramento, CA 95691
ATTN: Karin Yee

SAMPLING DATE: ④
BEGIN: 4/27/88 END: 4/27/88
DATE SHIPPED: 4/27/88 CARRIER: F ⑤
AIRBILL NO: 7844394950

SAMPLE DESCRIPTION ⑥
(ENTER IN BOX A)
1. SURFACE WATER
2. GROUND WATER
3. LEACHATE
4. SOIL
5. SEDIMENT
6. OIL (SAS)
7. WASTE (SAS)

TRIPLE VOLUME REQUIRED FOR MATRIX SPIKE/DUPLICATE AQUEOUS SAMPLE

SHIP MEDIUM AND HIGH CONCENTRATION SAMPLES IN PAINT CANS

SEE REVERSE FOR ADDITIONAL INSTRUCTIONS

CLP SAMPLE NUMBER (FROM LABELS)	Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7	Ⓑ CONCENTRATION L = LOW/MED. H = HIGH (SAS)	Ⓒ RAS ANALYSIS: VOLATILE	BASE/NEUT /ACID	PESTICIDE /PCB's		Ⓓ SPECIAL HANDLING	Ⓔ STATION LOCATION
EX022	2	L	✓	✓	✓		MSD	RW1
EX023	2	L	✓	✓	✓			RW2
EX024	2	L	✓	✓	✓			Duplicate
EX025	2	L	✓	✓	✓			RW3
EX026	2	L	✓	✓	✓		Blank	Blank

EPA Form 2075-7 (8-87)

WHITE — SMO COPY PINK — CLIENT COPY WHITE — LAB COPY FOR RETURN TO SMO YELLOW — LAB COPY

USEPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 ALEXANDRIA, VA 22313
703/557-2490 FTS-557-2490

CASE NO: 9469

SAS NO: 3554 E
(IF APPLICABLE)

INORGANIC TRAFFIC REPORT

(FOR CLP USE ONLY)

TYPE OF ACTIVITY (CIRCLE ONE) ①
SUPERFUND—PA (SI) ESI RIFS RD RA ER
NPLD O&M OTHER _____
NON-SUPERFUND—_____ PROGRAM

SITE NAME: Marble Cliff Quarries Dump

CITY, STATE: Columbus OH

SITE SPILL ID: _____

REGION NO: V

SAMPLING COMPANY ②: FIT

SAMPLER: (NAME) Philip A. Smith

SHIP TO: ③
Chemtech Consulting Grp.
360 W. 11TH St.
New York, NY 10014

ATTN: David Williams

SAMPLING DATE: ④

BEGIN: 4/27/88 END: 4/27/88

DATE SHIPPED: 4/27/88 CARRIER: F ⑤

AIRBILL NO: 7844394961

SAMPLE DESCRIPTION ⑥
(ENTER IN BOX A)
1. SURFACE WATER
2. GROUND WATER
3. LEACHATE
4. SOIL
5. SEDIMENT
6. OIL (SAS)
7. WASTE (SAS)

DOUBLE VOLUME REQUIRED FOR MATRIX SPIKE/DUPLICATE AQUEOUS SAMPLE

SHIP MEDIUM AND HIGH CONCENTRATION SAMPLES IN PAINT CANS

SEE REVERSE FOR ADDITIONAL INSTRUCTIONS

CLP SAMPLE NUMBER (FROM LABELS)	Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7	Ⓑ CONCENTRATION L = LOW M = MED H = HIGH (SAS)	Ⓒ RAS ANALYSIS: TOTAL METALS	CYANIDE	DISSOLVED METALS	HIGH ONLY (SAS): SULFIDE	pH	CONDUCTIVITY	OXIDANTS	Ⓓ SPECIAL HANDLING	Ⓔ STATION LOCATION
MEX226	2	L	✓	✓	X						RW1
MEX227	2	L	✓	✓							RW2
MEX228	2	L	✓	✓							Duplicate
MEX229	2	L	✓	✓							RW3
MEX230	2	L	✓	✓						BLANK	BLANK

EPA Form 2075-6 (8-87)

WHITE — SMO COPY PINK — CLIENT COPY WHITE — LAB COPY FOR RETURN TO SMO YELLOW — LAB COPY

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: F5-8110-062
PROJECT NAME: FOH0027 Case 9-169 SAS 3758E
SAMPLERS: (Signature) P.A. Smith

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1-liter extractables	40 ml					REMARKS OTR	ITR	LOW CONC. MATRIX
RW1	4/27/88	1515		✓	RW1-MSD	10	6	4					EX022	MEX226	Water
RW2	4/27/88	1530		✓	RW2	5	3	2					EX023	MEX227	Water
DUP	4/27/88	1530		✓	DUPLICATE	5	3	2					EX024	MEX228	Water
													Lot #		
													1l amber (all)	40 ml VOA (all)	
													H8088084	B7274071	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
P.A. Smith	4/27/88 1900				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Shipped Fedex to: Enseco/CAL Airbill 7844394950 Custody Seals 10800, 10801	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

Shipment is Complete

5 121CF

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO. F5-8710-062
PROJECT NAME FOH0027 Case 9469 SHS 3758E
SAMPLERS: (Signature) P.A. Smid

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 l extractables	40 ml					REMARKS OTR	ITR	LOW CONC. MATRIX
RW3	4/27/88	1610		✓	RW3	5	3	2					EX025	MEX229	Water
BLK	4/27/88	1415		✓	Blank	5	3	2					EX026	MEX230	Water
													Lot #		
													1 l. amber (all)		40 ml VOA (all)
													H8015034		B7274071

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
P.A. Smid	4/27/88 1900				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time		

Remarks Shipped Fedex to Enseco/CAL
AIRBILL 7844394950
Custody Seals 10804, 10805

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

Shipment is Complete

5-13166

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO. F5-8710-062
PROJECT NAME FOH0027 Case 9469 SAS 3554E
SAMPLERS: (Signature) P.A. Smith

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 l metals (HNO3)	1 l CN- (NaOH)					REMARKS ITR	OTR	LOW CONC. MATRIX
RW1	4/27/88	1515		✓	RW1	2	1	1					MEX226	EX022	Water
RW2	4/27/88	1530		✓	RW2	2	1	1					MEX227	EX023	Water
DUP	4/27/88	1530		✓	Duplicate	2	1	1					MEX228	EX024	Water
RW3	4/27/88	1610		✓	RW3	2	1	1					MEX229	EX025	Water
BLK	4/27/88	1415		✓	Blank	2	1	1					MEX230	EX026	Water
	A/M														
													Lot # 1 l plastic (all) C8048034		

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
P.A. Smith	4/27/88 1900				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Shipped Fedex to Chemtech AIRBILL 784439496 1 Custody Seals 10802, 10803	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

Shipment is Complete

5-13167

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

Recd 6/15/88

DATE: 6/13/88

SUBJECT: Review of Region V CLP Data
Received for Review on 6-6-88

FROM. Curtis Ross, Director (5SCRL)
Central Regional Laboratory Jay Thapper

TO: Data User: FIT

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

SITE NAME: Marble Cliff Quarries Dump (OH) SMO Case No. 9469

EPA Data Set No. SF 5134 No. of Samples: 8 D.U./Activity Numbers Y905/C72122

CRL No. 88FK20514 - 521

SMO Traffic No. MEX218 - 225

CLP Laboratory: KEYSTONE Hrs. Required for Review: 10

Following are our findings:

This review covers analysis of eight low soils for total metals and CN. Hg data is questionable for exceeding the twenty-six day holding time from receipt until samples were prepared for analysis. Data is flagged as estimated for exceeding spike recovery range for Sb (50%), Cu (40%), Se (70%), Ag (68%), Tl (60%) and Zn (129%). All of these poorly spiked analytes, except Cu and Zn, had no detection in the spiked sample, indicating low biased spiking reagent. Also flagged as estimated for exceeding RPD in duplication are Al, Ca, Cu, Fe, and Ni. Cd & Cr are also flagged for duplication, since the samples are less than 5xs the Cr CRDL, they should agree with the duplicate by less than CRDL, but that difference was exceeded. The RPD for Mn and Zn is less than the allowable ± 35% for soils, so they are acceptable. Pb is also acceptable when correct duplicate value by MSA is entered. CLP listed a value requiring MSA on the duplicate. As couldn't obtain correlation factors of ≥ 0.995 for MEX220, 223 + 225. CN was run one sample per ICV to avoid error of a creeping sample MEX221. Data is satisfactory.

( ) Data are acceptable for use.
(X) Data are acceptable for use with qualifications referenced above.
See Data Qualifier sheets and Calibration Outlier forms for flags and additional comments.
( ) Data are preliminary - pending verification by Contractor Laboratory.
See Case Summary above.
( ) Data are unacceptable.

6-13-88
DMM

NOTE: The qualifier "*" does not affect the data for lead analysis.
M. Dyer

cc: Carla Dempsey, CLP Quality Assurance Officer, Analytical Operations Branch
James Petty, Chief Quality Assurance Research, EMSL, Las Vegas

EPA FORM 1320-6 (REV 3-76)

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEX218

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

Matrix (soil/water): SOIL Lab Sample ID: 880417302

Level (low/med): LOW Date Received: 04/29/88

% Solids: 80.6 Keystone D.C.# 9469-05-05

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	4700.00		*	P	J
7440-36-0	Antimony	8.80	U	N	P	UJ
7440-38-2	Arsenic	11.90			F	
7440-39-3	Barium	116.00			P	
7440-41-7	Beryllium	0.45	U		P	
7440-43-9	Cadmium	0.77	U	*	P	J
7440-70-2	Calcium	178000.00		*	P	J
7440-47-3	Chromium	10.50		*	P	J
7440-48-4	Cobalt	7.70	B		P	
7440-50-8	Copper	86.60		N*E	P	J
7439-89-6	Iron	14100.00		*	P	J
7439-92-1	Lead	20.90		S*	F	
7439-95-4	Magnesium	18300.00			P	
7439-96-5	Manganese	427.00		*	P	
7439-97-6	Mercury	0.12	U		CV	
7439-02-0	Nickel	15.80		*	P	J
7440-09-7	Potassium	370.00	U		P	
7782-49-2	Selenium	0.99	U	WN	F	UJ
7440-22-4	Silver	1.40	U	N	P	UJ
7440-23-5	Sodium	115.00	B		P	
7440-28-0	Thallium	0.74	U	WN	F	UJ
7440-62-2	Vanadium	19.20			P	
7440-66-6	Zinc	82.10		N*	P	J
	Cyanide	0.62	U		AS	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:

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Keystone D.C.# 9469-05-05

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEX219

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

Matrix (soil/water): SOIL Lab Sample ID: 880417305

Level (low/med): LOW Date Received: 04/29/88

% Solids: 88.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	8040.00		*	P	J
7440-36-0	Antimony	8.10	U	N	P	UJ
7440-38-2	Arsenic	8.90	B	S	F	
7440-39-3	Barium	105.00			P	
7440-41-7	Beryllium	0.77	B		P	
7440-43-9	Cadmium	0.70	U	*	P	J
7440-70-2	Calcium	70400.00		*	P	J
7440-47-3	Chromium	30.20		*	P	J
7440-48-4	Cobalt	11.60			P	
7440-50-8	Copper	20.40		N*E	P	J
7439-89-6	Iron	20400.00		*	P	J
7439-92-1	Lead	198.00		*	F	
7439-95-4	Magnesium	23600.00			P	
7439-96-5	Manganese	345.00		*	P	
7439-97-6	Mercury	0.11	U		CV	
7439-02-0	Nickel	23.30		*	P	J
7440-09-7	Potassium	982.00	B		P	
7782-49-2	Selenium	0.91	U	N	F	UJ
7440-22-4	Silver	1.30	U	N	P	UJ
7440-23-5	Sodium	91.40	B		P	
7440-28-0	Thallium	0.68	U	WN	F	UJ
7440-62-2	Vanadium	28.20			P	
7440-66-6	Zinc	105.00		N*	P	J
	Cyanide	0.57	U		AS	

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: LT.YELLOW Clarity After: Artifacts: YES

Comments:
ROCKS IN SAMPLE.

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEX220

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

Matrix (soil/water): SOIL Lab Sample ID: 880417306

Level (low/med): LOW Date Received: 04/29/88

% Solids: 78.2 Keystone D.C.# 9469-05-05

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	1240.00		*	P	J
7440-36-0	Antimony	9.10	U	N	P	UJ
7440-38-2	Arsenic	2.30	B	+	F	
7440-39-3	Barium	630.00			P	
7440-41-7	Beryllium	0.46	U		P	
7440-43-9	Cadmium	0.79	U	*	P	J
7440-70-2	Calcium	284000.00		*	P	J
7440-47-3	Chromium	6.60		*	P	J
7440-48-4	Cobalt	3.40	U		P	
7440-50-8	Copper	6.20	B	N*E	P	J
7439-89-6	Iron	2710.00		*	P	J
7439-92-1	Lead	2.70		S*	F	
7439-95-4	Magnesium	77700.00			P	
7439-96-5	Manganese	91.00		*	P	
7439-97-6	Mercury	0.13	U		CV	
7439-02-0	Nickel	8.80	U	*	P	J
7440-09-7	Potassium	381.00	U		P	
7782-49-2	Selenium	1.00	U	WN	F	UJ
7440-22-4	Silver	1.40	U	N	P	UJ
7440-23-5	Sodium	113.00	B		P	
7440-28-0	Thallium	3.80	U	WN	F	UJ
7440-62-2	Vanadium	9.00	B		P	
7440-66-6	Zinc	55.10		N*	P	J
	Cyanide	0.64	U		AS	

Color Before: DK. BROWN Clarity Before: Texture: SAND

Color After: COLORLESS Clarity After: Artifacts: YES

Comments:
ROOTS IN SAMPLE.

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEX221

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

Matrix (soil/water): SOIL Lab Sample ID: 880417307

Level (low/med): LOW Date Received: 04/29/88

% Solids: 86.4 Keystone D.C.# 9469-05-05

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	1160.00		*	P	J
7440-36-0	Antimony	8.20	U	N	P	UJ
7440-38-2	Arsenic	3.80			F	
7440-39-3	Barium	494.00			P	
7440-41-7	Beryllium	0.42	U		P	
7440-43-9	Cadmium	0.72	U	*	P	J
7440-70-2	Calcium	245000.00		*	P	J
7440-47-3	Chromium	8.20		*	P	J
7440-48-4	Cobalt	3.10	U		P	
7440-50-8	Copper	14.30		N*E	P	J
7439-89-6	Iron	3720.00		*	P	J
7439-92-1	Lead	3.50		S*	F	
7439-95-4	Magnesium	67300.00			P	
7439-96-5	Manganese	156.00		*	P	
7439-97-6	Mercury	0.12	U		CV	
7439-02-0	Nickel	12.80		*	P	J
7440-09-7	Potassium	345.00	U		P	
7782-49-2	Selenium	0.93	U	WN	F	UJ
7440-22-4	Silver	1.30	U	N	P	UJ
7440-23-5	Sodium	123.00	B		P	
7440-28-0	Thallium	3.50	U	WN	F	UJ
7440-62-2	Vanadium	9.40	B		P	
7440-66-6	Zinc	50.30		N*	P	J
	Cyanide	0.58	U		AS	

Color Before: LT.BROWN Clarity Before: Texture: FINE

Color After: COLORLESS Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEX222

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

Matrix (soil/water): SOIL Lab Sample ID: 880417308

Level (low/med): LOW Date Received: 04/29/88

% Solids: 80.5 Keystone D.C.# 9469-05-05

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	859.00		*	P	J
7440-36-0	Antimony	8.80	U	N	P	UJ
7440-38-2	Arsenic	1.50	B		F	
7440-39-3	Barium	233.00			P	
7440-41-7	Beryllium	0.45	U		P	
7440-43-9	Cadmium	0.77	U	*	P	J
7440-70-2	Calcium	259000.00		*	P	J
7440-47-3	Chromium	6.10		*	P	J
7440-48-4	Cobalt	3.30	U		P	
7440-50-8	Copper	1.20	U	N*E	P	J
7439-89-6	Iron	2330.00		*	P	J
7439-92-1	Lead	1.40		S*	F	
7439-95-4	Magnesium	74400.00			P	
7439-96-5	Manganese	98.20		*	P	
7439-97-6	Mercury	0.12	U		CV	
7439-02-0	Nickel	10.30		*	P	J
7440-09-7	Potassium	370.00	U		P	
7782-49-2	Selenium	0.99	U	WN	F	UJ
7440-22-4	Silver	1.40	U	N	P	UJ
7440-23-5	Sodium	94.10	B		P	
7440-28-0	Thallium	0.75	U	WN	F	UJ
7440-62-2	Vanadium	8.10	B		P	
7440-66-6	Zinc	45.10		N*	P	J
	Cyanide	0.62	U		AS	

Color Before: LT.BROWN Clarity Before: Texture: FINE

Color After: COLORLESS Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEX223

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

Matrix (soil/water): SOIL Lab Sample ID: 880417309

Level (low/med): LOW Date Received: 04/29/88

% Solids: 88.6 Keystone D.C.# 9469-05-05

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	9510.00		*	P	J
7440-36-0	Antimony	8.00	U	N	P	UJ
7440-38-2	Arsenic	16.40		+	F	
7440-39-3	Barium	303.00			P	
7440-41-7	Beryllium	1.50			P	
7440-43-9	Cadmium	3.50		*	P	J
7440-70-2	Calcium	80600.00		*	P	J
7440-47-3	Chromium	22.90		*	P	J
7440-48-4	Cobalt	33.40			P	
7440-50-8	Copper	118.00		N*E	P	J
7439-89-6	Iron	31700.00		*	P	J
7439-92-1	Lead	36.00		*	F	
7439-95-4	Magnesium	13700.00			P	
7439-96-5	Manganese	1860.00		*	P	
7439-97-6	Mercury	0.14			CV	
7439-02-0	Nickel	65.80		*	P	J
7440-09-7	Potassium	1420.00			P	
7782-49-2	Selenium	0.90	U	N	F	UJ
7440-22-4	Silver	1.20	U	N	P	UJ
7440-23-5	Sodium	150.00	B		P	
7440-28-0	Thallium	0.68	U	N	F	UJ
7440-62-2	Vanadium	36.50			P	
7440-66-6	Zinc	645.00		N*	P	J
	Cyanide	0.56	U		AS	

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEX224

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

Matrix (soil/water): SOIL Lab Sample ID: 880417310

Level (low/med): LOW Date Received: 04/29/88

% Solids: 89.1 Keystone D.C.# 9469-05-05

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	10100.00		*	P	J
7440-36-0	Antimony	8.00	U	N	P	UJ
7440-38-2	Arsenic	8.90		S	F	
7440-39-3	Barium	103.00			P	
7440-41-7	Beryllium	1.10			P	
7440-43-9	Cadmium	0.70	U	*	P	J
7440-70-2	Calcium	78800.00		*	P	J
7440-47-3	Chromium	16.50		*	P	J
7440-48-4	Cobalt	12.50			P	
7440-50-8	Copper	21.20		N*E	P	J
7439-89-6	Iron	29300.00		*	P	J
7439-92-1	Lead	19.00		S*	F	
7439-95-4	Magnesium	22500.00			P	
7439-96-5	Manganese	478.00		*	P	
7439-97-6	Mercury	0.11	U		CV	
7439-02-0	Nickel	37.60		*	P	J
7440-09-7	Potassium	1420.00			P	
7782-49-2	Selenium	0.90	U	WN	F	UJ
7440-22-4	Silver	1.20	U	N	P	UJ
7440-23-5	Sodium	117.00	B		P	
7440-28-0	Thallium	0.67	U	WN	F	UJ
7440-62-2	Vanadium	33.70			P	
7440-66-6	Zinc	130.00		N*	P	J
	Cyanide	0.55	U		AS	

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: LT. YELLOW Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEX225

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

Matrix (soil/water): SOIL Lab Sample ID: 880417311

Level (low/med): LOW Date Received: 04/29/88

% Solids: 72.3 Keystone D.C.# 9469-05-05

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	13600.00		*	P	J
7440-36-0	Antimony	9.80	U	N	P	UJ
7440-38-2	Arsenic	16.30		+	F	
7440-39-3	Barium	175.00			P	
7440-41-7	Beryllium	1.90			P	
7440-43-9	Cadmium	0.86	U	*	P	J
7440-70-2	Calcium	3440.00		*	P	J
7440-47-3	Chromium	17.50		*	P	J
7440-48-4	Cobalt	12.40	B		P	
7440-50-8	Copper	5.90	B	N*E	P	J
7439-89-6	Iron	22800.00		*	P	J
7439-92-1	Lead	26.40		S*	F	
7439-95-4	Magnesium	2650.00			P	
7439-96-5	Manganese	1480.00		*	P	
7439-97-6	Mercury	0.14	U		CV	
7439-02-0	Nickel	26.10		*	P	J
7440-09-7	Potassium	1480.00			P	
7782-49-2	Selenium	1.10	U	N	F	UJ
7440-22-4	Silver	1.50	U	N	P	UJ
7440-23-5	Sodium	74.10	B		P	
7440-28-0	Thallium	0.83	U	N	F	UJ
7440-62-2	Vanadium	38.40			P	
7440-66-6	Zinc	90.60		N*	P	J
	Cyanide	0.69	U		AS	

Color Before: DK. BROWN Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: Artifacts: YES

Comments:
ROOTS IN SAMPLE.

QC EXCEPTION SUMMARY REPORT

CASE # 9469
DATA SET # SF5134
LAB SDG # MEX 218
DATE: 6-13-88

SITE Marble Cliff Quarries
LAB Keystone
REVIEWED BY Dorothy M. May

MATRIX: soil
CONC. : low

WATER SAMPLE SPK.
WATER SAMPLE DUP.
SOIL SAMPLE SPK. MEX 218
SOIL SAMPLE DUP. MEX 218

	OVERALL CASE QC									MATRIX SPECIFIC QC						SAMPLE SPECIFIC QC		FIELD QC			REGIONAL QC			OTHER/ COMMENTS
	Holding Time	Cal Blanks	Mid Calver	Contin Calver	Prep Blk AQ	Prep Blk SOL	ICS %R	ICS % AQ	ICS % SOL	Sol Dup RPD	Sol Spk %R	AQ Dup RPD	AQ Spk %R	Ser Dilu AQ	Ser Dilu SOL	GFAA Dup	GFAA Spike	Blank	Dup RPD	Spike %R	Blind Blank	Blind Spike %R	Spike Sample RPD	
Aluminum										49%														
Antimony											50%													
Arsenic																								
Barium																								
Beryllium																								
Cadmium																								
Calcium										103%														
Chromium										>CRDL														
Cobalt																								
Copper										49%	40.5%				10%									
Iron										49%														
Lead																								
Magnesium																								
Manganese																								
Mercury																								
Nickel										56%														
Potassium																								
Selenium																								
Silver											68%													
Sodium											70%													
Strontium											60%													
Tin																								
Vanadium																								
Zinc											129%													
Cyanide																								

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

SOW No.: 7/87

EPA Sample No.	Lab Sample ID.
MEX218	880417302
MEX218D	880417303
MEX218S	880417304
MEX219	880417305
MEX220	880417306
MEX221	880417307
MEX222	880417308
MEX223	880417309
MEX224	880417310
MEX225	880417311

Were ICP interelement corrections applied? Yes/No Yes

Were ICP background corrections applied? Yes/No Yes
If Yes-were data generated before application of background corrections? Yes/No No

Comments: An ICV for Cyanide was non compliant. Please see explanation in raw data.

Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Lab Manager: Ken H. Grondin

Date: 6/2/88

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3
BLANKS

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: . SDG No.: MEX218

Preparation Blank Matrix (soil/water): SOIL Keystone D.C.# 9469-05-06

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	54.1	U	54.1	U	54.1	U	54.1	U	10.820	U	P
Antimony	35.5	U	35.5	U	35.5	U	35.5	U	7.100	U	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	0.600	U	F
Barium	13.1	U	13.1	U	13.1	U	13.1	U	2.620	U	P
Beryllium	1.8	U	1.8	U	1.8	U	1.8	U	0.520	B	P
Cadmium	3.1	U	3.1	U	3.1	U	3.1	U	0.620	U	P
Calcium	129.0	U	129.0	U	129.0	U	129.0	U	33.380	B	P
Chromium	8.7	U	8.7	U	8.7	U	8.7	U	1.960	B	P
Cobalt	13.4	U	13.4	U	13.4	U	13.4	U	2.680	U	P
Copper	4.7	U	-8.7	B	-22.5	B	-17.5	B	3.520	B	P
Iron	27.0	U	27.0	U	27.0	U	27.0	U	5.600	B	P
Lead	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Magnesium	160.0	U	160.0	U	160.0	U	160.0	U	32.000	U	P
Manganese	3.4	U	3.4	U	3.4	U	3.4	U	0.680	U	P
Mercury	0.2	U	0.2	U	0.2	U			0.100	U	CV
Nickel	34.5	U	34.5	U	34.5	U	34.5	U	6.900	U	P
Potassium	1490.0	U	1490.0	U	1527.4	B	1490.0	U	-354.620	B	P
Selenium	4.0	U	4.0	U	4.0	U	4.0	U	0.800	U	F
Silver	9.1	B	5.5	U	5.5	U	5.5	U	1.100	U	P
Sodium	102.0	U	102.0	U	102.0	U	102.0	U	20.400	U	P
Thallium	6.3	B	3.0	U	3.0	U	3.0	U	0.600	U	F
Vanadium	7.4	U	7.4	U	7.4	U	7.4	U	1.480	U	P
Zinc	10.5	U	10.5	U	10.5	U	10.5	U	2.100	U	P
Cyanide	10.0	U	10.0	U					0.500	U	AS

000023

U.S. EPA - CLP

3
BLANKS

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

Preparation Blank Matrix (soil/water): SOIL Keystone D.C.# 9469-05-06

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic			3.0	U	3.0	U	3.0	U			F
Barium											
Beryllium											
Cadmium											
Calcium	230.0	U	230.0	U	230.0	U			46.000	U	P
Chromium											
Cobalt											
Copper											
Iron											
Lead			2.0	U	2.0	U	2.0	U			F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium			4.0	U							F
Silver											
Sodium											
Thallium			3.0	U							F
Vanadium											
Zinc											
Cyanide	10.0	U	10.0	U					0.500	U	AS

000024

U.S. EPA - CLP

3
BLANKS

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

Preparation Blank Matrix (soil/water): SOIL Keystone D.C.# 9469-05-06

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide	10.0	U	10.0	U					0.500	U	AS

000025

U.S. EPA - CLP

3
BLANKS

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MFX21A

Preparation Blank Matrix (soil/water): SOIL Keystone D.C.# 9469-05-06

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide	10.0	U	10.0	U					0.500	U	AS

000026

U.S. EPA - CLP

3
BLANKS

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

Preparation Blank Matrix (soil/water): SOIL Keystone D.C.# 9469-05-06

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide	10.0	U	10.0	U					0.500	U	AS

000027

U.S. EPA - CLP

3
BLANKS

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

Preparation Blank Matrix (soil/water): SOIL Keystone D.C.# 9469-05-06

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide	10.0	U	10.0	U					0.500	U	AS

000028

U.S. EPA - CLP

3
BLANKS

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

Preparation Blank Matrix (soil/water): SOIL Keystone D.C.# 9469-05-06

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide	10.0	U	10.0	U					0.500	U	AS

000029

U.S. EPA - CLP

3
BLANKS

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

Preparation Blank Matrix (soil/water): SOIL Keystone D.C.# 9469-05-06

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide	10.0	U	10.0	U					0.500	U	AS

000030

Keystone D.C.# 9469-05-06

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.
MEX218S

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

Matrix (soil/water): SOIL Level (low/med): LOW

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	61.7866		8.8089	U	124.1	49.8	N	P
Arsenic	75-125	21.3151		11.9355		9.9	94.5		F
Barium	75-125	671.9355		116.0794		496.3	112.0		P
Beryllium	75-125	14.7146		0.4467	U	12.4	118.6		P
Cadmium	75-125	12.8040		0.7692	U	12.4	103.2		P
Calcium									NR
Chromium	75-125	60.4963		10.4963		49.6	100.8		P
Cobalt	75-125	139.7767		7.7171	B	124.1	106.4		P
Copper	75-125	111.7618		86.6253		62.0	40.5	N	P
Iron									NR
Lead		36.8486		20.9345		5.0	320.7		F
Magnesium									NR
Manganese	75-125	536.5509		427.3698		124.1	88.0		P
Mercury	75-125	0.7134		0.1241	U	0.6	115.0		CV
Nickel	75-125	151.5881		15.7568		124.1	109.5		P
Potassium									NR
Selenium	75-125	1.7370		0.9926	U	2.5	70.0	N	F
Silver	75-125	8.4615		1.3648	U	12.4	68.2	N	P
Sodium									NR
Thallium	75-125	7.4690		0.7444	U	12.4	60.2	N	F
Vanadium	75-125	152.6055		19.2308		124.1	107.5		P
Zinc	75-125	242.2581		82.1092		124.1	129.1	N	P
Cyanide	75-125	5.0980		0.6203	U	6.2	82.2		AS

Comments:

Keystone D.C.# 9469-05-06

U.S. EPA - CLP

5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.
MEX218A

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

Matrix (soil/water): SOIL Level (low/med): LOW

Concentrations Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony		110.40		35.50	U	100.0	110.4		P
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper		1343.30		349.10		1000.0	99.4		P
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc		1568.90		330.90		1000.0	123.8		P
Cyanide									NR

Comments:

Keystone D.C.# 9469-05-06

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.
MEX218D

Lab Name: KEYSTONE ENV.RES./HOUSTON Contract: 68-W8-0005

Lab Code: KEYTX Case No.: 9469 SAS No.: SDG No.: MEX218

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 80.6 % Solids for Duplicate: 80.1

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

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		4703.4492		7735.4097		48.7	*	P
Antimony		8.8089	U	8.8089	U			P
Arsenic	2.5	11.9355		13.0273		8.7		F
Barium	49.6	116.0794		153.6228		27.8		P
Beryllium		0.4467	U	0.8437	B	200.0		P
Cadmium	1.2	0.7692	U	1.4144		200.0	*	P
Calcium		177694.5781		57176.9023		102.6	*	P
Chromium	2.5	10.4963		13.7717		27.0	*	P
Cobalt		7.7171	B	12.3821	B	46.4		P
Copper		86.6253		52.3821		49.3	*	P
Iron		14149.4053		23414.7402		49.3	*	P
Lead		20.9045		20.27 ~~16.6253~~		~~22.9~~ 3.2	*	F
Magnesium		18258.5605		15655.1621		15.4		P
Manganese		427.3698		540.1737		23.3	*	P
Mercury		0.1241	U	0.1241	U			CV
Nickel	9.9	15.7568		28.0397		56.1	*	P
Potassium		369.7271	U	538.2383	B	200.0		P
Selenium		0.9926	U	0.9926	U			F
Silver		1.3648	U	1.3648	U			P
Sodium		114.7395	B	77.8660	B	38.3		P
Thallium		0.7444	U	0.7444	U			F
Vanadium	12.4	19.2308		27.7419		36.2		P
Zinc		82.1092		108.0397		27.3	*	P
Cyanide		0.6203	U	0.6203	U			AS

SAMPLE DATES: 4/27-28/88
LOG IN DATE: 5/18/88
DUE DATE: 7/7/88

CENTRAL REGIONAL LABORATORY SAMPLE DATA REPORT
ORGANICS/INORGANICS

MAY 6 1988

SUPERFUND 5134

THIS FORM IS TO BE USED FOR SAMPLES SENT TO CONTRACT ONLY

CASE NUMBER/SAS No. 9469 SITE NAME Marble Cliff Quarries Dump LABORATORY ITSTU/Keystone DATE SHIPPED 4/28/88

SUPERFUND DU NUMBER 9905 EPA RPM or OSC (S.M.S.)/(CES) _____ CERCLIS NUMBER OHD980510226 PAGE 2 OF 2

ACTIVITY NUMBER C72100

CRL LOG NUMBER	ORGANIC TRAFFIC REPORT NUMBER or SAS Packing List No.	INORGANIC TRAFFIC REPORT NUMBER	WATER OR LIQUIDS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN UG/L TOX17574	VOLATILE ORGANIC ANALYSIS ORGANIC SCAN UG/L TOX17564	WATER POLYCHLORINATED BIPHENYLS UG/L PES 17144	WATER CHLORINATED PESTICIDES UG/L PES17134	TOTAL METALS IN WATER UG/L MET111	WATER CYANIDE UG/L MIN74919	NITRATE/NITRITE MG/L MIN7284	AMMONIA MG/L MIN7294	RESIDUE, FILTERABLE TDS MG/L MIN7362	RESIDUE, NON-FILT TSS MG/L MIN7372			SEDIMENTS or SOILS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN MG/KG TOX215722	VOLATILE ORGANIC ANALYSIS ORGANIC SCAN MG/KG TOX215622	SEDIMENTS POLYCHLORINATED BIPHENYLS MG/KG PES211422	SEDIMENT CHLORINATED PESTICIDES MG/KG 211322	TOTAL METALS MG/KG MET413	CYANIDE MG/KG MIN44930	EP TOXICITY METALS MG/KG	AMMONIA MG/KG MIN42925				
88FK20S14	EX014	MEX218	✓	✓	•										✓	✓	✓	✓	✓	✓						
88FK20S15	EX015	MEX219	✓	✓	•										✓	✓	✓	✓	✓	✓						
88FK20S16	EX016	MEX220	✓	✓	•										✓	✓	✓	✓	✓	✓						
88FK20S17	EX017	MEX221	✓	✓	•										✓	✓	✓	✓	✓	✓						
88FK20S18	EX018	MEX222	✓	✓	•										✓	✓	✓	✓	✓	✓						
88FK20S19	EX019	MEX223	✓	✓	•										✓	✓	✓	✓	✓	✓						
88FK20S20	EX020	MEX224	✓	✓	•										✓	✓	✓	✓	✓	✓						
88FK20S21	EX021	MEX225	✓	✓	•										✓	✓	✓	✓	✓	✓						
			CC	TK	data																					

APPENDIX F

WELL LOGS OF THE AREA OF THE SITE

ecology and environment, inc.

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

International Specialists in the Environment

CRL Receipt Date 5/23 FIT Receipt Date 6/13 Review Completed 6/13/88

TO: Jeryl Kolb

FROM: Zena Gold-Kaufman

SUBJECT: Marble Cliff Quarries

PAN: OH0027 SA (1 hour charged for review) Case # 9469/3758E

Sample Description

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

Project Data Status

Completed!!

Incomplete, awaiting low soil organics, inorganics

FIT Data Review Findings:

$MeCl_2$, Toluene detected in samples.

Check Data Sheets for Transcription Errors

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

Book No. 8 Page No. 48 Date Sampled 4/28

0759:2

recycled paper

... QA/QC IS PROVIDED IN THE ATTACHED DATA SHEETS.

REPORTING UNITS

A. Organics

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - ug/kg or ppb (parts per billion)

B. Metals

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - mg/kg or ppm (parts per million)

File Review

Tuesday 9:30 OK

05-RIN 1673-9826

DEFINITION OF FOOTNOTES TO ANALYTICAL DATA

A. Organics

OOTNOTE	DEFINITION
U	Indicates compound was analyzed for but not detected.
J	Indicates an estimated value.
UJ	Quantitation limit is estimated due to a Quality Control protocol.
C	This flag applies to pesticide results where the identif tion has been confirmed by GC/MS. Single component pest >10 ng/ul in the final extract shall be confirmed by GC/
B	This flag is used when the analyte is found in the assoc blank as well as in the sample. It indicates possible/ probable blank contamination and warns the data user to appropriate action.
E	This flag identifies compounds whose concentrations exce calibration range of the GC/MS instrument for that speci analysis. This flag will not apply to pesticides/PCBs a by GC/EC methods.
D	This flag identifies all compounds identified in an anal at a secondary dilution factor.
A	This flag indicates that a TIC is a suspected aldol-condensation product.
R	Results are unusable due to a major violation of QC prot

B. Metals

OTNOTE	DEFINITION	INTERPRETATION
? NEW		
E	Estimated or not reported due to inteference. See laboratory narrative.	Compound or element was not detected or value may be semi-quantitative.
S	Analysis by Method of Standard Additions.	Value may be quantitative.
N	Spike recoveries outside QC protocols which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative.	Value may be quantitative or semi-quantitative.
*	Duplicate value outside QC protocols which indicates a possible matrix problem.	Value may be semi-quantitative.
+	Correlation coefficient for standard additions in less than 0.995. See review and laboratory narrative.	Data value may be biased.
B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
	DL is estimated because of a QC protocol. DL is possibly above or below CRDL.	Compound or element was not detected.
	Value is above CRDL and is an estimated value because of a QC Protocol.	Value may be semi-quantitative.
U	Compound was analyzed for but not detected.	Compound was not detected.
M	Duplicate injection precision not met.	Value may be semi-quantitative.
W	Post digestion spike for furnance AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance.	Value may be semi-quantitative.

C. Other Symbols Used

NA Value not available due to insufficient data.
NR Value not calculated since chemical is not a carcinogen.
( ) Estimated value.

6/13/88

40 pages

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 6/9/88

SUBJECT: Review of Region V CLP Data
Received for Review on 5-23-88

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

TO: Data User: Fit

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

SITE NAME: Marble Cliff Quarries Dump (OH) SMO Case No. 9469SAS3758E

EPA Data Set No. SF5134 No. of Samples: 5 D.U./Activity Numbers Y905/C72122

CRL No. 88FK20 S22-S24, D23, R01

SMO Traffic No. EX022-026

CLP Laboratory: CAL Hrs. Required for Review: 4

Following are our findings:

This review covers 5 low water sample analyzed for fully organics. Qualifiers are included on the following pages of the review narrative

Nidia Feliciano
6/9/88

(✓) Data are acceptable for use.
( ) Data are acceptable for use with qualifications referenced above. See Data Qualifier sheets and Calibration Outlier forms for flags and additional comments.
( ) Data are preliminary - pending verification by Contractor Laboratory. See Case Summary above.
( ) Data are unacceptable.

cc: Carla Dempsey, CLP Quality Assurance Officer, Analytical Operations Branch
James Petty, Chief Quality Assurance Research, EMSL, Las Vegas

PAGE ___ OF ___

DATA QUALIFIERS

Contractor: Cal

Case 94695A53758E

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

Sample holding time:
All sample but sample holding criteria.

GC/MS Tuning and GC Instrument performance:
All ions meet ions abundance criteria. All samples run within 12 hours.
All linearity check and calibration for the GC is acceptable.

Calibration:
2-Butanone shows a RF below .05 for the volatile fraction. Benzyl alcohol % RSD greater than 25% for semi-volatile calibration. In both cases volatile and semi-volatile consider any positive as estimated (J). This situation does not affect the data. See calibration outlier forms. Calibration for Acrolein and Acrylonitrile is acceptable.

Blank.
Slightly contamination of acetone were noted, below the CRDL. Any positive ten times less the blank level, have been flagged as undetected (U). Bis(2-Ethylhexyl) phthalate was noted for ABN, positive have been flagged undetected (U) if concentration were ten time less blank level. No pesticides found

Reviewed by: Nidia Feliciano
Phone: 353-0651
Date: 6/9/88

PAGE ___ OF ___

DATA QUALIFIERS

Contractor: Cal

Case 9469 SA53758E

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

Surrogates recoveries:
Acceptable, within Q.C. limits for VOA and BEN. For sample EX026 - pesticide had no surrogate recovery, appears that surrogate was not added and because all the sample was used during the analysis, it was not possible to re-analyze. Surrogate recovery was acceptable for rest of sample and Q.C.

Matrix Spike/MSD:
Acceptable for all samples.

Reviewed by: Nilia Feliciano
Phone: 353-0651
Date: 6/9/88

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

CASE/SAS # 9469SA53758E CONTRACTOR Cal

Instrument # F-9	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	4/22/88 13:37			4/29/88 9:06											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane															
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride															
Acetone															
Carbon Disulfide															
1,1-Dichloroethane															
1,1-Dichloroethene															
Trans-1,2-Dichloroethene															
Chloroform															
2-Butanone	.015		F/J												
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:

EY022
EY022MS
EY022MSD
EY023
EY024
EY025
EY026

Reviewer's Initials/Date: M.F. 6/8/88

* 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 # 94695A53758E CONTRACTOR Cal

Instrument # F-10	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	5/9/88 9:50			5/10/88 8:02											
	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															
1,2-Dichlorobenzene															
2-Methylphenol															
bis(2-chloroisopropyl)Ether															
4-Methylphenol															
N-Nitroso-Di-n-Propylamine															
Hexachloroethane															
Nitrobenzene															
Isophorone															
2-Nitrophenol															
2,4-Dimethylphenol															
Benzoic Acid															
bis(2-Chloroethoxy)Methane															
2,4-Dichlorophenol															
1,2,4-Trichlorobenzene															
Naphthalene															
4-Chloroaniline															
Hexachlorobutadiene															
4-Chloro-3-Methylphenol															
2-Methylnaphthalene															
Hexachlorocyclopentadiene															
2,4,6-Trichlorophenol															
2,4,5-Trichlorophenol															
2-Chloronaphthalene															
2-Nitroaniline															
Dimethyl Phthalate															
Acenaphthylene															
3-Nitroaniline						--	-	—	-						
Acenaphthene															
2,4-Dinitrophenol															
4-Nitrophenol															
Dibenzofuran															

AFFECTED SAMPLES:

MB
EX022
EX022 MS
EX022 MSD
EX023
EX024
EX025
EX026

Reviewer Initials/Date: M.T. 6/8/88

* 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 # 24695A-3758E CONTRACTOR Cal

Instrument # F-10	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	5/9/88 9:50														
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
2,4-Dinitrotoluene															
2,6-Dinitrotoluene															
Diethylphthalate															
4-Chlorophenyl-phenylether															
Fluorene															
4-Nitroaniline															
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															
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: M.F. 6/8/88

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

CASE/SAS # 94695A53158E CONTRACTOR Cal

Instrument # F-10	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	5/10/88 8:07														
	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		36.13													
1,2-Dichlorobenzene															
2-Methylphenol															
bis(2-chloroisopropyl)Ether															
4-Methylphenol															
N-Nitroso-Di-n-Propylamine															
Hexachloroethane															
Nitrobenzene															
Isophorone															
2-Nitrophenol															
2,4-Dimethylphenol															
Benzoic Acid															
bis(2-Chloroethoxy)Methane															
2,4-Dichlorophenol															
1,2,4-Trichlorobenzene															
Naphthalene															
4-Chloroaniline															
Hexachlorobutadiene															
4-Chloro-3-Methylphenol															
2-Methylnaphthalene															
Hexachlorocyclopentadiene															
2,4,6-Trichlorophenol															
2,4,5-Trichlorophenol															
2-Chloronaphthalene															
2-Nitroaniline															
Dimethyl Phthalate															
Acenaphthylene															
3-Nitroaniline															
Acenaphthene															
2,4-Dinitrophenol															
4-Nitrophenol															
Dibenzofuran															

AFFECTED SAMPLES:

24025

Reviewer Initials/Date: M.F. 6/2/88

* 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 # 94695A5375 8E CONTRACTOR Cal

Instrument # F-10	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	5/10/88 8:02														
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
2,4-Dinitrotoluene															
2,6-Dinitrotoluene															
Diethylphthalate															
4-Chlorophenyl-phenylether															
Fluorene															
4-Nitroaniline															
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															
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: M.F 6/8/88

Enseco

May 18, 1988

RECEIVED
MAY 20 1988
U.S. EPA CENTRAL
REGIONAL LAB

Joan Fisk
U.S. EPA
Hazardous Waste Investigation
401 M Street, SW
Washington, DC 20460

Dear Joan Fisk:

Enclosed are data summary sheets and documentation for samples and QA/QC comprising case 9469/3758E (SDG EX022) of Contract 68-W8-0069. These samples were received 4/28/88 and logged in under the following ENSECO CAL Lab numbers:

ENSECO CAL LAB Number	Sample I.D.
41260-1	EX022
-2	EX023
-3	EX024
-4	EX025
-5	EX026

The samples were analyzed as low concentration water samples for low detection limits on a twenty one day turnaround. The pesticide fraction of sample EX026 had no surrogate recovery. Because all the sample was used during the original work, it was not possible to re-extract this sample.

This report was checked for contractual compliance, assembled, paginated then printed and assembled by a Kodak copier/assembler. Each copy has been checked for completeness. This check may miss some individual pages. Please request by page number if any page is missing. If you have any questions, please give us a call.

Sincerely,

Michael Orbanosky
Michael W. Orbanosky
Director of GC/MS Services

Karin S. Yee
Karin S. Yee
Data Control Coordinator

Enseco Incorporated
2544 Industrial Boulevard
West Sacramento, California 95691
916/372-1393 Fax: 916/372-1059

WATER SURROGATE PERCENT RECOVERY SUMMARY

CASE NO.: 9469/3758E CONTRACT LABORATORY: ENSECO CAL LAB CONTRACT NO.: 68-W8-0069 DATA PREP/RELEASE BY: Ky, BTM

SMO TRAFFIC NO.	VOLATILE: TOLUENE D8 (88-110)	VOLATILE: BFB (86-115)	VOLATILE: 1,2 DICHLORO ETHANE D4 (76-114)	SEMI-VOLATILE: NITRO-BENZENE D5 (35-114)	SEMI-VOLATILE: 2-FLUORO BIPHENYL (43-116)	SEMI-VOLATILE: TERPHENYL D14 (33-141)	SEMI-VOLATILE: PHENOL-D5 (10-94)	SEMI-VOLATILE: 2-FLUORO-PHENOL (21-100)	SEMI-VOLATILE: 2,4,6 TRIBROMO-PHENOL (10-123)	PESTICIDE: DIBUTYL-CHLORENDATE (24-154)**
VBK9880429	100	101	95	NR	NR	NR	NR	NR	NR	NR
EX 022	101	100	94	36	61	63	30	42	38	71
EX 022MS	101	99	96	38	60	59	34	44	50	80
EX 022MSD	101	98	98	41	63	72	28	44	46	70
EX 024	104	98	94	37	53	56	28	38	36	72
EX 023	104	97	95	35	54	58	28	37	36	72
EX 025	102	100	96	39	62	87	21	28	34	68
EX 026	103	108	92	45	69	76	31	46	47	G ~~NR~~ *#
41260MB	NR	NR	NR	36	58	63	25	40	39	74

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

** ADVISORY LIMITS ONLY

VOLATILES: 0 OUT OF 24 : OUTSIDE OF QC LIMITS
SEMI-VOLATILES: 0 OUT OF 48 : OUTSIDE OF QC LIMITS
PESTICIDES: 1 OUT OF 8 : OUTSIDE OF QC LIMITS

COMMENTS: # appears surrogate not added

E1

WATER MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

CASE NO.: 9469/3758E CONTRACTOR: Enseco - Cal Lab CONTRACT NO.68-W8-0069

FRACTION	COMPOUND	CONC.SPIKE ADDED(ug/L) SPIKE	DUPLICATE	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	%RPD	QC LIMITS* RPD	RECOVERY
VOA	1,1-Dichloroethene	10	10	0	9.3	93	9.5	95	2	14	61-145
SMO	Trichloroethene	10	10	0	9.8	98	9.4	94	4	14	71-120
SAMPLE NO.	Chlorobenzene	10	10	0	9.8	98	9.8	98	0	13	75-130
	Toluene	10	10	0	10	100	9.9	99	1	13	76-125
EX 022	Benzene	10	10	0	9.8	98	9.5	95	3	11	76-127
B/N	1,2,4-Trichlorobenzene	20	20	0	11.2	56	12.5	63	12	28	39-98
SMO	Acenaphthene	20	20	0	12.8	64	13.9	70	9	31	46-118
SAMPLE NO.	2,4-Dinitrotoluene	20	20	0	7.1	36	7.9	40	11	38	24-96
	Pyrene	20	20	0	12.2	61	13.6	68	11	31	26-127
	N-Nitrosodi-n-Propylamine	20	20	0	10.9	55	12.3	62	12	38	41-116
EX 022	1,4-Dichlorobenzene	20	20	0	11.3	57	13.4	67	16	28	36-97
ACID	Pentachlorophenol	40	40	0	10	25	7.7	19	27	50	9-103
SMO	Phenol	40	40	0	15.9	40	17.6	44	10	42	12-89
SAMPLE NO.	2-Chlorophenol	40	40	0	39.6	99	42.6	107	8	40	27-123
	4-Chloro-3-Methylphenol	40	40	0	30.8	77	31.2	78	1	42	23-97
EX 022	4-Nitrophenol	40	40	0	6.8	17	6.1	15	12	50	10-80
PEST	Lindane	0.0209	0.0206	0	0.0211	101	0.0192	93	8	15	56-123
SMO	Heptachlor	0.0209	0.0206	0	0.017	81	0.0203	99	19	20	40-131
SAMPLE NO.	Aldrin	0.0209	0.0206	0	0.0178	85	0.0165	80	6	22	40-120
	Dieldrin	0.0523	0.0514	0	0.0448	86	0.0392	76	12	18	52-126
	Endrin	0.0523	0.0514	0	0.0517	99	0.0446	87	13	21	56-121
EX 022	4,4-DDT	0.0523	0.0514	0	0.0478	91	0.0399	78	16	27	38-127

* ASTERISKED VALUES ARE OUTSIDE QC LIMITS

RPD: VOAs 0 out of 5 ; outside QC limits
B/Ns 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/Ns 0 out of 12 ; outside QC limits
ACID 0 out of 10 ; outside QC limits
PEST 0 out of 12 ; outside QC limits

Comments:

FORM III 7/85

METHOD BLANK SUMMARY

CASE NO. 9469/3758E REGION: 5 CONTRACTOR: Enseco - Cal Lab CONTRACT NO. 68-W8-0069

FILE ID	DATE OF ANALYSIS	FRACTION	MATRIX	CONC. LEVEL	INST. ID	CAS NUMBER	COMPOUND (HSL.TIC OR UNKNOWN)	CONC.	UNITS	CRDL
VBK9880429	04/29/88	VOA	WATER	LOW	F9	67-64-1	ACETONE	1	UG/L	10
41260MB	05/09/88	ABN	WATER	LOW	F10	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	3	UG/L	1
41260MB	05/06/88	PEST	WATER	LOW	G10	-	NO PESTICIDES FOUND	-	-	-

COMMENTS:

FORM IV 7/85

SPECIAL COMPOUNDS

Method 624/CLP

Case: 9469/3758E
EPA ID: VOA BLANK
Lab ID: VBK9880429 Enseco ID: NA
Matrix: Water Sampled: NA Received: NA
Authorized: NA Prepared: NA Analyzed: 29-APR-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: SDB AK Approved by: DNB

The cover letter is an integral part of this report.
Rev 041588

SPECIAL COMPOUNDS

Method 624/CLP

Case: 9469/3758E
EPA ID: EX 022
Lab ID: 41260-1 Enseco ID: NA
Matrix: Water Sampled: 27-APR-88 Received: 28-APR-88
Authorized: 28-APR-88 Prepared: NA Analyzed: 29-APR-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB Approved by: PH

The cover letter is an integral part of this report.
Rev 041588

SPECIAL COMPOUNDS

Method 624/CLP

Case: 9469/3758E
EPA ID: EX 022MS
Lab ID: 41260-1MS
Enseco ID: NA
Matrix: Water
Sampled: 27-APR-88
Received: 28-APR-88
Authorized: 28-APR-88
Prepared: NA
Analyzed: 29-APR-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB
Approved by: PH

The cover letter is an integral part of this report.
Rev 041588

SPECIAL COMPOUNDS

Method 624/CLP

Case: 9469/3758E
EPA ID: EX 022MSD
Lab ID: 41260-1MSD
Enseco ID: NA
Matrix: Water
Sampled: 27-APR-88
Received: 28-APR-88
Authorized: 28-APR-88
Prepared: NA
Analyzed: 29-APR-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB AR
Approved by: PH

The cover letter is an integral part of this report.
Rev 041588

SPECIAL COMPOUNDS

Method 624/CLP

Case:	9469/3758E				
EPA ID:	EX 023				
Lab ID:	41260-2	Enseco ID:	NA		
Matrix:	Water	Sampled:	27-APR-88	Received:	28-APR-88
Authorized:	28-APR-88	Prepared:	NA	Analyzed:	29-APR-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB Approved by: PH

The cover letter is an integral part of this report.
Rev 041588

SPECIAL COMPOUNDS

Method 624/CLP

Case: 9469/3758E
EPA ID: EX 024
Lab ID: 41260-3 Enseco ID: NA
Matrix: Water Sampled: 27-APR-88 Received: 28-APR-88
Authorized: 28-APR-88 Prepared: NA Analyzed: 29-APR-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB Approved by: PH

The AR cover letter is an integral part of this report.
Rev 041588

SPECIAL COMPOUNDS

Method 624/CLP

Case:	9469/3758E				
EPA ID:	EX 025				
Lab ID:	41260-4	Enseco ID:	NA		
Matrix:	Water	Sampled:	27-APR-88	Received:	28-APR-88
Authorized:	28-APR-88	Prepared:	NA	Analyzed:	29-APR-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB Approved by: PH

The cover letter is an integral part of this report.
Rev 041588

SPECIAL COMPOUNDS

Method 624/CLP

Case:	9469/3758E				
EPA ID:	EX 026				
Lab ID:	41260-5	Enseco ID:	NA		
Matrix:	Water	Sampled:	27-APR-88	Received:	28-APR-88
Authorized:	28-APR-88	Prepared:	NA	Analyzed:	29-APR-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB DK Approved by: PH

The cover letter is an integral part of this report.
Rev 041588

Sample Number
EX 022

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ENSECO CAL LAB

Case No: 9469/3758E

Lab Sample ID No: 41260-1

QC Report No: 3758E

Sample Matrix: WATER

Contract No: 68-W8-0069

Data Release Authorized By: [illegible]

Date Sample Received: 4/28/88

Volatile Compounds

Concentration: Low

Date Extracted/Prepared: 04/29/88

Date Analyzed: 04/29/88

Conc/Dil Factor: 1 pH: NR

Percent Moisture: NR

Percent Moisture (Decanted): NR

CAS Number		ug/L
74-87-3	Chloromethane	5 U
74-83-9	Bromomethane	5 U
75-01-4	Vinyl Chloride	5 U
75-00-3	Chloroethane	1 U
75-09-2	Methylene Chloride	5 U
67-64-1	Acetone	10 U
75-15-0	Carbon Disulfide	1 U
75-35-4	1,1-Dichloroethene	1 U
75-34-3	1,1-Dichloroethane	1 U
156-60-5	Trans-1,2-Dichloroethene	1 U
67-66-3	Chloroform	1 U
107-06-2	1,2-Dichloroethane	1 U
78-93-3	2-Butanone	10 U
71-55-6	1,1,1-Trichloroethane	1 U
56-23-5	Carbon Tetrachloride	1 U
108-05-4	Vinyl Acetate	10 U
75-27-4	Bromodichloromethane	1 U

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

NA Not Analyzed.

See cover letter.

NR Not Required.

S Spiked Compound.

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9469/3758E

Sample Number
EX 022

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low

Date Extracted/Prepared: 04/29/88

Date Analyzed: 05/09/88

Conc/DiL Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

CAS Number		ug/L
108-95-2	Phenol	1.0 U
111-44-4	bis(-2-Chloroethyl)Ether	1.0 U
95-57-8	2-Chlorophenol	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
100-51-6	Benzyl Alcohol	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
95-48-7	2-Methylphenol	1.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.0 U
106-44-5	4-Methylphenol	1.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	1.0 U
67-72-1	Hexachloroethane	1.0 U
98-95-3	Nitrobenzene	1.0 U
78-59-1	Isophorone	1.0 U
88-75-5	2-Nitrophenol	1.0 U
105-67-9	2,4-Dimethylphenol	1.0 U
65-85-0	Benzoic Acid	20 U
111-91-1	bis(-2-Chloroethoxy)Methane	1.0 U
120-83-2	2,4-Dichlorophenol	1.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0 U
91-20-3	Naphthalene	1.0 U
106-47-8	4-Chloroaniline	1.0 U
87-68-3	Hexachlorobutadiene	1.0 U
59-50-7	4-Chloro-3-Methylphenol	1.0 U
91-57-6	2-Methylnaphthalene	1.0 U
77-47-4	Hexachlorocyclopentadiene	1.0 U
88-06-2	2,4,6-Trichlorophenol	1.0 U
95-95-4	2,4,5-Trichlorophenol	1.0 U
91-58-7	2-Chloronaphthalene	1.0 U
88-74-4	2-Nitroaniline	5.0 U
131-11-3	Dimethyl Phthalate	1.0 U
208-96-8	Acenaphthylene	1.0 U
99-09-2	3-Nitroaniline	5.0 U

CAS Number		ug/L
83-32-9	Acenaphthene	1.0 U
51-28-5	2,4-Dinitrophenol	15 U
100-02-7	4-Nitrophenol	15 U
132-64-9	Dibenzofuran	1.0 U
121-14-2	2,4-Dinitrotoluene	1.0 U
606-20-2	2,6-Dinitrotoluene	1.0 U
84-66-2	Diethylphthalate	1.0 U
7005-72-3	4-Chlorophenyl-phenylether	1.0 U
86-73-7	Fluorene	1.0 U
100-01-6	4-Nitroaniline	5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15 U
86-30-6	N-Nitrosodiphenylamine(1)	1.5 U
101-55-3	4-Bromophenyl-phenylether	1.5 U
118-74-1	Hexachlorobenzene	1.5 U
87-86-5	Pentachlorophenol	2.0 U
85-01-8	Phenanthrene	1.0 U
120-12-7	Anthracene	2.5 U
84-74-2	Di-n-Butylphthalate	2.0 U
206-44-0	Fluoranthene	1.5 U
129-00-0	Pyrene	1.5 U
85-68-7	Butylbenzylphthalate	3.5 U
91-94-1	3,3'-Dichlorobenzidine	20 U
56-55-3	Benzo(a)Anthracene	1.5 U
117-81-7	bis(2-Ethylhexyl)Phthalate	~~3 B~~ 1 U
218-01-9	Chrysene	1.5 U
117-84-0	Di-n-Octyl Phthalate	1.5 U
205-99-2	Benzo(b)Fluoranthene	1.5 U
207-08-9	Benzo(k)Fluoranthene	1.5 U
50-32-8	Benzo(a)Pyrene	2.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	3.5 U
53-70-3	Dibenz(a,h)Anthracene	2.5 U
191-24-2	Benzo(g,h,i)Perylene	4.0 U

6/9/88 M-1

(1) - Cannot be separated from diphenylamine

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9469/3758E

Sample Number
EX 022

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: LOW

Date Extracted/Prepared: 04/29/88

Date Analyzed: 05/06/88

Conc/Dil Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

CAS Number		ug/L
319-84-6	Alpha-BHC	0.010 U
319-85-7	Beta-BHC	0.0050 U
319-86-8	Delta-BHC	0.0050 U
58-89-9	Gamma-BHC (Lindane)	0.0050 U
76-44-8	Heptachlor	0.030 U
309-00-2	Aldrin	0.0050 U
1024-57-3	Heptachlor Epoxide	0.0050 U
959-98-8	Endosulfan I	0.010 U
60-57-1	Dieldrin	0.010 U
72-55-9	4,4'-DDE	0.0050 U
72-20-8	Endrin	0.010 U
33213-65-9	Endosulfan II	0.010 U
72-54-8	4,4'-DDD	0.020 U
1031-07-8	Endosulfan Sulfate	0.10 U
50-29-3	4,4'-DDT	0.020 U
72-43-5	Methoxychlor	0.020 U
53494-70-5	Endrin Ketone	0.030 U
57-74-9	Chlordane	0.020 U
8001-35-2	Toxaphene	0.25 U
12674-11-2	Aroclor-1016	0.10 U
11104-28-2	Aroclor-1221	0.10 U
11141-16-5	Aroclor-1232	0.10 U
53469-21-9	Aroclor-1242	0.10 U
12672-29-6	Aroclor-1248	0.10 U
11097-69-1	Aroclor-1254	0.10 U
11096-82-5	Aroclor-1260	0.10 U

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 =980 or W_s =NR V_t = 5000 V_i = 5

ORGANICS ANALYSIS DATA SHEET
Page 4
ORGANICS ANALYSIS DATA SHEET
Page 4
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: CAL Case No. 9469/3758E Sample No. EX022(

QC Report No. 3758E Lab Sample No. 4126001AB

Probability that Identification is Correct:
A= HIGH B= MODERATE C= UNKNOWN D= SOLVENT IMPURITY, see VOA

CAS#	COMPOUND NAME	FRACTION	SCAN NUMBER	PURITY	Estimated CONC. J VALUE
	No A/BN				

No volatile compounds

FORM 1, PART B

Sample Number
EX 023

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ENSECO CAL LAB
Case No: 9469/3758E
Lab Sample ID No: 41260-2
QC Report No: 3758E
Sample Matrix: WATER
Contract No: 68-W8-0069
Data Release Authorized By: BM
Date Sample Received: 04/28/88

Volatile Compounds

Concentration: Low
Date Extracted/Prepared: 04/29/88
Date Analyzed: 04/29/88
Conc/Dil Factor: 1 pH: NR
Percent Moisture: NR
Percent Moisture (Decanted): NR

CAS Number		ug/L
74-87-3	Chloromethane	5 U
74-83-9	Bromomethane	5 U
75-01-4	Vinyl Chloride	5 U
75-00-3	Chloroethane	1 U
75-09-2	Methylene Chloride	1 J
67-64-1	Acetone	10 U
75-15-0	Carbon Disulfide	1 U
75-35-4	1,1-Dichloroethene	1 U
75-34-3	1,1-Dichloroethane	1 U
156-60-5	Trans-1,2-Dichloroethene	1 U
67-66-3	Chloroform	1 U
107-06-2	1,2-Dichloroethane	1 U
78-93-3	2-Butanone	10 U
71-55-6	1,1,1-Trichloroethane	1 U
56-23-5	Carbon Tetrachloride	1 U
108-05-4	Vinyl Acetate	10 U
75-27-4	Bromodichloromethane	1 U

CAS Number		ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1 U
78-87-5	1,2-Dichloropropane	1 U
10061-02-6	Trans-1,3-Dichloropropene	1 U
79-01-6	Trichloroethene	1 U
124-48-1	Dibromochloromethane	1 U
79-00-5	1,1,2-Trichloroethane	1 U
71-43-2	Benzene	1 U
10061-01-5	cis-1,3-Dichloropropene	1 U
110-75-8	2-Chloroethylvinylether	10 U
75-25-2	Bromoform	1 U
591-78-6	2-Hexanone	10 U
108-10-1	4-Methyl-2-Pentanone	10 U
127-18-4	Tetrachloroethene	1 U
108-88-3	Toluene	1
108-90-7	Chlorobenzene	1 U
100-41-4	Ethylbenzene	1 U
100-42-5	Styrene	1 U
	Total Xylenes	1 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 actions. (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 10ug/l and a concentration of 3ug/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 >= 10ng/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.
NA Not Analyzed.
See cover letter.
NR Not Required.
S Spiked Compound.

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9469/3758E

Sample Number
EX 023

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low

Date Extracted/Prepared: 04/29/88

Date Analyzed: 05/09/88

Conc/DiL Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

CAS Number		ug/L
108-95-2	Phenol	1.0 U
111-44-4	bis(-2-Chloroethyl)Ether	1.0 U
95-57-8	2-Chlorophenol	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
100-51-6	Benzyl Alcohol	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
95-48-7	2-Methylphenol	1.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.0 U
106-44-5	4-Methylphenol	1.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	1.0 U
67-72-1	Hexachloroethane	1.0 U
98-95-3	Nitrobenzene	1.0 U
78-59-1	Isophorone	1.0 U
88-75-5	2-Nitrophenol	1.0 U
105-67-9	2,4-Dimethylphenol	1.0 U
65-85-0	Benzoic Acid	20 U
111-91-1	bis(-2-Chloroethoxy)Methane	1.0 U
120-83-2	2,4-Dichlorophenol	1.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0 U
91-20-3	Naphthalene	1.0 U
106-47-8	4-Chloroaniline	1.0 U
87-68-3	Hexachlorobutadiene	1.0 U
59-50-7	4-Chloro-3-Methylphenol	1.0 U
91-57-6	2-Methylnaphthalene	1.0 U
77-47-4	Hexachlorocyclopentadiene	1.0 U
88-06-2	2,4,6-Trichlorophenol	1.0 U
95-95-4	2,4,5-Trichlorophenol	1.0 U
91-58-7	2-Chloronaphthalene	1.0 U
88-74-4	2-Nitroaniline	5.0 U
131-11-3	Dimethyl Phthalate	1.0 U
208-96-8	Acenaphthylene	1.0 U
99-09-2	3-Nitroaniline	5.0 U

CAS Number		ug/L
83-32-9	Acenaphthene	1.0 U
51-28-5	2,4-Dinitrophenol	15 U
100-02-7	4-Nitrophenol	15 U
132-64-9	Dibenzofuran	1.0 U
121-14-2	2,4-Dinitrotoluene	1.0 U
606-20-2	2,6-Dinitrotoluene	1.0 U
84-66-2	Diethylphthalate	1.0 U
7005-72-3	4-Chlorophenyl-phenylether	1.0 U
86-73-7	Fluorene	1.0 U
100-01-6	4-Nitroaniline	5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15 U
86-30-6	N-Nitrosodiphenylamine(1)	1.5 U
101-55-3	4-Bromophenyl-phenylether	1.5 U
118-74-1	Hexachlorobenzene	1.5 U
87-86-5	Pentachlorophenol	2.0 U
85-01-8	Phenanthrene	1.0 U
120-12-7	Anthracene	2.5 U
84-74-2	Di-n-Butylphthalate	2.0 U
206-44-0	Fluoranthene	1.5 U
129-00-0	Pyrene	1.5 U
85-68-7	Butylbenzylphthalate	3.5 U
91-94-1	3,3'-Dichlorobenzidine	20 U
56-55-3	Benzo(a)Anthracene	1.5 U
117-81-7	bis(2-Ethylhexyl)Phthalate	~~4.8~~ 1.1
218-01-9	Chrysene	1.5 U
117-84-0	Di-n-Octyl Phthalate	1.5 U
205-99-2	Benzo(b)Fluoranthene	1.5 U
207-08-9	Benzo(k)Fluoranthene	1.5 U
50-32-8	Benzo(a)Pyrene	2.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	3.5 U
53-70-3	Dibenz(a,h)Anthracene	2.5 U
191-24-2	Benzo(g,h,i)Perylene	4.0 U

6/9/88
N.T.

(1) - Cannot be separated from diphenylamine

CLF: 10/11/85

Form I

Prepared by: AR

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9469/3758E

Sample Number
EX 023

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: LOW

Date Extracted/Prepared: 04/29/88

Date Analyzed: 05/06/88

Conc/Dil Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

CAS Number		ug/L
319-84-6	Alpha-BHC	0.010 U
319-85-7	Beta-BHC	0.0050 U
319-86-8	Delta-BHC	0.0050 U
58-89-9	Gamma-BHC (Lindane)	0.0050 U
76-44-8	Heptachlor	0.030 U
309-00-2	Aldrin	0.0050 U
1024-57-3	Heptachlor Epoxide	0.0050 U
959-98-8	Endosulfan I	0.010 U
60-57-1	Dieldrin	0.010 U
72-55-9	4,4'-DDE	0.0050 U
72-20-8	Endrin	0.010 U
33213-65-9	Endosulfan II	0.010 U
72-54-8	4,4'-DDD	0.020 U
1031-07-8	Endosulfan Sulfate	0.10 U
50-29-3	4,4'-DDT	0.020 U
72-43-5	Methoxychlor	0.020 U
53494-70-5	Endrin Ketone	0.030 U
57-74-9	Chlordane	0.020 U
8001-35-2	Toxaphene	0.25 U
12674-11-2	Aroclor-1016	0.10 U
11104-28-2	Aroclor-1221	0.10 U
11141-16-5	Aroclor-1232	0.10 U
53469-21-9	Aroclor-1242	0.10 U
12672-29-6	Aroclor-1248	0.10 U
11097-69-1	Aroclor-1254	0.10 U
11096-82-5	Aroclor-1260	0.10 U

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 =850 or W_s =NR V_t = 5000 V_i = 5

ORGANICS ANALYSIS DATA SHEET
Page 4
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: CAL Case No. 9469/3758E Sample No. EX023

QC Report No. 3758E Lab Sample No. 4126002AB

Probability that Identification is Correct:
A= HIGH B= MODERATE C= UNKNOWN D= SOLVENT IMPURITY, see VOA

CAS#	COMPOUND NAME	FRACTION	SCAN NUMBER	PURITY	Estimated CONC. J VALUE
	No A/BN				

No volatile compounds

FORM 1, PART B

Sample Number
EX 024

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ENSECO CAL LAB

Case No: 9469/3758E

Lab Sample ID No: 41260-3

QC Report No: 3758E

Sample Matrix: WATER

Contract No: 68-W8-0069

Data Release Authorized By: [illegible]

Date Sample Received: 04/28/88

Volatile Compounds

Concentration: Low

Date Extracted/Prepared: 04/29/88

Date Analyzed: 04/29/88

Conc/Dil Factor: 1 pH: NR

Percent Moisture: NR

Percent Moisture (Decanted): NR

CAS Number		ug/L
74-87-3	Chloromethane	5 U
74-83-9	Bromomethane	5 U
75-01-4	Vinyl Chloride	5 U
75-00-3	Chloroethane	1 U
75-09-2	Methylene Chloride	5 U
67-64-1	Acetone	10 U
75-15-0	Carbon Disulfide	1 U
75-35-4	1,1-Dichloroethene	1 U
75-34-3	1,1-Dichloroethane	1 U
156-60-5	Trans-1,2-Dichloroethene	1 U
67-66-3	Chloroform	1 U
107-06-2	1,2-Dichloroethane	1 U
78-93-3	2-Butanone	10 U
71-55-6	1,1,1-Trichloroethane	1 U
56-23-5	Carbon Tetrachloride	1 U
108-05-4	Vinyl Acetate	10 U
75-27-4	Bromodichloromethane	1 U

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

NA Not Analyzed.
See cover letter.
NR Not Required.
S Spiked Compound.

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9469/3758E

Sample Number
EX 024

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low

Date Extracted/Prepared: 04/29/88

Date Analyzed: 05/09/88

Conc/DiL Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

CAS Number		ug/L
108-95-2	Phenol	1.0 U
111-44-4	bis(-2-Chloroethyl)Ether	1.0 U
95-57-8	2-Chlorophenol	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
100-51-6	Benzyl Alcohol	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
95-48-7	2-Methylphenol	1.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.0 U
106-44-5	4-Methylphenol	1.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	1.0 U
67-72-1	Hexachloroethane	1.0 U
98-95-3	Nitrobenzene	1.0 U
78-59-1	Isophorone	1.0 U
88-75-5	2-Nitrophenol	1.0 U
105-67-9	2,4-Dimethylphenol	1.0 U
65-85-0	Benzoic Acid	20 U
111-91-1	bis(-2-Chloroethoxy)Methane	1.0 U
120-83-2	2,4-Dichlorophenol	1.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0 U
91-20-3	Naphthalene	1.0 U
106-47-8	4-Chloroaniline	1.0 U
87-68-3	Hexachlorobutadiene	1.0 U
59-50-7	4-Chloro-3-Methylphenol	1.0 U
91-57-6	2-Methylnaphthalene	1.0 U
77-47-4	Hexachlorocyclopentadiene	1.0 U
88-06-2	2,4,6-Trichlorophenol	1.0 U
95-95-4	2,4,5-Trichlorophenol	1.0 U
91-58-7	2-Chloronaphthalene	1.0 U
88-74-4	2-Nitroaniline	5.0 U
131-11-3	Dimethyl Phthalate	1.0 U
208-96-8	Acenaphthylene	1.0 U
99-09-2	3-Nitroaniline	5.0 U

CAS Number		ug/L
83-32-9	Acenaphthene	1.0 U
51-28-5	2,4-Dinitrophenol	15 U
100-02-7	4-Nitrophenol	15 U
132-64-9	Dibenzofuran	1.0 U
121-14-2	2,4-Dinitrotoluene	1.0 U
606-20-2	2,6-Dinitrotoluene	1.0 U
84-66-2	Diethylphthalate	1.0 U
7005-72-3	4-Chlorophenyl-phenylether	1.0 U
86-73-7	Fluorene	1.0 U
100-01-6	4-Nitroaniline	5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15 U
86-30-6	N-Nitrosodiphenylamine(1)	1.5 U
101-55-3	4-Bromophenyl-phenylether	1.5 U
118-74-1	Hexachlorobenzene	1.5 U
87-86-5	Pentachlorophenol	2.0 U
85-01-8	Phenanthrene	1.0 U
120-12-7	Anthracene	2.5 U
84-74-2	Di-n-Butylphthalate	2.0 U
206-44-0	Fluoranthene	1.5 U
129-00-0	Pyrene	1.5 U
85-68-7	Butylbenzylphthalate	3.5 U
91-94-1	3,3'-Dichlorobenzidine	20 U
56-55-3	Benzo(a)Anthracene	1.5 U
117-81-7	bis(2-Ethylhexyl)Phthalate	~~TB~~ 6 U
218-01-9	Chrysene	1.5 U
117-84-0	Di-n-Octyl Phthalate	1.5 U
205-99-2	Benzo(b)Fluoranthene	1.5 U
207-08-9	Benzo(k)Fluoranthene	1.5 U
50-32-8	Benzo(a)Pyrene	2.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	3.5 U
53-70-3	Dibenz(a,h)Anthracene	2.5 U
191-24-2	Benzo(g,h,i)Perylene	4.0 U

6/9/88 N.F.

(1) - Cannot be separated from diphenylamine

CLF: 10/11/85 Form I Prepared by: AR

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9469/3758E

Sample Number
EX 024

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: LOW

GPC Cleanup: NO

Date Extracted/Prepared: 04/29/88

Separatory Funnel Extraction: YES

Date Analyzed: 05/06/88

Continuous Liquid - Liquid Extraction: NO

Conc/Dil Factor: 1

CAS Number		ug/L
319-84-6	Alpha-BHC	0.010 U
319-85-7	Beta-BHC	0.0050 U
319-86-8	Delta-BHC	0.0050 U
58-89-9	Gamma-BHC (Lindane)	0.0050 U
76-44-8	Heptachlor	0.030 U
309-00-2	Aldrin	0.0050 U
1024-57-3	Heptachlor Epoxide	0.0050 U
959-98-8	Endosulfan I	0.010 U
60-57-1	Dieldrin	0.010 U
72-55-9	4,4'-DDE	0.0050 U
72-20-8	Endrin	0.010 U
33213-65-9	Endosulfan II	0.010 U
72-54-8	4,4'-DDD	0.020 U
1031-07-8	Endosulfan Sulfate	0.10 U
50-29-3	4,4'-DDT	0.020 U
72-43-5	Methoxychlor	0.020 U
53494-70-5	Endrin Ketone	0.030 U
57-74-9	Chlordane	0.020 U
8001-35-2	Toxaphene	0.25 U
12674-11-2	Aroclor-1016	0.10 U
11104-28-2	Aroclor-1221	0.10 U
11141-16-5	Aroclor-1232	0.10 U
53469-21-9	Aroclor-1242	0.10 U
12672-29-6	Aroclor-1248	0.10 U
11097-69-1	Aroclor-1254	0.10 U
11096-82-5	Aroclor-1260	0.10 U

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 =950 or W_s =NR V_t = 5000 V_i = 5

ORGANICS ANALYSIS DATA SHEET
Page 4
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: CAL Case No. 9469/3758E Sample No. EX024

GC Report No. 3758E Lab Sample No. 4126003AB

Probability that Identification is Correct:
A= HIGH B= MODERATE C= UNKNOWN D= SOLVENT IMPURITY, see VOA

	CAS#	COMPOUND NAME	FRACTION	SCAN NUMBER	PURITY	Estimated CONC. J VALUE
1.	4602-84-0	2,6,10-DODECATRIEN-1-OL, 3,7,1	A/BN	1796	586	4.7 UG/L

	COMPOUND NAME	PROBABILITY	COMMENTS
1.	2,6,10-DODECATRIEN-1-OL, 3,7,1	1. C	1.

No volatile compounds

FORM 1, PART B

Sample Number
EX 025

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ENSECO CAL LAB

Case No: 9469/3758E

Lab Sample ID No: 41260-4

QC Report No: 3758E

Sample Matrix: WATER

Contract No: 68-W8-0069

Data Release Authorized By: [illegible]

Date Sample Received: 04/28/88

Volatile Compounds

Concentration: Low

Date Extracted/Prepared: 04/29/88

Date Analyzed: 04/29/88

Conc/Dil Factor: 1 pH: NR

Percent Moisture: NR

Percent Moisture (Decanted): NR

CAS Number		ug/L
74-87-3	Chloromethane	5 U
74-83-9	Bromomethane	5 U
75-01-4	Vinyl Chloride	5 U
75-00-3	Chloroethane	1 U
75-09-2	Methylene Chloride	5 U
67-64-1	Acetone	10 U
75-15-0	Carbon Disulfide	1 U
75-35-4	1,1-Dichloroethene	1 U
75-34-3	1,1-Dichloroethane	1 U
156-60-5	Trans-1,2-Dichloroethene	1 U
67-66-3	Chloroform	1 U
107-06-2	1,2-Dichloroethane	1 U
78-93-3	2-Butanone	10 U
71-55-6	1,1,1-Trichloroethane	1 U
56-23-5	Carbon Tetrachloride	1 U
108-05-4	Vinyl Acetate	10 U
75-27-4	Bromodichloromethane	1 U

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

NA Not Analyzed.
See cover letter.
NR Not Required.
S Spiked Compound.

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9469/3758E

Sample Number
EX 025

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low

Date Extracted/Prepared: 04/29/88

Date Analyzed: 05/10/88

Conc/DiL Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

CAS Number		ug/L
108-95-2	Phenol	1.0 U
111-44-4	bis(-2-Chloroethyl)Ether	1.0 U
95-57-8	2-Chlorophenol	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
100-51-6	Benzyl Alcohol	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
95-48-7	2-Methylphenol	1.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.0 U
106-44-5	4-Methylphenol	1.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	1.0 U
67-72-1	Hexachloroethane	1.0 U
98-95-3	Nitrobenzene	1.0 U
78-59-1	Isophorone	1.0 U
88-75-5	2-Nitrophenol	1.0 U
105-67-9	2,4-Dimethylphenol	1.0 U
65-85-0	Benzoic Acid	20 U
111-91-1	bis(-2-Chloroethoxy)Methane	1.0 U
120-83-2	2,4-Dichlorophenol	1.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0 U
91-20-3	Naphthalene	1.0 U
106-47-8	4-Chloroaniline	1.0 U
87-68-3	Hexachlorobutadiene	1.0 U
59-50-7	4-Chloro-3-Methylphenol	1.0 U
91-57-6	2-Methylnaphthalene	1.0 U
77-47-4	Hexachlorocyclopentadiene	1.0 U
88-06-2	2,4,6-Trichlorophenol	1.0 U
95-95-4	2,4,5-Trichlorophenol	1.0 U
91-58-7	2-Chloronaphthalene	1.0 U
88-74-4	2-Nitroaniline	5.0 U
131-11-3	Dimethyl Phthalate	1.0 U
208-96-8	Acenaphthylene	1.0 U
99-09-2	3-Nitroaniline	5.0 U

CAS Number		ug/L
83-32-9	Acenaphthene	1.0 U
51-28-5	2,4-Dinitrophenol	15 U
100-02-7	4-Nitrophenol	15 U
132-64-9	Dibenzofuran	1.0 U
121-14-2	2,4-Dinitrotoluene	1.0 U
606-20-2	2,6-Dinitrotoluene	1.0 U
84-66-2	Diethylphthalate	1.0 U
7005-72-3	4-Chlorophenyl-phenylether	1.0 U
86-73-7	Fluorene	1.0 U
100-01-6	4-Nitroaniline	5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15 U
86-30-6	N-Nitrosodiphenylamine(1)	1.5 U
101-55-3	4-Bromophenyl-phenylether	1.5 U
118-74-1	Hexachlorobenzene	1.5 U
87-86-5	Pentachlorophenol	2.0 U
85-01-8	Phenanthrene	1.0 U
120-12-7	Anthracene	2.5 U
84-74-2	Di-n-Butylphthalate	2.0 U
206-44-0	Fluoranthene	1.5 U
129-00-0	Pyrene	1.5 U
85-68-7	Butylbenzylphthalate	3.5 U
91-94-1	3,3'-Dichlorobenzidine	20 U
56-55-3	Benzo(a)Anthracene	1.5 U
117-81-7	bis(2-Ethylhexyl)Phthalate	~~5 B~~ 2 U
218-01-9	Chrysene	1.5 U
117-84-0	Di-n-Octyl Phthalate	1.5 U
205-99-2	Benzo(b)Fluoranthene	1.5 U
207-08-9	Benzo(k)Fluoranthene	1.5 U
50-32-8	Benzo(a)Pyrene	2.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	3.5 U
53-70-3	Dibenz(a,h)Anthracene	2.5 U
191-24-2	Benzo(g,h,i)Perylene	4.0 U

6/2/88
M.T.

(1) - Cannot be separated from diphenylamine

CLF: 10/11/85

Form I

Prepared by: AR

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9469/3758E

Sample Number
EX 025

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: LOW

Date Extracted/Prepared: 04/29/88

Date Analyzed: 05/06/88

Conc/Dil Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

CAS Number		ug/L
319-84-6	Alpha-BHC	0.010 U
319-85-7	Beta-BHC	0.0050 U
319-86-8	Delta-BHC	0.0050 U
58-89-9	Gamma-BHC (Lindane)	0.0050 U
76-44-8	Heptachlor	0.030 U
309-00-2	Aldrin	0.0050 U
1024-57-3	Heptachlor Epoxide	0.0050 U
959-98-8	Endosulfan I	0.010 U
60-57-1	Dieldrin	0.010 U
72-55-9	4,4'-DDE	0.0050 U
72-20-8	Endrin	0.010 U
33213-65-9	Endosulfan II	0.010 U
72-54-8	4,4'-DDD	0.020 U
1031-07-8	Endosulfan Sulfate	0.10 U
50-29-3	4,4'-DDT	0.020 U
72-43-5	Methoxychlor	0.020 U
53494-70-5	Endrin Ketone	0.030 U
57-74-9	Chlordane	0.020 U
8001-35-2	Toxaphene	0.25 U
12674-11-2	Aroclor-1016	0.10 U
11104-28-2	Aroclor-1221	0.10 U
11141-16-5	Aroclor-1232	0.10 U
53469-21-9	Aroclor-1242	0.10 U
12672-29-6	Aroclor-1248	0.10 U
11097-69-1	Aroclor-1254	0.10 U
11096-82-5	Aroclor-1260	0.10 U

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 =960 or W_s =NR V_t = 5000 V_i = 5

ORGANICS ANALYSIS DATA SHEET
Page 4
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: CAL Case No. 9469/3758E Sample No. EX025

SC Report No 3158E Lab Sample No. 4126004ABRI

Probability that Identification is Correct:
A= HIGH B= MODERATE C= UNKNOWN D= SOLVENT IMPURITY, see VOA

CAS#	COMPOUND NAME	FRACTION	SCAN NUMBER	PURITY	Estimated CONC J VALUE
	No A/BN				

No volatile compounds

FORM 1, PART B

Sample Number
EX 026

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ENSECO CAL LAB

Case No: 9469/3758E

Lab Sample ID No: 41260-5

QC Report No: 3758E

Sample Matrix: WATER

Contract No: 68-W8-0069

Data Release Authorized By: [illegible]

Date Sample Received: 04/28/88

Volatile Compounds

Concentration: Low

Date Extracted/Prepared: 04/29/88

Date Analyzed: 04/29/88

Conc/Dil Factor: 1 pH: NR

Percent Moisture: NR

Percent Moisture (Decanted): NR

CAS Number		ug/L
74-87-3	Chloromethane	5 U
74-83-9	Bromomethane	5 U
75-01-4	Vinyl Chloride	5 U
75-00-3	Chloroethane	1 U
75-09-2	Methylene Chloride	5 U
67-64-1	Acetone	~~1 JB~~ 10U
75-15-0	Carbon Disulfide	1 U
75-35-4	1,1-Dichloroethene	1 U
75-34-3	1,1-Dichloroethane	1 U
156-60-5	Trans-1,2-Dichloroethene	1 U
67-66-3	Chloroform	1 U
107-06-2	1,2-Dichloroethane	1 U
78-93-3	2-Butanone	10 U
71-55-6	1,1,1-Trichloroethane	1 U
56-23-5	Carbon Tetrachloride	1 U
108-05-4	Vinyl Acetate	10 U
75-27-4	Bromodichloromethane	1 U

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

6/9/88 N.F.

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 actions. (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 10ug/l and a concentration of 3ug/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 >= 10ng/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.

NA Not Analyzed.
See cover letter.
NR Not Required.
S Spiked Compound.

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9469/3758E

Sample Number
EX 026

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low

Date Extracted/Prepared: 04/29/88

Date Analyzed: 05/09/88

Conc/DiL Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

CAS Number		ug/L
108-95-2	Phenol	1.0 U
111-44-4	bis(-2-Chloroethyl)Ether	1.0 U
95-57-8	2-Chlorophenol	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
100-51-6	Benzyl Alcohol	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
95-48-7	2-Methylphenol	1.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.0 U
106-44-5	4-Methylphenol	1.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	1.0 U
67-72-1	Hexachloroethane	1.0 U
98-95-3	Nitrobenzene	1.0 U
78-59-1	Isophorone	1.0 U
88-75-5	2-Nitrophenol	1.0 U
105-67-9	2,4-Dimethylphenol	1.0 U
65-85-0	Benzoic Acid	20 U
111-91-1	bis(-2-Chloroethoxy)Methane	1.0 U
120-83-2	2,4-Dichlorophenol	1.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0 U
91-20-3	Naphthalene	1.0 U
106-47-8	4-Chloroaniline	1.0 U
87-68-3	Hexachlorobutadiene	1.0 U
59-50-7	4-Chloro-3-Methylphenol	1.0 U
91-57-6	2-Methylnaphthalene	1.0 U
77-47-4	Hexachlorocyclopentadiene	1.0 U
88-06-2	2,4,6-Trichlorophenol	1.0 U
95-95-4	2,4,5-Trichlorophenol	1.0 U
91-58-7	2-Chloronaphthalene	1.0 U
88-74-4	2-Nitroaniline	5.0 U
131-11-3	Dimethyl Phthalate	1.0 U
208-96-8	Acenaphthylene	1.0 U
99-09-2	3-Nitroaniline	5.0 U

CAS Number		ug/L
83-32-9	Acenaphthene	1.0 U
51-28-5	2,4-Dinitrophenol	15 U
100-02-7	4-Nitrophenol	15 U
132-64-9	Dibenzofuran	1.0 U
121-14-2	2,4-Dinitrotoluene	1.0 U
606-20-2	2,6-Dinitrotoluene	1.0 U
84-66-2	Diethylphthalate	1.0 U
7005-72-3	4-Chlorophenyl-phenylether	1.0 U
86-73-7	Fluorene	1.0 U
100-01-6	4-Nitroaniline	5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15 U
86-30-6	N-Nitrosodiphenylamine(1)	1.5 U
101-55-3	4-Bromophenyl-phenylether	1.5 U
118-74-1	Hexachlorobenzene	1.5 U
87-86-5	Pentachlorophenol	2.0 U
85-01-8	Phenanthrene	1.0 U
120-12-7	Anthracene	2.5 U
84-74-2	Di-n-Butylphthalate	2.0 U
206-44-0	Fluoranthene	1.5 U
129-00-0	Pyrene	1.5 U
85-68-7	Butylbenzylphthalate	3.5 U
91-94-1	3,3'-Dichlorobenzidine	20 U
56-55-3	Benzo(a)Anthracene	1.5 U
117-81-7	bis(2-Ethylhexyl)Phthalate	~~3.8~~ 1.U
218-01-9	Chrysene	1.5 U
117-84-0	Di-n-Octyl Phthalate	1.5 U
205-99-2	Benzo(b)Fluoranthene	1.5 U
207-08-9	Benzo(k)Fluoranthene	1.5 U
50-32-8	Benzo(a)Pyrene	2.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	3.5 U
53-70-3	Dibenz(a,h)Anthracene	2.5 U
191-24-2	Benzo(g,h,i)Perylene	4.0 U

6/9/88 MT.

(1) - Cannot be separated from diphenylamine

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9469/3758E

Sample Number
EX 026

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: LOW

Date Extracted/Prepared: 04/29/88

Date Analyzed: 5/13/88

Conc/Dil Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

CAS Number		ug/L
319-84-6	Alpha-BHC	0.010 U
319-85-7	Beta-BHC	0.0050 U
319-86-8	Delta-BHC	0.0050 U
58-89-9	Gamma-BHC (Lindane)	0.0050 U
76-44-8	Heptachlor	0.030 U
309-00-2	Aldrin	0.0050 U
1024-57-3	Heptachlor Epoxide	0.0050 U
959-98-8	Endosulfan I	0.010 U
60-57-1	Dieldrin	0.010 U
72-55-9	4,4'-DDE	0.0050 U
72-20-8	Endrin	0.010 U
33213-65-9	Endosulfan II	0.010 U
72-54-8	4,4'-DDD	0.020 U
1031-07-8	Endosulfan Sulfate	0.10 U
50-29-3	4,4'-DDT	0.020 U
72-43-5	Methoxychlor	0.020 U
53494-70-5	Endrin Ketone	0.030 U
57-74-9	Chlordane	0.020 U
8001-35-2	Toxaphene	0.25 U
12674-11-2	Aroclor-1016	0.10 U
11104-28-2	Aroclor-1221	0.10 U
11141-16-5	Aroclor-1232	0.10 U
53469-21-9	Aroclor-1242	0.10 U
12672-29-6	Aroclor-1248	0.10 U
11097-69-1	Aroclor-1254	0.10 U
11096-82-5	Aroclor-1260	0.10 U

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 =900 or W_s =NR V_t = 5000 V_i = 5

Prepared by: RGW

ORGANICS ANALYSIS DATA SHEET
Page 4
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: CAL Case No. 9469/3758E Sample No. EX026

SDG Report No. 3758E Lab Sample No. 4126005AB

Probability that Identification is Correct:
A= HIGH B= MODERATE C= UNKNOWN D= SOLVENT IMPURITY, see VOA

	CAS#	COMPOUND NAME	FRACTION	SCAN NUMBER	PURITY	Estimated CONC. J VALUE
1	128-37-0	PHENOL, 2,6-BIS(1,1-DIMETHYLET	A/BN	1011	766	4.3 UG/L

COMPOUND NAME	PROBABILITY	COMMENTS
1. PHENOL, 2,6-BIS(1,1-DIMETHYLET	1. A	1. or dimer

No volatile compounds

FORM 1, PART B

ecology and environment, inc.

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

International Specialists in the Environment

CRL Receipt Date 5/19/88 FIT Receipt Date 6/9/88 Review Completed 6/10/88

TO: J. KOLB

FROM: Mary Gzyra

SUBJECT: MARBLE CLIFF QUARRIES DUMP

PAN: OH 0027 **(1 hour charged for review)** Case # 9469/3554

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
#	Low Soil	#	Low Soil
	Low Water	11	Low Water
	Drinking Water	5	Drinking Water
	Other		Other

Project Data Status _____ Completed!!

✓ Incomplete, awaiting organic & inorganic soil, organic water.

FIT Data Review Findings:

As detected in MEX 229
Ag detected in MEX 227
Hg detected in MEX 227, 228
- other heavy metals detected

Check Data Sheets for Transcription Errors

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

Book No. 8 Page No. 50 Date Sampled 4/27/88

0759:2

recycled paper

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

M E M O R A N D U M

DATE: 6/10/88
TO: File
FROM: Mary Gzyra
SUBJECT: MARBLE CLIFF QUARRIES DUMP
PAN

Below is a list of elements whose spike recoveries were biased low:

Element	Spike Recovery
Chromium	83%
Silver	73%

The low recoveries rates biases the data low, thereby raising the detection limits and estimating any reported values. This means that in the worst case the true concentration is greater than the reported values and the data is an underestimation.

It is the opinion of this reviewer that the data is acceptable for HRS scoring.

0759:2

recycled paper

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 6.3.88

SUBJECT: Review of Region V CLP Data
Received for Review on 5-19-88

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

TO: Data User: Fit

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

SITE NAME: Marble Cliff Quarries Dump (OH) SMO Case No. 9469SAS3554E

EPA Data Set No. SF5134 No. of Samples: 5 D.U./Activity Numbers Y905/C72122

CRL No. 88FK20522-S24, D23, R01

SMO Traffic No. MEX226-230

CLP Laboratory: Chemtech Hrs. Required for Review: 5 hrs + 2 hrs MMT

Following are our findings:

The laboratory's portion of this case contained 5 low level water samples analyzed for total metals and total cyanide.

The matrix spike recoveries for the following elements were outside of the SAS requirements: Al(84%), Be(76%), Ca(126%), Cr(83%), Cu(66%), Fe(49%), Mg(119%), K(128%), Ag(73%), and V(83%). The recoveries for Al, Be, and V indicates that the detection limits may be elevated and all data are estimated(UJ). The Ca recovery indicates that the data are biased high [illegible] and all data are estimated(J) except MEX230 which is acceptable. The Cr data for samples MEX227-8 are biased low and are estimated(J). The detection limits may be elevated for Cr on samples MEX226, 229, and 230 and the data are estimated(UJ). The spike data for Mg indicates a high bias and all data are estimated(J) except for MEX230 which is acceptable. The spike recovery for Ag indicates a low bias and data for samples MEX227, 229 and 230 are estimated(J). The detection limits for samples MEX226 and 228 may be elevated and the Ag data are estimated(UJ).

(Next Page)

DK

( ) Data are acceptable for use.
(X) Data are acceptable for use with qualifications referenced above. See Data Qualifier sheets and Calibration Outlier forms for flags and additional comments.
( ) Data are preliminary - pending verification by Contractor Laboratory. See Case Summary above.
( ) Data are unacceptable.

cc: Carla Dempsey, CLP Quality Assurance Officer, Analytical Operations Branch
James Batty, Chief Quality Assurance Research, EMSL, Las Vegas

DATA QUALIFIERS

Laboratory: Chemtech **Case: 9469**

Sample MEX230 is a field blank and was found to contain the following elements in amounts >CRDL: Cu(34 ug/l), Fe(126 ug/l), Pb(4.3 ug/l) and K(3600 ug/l). All Fe and Pb data are estimated(J). The Cu(66%) spike indicates low bias and the blank indicates contamination, therefore all Cu data are estimated(J). Both the spike(128%) and blank indicates a high bias for K and all data are estimated(J).

Samples MEX227 and 228 are field duplicates. The following RPDs greater than 20% were found: K(118%), Cu(71.8%) and Fe(33.2%). All Hg and CN data are acceptable.

Reviewed by: Duane Kruse
Date: 5/31/88

D Kruse

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. MEX 226

Date 5/17/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME Chemtech Consulting Group

CASE NO. 9469/3554E

SOW NO. 785

Lab Receipt Date 4/28/88

LAB SAMPLE ID. NO. GD-1242-01

QC REPORT NO. GD- 1242

Elements Identified and Measured

Concentration: Low X Medium ____

Matrix: Water X Soil ____ Sludge ____ Other ____

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

1.	Aluminum	100U P N	13.	Magnesium	43000 P N
2.	Antimony	5U ~~P~~ F S	14.	Manganese	23 P ~~N~~
3.	Arsenic	5U F S	15.	Mercury	0.20U
4.	Barium	23 P	16.	Nickel	14 P
5.	Beryllium	2U P N	17.	Potassium	2700 A N
6.	Cadmium	0.5U ~~P~~ F S	18.	Selenium	2U F S
7.	Calcium	118000 P N	19.	Silver	5U P N
8.	Chromium	4U P N	20.	Sodium	19100 P
9.	Cobalt	6U P	21.	Thallium	2U F S
10.	Copper	37 P N	22.	Vanadium	4U P N
11.	Iron	548 P N	23.	Zinc	1120 P
12.	Lead	4.7 F S		Precent Solids (%)	
	Cyanide	10U			

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: Color: Before- Colorless After- Colorless. Clarity: Clear

Lab Manager [signature]

Table 4- Cont.

Sample Collection Information and Parameters	Sample Number											
	≥ 1	≥ 2	≥ 3	≥ 4	≥ 5	≥ 6	≥ 7	≥ 8	≥ 9	≥ 10	≥ 11	≥ 12
Pesticides/PCBs Cont.												
Aroclor 1232												
Aroclor 1242												
Aroclor 1248												
Aroclor 1254												
Aroclor 1260												
Analyte Detected (values in mg/ [ppm])	UEX 226	227	228	229	BLANK 230							
aluminum												
antimony												
arsenic				14								
barium	[23]	[45]	[48]	215	[67]							
beryllium												
cadmium												
calcium	118000 J,N	114000 J,N	120000 J,N	106000 J,N								
chromium		[4.2] N	11 N									
cobalt												
copper	37 J,N	91 J,N	46 J,N	74 J,N	34 J,N							
iron	548 J,N	506 J,N	362 J,N	2400 J,N	126 J,N							
lead	4.7 J	3.0 J	2.5 J	3.1 J	4.3 J							
magnesium	43000 J,N	33600 J,N	35500 J,N	31500 J,N								
manganese	23	26	27	138								
mercury		0.60	0.60									
nickel	[14]											
potassium	2700 J,N	2000 J,N	7800 J,N	3600 J,N	3600 J,N							
selenium												
silver		6.4 N										
sodium	19100	73900	78200	21700								
thallium												
vanadium												
zinc	1120	45	49	32	[11]							
cyanide												

-- Not detected.

Disregard qualifier "N" for chromium & silver — data is acceptable

[illegible]

COMPOUND FOOTNOTES	DEFINITION	INTERPRETATION
U	Indicates compound was analyzed for but not detected.	Compound was not detected.
J	Indicates an estimated value.	Compound value may be semi-quantitative.
UJ	Quantitation limit is estimated due to a Quality Control (QC) protocol.	Compound was not detected.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract shall be confirmed by GC/MS.	Compound was confirmed by mass spectroscopy
B	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.	Compound value may be semi-quantitative if it is <5x the blank concentration (<10x the blank concentrations for common lab artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone).
E	This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods.	Compound value may be semi-quantitative.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.	Alerts data user to a possible change in the CRQL.
A	This flag indicates that a TIC is a suspected aldol-condensation product.	Alerts data user of a lab artifact.
R	Results are unusable due to a major violation of QC protocol.	Compound value is not usable.

ANALYTE FOOTNOTES		DEFINITION	INTERPRETATION
OLD	NEW		
E	E	Estimated or not reported due to inteference. See laboratory narrative.	Compound or element was not detected or value may be semi-quantitative.
S	S	Analysis by Method of Standard Additions.	Value may be quantitative.
R	N	Spike recoveries outside QC protocols which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative.	Value may be quantitative or semi-quantitative.
*	*	Duplicate value outside QC protocols which indicates a possible matrix problem.	Value may be semi-quantitative.
+	+	Correlation coefficient for standard additions in less than 0.995. See review and laboratory narrative.	Data value may be biased.
[ ]	B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
UJ		DL is estimated because of a QC protocol. DL is possibly above or below CRDL.	Compound or element was not detected.
J		Value is above CRDL and is an estimated value because of a QC Protocol.	Value may be semi-quantitative.
U	U	Compound was analyzed for but not detected.	Compound was not detected.
	M	Duplicate injection precision not met.	Value may be semi-quantitative.
	W	Post digestion spike for furnance AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance.	Value may be semi-quantitative.
NA		Value not available due to insufficient data.	
NR		Value not recommended to be calculated, since chemical has proven to be a human carcinogen.	
( )		Estimated value.	

Source: Ecology and Environment, Inc. 1988.

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. MEX 227

Date 5/17/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME Chemtech Consulting Group

CASE NO. 9469/3554E

SOW NO. 785

Lab Receipt Date 4/28/88

LAB SAMPLE ID. NO. GI-1242-02

QC REPORT NO. GI-1242

Elements Identified and Measured

Concentration: Low X Medium ____

Matrix: Water X Soil ____ Sludge ____ Other ____

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

1.	Aluminum	100U P N	13.	Magnesium	33600 P N
2.	Antimony	5U P FS	14.	Manganese	26 P
3.	Arsenic	5U F S	15.	Mercury	0.60
4.	Barium	[45] P	16.	Nickel	11U P
5.	Beryllium	2U P N	17.	Potassium	2000 P N
6.	Cadmium	0.5U P FS	18.	Selenium	2U F S
7.	Calcium	114000 P N	19.	Silver	6.4 P N
8.	Chromium	[4.2] P N	20.	Sodium	73900 P
9.	Cobalt	6U P	21.	Thallium	2U F S
10.	Copper	91 P N	22.	Vanadium	4U P N
11.	Iron	506 P N	23.	Zinc	45 P N
12.	Lead	3.0 F S		Percent Solids (%)	
	Cyanide	10U			

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: Color: Before- Colorless After- Colorless. Clarity: Clear

Lab Manager [signature]

Discussed qualifier "N" for chromium & silver, data is acceptable. M. [illegible]

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. MEX 228

Date 5/17/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME Chemtech Consulting Group

CASE NO. 9469/3554E

SOW NO. 785

Lab Receipt Date 4/28/88

LAB SAMPLE ID. NO. GI-1242-03

QC REPORT NO. GI- 1242

Elements Identified and Measured

Concentration: Low X Medium ____

Matrix: Water X Soil ____ Sludge ____ Other ____

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

1.	Aluminum	100U P N	13.	Magnesium	35500 P N
2.	Antimony	5U P/A/F S	14.	Manganese	27 P
3.	Arsenic	5U F S	15.	Mercury	0.60
4.	Barium	(48) P	16.	Nickel	11U P
5.	Beryllium	2U P N	17.	Potassium	7800 A N
6.	Cadmium	0.5U P/A/F S	18.	Selenium	2U F S
7.	Calcium	120000 P N	19.	Silver	5U P N
8.	Chromium	11 P N	20.	Sodium	78200 P
9.	Cobalt	6U P	21.	Thallium	2U F S
10.	Copper	40 P N	22.	Vanadium	4U P N
11.	Iron	362 P N	23.	Zinc	49 P
12.	Lead	2.5 F S		Percent Solids (%)	
	Cyanide	10U			

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: Color: Before- Colorless After- Colorless. Clarity: Clear

Lab Manager [signature]

Disregard qualifier "N" for chromium - data is acceptable. M. [illegible]

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. MEX 229

Date 5/17/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME Chemtech Consulting Group

CASE NO. 9469/3554E

SOW NO. 785

Lab Receipt Date 4/28/88

LAB SAMPLE ID. NO. 02-1242-04

QC REPORT NO. 02- 1242

Elements Identified and Measured

Concentration: Low X Medium ____

Matrix: Water X Soil ____ Sludge ____ Other ____

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

1.	Aluminum	100U P N	13.	Magnesium	31500 P N
2.	Antimony	5U P F S	14.	Manganese	138 P
3.	Arsenic	14 F S	15.	Mercury	0.20U
4.	Barium	215 P	16.	Nickel	11U P
5.	Beryllium	2U P N	17.	Potassium	3600 A N
6.	Cadmium	0.5U F S	18.	Selenium	2U F S
7.	Calcium	106000 P N	19.	Silver	5U P N
8.	Chromium	4U P N	20.	Sodium	21700 P
9.	Cobalt	6U P	21.	Thallium	2U F S
10.	Copper	74 P N	22.	Vanadium	4U P N
11.	Iron	2400 P N	23.	Zinc	32 P
12.	Lead	3.1 F S		Percent Solids (%)	
	Cyanide	10U			

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: Color: Before- Colorless After- Colorless. Clarity: Clear

Lab Manager [signature]

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.
MEX 230

Date 5/17/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME Chemtech Consulting Group

CASE NO. 9469/3554E

SOW NO. 785

Lab Receipt Date 4/28/88

LAB SAMPLE ID. NO. GI-1242-05

QC REPORT NO. GI- 1242

Elements Identified and Measured

Concentration: Low X Medium ____

Matrix: Water X Soil ____ Sludge ____ Other ____

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

1.	Aluminum	100U P N	13.	Magnesium	500U P N
2.	Antimony	5U P F S	14.	Manganese	7U P
3.	Arsenic	5U F S	15.	Mercury	0.20U
4.	Barium	[6.7] P	16.	Nickel	11U P
5.	Beryllium	2U P N	17.	Potassium	[3600 A N]
6.	Cadmium	0.5U P F S	18.	Selenium	2U F S
7.	Calcium	500U P N	19.	Silver	5U P N
8.	Chromium	4U P N	20.	Sodium	597U P
9.	Cobalt	6U P	21.	Thallium	2U F S
10.	Copper	[34 P N]	22.	Vanadium	4U P N
11.	Iron	[126 P N]	23.	Zinc	[(11) P]
12.	Lead	(4.3) F S		Percent Solids (%)	
	Cyanide	10U			

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: Color: Before- Colorless After- Colorless. Clarity: Clear

Lab Manager [signature]

QC EXCEPTION SUMMARY REPORT

CASE # 94169 SAS 35 SITE Marble Cliff Quarries MATRIX: Water WATER SAMPLE SPK. _____
DATA SET # SF 5134 LAB Chemtech CONC. : Low WATER SAMPLE DUP. _____
LAB Q.C.# _____ REVIEWED BY D Kinsel MATRIX: _____ SOIL SAMPLE SPK. _____
DATE: 5/25/88 CONC. : _____ SOIL SAMPLE DUP. _____

	OVERALL CASE QC									MATRIX SPECIFIC QC						SAMPLE SPECIFIC QC		FIELD QC			REGIONAL QC			OTHER/ COMMENTS
	Holding Time	Cal Blanks	Init Calver	Contin Calver	Prep Blk AQ	Prep Blk SOL	ICS %R	LCS % AQ	LCS % SOL	Sol Dup RPD	Sol Spk %R	AQ Dup RPD	AQ Spk %R	Ser Dilu AQ	Ser Dilu SOL	GFAA Dup	GFAA Spike	Blank	Dup RPD	Spike %R	Blind Blank	Blind Spike %R	Split Sample RPD	
Aluminum													84											
Antimony																								
Arsenic																								
Barium																								
Beryllium													76											
Cadmium																								
Calcium													126											
Chromium													83											
Cobalt																								
Copper													66											
Iron													49											
Lead																								
Magnesium													119.											
Manganese																								
Mercury																								
Nickel																								
Potassium													128											
Selenium																								
Silver													73.											
Sodium																								
Thallium																								
Tin																								
Vanadium													83											
Zinc																								
Cyanide																								

Field Blk MEX230 Cu (34 µg/l) Fe (126) Pb (4.3)
K (3600)

Field Dups MEX227 & 228
K (118%) Cu (71.8%) Fe (33.2%)

Pb ICP (82%) spike

WA85-0818 - AMENDMENT THREE (3)
U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

Date 5/17/88

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name Chemtech Consulting Group

Case No. 9469/3554E

SOW No. 785

Q.C. Report No. G2-1242

Sample Numbers

EPA No.	Lab ID No.	EPA No.	Lab ID No.
MEX 226	G2-1242-01		
227	-02		
228	-03		
229	-04		
230	-05		

RECEIVED
MAY 19 1988
U.S. EPA CENTRAL REGIONAL LAB

Comments:

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 with 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 and F for Furnace.

Form III A

Q. C. Report No. 1242

BLANKS

LAB NAME Chemtech Consulting Group

DATE 5/17/88

CASE NO. 9469/3554E

UNITS ug/L

Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank[1] Matrix: L. WATER ug/L	Matrix: 2
Metals:							
1. Aluminum	100 U	100U	100U	100U	100U	100U	
2. Antimony	U						
3. Arsenic	U						
4. Barium	5 U	5U	5U	5U	5U	5U	
5. Beryllium	2 U	2U	2U	2U	2U	2U	
6. Cadmium	U						
7. Calcium	500 U	500U	500U	500U	500U	500U	
8. Chromium	4 U	4U	4U	4U	4U	4U	
9. Cobalt	6 U	6U	6U	6U	6U	6U	
10. Copper	9 U	9U	9U	9U	9U	9U	
11. Iron	100 U	100U	100U	100U	100U	100U	
12. Lead	2 U	2U	2U	2U			
13. Magnesium	500 U	500U	500U	500U	500U	500U	
14. Manganese	7 U	7U	7U	7U	7U	7U	
15. Mercury	0.20 U	~~2.0~~ 0.20U				0.20U	
16. Nickel	11 U	11U	11U	(11)	11U	11U	
17. Potassium	U						
18. Selenium	2 U	2U	2U				
19. Silver	5 U	5U	5U	5U	5U	5U	
20. Sodium	U	597U	597U	597U	597U	597U	
21. Thallium	U						
22. Vanadium	4 U	4U	4U	4U	4U	4U	
23. Zinc	7 U	7U	7U	7U	7U	7U	
Other: LEAD(P)	21 U	21U	21U	21U	21U	21U	
Cyanide	10U	10U				10U	

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

Form III B

Q. C. Report No. G_2-1242

BLANKS

LAB NAME Chemtech Consulting Group

CASE NO. 9469/3554E

DATE 6/17/94

UNITS ug/L

Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank[1] Matrix: 1	Matrix: 2
Metals:							
1. Aluminum	U	100U	100U				
2. Antimony	U						
3. Arsenic	U						
4. Barium	U	5U	5U				
5. Beryllium	U	2U	2U				
6. Cadmium	U						
7. Calcium	U	500U	500U				
8. Chromium	U	4U	4U				
9. Cobalt	U	6U	6U				
10. Copper	U	9U	9U				
11. Iron	U	100U	100U				
12. Lead	U						
13. Magnesium	U	500U	500U				
14. Manganese	U	7U	7U				
15. Mercury	U						
16. Nickel	U	11U	11U				
17. Potassium	U						
18. Selenium	U						
19. Silver	U	5U	5U				
20. Sodium	U	597U	597U				
21. Thallium	U						
22. Vanadium	U	4U	4U				
23. Zinc	U	7U	7U				
Other: LEAD(P)	U	21U	21U				
Cyanide							

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

Item III (c)

C. C. Report No. 1242

BLANKS

LAB NAME Chemtech Consultants Group

CASE NO. 9469/3554E

DATE 5/17/88

UNITS ug/L

Compound	Initial Calibration Blank Value		Continuing Calibration Blank Value 1	2	3	4	Preparation Blank[1] Matrix: L-WATER ug/L 1	Matrix: 2
Metals:								
1. Aluminum		U						
2. Antimony	5	U	5U	5U	5U	5U		
3. Arsenic	5	U	5U	5U	5U	5U		
4. Barium		U						
5. Beryllium		U						
6. Cadmium	0.5	U	0.5U	0.5U	0.5U	0.5U		
7. Calcium		U						
8. Chromium		U						
9. Cobalt		U						
10. Copper		U						
11. Iron		U						
12. Lead		U						
13. Magnesium		U						
14. Manganese		U						
15. Mercury		U						
16. Nickel		U						
17. Potassium	500	U	500U	500U	500U	500U	500U	
18. Selenium	~~2~~	U	~~2U~~	~~2U~~	~~2U~~	~~2U~~		
19. Silver		U						
20. Sodium		U						
21. Thallium	2	U	2U	2U	2U	2U		
22. Vanadium		U						
23. Zinc		U						
Other: LEAD(P)		U						
Cyanide								

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

Form III (D)

C. C. Report No. 42-1242

BLANKS

LAB NAME Chemical Consultants Group

DATE 9/17/88

CASE NO. 9469/3554E

UNITS ug/L

Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank[1] Matrix: 1	Matrix: 2
Metals:							
1. Aluminum	U						
2. Antimony	U	5U	5U	5U	5U		
3. Arsenic	U	5U	5U	5U	5U		
4. Barium	U						
5. Beryllium	U						
6. Cadmium	U	0.5U	0.5U	0.5U	0.5U		
7. Calcium	U						
8. Chromium	U						
9. Cobalt	U						
10. Copper	U						
11. Iron	U						
12. Lead	U						
13. Magnesium	U						
14. Manganese	U						
15. Mercury	U						
16. Nickel	U						
17. Potassium	U	500U	500U	500U			
18. Selenium	U	~~2U~~	~~2U~~	~~2U~~	~~2U~~		
19. Silver	U						
20. Sodium	U						
21. Thallium	U	2U	2U	2U			
22. Vanadium	U						
23. Zinc	U						
Other: LEAD(P)	U						
Cyanide							

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

Item III (E)

C. O. Report No. 89-1242

BLANKS

LAB NAME [illegible]

DATE 5/17/88

CASE NO. 9469/3554E

UNITS ug/L

Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank Matrix: 1	Matrix: 2
Metals:							
1. Aluminum	U						
2. Antimony	U	5U					
3. Arsenic	U	5U	5U	5U	5U		
4. Barium	U						
5. Beryllium	U						
6. Cadmium	U	0.5U					
7. Calcium	U						
8. Chromium	U						
9. Cobalt	U						
10. Copper	U						
11. Iron	U						
12. Lead	U						
13. Magnesium	U						
14. Manganese	U						
15. Mercury	U						
16. Nickel	U						
17. Potassium	U						
18. Selenium	U	*~~2U~~					
19. Silver	U						
20. Sodium	U						
21. Thallium	U						
22. Vanadium	U						
23. Zinc	U						
Other: LEAD(P)	U						
Cyanide							

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

Form V A

Q. C. Report No. 1242

SPIKE SAMPLE RECOVERY

LAB NAME Chemtech Consulting Group

DATE 5/17/88

CASE NO. 4469/3554E

EPA Sample No. MEX227

Lab Sample ID No. G-1242-02

Units ug/L

Matrix LOW WATER

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	%R[1]
Metals:					
1. Aluminum	85-115 ~~75-125~~	1670	100U	2000	84N
2. Antimony	-			500	NR
3. Arsenic	-			20	NR
4. Barium	-	1770	[45]	2000	86
5. Beryllium	-	38	2U	50	76N
6. Cadmium	-			50	NR
7. Calcium	-			---	NR
8. Chromium	-	170	[4.2]	200	83N
9. Cobalt	-	430	6U	500	86
10. Copper	-	257	91	250	66N
11. Iron	-	995	506	1000	49N
12. Lead	-			20	NR
13. Magnesium	-			---	NR
14. Manganese	-	208	26	200	91
15. Mercury	(80-120)	1.8	0.60	1.0	~~85~~ 120
16. Nickel	(85-115)	341	11U	400	85
17. Potassium	-			---	NR
18. Selenium	-			10	NR
19. Silver	-	43	6.4	50	73N
20. Sodium	-			---	NR
21. Thallium	-			50	NR
22. Vanadium	-	417	4U	500	83N
23. Zinc	-	223	45	200	89
Other: LEAD(P)		440	28	500	82N
Cyanide	(80-120)	98	10U	100	98

[1] %R = [(SSR - SR)/SA] x 100

"N" - out of control

"NR" - Not required

Comments:

Form V B

C. C. Report No. 1242

SPIKE SAMPLE RECOVERY

LAB NAME Chemtech Consulting Group

DATE 5/17/88

CASE NO. 9469/3554E

EPA Sample No. MEX227

Lab Sample ID No. 4-1242-02 (PDS#2)

Units ug/L

Matrix LOW WATER

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	%R[1]
Metals:					
1. Aluminum	85-115 ~~75-125~~			2000	
2. Antimony	-			500	
3. Arsenic	-			20	
4. Barium	-			2000	
5. Beryllium	-			50	
6. Cadmium	-			50	
7. Calcium	-	177000	114000	50,000	126N
8. Chromium	-			200	
9. Cobalt	-			500	
10. Copper	-			250	
11. Iron	-			1000	
12. Lead	-			20	
13. Magnesium	-	63300	33600	25,000	119N
14. Manganese	-			200	
15. Mercury	-			1.0	
16. Nickel	-			400	
17. Potassium	-	27600	2000	20,000	128N
18. Selenium	-			10	
19. Silver	-			50	
20. Sodium	-	129000	73900	50,000	110
21. Thallium	-			50	
22. Vanadium	-			500	
23. Zinc	-			200	
Other: LEAD(P)				500	
Cyanide	-				

[1] %R = [(SSR - SR)/SA] x 100

"N" - out of control

"NR" - Not required

Comments:

Form VI

Q. C. Report No. 1242

DUPLICATES

LAB NAME Chemtech Consulting Group

DATE 5/7/86

CASE NO. 9469/3554E

EPA Sample No. MEX 226

Lab Sample ID No. G2-1242-01

Units ug/L

Matrix LOW WATER

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
Metals:				
1. Aluminum		100U	100U	NC
2. Antimony		5U	5U	NC
3. Arsenic		5U	5U	NC
4. Barium		[23]	[23]	NC
5. Beryllium		2U	2U	NC
6. Cadmium		0.5U	0.5U	NC
7. Calcium	±20%	118000	121000	2.5
8. Chromium		4U	4U	NC
9. Cobalt		6U	6U	NC
10. Copper	±10	37	42	13
11. Iron	±20%	548	559	2.0
12. Lead	±2.0	4.7	4.0	16
13. Magnesium	±20%	43000	43900	2.1
14. Manganese	±10	23	24	4.2
15. Mercury		0.20U	0.20U	NC
16. Nickel		[14]	11U	NC
17. Potassium	±2000	2700	2300	16
18. Selenium		2U	2U	NC
19. Silver		5U	5U	NC
20. Sodium	±20%	19100	20000	4.6
21. Thallium		2U	2U	NC
22. Vanadium		4U	4U	NC
23. Zinc	±20%	1120	1150	2.6
Other: LEAD(P)		21U	21U	NC
Cyanide		10U	10U	NC

* Out of Control

[1] To be added at a later date.

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

NC - Non calculable RPD due to value(s) less than CRDL

Form VII

Q. C. Report No. 62-1242

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE.

LAB NAME Chemtech Consulting Group CASE NO. 9469/35545 DATE 5/17/88

Compound	Required Detection Limits (CRDL)-ug/L	Instrument Detection Limits (IDL) - ug/L ICP/AA ID #: 9000	Furnace ID #: 1	2	3	4	Lab Control Sample ug/L True	Found	%R
Metals:									
1. Aluminum.	100	100					990	1020	103
2. Antimony	5		5	5	5	5	505		NR
3. Arsenic	5		5	~~3~~ 5	~~3~~ 5	~~4~~ 5	49		NR
4. Barium	50	5					990	975	98
5. Beryllium	5	2					240	240	100
6. Cadmium	0.5	5	0.5	0.5	0.5	0.5	244		NR
7. Calcium	1000	500					24900	24400	98
8. Chromium	10	4					253	251	99
9. Cobalt	10	6					237	247	104
10. Copper	10	9					271	262	97
11. Iron	100	100					995	1040	104
12. Lead	2		~~3~~ 2	~~3~~ 2	~~3~~ 2	~~2~~ 2	49		NR
13. Magnesium	1000	500					12500	12400	99
14. Manganese	10	7					256	268	105
15. Mercury	0.2	0.15					5.2		NR
16. Nickel	20	11					248	247	100
17. Potassium	2000	500*					10000	11500	115
18. Selenium	2			2	2	4	104		NR
19. Silver	5	5	~~4~~ 5	~~5~~	~~5~~	~~5~~	254	~~3~~ 243	96
20. Sodium	1000	597					25350	24100	95
21. Thallium	2		~~4~~ 2	2	2	2	49		NR
22. Vanadium	10	4					256	250	98
23. Zinc	20	7					1550	1520	98
Other Lead(P)	5	21					2255	2200	98
Cyanide	10	NR	NR					105	105

NR- Not required

AA ID # 1. Hitachi
2. P.E. 30/30
3. P.E. 5000
4. P.E. 30/30Z

* Hitachi Flame

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

CRL Receipt Date 6/20 FIT Receipt Date 7/15/88 Review Completed 7/20/88

TO: Jerryl Kolb

FROM: Zena Gold-Kaufman

SUBJECT: MARBLE Cliff Quarries

PAN: OH0027SA (1 hour charged for review) Case # 9469

Sample Description

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

Project Data Status _____ Completed!!

_____ Incomplete, awaiting _____

FIT Data Review Findings:

Ketones, PAHs, some Pesticides and CLA
Some samples were re-analyzed due to QC Non-compliance (internal standards & surrogates). ~~Du~~ The data from both analyses are consistent, report first analysis on summary sheet.

Check Data Sheets for Transcription Errors

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

Book No. 8 Page No. 46 Date Sampled 4/28/88

0759:2

recycled paper

REPORTING UNITS

A. Organics

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - ug/kg or ppb (parts per billion)

B. Metals

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - mg/kg or ppm (parts per million)

DEFINITION OF FOOTNOTES TO ANALYTICAL DATA

A. Organics

FOOTNOTE	DEFINITION	INTERPRETATION
U	Indicates compound was analyzed for but not detected.	Compound was not detected.
J	Indicates an estimated value.	Compound value may be semi-quantitative.
UJ	Quantitation limit is estimated due to a Quality Control (QC) protocol.	Compound was not detected.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides >10 ng/ul in the final extract shall be confirmed by GC/MS.	Compound was confirmed by mass spectroscop
B	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.	Compound value may be semi-quantitative if it is <5x the blank concentration (<10x the blank concentrations for common lab artifacts: phthalates, methylene chloride acetone, toluene, 2-butanone).
E	This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods.	Compound value may be semi-quantitative.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.	Alerts data user to a possible change in the CRQL.
A	This flag indicates that a TIC is a suspected aldol-condensation product.	Alerts data user of a lab artifact.
R	Results are unusable due to a major violation of QC protocol.	Compound value is not usable.

B. Metals

FOOTNOTE	DEFINITION	INTERPRETATION
NEW E	Estimated or not reported due to inteference. See laboratory narrative.	Compound or element was not detected or value may be semi-quantitative.
S	Analysis by Method of Standard Additions.	Value may be quantitative.
N	Spike recoveries outside QC protocols which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative.	Value may be quantitative or semi-quantitative.
*	Duplicate value outside QC protocols which indicates a possible matrix problem.	Value may be semi-quantitative.
+	Correlation coefficient for standard additions in less than 0.995. See review and laboratory narrative.	Data value may be biased.
B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
	DL is estimated because of a QC protocol. DL is possibly above or below CRDL.	Compound or element was not detected.
	Value is above CRDL and is an estimated value because of a QC Protocol.	Value may be semi-quantitative.
U	Compound was analyzed for but not detected.	Compound was not detected.
M	Duplicate injection precision not met.	Value may be semi-quantitative.
W	Post digestion spike for furnance AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance.	Value may be semi-quantitative.

C. Other Symbols Used

NA Value not available due to insufficient data.
NR Value not calculated since chemical is not a carcinogen.
( ) Estimated value.

7/15/88
122 pages

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 7/13/88

SUBJECT: Review of Region V CLP Data
Received for Review on 6-20-88

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

TO: Data User: FIT

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

SITE NAME: Marble Cliff Quarries Dump, OH SMO Case No. 9469

EPA Data Set No. SF 5134 No. of Samples: 8 D.U./Activity Numbers Y905/C72122

CRL No. 88FK20S14 - S21

SMO Traffic No. EX014 - 021

CLP Laboratory: IT CORP., TN (Region 4) Hrs. Required for Review: 14

Following are our findings:

This review covers eight soil samples (EX014 through EX021) for complete low level organic analysis.

Al Venuto (Weston/ESAT)
7 July 1988

( ) Data are acceptable for use.
(✓) Data are acceptable for use with qualifications referenced above. See Data Qualifier sheets and Calibration Outlier forms for flags and additional comments.
( ) Data are preliminary - pending verification by Contractor Laboratory. See Case Summary above.
( ) Data are unacceptable.

cc: Carla Dempsey, CLP Quality Assurance Officer, Analytical Operations Branch
James Petty, Chief Quality Assurance Research, EMSL, Las Vegas

DATA QUALIFIERS

Contractor: ITAS- KNOXVILLE

Case 9469

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

① Holding Times:

The seven day holding time from date of sampling to date of analysis for the volatile fraction was exceeded for all samples; they were, however, analyzed within fourteen days. Therefore, the results for all aromatic compounds in this fraction should be considered J, estimated.

In both the semi-volatile and PCB/pesticides fractions, the seven day holding time from date of sampling to date of extraction for samples EX014 through EX017 and EX019 was exceeded by one day. For both fractions of samples EX018, EX020 and EX021, the holding time for extraction was exceeded by four days and for EX019RE by more than a month. The positive results for all of these samples should therefore be considered J, estimated.

② GC/MS Tuning and GC Instrument Performance

The GC tuning and mass calibration were all within the required QC limits. In the semi-volatile raw QC data package, some of the DFTPP mass spectra and data sheets are incorrectly labeled as standards.

The pesticide degradation in the column for PCB/pesticides was within the maximum 20%.

③ Calibration:

The calibration outliers for volatiles and semi-volatiles are listed on the outliers forms.

Reviewed by: Al Venuto (Weston/ESAT)

Phone: (312) 353-2959

Date: 7 July 1988

DATA QUALIFIERS

Contractor: ITAS-KNOXVILLE

Case 9469

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

④ Method Blanks:

No compounds were found in volatile blank VBLK1. VBLK2 contained a very small amount of the common contaminant acetone; this compound was also found in each of the associated samples EX015RE, EX018RE through EX021RE, EX019MS and EX019MSD. VBLK3 was found to contain the HSL compound 2-hexanone at a level much below the CRQL; this compound was not present in any of the associated samples.

Each of the three semi-volatile blanks was found to contain the two HSL compounds N-nitrosodiphenylamine and bis(2-ethylhexyl) phthalate, all at concentrations below the CRQL; both of these compounds were also found in each of the samples.

No compounds were found in any of the PCB/pesticide blanks.

⑤ Surrogate Recoveries:

All volatile surrogate recoveries were within the Q.C. limits for all samples except EX015 which had a marginally high recovery for toluene-D8. Upon reanalysis, this sample had recoveries fully within the limits.

All semi-volatile surrogate recoveries were well within the Q.C. limits

All pesticide surrogate recoveries were well within the Q.C. limits except for samples EX015

Reviewed by: Al Venuto (Weston/ESAT)

Phone: (312) 353-2959

Date: 7 July 1988

DATA QUALIFIERS

Contractor: ITAS-KNOXVILLE

Case 9469

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

and EX015 DL, which had zero DBC recoveries and sample EX016 DL which had a DBC recovery above the Q.C. limit. The first two samples were run at dilutions of 1:200 and 1:2000 respectively, so the DBC was diluted out. Inspection of the chromatogram for EX016 DL showed a broad peak, so the area reported may in fact have been too great. No action is recommended.

(6) Matrix Spikes and Matrix Spike Duplicates:

All volatile matrix spike and matrix spike duplicate recoveries and RPDs were well within the QC limits.

All semi-volatile MS and MSD recoveries were within the QC limits except for pyrene, which had a very high recovery in both. The RPDs for acenaphthene and pyrene were above the Q.C. limits. These samples were reextracted and reanalyzed; all values for recoveries and RPDs were well within the Q.C. limits except those for pyrene, which remained widely discrepant. The results for pyrene in sample EX019 and EX019RE should therefore be considered J, estimated.

(7) Field duplicates:

No samples were identified as field duplicates.

(8) Internal Standards Performance:

All volatile internal standard areas are satisfactory except the area for 1,4-difluorobenzene

Reviewed by: Al Venuto (Weston/ESAT)

Phone: (312) 353-2959

Date: 7 July 1988

DATA QUALIFIERS

Contractor: ITAS - KNOXVILLE

Case 9469

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

in sample EX018, which is insignificantly above the QC limit and the areas for both 1,4 Difluorobenzene and chlorobenzene in sample EX020 which were below the Q.C. limits. The results for compounds quantitated using these standards in sample EX020 should be considered J, estimated.

(9) Compound Identification:

The compounds as listed appear to be confirmed for the spectra.

(10) Compound Quantitation and Reported Detection Limits:

No list of detection limits is included in this case.

In my opinion, the data quality is basically good. I feel that these data are acceptable for use with the qualifications noted above.

Reviewed by: Al Venuto

Phone: (312) 353-2959

Date: 7 July 1988

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

CASE/SAS # 9469 CONTRACTOR ITAS-KNOXVILLE

Instrument # OWA5	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME: 4-7-88 10:52	4-7-88 10:52			5-9-88 20:41											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane					99.9+	J									
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride															
Acetone					46.8	J									
Carbon Disulfide															
1,1-Dichloroethane					53.9	J									
1,1-Dichloroethene															
Trans-1,2-Dichloroethene															
Chloroform															
2-Butanone		41.8	J		270	J									
1,2-Dichloroethane															
1,1,1-Trichloroethane															
Carbon Tetrachloride					30.7	J									
Vinyl Acetate					77.4	J									
Bromodichloromethane															
1,2-Dichloropropane					49.4	J									
Trans-1,3-Dichloropropene					46.1	J									
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane															
Benzene															
cis-1,3-Dichloropropene															
2-Chloroethylvinylether															
Bromoform					28.4	J									
4-Methyl-2-Pentanone					99.9+	J									
2-Hexanone		34.3	J		95.2	J									
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
m-Xylene															
o/p-Xylene															

AFFECTED SAMPLES:

VBLK3
EX019
EX020
EX021

Reviewer's Initials/Date: AV 7-6-88

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

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

CASE/SAS # 9469 CONTRACTOR ITAS-KNOXVILLE

Instrument # OWA 3	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME: 5-9-88 9:28	5-9-88 9:28			5-9-88 18:47			5-10-88 5:46								
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane															
Bromomethane															
Vinyl Chloride															
Chloroethane	.851			1.13	32.7	J	.889								
Methylene Chloride															
Acetone															
Carbon Disulfide															
1,1-Dichloroethane															
1,1-Dichloroethene															
Trans-1,2-Dichloroethene															
Chloroform															
2-Butanone															
1,2-Dichloroethane	1.34			1.74	29.1	J	1.30								
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:

VBLK1	VBLK2
EX014	EX015RE
EX015	EX018RE
EX016	EX019RE
EX017	EX019MS
EX018	EX019MSD
	EX020RE
	EX021RE

Reviewer's Initials/Date: AV 7-6-88

* 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 # 9469 CONTRACTOR ITAS - KNOXVILLE

Instrument # 4500	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME: 6-1-88 17:17	6-1-88 17:17			6-3-88 9:41											
	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															
1,2-Dichlorobenzene															
2-Methylphenol															
bis(2-chloroisopropyl)Ether															
4-Methylphenol															
N-Nitroso-Di-n-Propylamine															
Hexachloroethane															
Nitrobenzene															
Isophorone															
2-Nitrophenol															
2,4-Dimethylphenol															
Benzoic Acid															
bis(2-Chloroethoxy)Methane															
2,4-Dichlorophenol															
1,2,4-Trichlorobenzene															
Naphthalene															
4-Chloroaniline															
Hexachlorobutadiene															
4-Chloro-3-Methylphenol															
2-Methylnaphthalene															
Hexachlorocyclopentadiene															
2,4,6-Trichlorophenol															
2,4,5-Trichlorophenol															
2-Chloronaphthalene															
2-Nitroaniline															
Dimethyl Phthalate															
Acenaphthylene															
3-Nitroaniline					39.2	J									
Acenaphthene															
2,4-Dinitrophenol															
4-Nitrophenol															
Dibenzofuran															

AFFECTED SAMPLES:

SBLK 1
SBLK 2

Reviewer Initials/Date: AV 7-6-88

* 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 # 9469 CONTRACTOR ITAS - KNOXVILLE

Instrument # 4500	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME: 6-1-88 17:17	6-1-88 17:17			6-3-88 9:41											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
2,4-Dinitrotoluene															
2,6-Dinitrotoluene															
Diethylphthalate															
4-Chlorophenyl-phenylether															
Fluorene															
4-Nitroaniline															
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															
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: AV 7-6-88

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

CASE/SAS # 9469 CONTRACTOR ITAS-KNOXVILLE

Instrument # 4500	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME: 6-6-88 10:33	6-6-88 10:33			6-6-88 15:21			6-7-88 10:03			6-10-88 10:16					
	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															
1,2-Dichlorobenzene															
2-Methylphenol															
bis(2-chloroisopropyl)Ether											39.7	J			
4-Methylphenol															
N-Nitroso-Di-n-Propylamine											25.6	J			
Hexachloroethane															
Nitrobenzene															
Isophorone															
2-Nitrophenol															
2,4-Dimethylphenol															
Benzoic Acid															
bis(2-Chloroethoxy)Methane															
2,4-Dichlorophenol															
1,2,4-Trichlorobenzene															
Naphthalene															
4-Chloroaniline															
Hexachlorobutadiene															
4-Chloro-3-Methylphenol															
2-Methylnaphthalene															
Hexachlorocyclopentadiene															
2,4,6-Trichlorophenol															
2,4,5-Trichlorophenol															
2-Chloronaphthalene															
2-Nitroaniline															
Dimethyl Phthalate															
Acenaphthylene															
3-Nitroaniline															
Acenaphthene															
2,4-Dinitrophenol															
4-Nitrophenol											28.0	J			
Dibenzofuran															

AFFECTED SAMPLES:

EX014	EX015	SBLK3
EX016	EX019MS	EX019RE
EX019	EX019MSD	EX019MSRE
EX018	EX020	EX019MSDRE
EX017		
EX021		

Reviewer Initials/Date: AV 7-6-88

* 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 # 9469 CONTRACTOR ITAS-KNOXVILLE

Instrument # 4500	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME: 6-6-88 10:33	6-6-88 10:33			6-6-88 15:21			6-7-88 10:03			6-10-88 10:16					
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
2,4-Dinitrotoluene															
2,6-Dinitrotoluene															
Diethylphthalate															
4-Chlorophenyl-phenylether															
Fluorene															
4-Nitroaniline															
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															
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: AV 7-6-88

Case: 9469

Contractor: ITAS-KNOXVILLE

TENTATIVELY IDENTIFIED COMPOUNDS
MATCH 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.

Al Venuto (Weston/ESAT)

INTERNATIONAL TECHNOLOGY CORPORATION

June 17, 1988

USEPA Region V, ESD
536 S. Clark Street
Tenth Floor, CRL
Chicago, IL 60605

ATTN: Curtis Ross

CASE NARRATIVE

Case Number:	9469
Sample Delivery Group Number (SDG#):	EX014
Laboratory Name:	ITAS-Knoxville (IT-STU)
Contract Number:	68-01-7468
ITAS Project Number:	EPAG 41196

Enclosures

Enclosed are the data for Case Number 9469. Table 1 lists EPA and ITAS sample numbers, SMO tag number (if applicable), sample matrix, sample concentration (for soil samples only), and analysis requested.

Sample Receipt

The samples were received in one (1) shipment on April 29, 1988. The shipment contained eight (8) soil samples in good condition.

GC/MS Analysis

The volatiles analyses were performed on 5/9 and 5/10/88 by purge and trap with packed SP-1000 column on 2 Finnigan OWA GC/MS/DS systems.

The semivolatiles analyses were performed on 6/3, 6/6, 6/7, and 6/10/88 by direct injection of sample extract on a J&W DB-5 capillary column on a Finnigan 4500 GC/MS/DS.

The analysis followed EPA CLP SOW 10/86 protocol. In the volatiles analyses, instrumental problems caused delay in running the samples, but every attempt was made to perform the runs within holding time: on the 10th day from receipt all samples except the matrix spike and the matrix spike duplicate were run. Unfortunately, one standard of that day (our VSTD05093) exceeded 25% RPD for CCC compound 1,2-dichloropropane. This affected samples EX021, EX020, EX019,

and blank VBLK3. It was felt that it was better to run these samples within holding time despite the standard nonconformance. Also, EX015, EX018, and EX020 showed variously discrepant results for either a surrogate or 1-2 internal standards. All samples with discrepancies, along with matrix spike and duplicate, were rerun the following day. The data from both analyses appear consistent, and are submitted for purposes of client usability.

The semivolatiles analyses proceeded with no major problems, except that sample EX019 showed wide variation in the TCL results for the original, matrix spike, and matrix spike duplicate samples. The sample had been well mixed, but apparently small heterogeneous spots remained to produce such results.

Although this discrepancy did not necessarily represent a failure to meet protocol, a call was made to Jeb Livingood of SMO to discuss the situation. He returned the call (see phone dialogs at the end of this narrative) after conferring with Region V, with the suggestion to reprep (now beyond holding time) a larger piece of the sample, and document so in this narrative. After considering the high TCL levels seen, protocol restraints and available remaining sample, IT-STU decided to meet that suggestion as closely as possible by reprepping the original and matrix spikes; in so doing, obtaining more information on matrix spike effect. The same protocol amount was weighed up, but the sample was vigorously mixed, with a consistent granular texture throughout. The original and reprep data are submitted, along with 2 Form 3D's for this sample.

Two notes concerning the data workup: One TIC peak in the samples was characterized as hydroxymethylpentanone, replacing the NBS library match name. IT-STU considers the former name to be correct. Matrix spike results were suppressed (treated as undetected) on Form 1; they were retained on Form 3.

Data were reported with qualifiers as follows:

U - Compound analyzed for but not detected.
E - Compound exceeded calibration range of instrument.
D - Compound analyzed at a secondary dilution factor.
J - Compound detected but below the contract required detection limit. The value given was an estimate.
B - Compound was found in the method blank.
A - Suspected aldol condensation product.
Y - Indistinguishable isomer in tentatively identified compounds.

GC Analysis

Samples EX014, EX015, EX016, EX017, EX019, EX019 MS, EX019 MSD, and PBLK1 were extracted on 5/6/88. Samples EX018, EX020, EX021, and PBLK2 were extracted on 5/9/88. All samples, except EE7780 (EX018), required sulfur cleanup treatment. The sulfur cleanups were done on 6/3/88 and 6/8/88. A sulfur cleanup blank was generated on 6/8/88 to cover both treatments. (This approach was approved by Doris Ling.) The same procedure and reagents were used on both days.

The pesticide/PCB analysis was performed from 6/6/88 to 6/16/88. The 2250/2401 column was the primary column. The 3% OV-1 column was used as the secondary column.

The hard copies and diskette were generated through Finnigan-supplied software (FORMASTER).

The program, FORMASTER, does not number blanks as is required in the latest contract revision. Therefore, all pesticide blanks have a number added by hand to the hard copies of the package. However, it is not possible to change the identification of the blank(s) on diskette.

The program, FORMASTER, does not accept a slash in the space designated for column type. It also only accepts 8 characters in that space. For the 2250/2401 column, the space was filled with 22502401 and the slash was later added by hand to all forms with that column designation. The designation on the chromatograms is 2250-2401.

The hexane injections listed on FORM VIII PEST-2 are used only to prevent late eluting components from interfering with sample or standard injections. Therefore, no surrogate is added and %D for dibutylchlorendate retention time shift is not reported.

FORMASTER calculates and prints the individual and the combined degradation values for endrin and 4,4'-DDT for the 2250/2401 column. The combined value is crossed out on the FORM VIII PEST I for the 2250/2401 sequence.

V3700A, 2250/2401, 6/6-9/88

Standard INDA analyzed at 11:42 on 6/7/88 did not meet QC criteria because of interference from late eluting peaks in the previous sample(s). INDA was rerun at 13:27 on 6/7/88 and did meet QC criteria. The analytical sequence was restarted at this point and all affected samples were re-analyzed.

EVALB at 16:52 on 6/7/88 failed QC criteria because of incorrect integration. It was rerun at 17:23 on 6/7/88. A late eluting peak from a previous sample(s) interfered with endrin ketone. EVALB was run again at 18:57 on 6/7/88 and passed QC criteria. The sequence was continued at this point.

EVALB at 01:06 on 6/8/88 failed QC criteria because of column overloading from the previous sample. It was reanalyzed at 08:59 on 6/8/88 and passed QC criteria. The sequence was continued at this point and all affected samples were reanalyzed.

INDB at 12:39 on 6/8/88 did not meet QC criteria due to interference from the previous sample. Column maintenance was performed. INDB was reanalyzed at 15:03 on 6/8/88. QC criteria were met and the sequence was resumed.

Integration of endrin aldehyde was incorrect for EVALB analyzed at 18:11 on 6/8/88. EVALB was reanalyzed at 22:20 on 6/8/88 and met criteria. The sequence was resumed and affected samples were reanalyzed.

EVALB at 01:54 on 6/9/88 failed QC criteria. It was reanalyzed at 08:54 on 6/9/88 and passed QC criteria. The sequence was continued at this point and all affected samples were reanalyzed.

V3700A, 2250/2401, 6/14-15/88

INDB at 1:08 on 6/16/88 did not meet RT window criteria. When this was discovered, INDB had already run again at 08:39 and met RT window criteria. The sequence was resumed and all affected samples were reanalyzed.

The retention time windows were re-established on 6/10/88. The INDB standards meet the new windows. The windows are printed incorrectly on the FORMASTER generated FORM IX's and are manually corrected.

The following symbols were used in reporting the data:

(R) - This symbol is used in labeling chromatograms to signify an interfering peak which has a retention time close to that of a compound of interest but is not actually within the retention time window for that compound. The peak area or height information is then used to calculate a quantitation limit if the interfering peak would obscure the compound of interest.

X - Indicates that this area of the chromatogram was off scale, but that the retention time of the peak does not match a TCL component. No value is reported.

UJ - Indicates a quantitation limit that is lower than the normal CRQL for a dilution. This flag is used when the undiluted sample has an off scale peak which interferes with the quantitation of a component, but is not inside the retention time window of the component.

FORM IV was manually generated for the sulfur cleanup blank due to FORMASTER limitations.

Most of the soil samples have a large peak just outside of the retention time window of Aroclor 1221. Aroclor 1221 could not be calculated at the original dilution because of this peak. These samples were also analyzed at a 1:10 dilution. On the OV-1 column, the interfering peak was well outside of the 1221 window. When the quantitation limit was calculated for the 1:10 dilution, it was below the CRQL. The actual quantitation limit of 1221 for these samples is reported on the 1:10 dilutions. A flag of "UJ" is used to indicate that one peak was detected and that the quantitation limit is below the CRQL for a 1:10 dilution.

Approved by:

Tom Wilson

Tom Wilson
Group Supervisor, GC/MS

TW:sm

Enclosure

Release of the data contained in this hard copy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Tom Wilson

Tom Wilson
Group Supervisor, GC/MS

TABLE 1
SAMPLE SUMMARY TABLE

Case Number: 9469
Sample Delivery Group Number (SDG#): EX014
Laboratory Name: ITAS-Knoxville (IT-STU)
Contract Number: 68-01-7468
ITAS Project Number: EPAG 41196

SMO #	SMO TAG #	ITAS #	Matrix	Conc.	Analysis
EX014	5-157001	EE7776	Soil	Low	BNA
	5-157001	EE7776	Soil	Low	Pest/PCB
	5-157002/03	EE7766	Soil	Low	VO
EX015	5-157005	EE7777	Soil	Low	BNA
	5-157005	EE7777	Soil	Low	Pest/PCB
	5-157006/07	EE7767	Soil	Low	VO
EX016	5-157009	EE7778	Soil	Low	BNA
	5-157009	EE7778	Soil	Low	Pest/PCB
	5-157010/11	EE7768	Soil	Low	VO
EX017	5-157013	EE7779	Soil	Low	BNA
	5-157013	EE7779	Soil	Low	Pest/PCB
	5-157014/15	EE7769	Soil	Low	VO
EX018	5-157017	EE7780	Soil	Low	BNA
	5-157017	EE7780	Soil	Low	Pest/PCB
	5-157018/19	EE7770	Soil	Low	VO
EX019	5-157021	EE7781	Soil	Low	BNA
	5-157021	EE7781	Soil	Low	Pest/PCB
	5-157022/23	EE7771	Soil	Low	VO
EX019 MS	5-157021	EE7782 MS	Soil	Low	QC-MS-BNA
	5-157021	EE7782 MS	Soil	Low	QC-MS-Pest/PCB
	5-157022/23	EE7772 MS	Soil	Low	QC-MS-VO
EX019 MSD	5-157021	EE7783 MSD	Soil	Low	QC-MSD-BNA
	5-157021	EE7783 MSD	Soil	Low	QC-MSD-Pest/PCB
	5-157022/23	EE7773 MSD	Soil	Low	QC-MSD-VO
EX020	5-157025	EE7784	Soil	Low	BNA
	5-157025	EE7784	Soil	Low	Pest/PCB
	5-157026/27	EE7774	Soil	Low	VO

TABLE 1
SAMPLE SUMMARY TABLE
(continued)

SMO #	SMO TAG #	ITAS #	Matrix	Conc.	Analysis
EX021	5-157029	EE7785	Soil	Low	BNA
	5-157029	EE7785	Soil	Low	Pest/PCB
	5-157030/31	EE7775	Soil	Low	VO

ABBREVIATIONS:
BNA = Semivolatiles
Pest = Pesticides
PCB = Polychlorinated biphenyls
VO = Volatiles
MS = Matrix spike
MSD = Matrix spike duplicate

SAMPLE DATES: 4/27-28/88
LOG IN DATE: 5/18/88
DUE DATE: 7/7/88

CENTRAL REGIONAL LABORATORY SAMPLE DATA REPORT
ORGANICS/INORGANICS

MAY 6 1988

SUPERFUND 5134

THIS FORM IS TO BE USED FOR SAMPLES SENT TO CONTRACT ONLY

CASE NUMBER/SAS No. 9469 SITE NAME Marble Cliff Quarries Dump LABORATORY ITSTU/Keystone DATE SHIPPED 4/28/88

SUPERFUND DU NUMBER 9905 EPA RPM or OSC (S.M.S.)/(CES) _____ CERCLIS NUMBER OHD980510226 PAGE 2 OF 2

ACTIVITY NUMBER C72100

CRL LOG NUMBER	ORGANIC TRAFFIC REPORT NUMBER or SAS Packing List No.	INORGANIC TRAFFIC REPORT NUMBER	WATER OR LIQUIDS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN UG/L TOX17574	VOLATILE ORGANIC ANALYSIS ORGANIC SCAN UG/L TOX17564	WATER POLYCHLORINATED BIPHENYLS UG/L PES 17144	WATER CHLORINATED PESTICIDES UG/L PES17134	TOTAL METALS IN WATER UG/L MET111	WATER CYANIDE UG/L MIN74919	NITRATE/NITRITE MG/L MIN7284	AMMONIA MG/L MIN7294	RESIDUE, FILTERABLE TDS MG/L MIN7362	RESIDUE, NON-FILT TSS MG/L MIN7372			SEDIMENTS or SOILS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN MG/KG TOX215722	VOLATILE ORGANIC ANALYSIS ORGANIC SCAN MG/KG TOX215622	SEDIMENTS POLYCHLORINATED BIPHENYLS MG/KG PES211422	SEDIMENT CHLORINATED PESTICIDES MG/KG 211322	TOTAL METALS MG/KG MET413	CYANIDE MG/KG MIN44930	EP TOXICITY METALS MG/KG	AMMONIA MG/KG MIN42925				
88FK20S14	EX014 ✓	MEX218	✓	✓											✓	✓	✓	✓	✓	✓						
88FK20S15	EX015 ✓	MEX219	✓	✓											✓	✓	✓	✓	✓	✓						
88FK20S16	EX016 ✓	MEX220	✓	✓											✓	✓	✓	✓	✓	✓						
88FK20S17	EX017 ✓	MEX221	✓	✓											✓	✓	✓	✓	✓	✓						
88FK20S18	EX018 ✓	MEX222	✓	✓											✓	✓	✓	✓	✓	✓						
88FK20S19	EX019 ✓	MEX223	✓	✓											✓	✓	✓	✓	✓	✓						
88FK20S20	EX020 ✓	MEX224	✓	✓											✓	✓	✓	✓	✓	✓						
88FK20S21	EX021 ✓	MEX225	✓	✓											✓	✓	✓	✓	✓	✓						
	data		CC	[illegible]																						

USEPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 ALEXANDRIA VA 22313
703/557-2490 FTS-557-2490

CASE NO: 9469

SAS NO: (IF APPLICABLE)

ORGANIC TRAFFIC REPORT

(FOR CLP USE ONLY)

TYPE OF ACTIVITY (CIRCLE ONE) ①
SUPERFUND—PA (SI) ESI RIFS RD RA ER
NPLD O&M OTHER _____
NON-SUPERFUND—_____ PROGRAM

SAMPLE DESCRIPTION
(ENTER IN BOX A)
1. SURFACE WATER
2. GROUND WATER
3. LEACHATE
4. SOIL
5. SEDIMENT
6. OIL (SAS)
7. WASTE (SAS)

REGION NO: V
SAMPLING COMPANY ② FIT
SAMPLER: (NAME) Philip H. Smith

SHIP TO: ③
IT Analytical Services
5815 Middlebrook Pike
Knoxville, TN 37921
ATTN: Pauula Rogers

SAMPLING DATE: ④
BEGIN: 4/21/88 END: 4/22/88

DATE SHIPPED: 4/22/88 CARRIER: F ⑤
AIRBILL NO: 7844394872

DATE REC'D: 4-29-88
SDG NO: ⑥ EX014
REC'D BY: Beth Monroe
LABORATORY CONTRACT NO. SPA-68-01-7468
UNIT PRICE 793

TRANSFER TO:
DATE REC'D: ⑦
REC'D BY:
CONTRACT NO./PRICE:

CLP SAMPLE NUMBER (FROM LABELS)	Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7	Ⓑ CONCENTRATION L = LOW/MED. H = HIGH (SAS)	Ⓒ RAS ANALYSIS: VOLATILE	BASE/NEUT /ACID	PESTICIDE /PCB's		Ⓓ SPECIAL HANDLING	Ⓔ STATION LOCATION	Ⓕ SAMPLE CONDITION ON RECEIPT	Ⓖ HIGH CONC. PHASES (CHECK): SOLID	WATER—MIS LIQUID	NON WATER—MIS LIQUID
EX014	4	L	✓	✓	✓			Soil 1	Cool + Intact			
EX015	4	L	✓	✓	✓			Soil 2	Cool + Intact			
EX016	4	L	✓	✓	✓			Soil 3	Cool + Intact			
EX017	4	L	✓	✓	✓			Soil 4	Cool + Intact			
EX018	4	L	✓	✓	✓			Soil 5	Cool + Intact			
EX019	4	L	✓	✓	✓			Soil 6	Cool + Intact			
EX020	4	L	✓	✓	✓			Soil 7	Cool + Intact			
EX021	4	L	✓	✓	✓			Soil 8	Cool + Intact			

EPA Form 2075-7 (8-87)

SDG # Final Sample EX021

WHITE — SMO COPY PINK — CLIENT COPY WHITE — LAB COPY FOR RETURN TO SMO YELLOW — LAB COPY

SPAG 41196

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
01	EX014	93	91	91		0
02	EX015	118 *	84	96		1
03	EX015RE	104	90	93		0
04	EX016	107	101	93		0
05	EX017	106	87	71		0
06	EX018	104	94	74		0
07	EX018RE	100	94	93		0
08	EX019	108	92	94		0
09	EX019MS	100	84	90		0
10	EX019MSD	101	87	92		0
11	EX019RE	104	87	91		0
12	EX020	106	93	97		0
13	EX020RE	103	88	88		0
14	EX021	102	86	84		0
15	EX021RE	111	86	91		0
16	VBLK1	108	103	91		0
17	VBLK2	96	92	94		0
18	VBLK3	100	100	91		0

		QC LIMITS
S1 (TOL)	= Toluene-d8	(81-117)
S2 (BFB)	= Bromofluorobenzene	(74-121)
S3 (DCE)	= 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	OTHER	TOT OUT
01	EX014	63	62	61	55	59	60		0
02	EX015	76	78	125	70	71	85		0
03	EX016	63	67	81	64	63	61		0
04	EX017	66	69	71	63	63	65		0
05	EX018	67	70	86	66	64	61		0
06	EX019	40	52	47	44	45	50		0
07	EX019MS	57	61	83	58	53	66		0
08	EX019MSD	68	70	92	59	59	64		0
09	EX019MSDRE	94	74	67	62	82	83		0
10	EX019MSRE	74	75	64	59	71	69		0
11	EX019RE	81	73	74	56	69	69		0
12	EX020	64	72	83	59	62	59		0
13	EX021	65	64	64	58	61	64		0
14	SBLK1	81	82	95	79	76	92		0
15	SBLK2	74	76	88	72	73	82		0
16	SBLK3	66	67	78	61	65	74		0

		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(23-120)
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)
S3 (TPH)	= Terphenyl	(18-137)
S4 (PHL)	= Phenol-d5	(24-113)
S5 (2FP)	= 2-Fluorophenol	(25-121)
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)

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

IF
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: ITAS-KNOXVILLE Contract: 68-01-1468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: 62016

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (DBC)	#	OTHER
01	EN014	79		0
02	EN014DL	54		0
03	EN013	0	D	0
04	EN015DL	0	D	0
05	EN016	70		0
06	EN016DL	223	*	0
07	EN017	66		0
08	EN017DL	71		0
09	EN018	90		0
10	EN018DL	96		0
11	EN019	92		0
12	EN020	91		0
13	EN020DL	106		0
14	EN021	63		0
15	EN019MS	115		0
16	EN019MSD	122		0
17	PBLK2	80		0
18	PBLK1	72		0
19	PBLK1DL	88		
20	PBLK2DL	100		
21	PBLK3	83		

S1 (DBC) = Dibutylchlorendate — ADVISORY QC LIMITS (20-150)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

FORM II PEST-1

1/87 Rev.

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix Spike - EPA Sample No.: EX019RE Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	56.8	0	44.7	79	59-172
Trichloroethene	56.8	0	50.5	89	62-137
Benzene	56.8	0	49.5	87	66-142
Toluene	56.8	4.20	55.1	90	59-139
Chlorobenzene	56.8	0	53.4	94	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	56.8	45.1	79	0	22	59-172
Trichloroethene	56.8	52.4	92	-3	24	62-137
Benzene	56.8	51.7	91	-4	21	66-142
Toluene	56.8	54.5	89	1	21	59-139
Chlorobenzene	56.8	55.8	98	-4	21	60-133

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

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: CLP,9469,EX014,EX019,LOW,SOIL,EE7771R,VOA,EPA
OWA-3:5GR/5ML H2O PURGED W/50PPB IS+SS

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix Spike - EPA Sample No.: EX019 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	7580	0	3770	50	26- 90
2-Chlorophenol	7580	0	3920	52	25-102
1,4-Dichlorobenzene	3790	0	1720	45	28 104
N-Nitroso-di-n-prop.(1)	3790	0	1910	50	41 126
1,2,4-Trichlorobenzene	3790	0	2020	53	38 107
4-Chloro-3-methylphenol	7580	0	4520	60	26 103
Acenaphthene	3790	141	2770	69	31-137
4-Nitrophenol	7580	0	4070	54	11-114
2,4-Dinitrotoluene	3790	0	2120	56	28- 89
Pentachlorophenol	7580	0	2980	39	17-109
Pyrene	3790	3600	15800	322 *	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	7520	3930	52	-4	35	26- 90
2-Chlorophenol	7520	4220	56	-7	50	25-102
1,4-Dichlorobenzene	3760	1820	48	-6	27	28 104
N-Nitroso-di-n-prop.(1)	3760	1960	52	-4	38	41 126
1,2,4-Trichlorobenzene	3760	2230	59	-11	23	38 107
4-Chloro-3-methylphenol	7520	4530	60	0	33	26 103
Acenaphthene	3760	3930	101	-38 *	19	31-137
4-Nitrophenol	7520	4230	56	-4	50	11-114
2,4-Dinitrotoluene	3760	2360	63	-12	47	28- 89
Pentachlorophenol	7520	3200	43	-10	47	17-109
Pyrene	3760	35200	840 *	-89 *	36	35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 2 out of 11 outside limits
Spike Recovery: 2 out of 22 outside limits

COMMENTS: CLP,9469,,EX019,LOW,SOIL,EE7781,BNA,EPA
INSTR.4500 : J&WDBS(30M*.315MM/1UM) 45-325@10D/M: 1 UL INJ

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix Spike - EPA Sample No.: EX019RE Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	7480	0	4190	56	26- 90
2-Chlorophenol	7480	0	4710	63	25-102
1,4-Dichlorobenzene	3740	0	2270	61	28 104
N-Nitroso-di-n-prop.(1)	3740	0	2330	62	41 126
1,2,4-Trichlorobenzene	3740	0	2540	68	38 107
4-Chloro-3-methylphenol	7480	0	5210	70	26 103
Acenaphthene	3740	230	2800	69	31-137
4-Nitrophenol	7480	0	6260	84	11-114
2,4-Dinitrotoluene	3740	0	2290	61	28- 89
Pentachlorophenol	7480	0	4520	60	17-109
Pyrene	3740	6300	6030	-7 *	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	7550	4630	61	-9	35	26- 90
2-Chlorophenol	7550	5270	70	-11	50	25-102
1,4-Dichlorobenzene	3770	2520	67	-9	27	28 104
N-Nitroso-di-n-prop.(1)	3770	2290	61	2	38	41 126
1,2,4-Trichlorobenzene	3770	2840	75	-10	23	38 107
4-Chloro-3-methylphenol	7550	5920	78	-11	33	26 103
Acenaphthene	3770	3090	76	-10	19	31-137
4-Nitrophenol	7550	7360	97	-14	50	11-114
2,4-Dinitrotoluene	3770	2500	66	-8	47	28- 89
Pentachlorophenol	7550	5120	68	-13	47	17-109
Pyrene	3770	10500	111	-227 *	36	35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 1 out of 11 outside limits
Spike Recovery: 1 out of 22 outside limits

COMMENTS: CLP,9469,,EX019,LOW,SOIL,EE7781RP,BNA,EPA
INSTR.4500 : J&WDBS(30M*.315MM/1UM) 45-325@10D/M: 1 UL INJ

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EK016

Matrix Spike - EPA Sample No.: EK016 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)	30.3	0	58.6	193 *	46-127
Heptachlor	30.3	0	20.3	69	35-130
Aldrin	30.3	0	26.1	86	34-132
Dieldrin	75.7	0	40.5	57	31-134
Endrin	75.7	0	57.9	76	42-139
4,4'-DDT	75.7	0	48.8	64	20-134

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
gamma-BHC (Lindane)	30.1	83.5	277 *	-32	50	46-127
Heptachlor	30.1	18.3	37	-23	21	35-130
Aldrin	30.1	24.1	80	7	43	34-132
Dieldrin	75.2	30.0	47	19	32	31-134
Endrin	75.2	56.8	75	0	40	42-139
4,4'-DDT	75.2	54.1	72	-12	30	20-134

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

\# Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 2 out of 12 outside limits

COMMENTS: Lindane recovery values are outside the suggested QC Limits due to a closely eluting unknown component in the sample which coelutes with Lindane in the MS and MSD samples.

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Lab File ID: VBL05092 Lab Sample ID: VBL05092

Date Analyzed: 05/09/88 Time Analyzed: 1950

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: OWA3

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	EX014	EE7766	EE7766	2044
02	EX015	EE7767	EE7767	2132
03	EX016	EE7768	EE7768	2221
04	EX017	EE7769	EE7769	2310
05	EX018	EE7770	EE7770	2358

COMMENTS: CLP,9469,EX014,VBLK1,LOW,SOIL,VBL05092,VOA,BLANK
INSTRUMENT-OWA3 EPA CLP METHOD (VOLATILES)

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Lab File ID: VBLK05092 Lab Sample ID: VBLK05092

Date Analyzed: 05/09/88 Time Analyzed: 2136

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: OWA5

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	EX019	EE7771	EE7771	2349
02	EX020	EE7774	EE7774	2305
03	EX021	EE7775	EE7775	2226

COMMENTS: CLP,9469,,VBLK1,LOW,SOIL,VBLK05092,VOA,BLANK
INST OWA5: CLP VOLATILES

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Lab File ID: VBL05101 Lab Sample ID: VBL05101

Date Analyzed: 05/10/88 Time Analyzed: 0636

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: OWA3

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	EX015RE	EE7767	EE7767R	1036
02	EX018RE	EE7770	EE7770R	1123
03	EX019RE	EE7771	EE7771R	0812
04	EX020RE	EE7774	EE7774R	1211
05	EX021RE	EE7775	EE7775R	1259
06	EX019MS	EE7772	EE7772MS	0900
07	EX019MSD	EE7773	EE7773SD	0948

COMMENTS: CLP,9469,EX014,VBLK2,LOW,SOIL,VBL05101,VOA,BLANK
OWA-3:5ML PURGED W/50PPB IS+SS

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: VBL05092

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VBL05092

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

% Moisture: not dec. _____ Date Analyzed: 05/09/88

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes(total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK1

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: VBL05092

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VBL05092

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

% Moisture: not dec. _____ Date Analyzed: 05/09/88

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: VBL05101

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VBL05101

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

% Moisture: not dec. ____ Date Analyzed: 05/10/88

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	1	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes(total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK2

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: VBL05101

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VBL05101

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

% Moisture: not dec. _____ Date Analyzed: 05/10/88

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK3

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: VBLK05092

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VBLK05092

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

% Moisture: not dec. _____ Date Analyzed: 05/09/88

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	1	J
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes(total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: VBLK3

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: VBLK05092

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VBLK05092

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

% Moisture: not dec. _____ Date Analyzed: 05/09/88

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Lab File ID: BL2808 Lab Sample ID: BL2808

Date Extracted: 05/06/88 Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/88 Time Analyzed: 1412

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: 4500

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	EX014	EE7776	EE7776	06/06/88
02	EX015	EE7777	EE7777	06/07/88
03	EX016	EE7778	EE7778	06/06/88
04	EX017	EE7779	EE7779	06/06/88
05	EX019	EE7781	EE7781	06/06/88
06	EX019MS	EE7782MS	EE7782MS	06/07/88
07	EX019MSD	EE7783MSD	EE7783MSD	06/07/88

COMMENTS: CLP,9469,,SBLK1,LOW,SOIL,BL2808,BNA,BLANK
INSTR.4500 : J&WDBS(30M*.315MM/1UM) 45-325@10D/M: 1 UL INJ

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Lab File ID: BL2814 Lab Sample ID: BL2814

Date Extracted: 05/09/88 Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/88 Time Analyzed: 1515

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: 4500

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	EX018	EE7780	EE7780	06/06/88
02	EX020	EE7784	EE7784	06/07/88
03	EX021	EE7785	EE7785	06/06/88

COMMENTS: CLP,9469,,SBLK2,LOW,SOIL,BL2814,BNA,BLANK
INSTR.4500 : J&WDBS(30M*.315MM/1UM) 45-325@10D/M: 1 UL INJ

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Lab File ID: BL2971 Lab Sample ID: BL2971

Date Extracted: 06/10/88 Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed: 06/10/88 Time Analyzed: 1439

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: 4500

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	EX019MSDRE	EE7783RPR	EE7783RPR	06/10/88
02	EX019MSRE	EE7782RP	EE7782RP	06/10/88
03	EX019RE	EE7781RP	EE7781RP	06/10/88

COMMENTS: CLP,9469,,SBLK3,LOW,SOIL,BL2971,BNA,BLANK
INSTR.4500 : J&WDBS(30M*.315MM/1UM) 45-325@10D/M: 1 UL INJ

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

1107

SBLK1

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: BL2808

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BL2808

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. _____ dec. _____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/88

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl Alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	bis(2-Chloroisopropyl)Ether	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic Acid	1600	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

1108

SBLK1

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: BL2808

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BL2808

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. _____ dec. _____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/88

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-Methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	270	J
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	660	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	200	J
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLK1 1109

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: BL2808

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BL2808

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. _____ dec. _____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/88

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.000

Number TICs found: 11

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108-21-4	ACETIC ACID, 1-METHYLETHYL E	3.90	190	AJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.40	13000	AJ
3. 110-12-3	2-HEXANONE, 5-METHYL-	4.70	860	AJ
4.	UNKNOWN	5.82	150	J
5. 57-15-8	2-PROPANOL, 1,1,1-TRICHLORO-	7.03	670	J
6.	UNKNOWN	22.42	250	J
7.	OCTADECENE	22.60	230	JY
8.	UNKNOWN	24.20	410	J
9.	UNKNOWN	24.39	140	J
10. 88-24-4	PHENOL, 2,2'-METHYLENEBIS[6-	25.76	590	J
11.	UNKNOWN	26.46	900	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: BL2814

Sample wt/vol: 30.1 (g/mL) G Lab File ID: BL2814

Level: (low/med) LOW Date Received: 05/05/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/88

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl Alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	bis(2-Chloroisopropyl)Ether	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic Acid	1600	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: BL2814

Sample wt/vol: 30.1 (g/mL) G Lab File ID: BL2814

Level: (low/med) LOW Date Received: 05/05/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/88

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-Methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	260	J
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	660	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	160	J
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

1141

SBLK2

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: BL2814

Sample wt/vol: 30.1 (g/mL) G Lab File ID: BL2814

Level: (low/med) LOW Date Received: 05/05/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/88

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

Number TICs found: 16

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108-21-4	ACETIC ACID, 1-METHYLETHYL E	3.92	190	AJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.42	12000	AJ
3. 110-12-3	2-HEXANONE, 5-METHYL-	4.70	700	AJ
4.	UNKNOWN	5.82	150	J
5. 57-15-8	2-PROPANOL, 1,1,1-TRICHLORO-	7.05	700	J
6.	UNKNOWN	22.42	360	J
7.	OCTADECENE	22.62	360	JY
8.	UNKNOWN	24.19	390	J
9.	UNKNOWN	24.35	200	J
10. 74685-33-9	3-EICOSENE, (E)-	24.44	170	J
11. 3891-98-3	DODECANE, 2,6,10-TRIMETHYL-	25.26	160	J
12. 88-24-4	PHENOL, 2,2'-METHYLENEBIS[6-	25.69	2100	J
13. 54833-23-7	EICOSANE, 10-METHYL-	26.14	140	J
14.	UNKNOWN	26.36	430	J
15.	UNKNOWN (SAT'D HYDROCARBON)	27.04	140	J
16.	UNKNOWN (SAT'D HYDROCARBON)	28.91	140	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3

1176

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: BL2971

Sample wt/vol: 30.1 (g/mL) G Lab File ID: BL2971

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. _____ dec. _____ Date Extracted: 06/10/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl Alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	bis(2-Chloroisopropyl)Ether	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic Acid	1600	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

1177

SBLK3

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: BL2971

Sample wt/vol: 30.1 (g/mL) G Lab File ID: BL2971

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. _____ dec. _____ Date Extracted: 06/10/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-Methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	150	J
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	660	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	350	
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO. 1178

SBLK3

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: BL2971

? Sample wt/vol: 30.1 (g/mL) G Lab File ID: BL2971

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/10/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108-21-4	ACETIC ACID, 1-METHYLETHYL E	3.83	190	AJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.35	19000	AJ
3. 110-12-3	2-HEXANONE, 5-METHYL-	4.62	560	AJ
4. 57-15-8	2-PROPANOL, 1,1,1-TRICHLORO-	6.95	940	J
5.	UNKNOWN	28.02	240	J

PESTICIDE METHOD BLANK SUMMARY

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7168

Lab Code: IT-BTU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Lab Sample ID: 2608B1-1 Lab File ID: _____

Matrix:(soil/water) SOIL Level:(low/med) LOW

Date Extracted: 05/06/88 Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed (1): 06/07/88 Date Analyzed (2): 06/14/88

Time Analyzed (1): 0018 Time Analyzed (2): 1611

Instrument ID (1): V3740A Instrument ID (2): V3700E

GC Column ID (1): 22302401 GC Column ID (2): 3 OV1

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

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	EX014	EE77768T-1	06/07/88	06/15/88
02	EX014DL	EE77768T-10	06/07/88	06/14/88
03	EX015	EE77778T-200	06/08/88	06/14/88
04	EX015DL	EE77778T-2000	06/08/88	06/14/88
05	EX016	EE77788T-1	06/15/88	06/15/88
06	EX016DL	EE77788T-10	06/09/88	06/14/88
07	EX017	EE77798T-1	06/07/88	06/14/88
08	EX017DL	EE77798T-10	06/07/88	06/13/88
09	EX019	EE7781DSST-5	06/09/88	06/13/88
10	EX019MS	EE7782MSST-5	06/09/88	06/13/88
11	EX019MSD	EE7783MSDST-5	06/09/88	06/15/88

COMMENTS:

PESTICIDE METHOD BLANK SUMMARY

Lab Name: ITAS-HUNTSVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9168 SAS No.: _____ SDG No.: SB014

Lab Sample ID: 3814B1 Lab File ID: _____

Matrix: (soil/water) SOIL Level: (low/med) LOW

Date Extracted: 05/03/88 Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed (1): 06/06/88 Date Analyzed (2): 06/14/88

Time Analyzed (1): 2317 Time Analyzed (2): 1843

Instrument ID (1): V8/406 Instrument ID (2): V8700E

GC Column ID (1): 22502A01 GC Column ID (2): 2 CV1

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

EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01:EP018	EE7780-1	06/07/88	06/14/88
02:EP018DL	EE7780-10	06/07/88	06/14/88
03:EP010	EE7784BT-1	06/15/88	06/15/88
04:EP010DL	EE7784BT-10	06/15/88	06/15/88
05:EP011	EE7738T-1	06/07/88	06/15/88

COMMENTS:

4C
PESTICIDE METHOD BLANK SUMMARY

Lab Name: ITAS- KNOXVILLE Contract: 6801 7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Lab Sample ID: 2962 B1ST Lab File ID: _____

Matrix:(soil/water) SOIL Level:(low/med) LOW

Date Extracted: 06/08/88 Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed (1): 06/08/88 Date Analyzed (2): 06/14/88

Time Analyzed (1): 23:23 Time Analyzed (2): 1914

Instrument ID (1): V3740A Instrument ID (2): V3700E

GC Column ID (1): 2250/2401 GC Column ID (2): OV-1

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

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	EX014	EE7776ST-1	06/07/88	06/15/88
02	EX014 DL	EE7776ST-10	06/07/88	06/14/88
03	EX015	EE7777ST-200	06/08/88	06/14/88
04	EX015 DL	EE7777ST-2000	06/08/88	06/14/88
05	EX016	EE7778ST-1	06/15/88	06/15/88
06	EX016 DL	EE7778ST-10	06/09/88	06/14/88
07	EX017	EE7779ST-1	06/07/88	06/14/88
08	EX017 DL	EE7779ST-10	06/07/88	06/15/88
09	EX019	EE7781OSST-5	06/09/88	06/15/88
10	EX019 MS	EE7782MSST-5	06/09/88	06/15/88
11	EX019 MSD	EE7783MSDST-5	06/09/88	06/15/88
12	EX020	EE7784ST-1	06/15/88	06/15/88
13	EX020 DL	EE7784ST-10	06/15/88	06/15/88
14	EX021	EE7785ST-1	06/07/88	06/15/88
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: _____

FORM IV PEST 1/87 Rev.

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK1 1503

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: SDG No.: EK014

Matrix: (soil/water) SOIL Lab Sample ID: 280381-1

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 0 dec. Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.0	U
319-85-7	beta-BHC	8.0	U
319-86-8	delta-BHC	8.0	U
58-89-9	gamma-BHC (Lindane)	8.0	U
76-44-8	Heptachlor	8.0	U
309-00-2	Aldrin	8.0	U
1024-57-3	Heptachlor epoxide	8.0	U
959-98-8	Endosulfan I	8.0	U
60-57-1	Dieldrin	16	U
72-55-9	4,4'-DDE	16	U
72-20-8	Endrin	16	U
33213-65-9	Endosulfan II	16	U
72-54-8	4,4'-DDD	16	U
1031-07-8	Endosulfan sulfate	16	U
50-29-3	4,4'-DDT	16	U
72-43-5	Methoxychlor	80	U
53494-70-5	Endrin ketone	16	U
5103-71-9	alpha-Chlordane	80	U
5103-74-2	gamma-Chlordane	80	U
8001-35-2	Toxaphene	160	U
12674-11-2	Aroclor-1016	80	U
11104-28-2	Aroclor-1221	~~80~~	~~U~~ X
11141-16-5	Aroclor-1232	80	U
53469-21-9	Aroclor-1242	80	U
12672-29-6	Aroclor-1248	80	U
11097-69-1	Aroclor-1254	160	U
11096-82-5	Aroclor-1260	160	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FBLK 2

1515

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: 1 SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: 2814B1

Sample wt/vol: 30.1 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 0 dec. Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.0	U
319-85-7	beta-BHC	8.0	U
319-86-8	delta-BHC	8.0	U
58-89-9	gamma-BHC (Lindane)	8.0	U
76-44-8	Heptachlor	8.0	U
309-00-2	Aldrin	8.0	U
1024-57-3	Heptachlor epoxide	8.0	U
959-98-8	Endosulfan I	8.0	U
60-57-1	Dieldrin	16	U
72-55-9	4,4'-DDE	16	U
72-20-8	Endrin	16	U
33213-65-9	Endosulfan II	16	U
72-54-8	4,4'-DDD	16	U
1031-07-8	Endosulfan sulfate	16	U
50-29-3	4,4'-DDT	16	U
72-43-5	Methoxychlor	80	U
53494-70-5	Endrin ketone	16	U
5103-71-9	alpha-Chlordane	80	U
5103-74-2	gamma-Chlordane	80	U
8001-35-2	Toxaphene	160	U
12674-11-2	Aroclor-1016	80	U
11104-28-2	Aroclor-1221	~~80~~	~~U~~
11141-16-5	Aroclor-1232	80	U
53469-21-9	Aroclor-1242	80	U
12672-29-6	Aroclor-1248	80	U
11097-69-1	Aroclor-1254	160	U
11096-82-5	Aroclor-1260	160	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK3 1527

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EM014

Matrix: (soil/water) SOIL Lab Sample ID: 2962B18T-1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 04/29/86

% Moisture: not dec. 0 dec. _____ Date Extracted: 06/05/86

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/08/86

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.0	U
319-85-7	beta-BHC	8.0	U
319-86-8	delta-BHC	8.0	U
58-89-9	gamma-BHC (Lindane)	8.0	U
76-44-8	Heptachlor	8.0	U
309-00-2	Aldrin	8.0	U
1024-57-3	Heptachlor epoxide	8.0	U
959-98-8	Endosulfan I	8.0	U
60-57-1	Dieldrin	16	U
72-55-9	4,4'-DDE	16	U
72-20-8	Endrin	16	U
33213-65-9	Endosulfan II	16	U
72-54-8	4,4'-DDD	16	U
1031-07-8	Endosulfan sulfate	16	U
50-29-3	4,4'-DDT	16	U
72-43-5	Methoxychlor	80	U
53494-70-5	Endrin ketone	16	U
5103-71-9	alpha-Chlordane	80	U
5103-74-2	gamma-Chlordane	80	U
8001-35-2	Toxaphene	160	U
12674-11-2	Aroclor-1016	80	U
11104-28-2	Aroclor-1221	80	U
11141-16-5	Aroclor-1232	80	U
53469-21-9	Aroclor-1242	80	U
12672-29-6	Aroclor-1248	80	U
11097-69-1	Aroclor-1254	160	U
11096-82-5	Aroclor-1260	160	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX014

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7766

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7766

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 17 Date Analyzed: 05/09/88

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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	6	J
67-64-1	Acetone	26	
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
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
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-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
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	2	J
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	J
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylenes(total)	6	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
EX014

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7766

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7766

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 17 Date Analyzed: 05/09/88

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX015

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7767

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7767

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 Date Analyzed: 05/09/88

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	21	
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-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
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	3	J
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylenes(total)	6	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX015

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7767

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7767

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 Date Analyzed: 05/09/88

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX015RE

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7767

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7767R

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 Date Analyzed: 05/10/88

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	12	~~BJ~~ U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-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
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	1	J
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylenes(total)	6	U

AV 7-6-88

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
EX015RE

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7767

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7767R

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 Date Analyzed: 05/10/88

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX016

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7768

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7768

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 22 Date Analyzed: 05/09/88

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	6	J
67-64-1	Acetone	15	
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-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
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	1	J
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylenes(total)	6	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX016

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7768

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7768

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 22 Date Analyzed: 05/09/88

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX017

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7769

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7769

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 15 Date Analyzed: 05/09/88

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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	4	J
67-64-1	Acetone	7	J
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
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
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-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
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	1	J
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	9	
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylenes(total)	6	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX017

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7769

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7769

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 15 Date Analyzed: 05/09/88

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX018

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7770

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7770

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 18 Date Analyzed: 05/09/88

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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	2	J
67-64-1	Acetone	15	
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	2	J
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
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-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
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	2	J
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	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylenes(total)	6	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX018

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7770

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7770

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 18 Date Analyzed: 05/09/88

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX018RE

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7770

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7770R

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 18 Date Analyzed: 05/10/88

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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	6	J
67-64-1	Acetone	26	B
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	2	J
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
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-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
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	3	J
591-78-6	2-Hexanone	2	J
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	3	J
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylenes(total)	6	U

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7-6-88

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX018RE

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7770

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7770R

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 18 Date Analyzed: 05/10/88

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX019

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7771

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7771

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 Date Analyzed: 05/09/88

Column: (pack/cap) PACK Dilution Factor: 1.00

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

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	9	J
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-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
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	4	J
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylenes(total)	6	U

OK as is
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7-6-88

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX019

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7771

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7771

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 Date Analyzed: 05/09/88

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX019RE

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7771

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7771R

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 Date Analyzed: 05/10/88

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	5	J
67-64-1	Acetone	11 ~~8~~	~~BJ~~ U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-35-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-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
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	4	J
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylenes(total)	6	U

AV 7-6-88

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX019RE

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7771

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7771R

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 Date Analyzed: 05/10/88

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX020

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7774

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7774

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 9 Date Analyzed: 05/09/88

Column: (pack/cap) PACK Dilution Factor: 1.00

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

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	13	
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	3	J
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes(total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX020

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7774

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7774

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 9 Date Analyzed: 05/09/88

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX020RE

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7774

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7774R

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 9 Date Analyzed: 05/10/88

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	11	
67-64-1	Acetone	11 ~~BJ~~	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	6	
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes(total)	5	U

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX020RE

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7774

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7774R

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 9 Date Analyzed: 05/10/88

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX021

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7775

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7775

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 26 Date Analyzed: 05/09/88

Column: (pack/cap) PACK Dilution Factor: 1.00

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

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	8	
67-64-1	Acetone	21	
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-35-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	14	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	14	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Xylenes(total)	7	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX021

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7775

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7775

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 26 Date Analyzed: 05/09/88

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX021RE

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7775

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7775R

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 26 Date Analyzed: 05/10/88

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	10	
67-64-1	Acetone	14 ~~11~~	~~B~~ U
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-35-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	14	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	14	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Xylenes(total)	7	U

AV 7-6-88

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX021RE

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7775

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE7775R

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 26 Date Analyzed: 05/10/88

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX014

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7776

Sample wt/vol: 30.1 (g/mL) G Lab File ID: EE7776

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 17 dec. ____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	790	U
111-44-4	bis(2-Chloroethyl)Ether	790	U
95-57-8	2-Chlorophenol	790	U
541-73-1	1,3-Dichlorobenzene	790	U
106-46-7	1,4-Dichlorobenzene	790	U
100-51-6	Benzyl Alcohol	790	U
95-50-1	1,2-Dichlorobenzene	790	U
95-48-7	2-Methylphenol	790	U
108-60-1	bis(2-Chloroisopropyl)Ether	790	U
106-44-5	4-Methylphenol	790	U
621-64-7	N-Nitroso-Di-n-Propylamine	790	U
67-72-1	Hexachloroethane	790	U
98-95-3	Nitrobenzene	790	U
78-59-1	Isophorone	790	U
88-75-5	2-Nitrophenol	790	U
105-67-9	2,4-Dimethylphenol	790	U
65-85-0	Benzoic Acid	3800	U
111-91-1	bis(2-Chloroethoxy)Methane	790	U
120-83-2	2,4-Dichlorophenol	790	U
120-82-1	1,2,4-Trichlorobenzene	790	U
91-20-3	Naphthalene	790	U
106-47-8	4-Chloroaniline	790	U
87-68-3	Hexachlorobutadiene	790	U
59-50-7	4-Chloro-3-Methylphenol	790	U
91-57-6	2-Methylnaphthalene	790	U
77-47-4	Hexachlorocyclopentadiene	790	U
88-06-2	2,4,6-Trichlorophenol	790	U
95-95-4	2,4,5-Trichlorophenol	3800	U
91-58-7	2-Chloronaphthalene	790	U
88-74-4	2-Nitroaniline	3800	U
131-11-3	Dimethyl Phthalate	790	U
208-96-8	Acenaphthylene	790	U
606-20-2	2,6-Dinitrotoluene	790	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX014

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7776

Sample wt/vol: 30.1 (g/mL) G Lab File ID: EE7776

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 17 dec. ____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3800	U
83-32-9	Acenaphthene	790	U
51-28-5	2,4-Dinitrophenol	3800	U
100-02-7	4-Nitrophenol	3800	U
132-64-9	Dibenzofuran	790	U
121-14-2	2,4-Dinitrotoluene	790	U
84-66-2	Diethylphthalate	790	U
7005-72-3	4-Chlorophenyl-phenylether	790	U
86-73-7	Fluorene	790	U
100-01-6	4-Nitroaniline	3800	U
534-52-1	4,6-Dinitro-2-Methylphenol	3800	U
86-30-6	N-Nitrosodiphenylamine (1)	790 ~~490~~	~~BJ~~ U
101-55-3	4-Bromophenyl-phenylether	790	U
118-74-1	Hexachlorobenzene	790	U
87-86-5	Pentachlorophenol	3800	U
85-01-8	Phenanthrene	660	J
120-12-7	Anthracene	180	J
84-74-2	Di-n-Butylphthalate	790	U
206-44-0	Fluoranthene	1200	
129-00-0	Pyrene	900	
85-68-7	Butylbenzylphthalate	790	U
91-94-1	3,3'-Dichlorobenzidine	1600	U
56-55-3	Benzo(a)Anthracene	590	J
218-01-9	Chrysene	870	
117-81-7	bis(2-Ethylhexyl)Phthalate	790 ~~280~~	~~BJ~~ U
117-84-0	Di-n-Octyl Phthalate	790	U
205-99-2	Benzo(b)Fluoranthene	500	J
207-08-9	Benzo(k)Fluoranthene	730	J
50-32-8	Benzo(a)Pyrene	520	J
193-39-5	Indeno(1,2,3-cd)Pyrene	370	J
53-70-3	Dibenz(a,h)Anthracene	790	U
191-24-2	Benzo(g,h,i)Perylene	510	J

(1) - Cannot be separated from Diphenylamine

AV
7-6-88

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX014

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7776

Sample wt/vol: 30.1 (g/mL) G Lab File ID: EE7776

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 17 dec. ____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 2.00

Number TICs found: 9

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108-21-4	ACETIC ACID, 1-METHYLETHYL E	3.80	350	ABJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.30	24000	ABJ
3. 110-12-3	2-HEXANONE, 5-METHYL-	4.62	1200	ABJ
4. 57-15-8	2-PROPANOL, 1,1,1-TRICHLORO-	6.98	1000	BJ
5.	UNKNOWN	24.14	780	BJ
6. 88-24-4	PHENOL, 2,2'-METHYLENEBIS[6-	25.64	1200	BJ
7.	UNKNOWN	26.99	340	J
8.	UNKNOWN (SAT'D HYDROCARBON)	28.79	380	J
9. 205-82-3	BENZO[J]FLUORANTHENE	29.66	490	J

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX015

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7777

Sample wt/vol: 30.3 (g/mL) G Lab File ID: EE7777

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 dec. ____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 8.5 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3600	U
83-32-9	Acenaphthene	740	U
51-28-5	2,4-Dinitrophenol	3600	U
100-02-7	4-Nitrophenol	3600	U
132-64-9	Dibenzofuran	740	U
121-14-2	2,4-Dinitrotoluene	740	U
84-66-2	Diethylphthalate	740	U
7005-72-3	4-Chlorophenyl-phenylether	740	U
86-73-7	Fluorene	740	U
100-01-6	4-Nitroaniline	3600	U
534-52-1	4,6-Dinitro-2-Methylphenol	3600	U
86-30-6	N-Nitrosodiphenylamine (1)	740 ~~220~~	~~BJ~~ V
101-55-3	4-Bromophenyl-phenylether	740	U
118-74-1	Hexachlorobenzene	740	U
87-86-5	Pentachlorophenol	3600	U
85-01-8	Phenanthrene	1500	
120-12-7	Anthracene	390	J
84-74-2	Di-n-Butylphthalate	740	U
206-44-0	Fluoranthene	2400	
129-00-0	Pyrene	3300	
85-68-7	Butylbenzylphthalate	390	J
91-94-1	3,3'-Dichlorobenzidine	1500	U
56-55-3	Benzo(a)Anthracene	1100	
218-01-9	Chrysene	1700	
117-81-7	bis(2-Ethylhexyl)Phthalate	740 ~~400~~	~~BJ~~ V
117-84-0	Di-n-Octyl Phthalate	740	U
205-99-2	Benzo(b)Fluoranthene	1200	
207-08-9	Benzo(k)Fluoranthene	1000	
50-32-8	Benzo(a)Pyrene	1100	
193-39-5	Indeno(1,2,3-cd)Pyrene	560	J
53-70-3	Dibenz(a,h)Anthracene	740	U
191-24-2	Benzo(g,h,i)Perylene	770	

(1) - Cannot be separated from Diphenylamine

AV
7-6-88

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX015

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7777

Sample wt/vol: 30.3 (g/mL) G Lab File ID: EE7777

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 dec. ____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 8.5 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	740	U
111-44-4	bis(2-Chloroethyl)Ether	740	U
95-57-8	2-Chlorophenol	740	U
541-73-1	1,3-Dichlorobenzene	740	U
106-46-7	1,4-Dichlorobenzene	740	U
100-51-6	Benzyl Alcohol	740	U
95-50-1	1,2-Dichlorobenzene	740	U
95-48-7	2-Methylphenol	740	U
108-60-1	bis(2-Chloroisopropyl)Ether	740	U
106-44-5	4-Methylphenol	740	U
621-64-7	N-Nitroso-Di-n-Propylamine	740	U
67-72-1	Hexachloroethane	740	U
98-95-3	Nitrobenzene	740	U
78-59-1	Isophorone	740	U
88-75-5	2-Nitrophenol	740	U
105-67-9	2,4-Dimethylphenol	740	U
65-85-0	Benzoic Acid	3600	U
111-91-1	bis(2-Chloroethoxy)Methane	740	U
120-83-2	2,4-Dichlorophenol	740	U
120-82-1	1,2,4-Trichlorobenzene	740	U
91-20-3	Naphthalene	740	U
106-47-8	4-Chloroaniline	740	U
87-68-3	Hexachlorobutadiene	740	U
59-50-7	4-Chloro-3-Methylphenol	740	U
91-57-6	2-Methylnaphthalene	740	U
77-47-4	Hexachlorocyclopentadiene	740	U
88-06-2	2,4,6-Trichlorophenol	740	U
95-95-4	2,4,5-Trichlorophenol	3600	U
91-58-7	2-Chloronaphthalene	740	U
88-74-4	2-Nitroaniline	3600	U
131-11-3	Dimethyl Phthalate	740	U
208-96-8	Acenaphthylene	740	U
606-20-2	2,6-Dinitrotoluene	740	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX015

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7777

Sample wt/vol: 30.3 (g/mL) G Lab File ID: EE7777

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 dec. ____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 8.5 Dilution Factor: 2.00

Number TICs found: 14

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.37	20000	ABJ
2. 110-12-3	2-HEXANONE, 5-METHYL-	4.67	1200	ABJ
3. 57-15-8	2-PROPANOL, 1,1,1-TRICHLORO-	7.02	860	BJ
4. 82-68-8	BENZENE, PENTACHLORONITRO-	18.74	8700	J
5.	UNKNOWN	19.69	1000	J
6. 57-10-3	HEXADECANOIC ACID	20.14	320	J
7.	METHYL PHENANTHRENE	20.25	360	JY
8. 203-64-5	4H-CYCLOPENTA[DEF]PHENANTHRE	20.49	580	J
9.	UNKNOWN	20.79	480	J
10. 84-65-1	9,10-ANTHRACENEDIONE	20.99	450	J
11. 238-84-6	11H-BENZO[A]FLUORENE	23.50	400	J
12.	UNKNOWN	24.20	1000	BJ
13. 88-24-4	PHENOL, 2,2'-METHYLENEBIS[6-	25.72	1600	BJ
14. 205-82-3	BENZO[J]FLUORANTHENE	29.34	1100	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

527

EX016

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7778

Sample wt/vol: 30.5 (g/mL) G Lab File ID: EE7778

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 22 dec. ____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 8.1 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	420	U
111-44-4	bis(2-Chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	2-Methylphenol	420	U
108-60-1	bis(2-Chloroisopropyl)Ether	420	U
106-44-5	4-Methylphenol	420	U
621-64-7	N-Nitroso-Di-n-Propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2000	U
111-91-1	bis(2-Chloroethoxy)Methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-Methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethyl Phthalate	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

528

EX016

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7778

Sample wt/vol: 30.5 (g/mL) G Lab File ID: EE7778

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 22 dec. ____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 8.1 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenyl-phenylether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-Methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine (1)	420 ~~250~~	~~BJ~~ U
101-55-3	4-Bromophenyl-phenylether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
84-74-2	Di-n-Butylphthalate	420	U
206-44-0	Fluoranthene	420	U
129-00-0	Pyrene	420	U
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	830	U
56-55-3	Benzo(a)Anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)Phthalate	420	~~B~~ U
117-84-0	Di-n-Octyl Phthalate	420	U
205-99-2	Benzo(b)Fluoranthene	420	U
207-08-9	Benzo(k)Fluoranthene	420	U
50-32-8	Benzo(a)Pyrene	420	U
193-39-5	Indeno(1,2,3-cd)Pyrene	420	U
53-70-3	Dibenz(a,h)Anthracene	420	U
191-24-2	Benzo(g,h,i)Perylene	420	U

(1) - Cannot be separated from Diphenylamine

AV 7-6-88

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO. 529

EX016

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7778

Sample wt/vol: 30.5 (g/mL) G Lab File ID: EE7778

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 22 dec. ____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 8.1 Dilution Factor: 1.00

Number TICs found: 12

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108-21-4	ACETIC ACID, 1-METHYLETHYL E	3.85	190	ABJ
2. 123-42-2	2-PENTANONE,4-HYDROXY-4-METH	4.35	15000	ABJ
3. 110-12-3	2-HEXANONE, 5-METHYL-	4.65	970	ABJ
4.	UNKNOWN	5.78	210	BJ
5. 57-15-8	2-PROPANOL, 1,1,1-TRICHLORO-	7.02	760	BJ
6. 57-10-3	HEXADECANOIC ACID	20.14	210	J
7.	UNKNOWN	22.39	290	BJ
8.	OCTADECENE	22.59	200	JYB
9.	UNKNOWN	24.14	2000	BJ
10.	UNKNOWN	24.30	340	J
11. 88-24-4	PHENOL, 2,2'-METHYLENEBIS[6-	25.61	1500	BJ
12.	UNKNOWN	26.26	710	BJ

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX017

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7779

Sample wt/vol: 30.2 (g/mL) G Lab File ID: EE7779

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 15 dec. ____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 8.2 Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	bis(2-Chloroisopropyl)Ether	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-Propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	1900	U
111-91-1	bis(2-Chloroethoxy)Methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethyl Phthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX017

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7779

Sample wt/vol: 30.2 (g/mL) G Lab File ID: EE7779

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 15 dec. ____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 8.2 Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-Methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	390 ~~299~~	~~BJ~~ U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	110	J
120-12-7	Anthracene	390	U
84-74-2	Di-n-Butylphthalate	390	U
206-44-0	Fluoranthene	110	J
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	770	U
56-55-3	Benzo(a)Anthracene	390	U
218-01-9	Chrysene	140	J
117-81-7	bis(2-Ethylhexyl)Phthalate	390 ~~256~~	~~BJ~~ U
117-84-0	Di-n-Octyl Phthalate	390	U
205-99-2	Benzo(b)Fluoranthene	390	U
207-08-9	Benzo(k)Fluoranthene	390	U
50-32-8	Benzo(a)Pyrene	390	U
193-39-5	Indeno(1,2,3-cd)Pyrene	390	U
53-70-3	Dibenz(a,h)Anthracene	390	U
191-24-2	Benzo(g,h,i)Perylene	390	U

(1) - Cannot be separated from Diphenylamine

AV
7-6-88

1F

EPA SAMPLE NO.

EX017

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7779

Sample wt/vol: 30.2 (g/mL) G Lab File ID: EE7779

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 15 dec. ____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 8.2 Dilution Factor: 1.000

Number TICs found: 19

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108-21-4	ACETIC ACID, 1-METHYLETHYL E	3.88	240	ABJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.40	15000	ABJ
3. 110-12-3	2-HEXANONE, 5-METHYL-	4.70	860	ABJ
4.	UNKNOWN	5.82	210	BJ
5. 57-15-8	2-PROPANOL, 1,1,1-TRICHLORO-	7.05	770	BJ
6.	UNKNOWN (SAT'D HYDROCARBON)	17.34	240	J
7.	UNKNOWN (SAT'D HYDROCARBON)	18.47	260	J
8.	UNKNOWN (SAT'D HYDROCARBON)	19.54	200	J
9.	UNKNOWN (SAT'D HYDROCARBON)	20.59	180	J
10.	UNKNOWN (SAT'D HYDROCARBON)	21.57	190	J
11.	UNKNOWN	22.40	220	BJ
12.	UNKNOWN	22.59	250	J
13.	UNKNOWN (SAT'D HYDROCARBON)	23.42	170	J
14.	UNKNOWN	24.15	1100	BJ
15.	UNKNOWN	24.32	290	BJ
16.	UNKNOWN	25.21	220	J
17. 88-24-4	PHENOL, 2,2'-METHYLENEBIS[6-	25.62	1300	BJ
18.	UNKNOWN	26.29	340	BJ
19.	UNKNOWN	29.79	220	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX018

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7780

Sample wt/vol: 30.2 (g/mL) G Lab File ID: EE7780

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 18 dec. ____ Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 8.4 Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	bis(2-Chloroisopropyl)Ether	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-Di-n-Propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	1900	U
111-91-1	bis(2-Chloroethoxy)Methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-Methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethyl Phthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U

619

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE 619

EX018

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7780

Sample wt/vol: 30.2 (g/mL) G Lab File ID: EE7780

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 18 dec. ____ Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 8.4 Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-Methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	400 ~~380~~	~~BJ~~ U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
84-74-2	Di-n-Butylphthalate	400	U
206-44-0	Fluoranthene	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	800	U
56-55-3	Benzo(a)Anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)Phthalate	400 ~~340~~	~~BJ~~ U
117-84-0	Di-n-Octyl Phthalate	400	U
205-99-2	Benzo(b)Fluoranthene	400	U
207-08-9	Benzo(k)Fluoranthene	400	U
50-32-8	Benzo(a)Pyrene	400	U
193-39-5	Indeno(1,2,3-cd)Pyrene	400	U
53-70-3	Dibenz(a,h)Anthracene	400	U
191-24-2	Benzo(g,h,i)Perylene	400	U

(1) - Cannot be separated from Diphenylamine

AV 7-6-88

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX018

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7780

Sample wt/vol: 30.2 (g/mL) G Lab File ID: EE7780

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 18 dec. ____ Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 8.4 Dilution Factor: 1.000

Number TICs found: 8

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108-21-4	ACETIC ACID, 1-METHYLETHYL E	3.90	310	ABJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.40	25000	ABJ
3. 110-12-3	2-HEXANONE, 5-METHYL-	4.68	1200	ABJ
4.	UNKNOWN	5.80	250	BJ
5. 57-15-8	2-PROPANOL, 1,1,1-TRICHLORO-	7.02	1200	BJ
6.	UNKNOWN	24.15	760	BJ
7. 88-24-4	PHENOL, 2,2'-METHYLENEBIS[6-	25.64	960	BJ
8.	UNKNOWN	26.29	180	BJ

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX019

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7781

Sample wt/vol: 30.2 (g/mL) G Lab File ID: EE7781

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 dec. ____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	750	U
111-44-4	bis(2-Chloroethyl)Ether	750	U
95-57-8	2-Chlorophenol	750	U
541-73-1	1,3-Dichlorobenzene	750	U
106-46-7	1,4-Dichlorobenzene	750	U
100-51-6	Benzyl Alcohol	750	U
95-50-1	1,2-Dichlorobenzene	750	U
95-48-7	2-Methylphenol	750	U
108-60-1	bis(2-Chloroisopropyl)Ether	750	U
106-44-5	4-Methylphenol	750	U
621-64-7	N-Nitroso-Di-n-Propylamine	750	U
67-72-1	Hexachloroethane	750	U
98-95-3	Nitrobenzene	750	U
78-59-1	Isophorone	750	U
88-75-5	2-Nitrophenol	750	U
105-67-9	2,4-Dimethylphenol	750	U
65-85-0	Benzoic Acid	3600	U
111-91-1	bis(2-Chloroethoxy)Methane	750	U
120-83-2	2,4-Dichlorophenol	750	U
120-82-1	1,2,4-Trichlorobenzene	750	U
91-20-3	Naphthalene	130	J
106-47-8	4-Chloroaniline	750	U
87-68-3	Hexachlorobutadiene	750	U
59-50-7	4-Chloro-3-Methylphenol	750	U
91-57-6	2-Methylnaphthalene	750	U
77-47-4	Hexachlorocyclopentadiene	750	U
88-06-2	2,4,6-Trichlorophenol	750	U
95-95-4	2,4,5-Trichlorophenol	3600	U
91-58-7	2-Chloronaphthalene	750	U
88-74-4	2-Nitroaniline	3600	U
131-11-3	Dimethyl Phthalate	750	U
208-96-8	Acenaphthylene	610	J
606-20-2	2,6-Dinitrotoluene	750	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 650

EX019

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7781

Sample wt/vol: 30.2 (g/mL) G Lab File ID: EE7781

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 dec. ____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3600	U
83-32-9	Acenaphthene	140	J
51-28-5	2,4-Dinitrophenol	3600	U
100-02-7	4-Nitrophenol	3600	U
132-64-9	Dibenzofuran	140	J
121-14-2	2,4-Dinitrotoluene	750	U
84-66-2	Diethylphthalate	750	U
7005-72-3	4-Chlorophenyl-phenylether	750	U
86-73-7	Fluorene	360	J
100-01-6	4-Nitroaniline	3600	U
534-52-1	4,6-Dinitro-2-Methylphenol	3600	U
86-30-6	N-Nitrosodiphenylamine (1)	750 ~~508~~	~~BJ~~ U
101-55-3	4-Bromophenyl-phenylether	750	U
118-74-1	Hexachlorobenzene	750	U
87-86-5	Pentachlorophenol	3600	U
85-01-8	Phenanthrene	2800	
120-12-7	Anthracene	940	
84-74-2	Di-n-Butylphthalate	750	U
206-44-0	Fluoranthene	5600	
129-00-0	Pyrene	3600	
85-68-7	Butylbenzylphthalate	750	U
91-94-1	3,3'-Dichlorobenzidine	1500	U
56-55-3	Benzo(a)Anthracene	2300	
218-01-9	Chrysene	3000	
117-81-7	bis(2-Ethylhexyl)Phthalate	750 ~~290~~	~~BJ~~ U
117-84-0	Di-n-Octyl Phthalate	750	U
205-99-2	Benzo(b)Fluoranthene	2100	
207-08-9	Benzo(k)Fluoranthene	2500	
50-32-8	Benzo(a)Pyrene	2100	
193-39-5	Indeno(1,2,3-cd)Pyrene	1300	
53-70-3	Dibenz(a,h)Anthracene	840	
191-24-2	Benzo(g,h,i)Perylene	1900	

(1) - Cannot be separated from Diphenylamine

AV 7-6-88

1F

EPA SAMPLE NO.

EX019

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7781

Sample wt/vol: 30.2 (g/mL) G Lab File ID: EE7781

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 dec. ____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 2.00

Number TICs found: 12

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.33	12000	ABJ
2. 110-12-3	2-HEXANONE, 5-METHYL-	4.65	670	ABJ
3. 57-15-8	2-PROPANOL, 1,1,1-TRICHLORO-	7.02	530	BJ
4. 203-64-5	4H-CYCLOPENTA[DEF]PHENANTHRE	20.50	530	J
5. 238-84-6	11H-BENZO[A]FLUORENE	23.49	600	J
6.	UNKNOWN	24.15	550	BJ
7. 239-35-0	BENZO[B]NAPHTHO[2,1-D]THIOPH	25.14	380	J
8. 195-19-7	BENZO[C]PHENANTHRENE	25.31	370	J
9. 88-24-4	PHENOL, 2,2'-METHYLENEBIS[6-	25.62	400	BJ
10. 192-97-2	BENZO[E]PYRENE	29.14	530	J
11. 205-82-3	BENZO[J]FLUORANTHENE	29.64	1700	J
12.	UNKNOWN	33.92	340	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX019RE

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7781RP

Sample wt/vol: 30.1 (g/mL) G Lab File ID: EE7781RP

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 dec. ____ Date Extracted: 06/10/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	750	U
111-44-4	bis(2-Chloroethyl)Ether	750	U
95-57-8	2-Chlorophenol	750	U
541-73-1	1,3-Dichlorobenzene	750	U
106-46-7	1,4-Dichlorobenzene	750	U
100-51-6	Benzyl Alcohol	750	U
95-50-1	1,2-Dichlorobenzene	750	U
95-48-7	2-Methylphenol	750	U
108-60-1	bis(2-Chloroisopropyl)Ether	750	U
106-44-5	4-Methylphenol	750	U
621-64-7	N-Nitroso-Di-n-Propylamine	750	U
67-72-1	Hexachloroethane	750	U
98-95-3	Nitrobenzene	750	U
78-59-1	Isophorone	750	U
88-75-5	2-Nitrophenol	750	U
105-67-9	2,4-Dimethylphenol	750	U
65-85-0	Benzoic Acid	3600	U
111-91-1	bis(2-Chloroethoxy)Methane	750	U
120-83-2	2,4-Dichlorophenol	750	U
120-82-1	1,2,4-Trichlorobenzene	750	U
91-20-3	Naphthalene	270	J
106-47-8	4-Chloroaniline	750	U
87-68-3	Hexachlorobutadiene	750	U
59-50-7	4-Chloro-3-Methylphenol	750	U
91-57-6	2-Methylnaphthalene	130	J
77-47-4	Hexachlorocyclopentadiene	750	U
88-06-2	2,4,6-Trichlorophenol	750	U
95-95-4	2,4,5-Trichlorophenol	3600	U
91-58-7	2-Chloronaphthalene	750	U
88-74-4	2-Nitroaniline	3600	U
131-11-3	Dimethyl Phthalate	750	U
208-96-8	Acenaphthylene	710	J
606-20-2	2,6-Dinitrotoluene	750	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX019RE

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7781RP

Sample wt/vol: 30.1 (g/mL) G Lab File ID: EE7781RP

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 dec. ____ Date Extracted: 06/10/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3600	U
83-32-9	Acenaphthene	230	J
51-28-5	2,4-Dinitrophenol	3600	U
100-02-7	4-Nitrophenol	3600	U
132-64-9	Dibenzofuran	410	J
121-14-2	2,4-Dinitrotoluene	750	U
84-66-2	Diethylphthalate	750	U
7005-72-3	4-Chlorophenyl-phenylether	750	U
86-73-7	Fluorene	910	
100-01-6	4-Nitroaniline	3600	U
534-52-1	4,6-Dinitro-2-Methylphenol	3600	U
86-30-6	N-Nitrosodiphenylamine (1)	750 ~~380~~	~~BJ~~ V
101-55-3	4-Bromophenyl-phenylether	750	U
118-74-1	Hexachlorobenzene	750	U
87-86-5	Pentachlorophenol	3600	U
85-01-8	Phenanthrene	5600	
120-12-7	Anthracene	1600	
84-74-2	Di-n-Butylphthalate	750	U
206-44-0	Fluoranthene	8100	
129-00-0	Pyrene	6300	
85-68-7	Butylbenzylphthalate	750	U
91-94-1	3,3'-Dichlorobenzidine	1500	U
56-55-3	Benzo(a)Anthracene	3400	
218-01-9	Chrysene	4300	
117-81-7	bis(2-Ethylhexyl)Phthalate	860	~~B~~ V
117-84-0	Di-n-Octyl Phthalate	750	U
205-99-2	Benzo(b)Fluoranthene	2600	
207-08-9	Benzo(k)Fluoranthene	3400	
50-32-8	Benzo(a)Pyrene	2800	
193-39-5	Indeno(1,2,3-cd)Pyrene	1900	
53-70-3	Dibenz(a,h)Anthracene	750	U
191-24-2	Benzo(g,h,i)Perylene	2500	

(1) - Cannot be separated from Diphenylamine

AV
7-6-88

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
EX019RE

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7781RP

Sample wt/vol: 30.1 (g/mL) G Lab File ID: EE7781RP

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 dec. ____ Date Extracted: 06/10/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/10/88

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 2.00

Number TICs found: 15

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.30	23000	ABJ
2. 110-12-3	2-HEXANONE, 5-METHYL-	4.58	710	ABJ
3. 57-15-8	2-PROPANOL, 1,1,1-TRICHLORO-	6.93	1000	BJ
4. 613-12-7	ANTHRACENE, 2-METHYL-	20.04	430	J
5. 610-48-0	ANTHRACENE, 1-METHYL-	20.10	410	J
6. 203-64-5	4H-CYCLOPENTA[DEF]PHENANTHRE	20.35	1000	J
7. 3353-12-6	PYRENE, 4-METHYL-	23.34	1400	J
8. 238-84-6	11H-BENZO[A]FLUORENE	23.50	810	J
9. 2381-21-7	PYRENE, 1-METHYL-	23.62	710	J
10. 239-35-0	BENZO[B]NAPHTHO[2,1-D]THIOPH	25.02	660	J
11. 195-19-7	BENZO[C]PHENANTHRENE	25.11	660	J
12. 27208-37-3	CYCLOPENTA[CD]PYRENE	25.17	910	J
13. 192-97-2	BENZO[E]PYRENE	29.12	600	J
14. 205-82-3	BENZO[J]FLOURANTHENE	29.62	2300	J
15.	UNKNOWN	33.87	590	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX020

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7784

Sample wt/vol: 30.1 (g/mL) G Lab File ID: EE7784

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 9 dec. ____ Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 8.7 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	720	U
111-44-4	bis(2-Chloroethyl)Ether	720	U
95-57-8	2-Chlorophenol	720	U
541-73-1	1,3-Dichlorobenzene	720	U
106-46-7	1,4-Dichlorobenzene	720	U
100-51-6	Benzyl Alcohol	720	U
95-50-1	1,2-Dichlorobenzene	720	U
95-48-7	2-Methylphenol	720	U
108-60-1	bis(2-Chloroisopropyl)Ether	720	U
106-44-5	4-Methylphenol	720	U
621-64-7	N-Nitroso-Di-n-Propylamine	720	U
67-72-1	Hexachloroethane	720	U
98-95-3	Nitrobenzene	720	U
78-59-1	Isophorone	720	U
88-75-5	2-Nitrophenol	720	U
105-67-9	2,4-Dimethylphenol	720	U
65-85-0	Benzoic Acid	3500	U
111-91-1	bis(2-Chloroethoxy)Methane	720	U
120-83-2	2,4-Dichlorophenol	720	U
120-82-1	1,2,4-Trichlorobenzene	~~720~~	~~U~~
91-20-3	Naphthalene	87	J
106-47-8	4-Chloroaniline	~~720~~	~~U~~
87-68-3	Hexachlorobutadiene	720	U
59-50-7	4-Chloro-3-Methylphenol	720	U
91-57-6	2-Methylnaphthalene	720	U
77-47-4	Hexachlorocyclopentadiene	720	U
88-06-2	2,4,6-Trichlorophenol	720	U
95-95-4	2,4,5-Trichlorophenol	3500	U
91-58-7	2-Chloronaphthalene	720	U
88-74-4	2-Nitroaniline	3500	U
131-11-3	Dimethyl Phthalate	720	U
208-96-8	Acenaphthylene	170	J
606-20-2	2,6-Dinitrotoluene	720	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX020

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7784

Sample wt/vol: 30.1 (g/mL) G Lab File ID: EE7784

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 9 dec. ____ Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 8.7 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3500	U
83-32-9	Acenaphthene	290	J
51-28-5	2,4-Dinitrophenol	3500	U
100-02-7	4-Nitrophenol	3500	U
132-64-9	Dibenzofuran	190	J
121-14-2	2,4-Dinitrotoluene	720	U
84-66-2	Diethylphthalate	720	U
7005-72-3	4-Chlorophenyl-phenylether	720	U
86-73-7	Fluorene	400	J
100-01-6	4-Nitroaniline	3500	U
534-52-1	4,6-Dinitro-2-Methylphenol	3500	U
86-30-6	N-Nitrosodiphenylamine (1)	820	~~B~~ U
101-55-3	4-Bromophenyl-phenylether	720	U
118-74-1	Hexachlorobenzene	720	U
87-86-5	Pentachlorophenol	3500	U
85-01-8	Phenanthrene	3200	
120-12-7	Anthracene	1000	
84-74-2	Di-n-Butylphthalate	720	U
206-44-0	Fluoranthene	4000	
129-00-0	Pyrene	4400	
85-68-7	Butylbenzylphthalate	720	U
91-94-1	3,3'-Dichlorobenzidine	1400	U
56-55-3	Benzo(a)Anthracene	2000	
218-01-9	Chrysene	2600	
117-81-7	bis(2-Ethylhexyl)Phthalate	720 ~~360~~	~~BJ~~ U
117-84-0	Di-n-Octyl Phthalate	720	U
205-99-2	Benzo(b)Fluoranthene	1800	
207-08-9	Benzo(k)Fluoranthene	1600	
50-32-8	Benzo(a)Pyrene	1600	
193-39-5	Indeno(1,2,3-cd)Pyrene	1000	
53-70-3	Dibenz(a,h)Anthracene	720	U
191-24-2	Benzo(g,h,i)Perylene	1200	

(1) - Cannot be separated from Diphenylamine

AV 7-6-88

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX020

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7784

Sample wt/vol: 30.1 (g/mL) G Lab File ID: EE7784

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 9 dec. ____ Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 8.7 Dilution Factor: 2.00

Number TICs found: 8

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.37	21000	ABJ
2. 110-12-3	2-HEXANONE, 5-METHYL-	4.67	1100	ABJ
3. 57-15-8	2-PROPANOL, 1,1,1-TRICHLORO-	7.03	820	BJ
4. 203-64-5	4H-CYCLOPENTA[DEF]PHENANTHRE	20.49	550	J
5. 238-84-6	11H-BENZO[A]FLUORENE	23.49	530	J
6.	UNKNOWN	24.19	460	BJ
7. 88-24-4	PHENOL, 2,2'-METHYLENEBIS[6-	25.72	1600	BJ
8. 205-82-3	BENZO[J]FLUORANTHENE	29.96	1500	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 901

EX021

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7785

Sample wt/vol: 30.2 (g/mL) G Lab File ID: EE7785

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 26 dec. ____ Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	440	U
111-44-4	bis(2-Chloroethyl)Ether	440	U
95-57-8	2-Chlorophenol	440	U
541-73-1	1,3-Dichlorobenzene	440	U
106-46-7	1,4-Dichlorobenzene	440	U
100-51-6	Benzyl Alcohol	440	U
95-50-1	1,2-Dichlorobenzene	440	U
95-48-7	2-Methylphenol	440	U
108-60-1	bis(2-Chloroisopropyl)Ether	440	U
106-44-5	4-Methylphenol	440	U
621-64-7	N-Nitroso-Di-n-Propylamine	440	U
67-72-1	Hexachloroethane	440	U
98-95-3	Nitrobenzene	440	U
78-59-1	Isophorone	440	U
88-75-5	2-Nitrophenol	440	U
105-67-9	2,4-Dimethylphenol	440	U
65-85-0	Benzoic Acid	2100	U
111-91-1	bis(2-Chloroethoxy)Methane	440	U
120-83-2	2,4-Dichlorophenol	440	U
120-82-1	1,2,4-Trichlorobenzene	440	U
91-20-3	Naphthalene	440	U
106-47-8	4-Chloroaniline	440	U
87-68-3	Hexachlorobutadiene	440	U
59-50-7	4-Chloro-3-Methylphenol	440	U
91-57-6	2-Methylnaphthalene	440	U
77-47-4	Hexachlorocyclopentadiene	440	U
88-06-2	2,4,6-Trichlorophenol	440	U
95-95-4	2,4,5-Trichlorophenol	2100	U
91-58-7	2-Chloronaphthalene	440	U
88-74-4	2-Nitroaniline	2100	U
131-11-3	Dimethyl Phthalate	440	U
208-96-8	Acenaphthylene	440	U
606-20-2	2,6-Dinitrotoluene	440	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 902

EX021

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7785

Sample wt/vol: 30.2 (g/mL) G Lab File ID: EE7785

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 26 dec. ____ Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2100	U
83-32-9	Acenaphthene	440	U
51-28-5	2,4-Dinitrophenol	2100	U
100-02-7	4-Nitrophenol	2100	U
132-64-9	Dibenzofuran	440	U
121-14-2	2,4-Dinitrotoluene	440	U
84-66-2	Diethylphthalate	440	U
7005-72-3	4-Chlorophenyl-phenylether	440	U
86-73-7	Fluorene	440	U
100-01-6	4-Nitroaniline	2100	U
534-52-1	4,6-Dinitro-2-Methylphenol	2100	U
86-30-6	N-Nitrosodiphenylamine (1)	440 ~~280~~	~~BJ~~ U
101-55-3	4-Bromophenyl-phenylether	440	U
118-74-1	Hexachlorobenzene	440	U
87-86-5	Pentachlorophenol	2100	U
85-01-8	Phenanthrene	440	U
120-12-7	Anthracene	76	J
84-74-2	Di-n-Butylphthalate	440	U
206-44-0	Fluoranthene	440	U
129-00-0	Pyrene	440	U
85-68-7	Butylbenzylphthalate	440	U
91-94-1	3,3'-Dichlorobenzidine	890	U
56-55-3	Benzo(a)Anthracene	440	U
218-01-9	Chrysene	440	U
117-81-7	bis(2-Ethylhexyl)Phthalate	440 ~~310~~	~~BJ~~ U
117-84-0	Di-n-Octyl Phthalate	440	U
205-99-2	Benzo(b)Fluoranthene	440	U
207-08-9	Benzo(k)Fluoranthene	440	U
50-32-8	Benzo(a)Pyrene	440	U
193-39-5	Indeno(1,2,3-cd)Pyrene	440	U
53-70-3	Dibenz(a,h)Anthracene	440	U
191-24-2	Benzo(g,h,i)Perylene	440	U

(1) - Cannot be separated from Diphenylamine

AV 7-6-88

FORM I SV-2 1/87 Rev.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: EX021

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7785

Sample wt/vol: 30.2 (g/mL) G Lab File ID: EE7785

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 26 dec. ____ Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/88

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.000

Number TICs found: 17

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108-21-4	ACETIC ACID, 1-METHYLETHYL E	3.85	400	ABJ
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	4.37	28000	ABJ
3. 110-12-3	2-HEXANONE, 5-METHYL-	4.65	1300	ABJ
4.	UNKNOWN	5.78	310	BJ
5. 57-15-8	2-PROPANOL, 1,1,1-TRICHLORO-	7.02	1200	BJ
6. 4655-34-9	2-PROPENOIC ACID, 2-METHYL-,	12.39	300	J
7. 502-69-2	2-PENTADECANONE, 6,10,14-TRI	19.00	200	J
8. 57-10-3	HEXADECANOIC ACID	20.14	300	J
9.	UNKNOWN	24.15	1000	BJ
10. 88-24-4	PHENOL, 2,2'-METHYLENEBIS[6-	25.62	580	BJ
11.	UNKNOWN	27.12	180	J
12. 36237-66-8	6,10,14-HEXADECATRIEN-1-OL,	28.26	260	J
13.	UNKNOWN (SAT'D HYDROCARBON)	28.72	930	J
14.	UNKNOWN (SAT'D HYDROCARBON)	30.57	1700	J
15. 58-95-7	VITAMIN E ACETATE (VAN)	31.49	230	J
16.	UNKNOWN (SAT'D HYDROCARBON)	32.86	780	J
17.	UNKNOWN	34.77	210	J

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

[illegible]

1265

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7582

Lab Code: IT-STU Case No.: 9969 SAS No.: SDG No.: [illegible]

Matrix: (soil/water) SOIL Lab Sample ID: [illegible]

Sample wt/vol: 30.1 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 17 dec. Date Extracted: 05/05/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	5.6	U
319-85-7	beta-BHC	450	U
319-86-8	delta-BHC	5.6	U
58-89-9	gamma-BHC (Lindane)	5.6	U
76-44-8	Heptachlor	5.6	U
309-00-2	Aldrin	10	U
1024-57-3	Heptachlor epoxide	5.6	U
959-98-8	Endosulfan I	5.6	U
60-57-1	Dieldrin	26	U ← 26760K
72-55-9	4,4'-DDE	10	U
72-20-8	Endrin	10	U
33213-65-9	Endosulfan II	10	U
72-54-8	4,4'-DDD	10	U
1031-07-8	Endosulfan sulfate	10	U
50-29-3	4,4'-DDT	10	U
72-43-5	Methoxychlor	50	U
53494-70-5	Endrin ketone	10	U
5103-71-9	alpha-Chlordane	50	U
5103-74-2	gamma-Chlordane	50	U
8001-35-2	Toxaphene	100	U
12674-11-2	Aroclor-1016	50	U
11104-28-2	Aroclor-1221	350	U
11141-16-5	Aroclor-1232	50	U
53469-21-9	Aroclor-1242	50	U
12672-29-6	Aroclor-1248	50	U
11097-69-1	Aroclor-1254	100	U
11096-82-5	Aroclor-1260	100	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
[illegible]

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STL Case No.: 9469 SAS No.: _____ SDG No.: [illegible]

Matrix: (soil/water) SOIL Lab Sample ID: [illegible]

Sample wt/vol: [illegible] (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 04/22/88

% Moisture: not dec. 17 dec. _____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	96	U
319-85-7	beta-BHC	23	J
319-86-8	delta-BHC	96	U
58-89-9	gamma-BHC (Lindane)	96	U
76-44-8	Heptachlor	96	U
309-00-2	Aldrin	96	U
1024-57-3	Heptachlor epoxide	96	U
959-98-8	Endosulfan I	[illegible]	U
60-57-1	Dieldrin	22	J
72-55-9	4,4'-DDE	190	U
72-20-8	Endrin	190	U
33213-65-9	Endosulfan II	190	U
72-54-8	4,4'-DDD	190	U
1031-07-8	Endosulfan sulfate	190	U
50-29-3	4,4'-DDT	190	U
72-43-5	Methoxychlor	960	U
53494-70-5	Endrin ketone	190	U
5103-71-9	alpha-Chlordane	960	U
5103-74-2	gamma-Chlordane	960	U
8001-35-2	Toxaphene	1900	U
12674-11-2	Aroclor-1016	960	U
11104-28-2	Aroclor-1221	96	J
11141-16-5	Aroclor-1232	960	U
53469-21-9	Aroclor-1242	960	U
12672-29-6	Aroclor-1248	960	U
11097-69-1	Aroclor-1254	1900	U
11096-82-5	Aroclor-1260	1900	U

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7/20/88

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

1277

EX011

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-SIU Case No.: 9462 SAS No.: _____ SDG No.: EX011

Matrix: (soil/water) SOIL Lab Sample ID: 6E1CI7SL-2N

Sample wt./vol: 20.2 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 04/24/88

% Moisture: not dec. 12 dec. _____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/08/88

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 200

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1800	U
319-85-7	beta-BHC	1800	U
319-86-8	delta-BHC	1800	U
58-89-9	gamma-BHC (Lindane)	1800	U
76-44-8	Heptachlor	1800	U
309-00-2	Aldrin	1800	U
1024-57-3	Heptachlor epoxide	1800	U
959-98-8	Endosulfan I	1800	U
60-57-1	Dieldrin	3600	U
72-55-9	4,4'-DDE	3600	U
72-20-8	Endrin	3600	U
33213-65-9	Endosulfan II	3600	U
72-54-8	4,4'-DDD	3600	U
1031-07-8	Endosulfan sulfate	3600	U
50-29-3	4,4'-DDT	3600	U
72-43-5	Methoxychlor	18000	U
53494-70-5	Endrin ketone	3600	U
5103-71-9	alpha-Chlordane	18000	U
5103-74-2	gamma-Chlordane	18000	U
8001-35-2	Toxaphene	36000	U
12674-11-2	Aroclor-1016	18000	U
11104-28-2	Aroclor-1221	18000	U
11141-16-5	Aroclor-1232	18000	U
53469-21-9	Aroclor-1242	18000	U
12672-29-6	Aroclor-1248	18000	U
11097-69-1	Aroclor-1254	36000	U
11096-82-5	Aroclor-1260	36000	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

1283

EX01SDL

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7488

Lab Code: IT-STU Case No.: 9489 SAS No.: _____ SDG No.: EX01[illegible]

Matrix: (soil/water) SOIL Lab Sample ID: [illegible]

Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 dec. ____ Date Extracted: 05/05/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/88

GPC Cleanup: (Y/N) N pH: 8.3 Dilution Factor: 2000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	18000	U
319-85-7	beta-BHC	18000	U
319-86-8	delta-BHC	18000	U
58-89-9	gamma-BHC (Lindane)	18000	U
76-44-8	Heptachlor	18000	U
309-00-2	Aldrin	18000	U
1024-57-3	Heptachlor epoxide	18000	U
959-98-8	Endosulfan I	18000	U
60-57-1	Dieldrin	36000	U
72-55-9	4,4'-DDE	36000	U
72-20-8	Endrin	36000	U
33213-65-9	Endosulfan II	36000	U
72-54-8	4,4'-DDD	36000	U
1031-07-8	Endosulfan sulfate	36000	U
50-29-3	4,4'-DDT	36000	U
72-43-5	Methoxychlor	180000	U
53494-70-5	Endrin ketone	36000	U
5103-71-9	alpha-Chlordane	180000	U
5103-74-2	gamma-Chlordane	180000	U
8001-35-2	Toxaphene	360000	U
12674-11-2	Aroclor-1016	180000	U
11104-28-2	Aroclor-1221	180000	U
11141-16-5	Aroclor-1232	180000	U
53469-21-9	Aroclor-1242	180000	U
12672-29-6	Aroclor-1248	180000	U
11097-69-1	Aroclor-1254	360000	U
11096-82-5	Aroclor-1260	360000	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 1289

EXCIT

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: SDG No.: E-014

Matrix: (soil/water) SOIL Lab Sample ID: SE-7768T-1

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 04/20/88

% Moisture: not dec. 22 dec. Date Extracted: 05/06/88

Extraction: (Sep/Cont/Sonc) SONC Date Analyzed: 06/12/88

GPC Cleanup: (Y/N) N pH: 8.1 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	10	U
319-85-7	beta-BHC	20	U
319-86-8	delta-BHC	10	U
58-89-9	gamma-BHC (Lindane)	10	U
76-44-8	Heptachlor	10	U
309-00-2	Aldrin	10	U
1024-57-3	Heptachlor epoxide	10	U
959-98-8	Endosulfan I	10	U
60-57-1	Dieldrin	20	U
72-55-9	4,4'-DDE	20	U
72-20-8	Endrin	20	U
33213-65-9	Endosulfan II	20	U
72-54-8	4,4'-DDD	20	U
1031-07-8	Endosulfan sulfate	20	U
50-29-3	4,4'-DDT	20	U
72-43-5	Methoxychlor	100	U
53494-70-5	Endrin ketone	20	U
5103-71-9	alpha-Chlordane	100	U
5103-74-2	gamma-Chlordane	100	U
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	100	U
11104-28-2	Aroclor-1221	100	U
11141-16-5	Aroclor-1232	100	U
53469-21-9	Aroclor-1242	100	U
12672-29-6	Aroclor-1248	100	U
11097-69-1	Aroclor-1254	200	U
11096-82-5	Aroclor-1260	200	U

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: STAR-KNOXVILLE Contract: 68-01-7468

Lab Code: KNSTL Case No.: 9465 SAS No.: SDG No.: 8111

Matrix (soil/water): SOIL Lab Sample ID: 8411211

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

Level (low/med): LOW Date Received: 04/29/88

% Moisture: not dec.: 10 dec.: Date Extracted: 05/02/88

Extraction: (Sep.Funn./Cont.Perc.) SONC Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: Dil. Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	100	U
319-85-7	beta-BHC	100	U
319-86-8	delta-BHC	100	U
58-89-9	gamma-BHC (Lindane)	100	U
76-44-8	Heptachlor	100	U
309-00-2	Aldrin	100	U
1024-57-3	Heptachlor epoxide	100	U
959-98-8	Endosulfan I	100	U
60-57-1	Dieldrin	200	U
72-55-9	4,4'-DDE	200	U
72-20-8	Endrin	200	U
33213-65-9	Endosulfan II	200	U
72-54-8	4,4'-DDD	200	U
1031-07-8	Endosulfan sulfate	200	U
50-29-3	4,4'-DDT	200	U
72-43-5	Methoxychlor	1000	U
53494-70-5	Endrin ketone	200	U
5103-71-9	alpha-Chlordane	1000	U
5103-74-2	gamma-Chlordane	1000	U
8001-35-2	Toxaphene	2000	U
12674-11-2	Aroclor-1016	1000	U
11104-28-2	Aroclor-1221	1000	U
11141-16-5	Aroclor-1232	1000	U
53469-21-9	Aroclor-1242	1000	U
12672-29-6	Aroclor-1248	1000	U
11097-69-1	Aroclor-1254	2000	U
11096-82-5	Aroclor-1260	2000	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EX017

1301

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: [illegible]

Matrix: (soil/water) SOIL Lab Sample ID: [illegible]

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

Level: (low/med) Low Date Received: 04/29/93

% Moisture: not dec. 13 dec. _____ Date Extracted: [illegible]

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/07/93

GPC Cleanup: (Y/N) N pH: 8.2 Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	9.3	U
319-85-7	beta-BHC	24	U
319-86-8	delta-BHC	49	U
58-89-9	gamma-BHC (Lindane)	9.3	U
76-44-8	Heptachlor	9.3	U
309-00-2	Aldrin	9.3	U
1024-57-3	heptachlor epoxide	9.3	U
959-98-8	Endosulfan I	9.3	U
60-57-1	Dieldrin	19	U
72-55-9	4,4'-DDE	19	U
72-20-8	Endrin	19	U
33213-65-9	Endosulfan II	19	U
72-54-8	4,4'-DDD	19	U
1031-07-8	Endosulfan sulfate	19	U
50-29-3	4,4'-DDT	19	U
72-43-5	Methoxychlor	93	U
53494-70-5	Endrin ketone	19	U
5103-71-9	alpha-Chlordane	93	U
5103-74-2	gamma-Chlordane	93	U
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	93	U
11104-28-2	Aroclor-1221	93	U
11141-16-5	Aroclor-1232	93	U
53469-21-9	Aroclor-1242	93	U
12672-29-6	Aroclor-1248	93	U
11097-69-1	Aroclor-1254	190	U
11096-82-5	Aroclor-1260	190	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX017DL

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9465 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: SE777987-10

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 04/25/88

% Moisture: not dec. 15 dec. _____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 8.2 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	93	U
319-85-7	beta-BHC	93	U
319-86-8	delta-BHC	9.3	JU
58-89-9	gamma-BHC (Lindane)	93	U
76-44-8	Heptachlor	93	U
309-00-2	Aldrin	93	U
1024-57-3	Heptachlor epoxide	93	U
959-98-8	Endosulfan I	93	U
60-57-1	Dieldrin	190	U
72-55-9	4,4'-DDE	190	U
72-20-8	Endrin	190	U
33213-65-9	Endosulfan II	190	U
72-54-8	4,4'-DDD	190	U
1031-07-8	Endosulfan sulfate	190	U
50-29-3	4,4'-DDT	190	U
72-43-5	Methoxychlor	930	U
53494-70-5	Endrin ketone	190	U
5103-71-9	alpha-Chlordane	930	U
5103-74-2	gamma-Chlordane	930	U
8001-35-2	Toxaphene	1900	U
12674-11-2	Aroclor-1016	930	U
11104-28-2	Aroclor-1221	93	JU
11141-16-5	Aroclor-1232	930	U
53469-21-9	Aroclor-1242	930	U
12672-29-6	Aroclor-1248	930	U
11097-69-1	Aroclor-1254	1900	U
11096-82-5	Aroclor-1260	1900	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX016

1313

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE7720-1

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 18 dec. _____ Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 3.4 Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	9.7	U
319-85-7	beta-BHC	39	U
319-86-8	delta-BHC	9.7	U
58-89-9	gamma-BHC (Lindane)	9.7	U
76-44-8	Heptachlor	9.7	U
309-00-2	Aldrin	9.7	U
1024-57-3	Heptachlor epoxide	9.7	U
959-98-8	Endosulfan I	9.7	U
60-57-1	Dieldrin	19	U
72-55-9	4,4'-DDE	19	U
72-20-8	Endrin	19	U
33213-65-9	Endosulfan II	19	U
72-54-8	4,4'-DDD	19	U
1031-07-8	Endosulfan sulfate	19	U
50-29-3	4,4'-DDT	19	U
72-43-5	Methoxychlor	97	U
53494-70-5	Endrin ketone	19	U
5103-71-9	alpha-Chlordane	97	U
5103-74-2	gamma-Chlordane	97	U
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	97	U
11104-28-2	Aroclor-1221	~~97~~	~~U~~
11141-16-5	Aroclor-1232	97	U
53469-21-9	Aroclor-1242	97	U
12672-29-6	Aroclor-1248	97	U
11097-69-1	Aroclor-1254	190	U
11096-82-5	Aroclor-1260	190	U

PESTICIDE ORGANICS 1D ANALYSIS DATA SHEET

EPA SAMPLE NO.: EX018DL

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7466

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX016

Matrix: (soil/water) SOIL Lab Sample ID: EE7780-10

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 18 dec. _____ Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) Y pH: 8.4 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	97	U
319-85-7	beta-BHC	42	JU
319-86-8	delta-BHC	97	U
58-89-9	gamma-BHC (Lindane)	97	U
76-44-8	Heptachlor	97	U
309-00-2	Aldrin	97	U
1024-57-3	Heptachlor epoxide	97	U
959-98-8	Endosulfan I	97	U
60-57-1	Dieldrin	190	U
72-55-9	4,4'-DDE	190	U
72-20-8	Endrin	190	U
33213-65-9	Endosulfan II	190	U
72-54-8	4,4'-DDD	190	U
1031-07-8	Endosulfan sulfate	190	U
50-29-3	4,4'-DDT	190	U
72-43-5	Methoxychlor	970	U
53494-70-5	Endrin ketone	190	U
5103-71-9	alpha-Chlordane	970	U
5103-74-2	gamma-Chlordane	970	U
8001-35-2	Toxaphene	1900	U
12674-11-2	Aroclor-1016	970	U
11104-28-2	Aroclor-1221	97	JU
11141-16-5	Aroclor-1232	970	U
53469-21-9	Aroclor-1242	970	U
12672-29-6	Aroclor-1248	970	U
11097-69-1	Aroclor-1254	1900	U
11096-82-5	Aroclor-1260	1900	U

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 1325

EX019

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7462

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: EE77810987-2

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 12 dec. ____ Date Extracted: 05/06/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/09/88

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	45	U
319-85-7	beta-BHC	45	U
319-86-8	delta-BHC	45	U
58-89-9	gamma-BHC (Lindane)	45	U
76-44-8	Heptachlor	45	U
309-00-2	Aldrin	45	U
1024-57-3	Heptachlor epoxide	45	U
959-98-8	Endosulfan I	45	U
60-57-1	Dieldrin	90	U
72-55-9	4,4'-DDE	90	U
72-20-8	Endrin	90	U
33213-65-9	Endosulfan II	90	U
72-54-8	4,4'-DDD	90	U
1031-07-8	Endosulfan sulfate	90	U
50-29-3	4,4'-DDT	90	U
72-43-5	Methoxychlor	450	U
53494-70-5	Endrin ketone	90	U
5103-71-9	alpha-Chlordane	450	U
5103-74-2	gamma-Chlordane	450	U
8001-35-2	Toxaphene	900	U
12674-11-2	Aroclor-1016	450	U
11104-28-2	Aroclor-1221	450	U
11141-16-5	Aroclor-1232	450	U
53469-21-9	Aroclor-1242	450	U
12672-29-6	Aroclor-1248	450	U
11097-69-1	Aroclor-1254	900	U
11096-82-5	Aroclor-1260	900	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX02C

1331

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9469 SAS No.: _____ SDG No.: CX014

Matrix: (soil/water) SOIL Lab Sample ID: EE77848T-1

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 9 dec. _____ Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/15/88

GPC Cleanup: (Y/N) N pH: 8.7 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.8	U
319-85-7	beta-BHC	45	U
319-86-8	delta-BHC	8.8	U
58-89-9	gamma-BHC (Lindane)	8.8	U
76-44-8	Heptachlor	11	
309-00-2	Aldrin	8.8	U
1024-57-3	Heptachlor epoxide	8.8	U
959-98-8	Endosulfan I	8.8	U
60-57-1	Dieldrin	18	U
72-55-9	4,4'-DDE	18	U
72-20-8	Endrin	18	U
33213-65-9	Endosulfan II	18	U
72-54-8	4,4'-DDD	18	U
1031-07-8	Endosulfan sulfate	18	U
50-29-3	4,4'-DDT	18	U
72-43-5	Methoxychlor	88	U
53494-70-5	Endrin ketone	18	U
5103-71-9	alpha-Chlordane	88	U
5103-74-2	gamma-Chlordane	88	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	88	U
11104-28-2	Aroclor-1221	88	U
11141-16-5	Aroclor-1232	88	U
53469-21-9	Aroclor-1242	88	U
12672-29-6	Aroclor-1248	88	U
11097-69-1	Aroclor-1254	180	U
11096-82-5	Aroclor-1260	180	U

"EGK 7/20/88

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

1337

[illegible]

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7468

Lab Code: IT-STU Case No.: 9468 SAS No.: _____ SDG No.: [illegible]

Matrix: (soil/water) SOIL Lab Sample ID: [illegible]

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 9 dec. _____ Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/15/88

GPC Cleanup: (Y/N) N pH: 8.7 Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	88	U
319-85-7	beta-BHC	34	JU
319-86-8	delta-BHC	05	U
58-89-9	gamma-BHC (Lindane)	68	U
76-44-8	Heptachlor	10	DJ
309-00-2	Aldrin	86	U
1024-57-3	Heptachlor epoxide	88	U
959-98-8	Endosulfan I	85	U
60-57-1	Dieldrin	180	U
72-55-9	4,4'-DDE	180	U
72-20-8	Endrin	180	U
33213-65-9	Endosulfan II	180	U
72-54-8	4,4'-DDD	180	U
1031-07-8	Endosulfan sulfate	180	U
50-29-3	4,4'-DDT	180	U
72-43-5	Methoxychlor	880	U
53494-70-5	Endrin ketone	180	U
5103-71-9	alpha-Chlordane	880	U
5103-74-2	gamma-Chlordane	880	U
8001-35-2	Toxaphene	1800	U
12674-11-2	Aroclor-1016	880	U
11104-28-2	Aroclor-1221	880	U
11141-16-5	Aroclor-1232	880	U
53469-21-9	Aroclor-1242	880	U
12672-29-6	Aroclor-1248	880	U
11097-69-1	Aroclor-1254	1800	U
11096-82-5	Aroclor-1260	1800	U

II

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

1343

EX021

Lab Name: ITAS-KNOXVILLE Contract: 68-01-7463

Lab Code: IT-STU Case No.: 9463 SAS No.: SDG No.: EX014

Matrix: (soil/water) SOIL Lab Sample ID: SEV7855T-1

Sample wt/vol: 30.1 (g/mL) G Lab File ID:

Level: (low/med) LOW Date Received: 04/29/88

% Moisture: not dec. 9 dec. Date Extracted: 05/09/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/07/88

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.00

CAS NO.	COMPC	CONCENTRATION UNITS: (ug/L or ug/kg) UG/KG	Q
319-84-6	alpha-BHC	8.8	U
319-85-7	beta-BHC	8.8	U
319-86-8	delta-BHC	8.8	U
58-89-9	gamma-BHC (Lindane)	8.8	U
76-44-8	Heptachlor	8.8	U
309-00-2	Aldrin	8.8	U
1024-57-3	Heptachlor epoxide	8.8	U
959-98-8	Endosulfan I	8.8	U
60-57-1	Dieldrin	18	U
72-55-9	4,4'-DDE	18	U
72-20-8	Endrin	18	U
33213-65-9	Endosulfan II	18	U
72-54-8	4,4'-DDD	18	U
1031-07-8	Endosulfan sulfate	18	U
50-29-3	4,4'-DDT	18	U
72-43-5	Methoxychlor	88	U
53494-70-5	Endrin ketone	18	U
5103-71-9	alpha-Chlordane	88	U
5103-74-2	gamma-Chlordane	88	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	88	U
11104-28-2	Aroclor-1221	88	U
11141-16-5	Aroclor-1232	88	U
53469-21-9	Aroclor-1242	88	U
12672-29-6	Aroclor-1248	88	U
11097-69-1	Aroclor-1254	180	U
11096-82-5	Aroclor-1260	180	U

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

CRL Receipt Date 6/6/88 FIT Receipt Date 6/15/88 Review Completed 6/21/88

TO: D. Kolb
FROM: Mary Gzyra
SUBJECT: MARBLE CLIFF QUARRIES
PAN: 040027SA (1 hour charged for review) Case # 9469

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
#	Low Soil	# 8	Low Soil
	Low Water		Low Water
	Drinking Water		Drinking Water
	Other		Other

Project Data Status _____ Completed!!

✓ Incomplete, awaiting low soil organics

FIT Data Review Findings:

Check Data Sheets for Transcription Errors

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

Book No. 8 Page No. 48/50 Date Sampled 4/28/88

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COMPOUND FOOTNOTES	DEFINITION	INTERPRETATION
U	Indicates compound was analyzed for but not detected.	Compound was not detected.
J	Indicates an estimated value.	Compound value may be semi-quantitative.
UJ	Quantitation limit is estimated due to a Quality Control (QC) protocol.	Compound was not detected.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract shall be confirmed by GC/MS.	Compound was confirmed by mass spectroscopy
B	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.	Compound value may be semi-quantitative if it is <5x the blank concentration (<10x the blank concentrations for common lab artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone).
E	This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will <u>not</u> apply to pesticides/PCBs analyzed by GC/EC methods.	Compound value may be semi-quantitative.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.	Alerts data user to a possible change in the CRQL.
A	This flag indicates that a TIC is a suspected aldol-condensation product.	Alerts data user of a lab artifact.
R	Results are unusable due to a major violation of QC protocol.	Compound value is not usable.

ANALYTE FOOTNOTES		DEFINITION	INTERPRETATION
OLD	NEW		
E	E	Estimated or not reported due to inteference. See laboratory narrative.	Compound or element was not detected or value may be semi-quantitative.
S	S	Analysis by Method of Standard Additions.	Value may be quantitative.
R	N	Spike recoveries outside QC protocols which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative.	Value may be quantitative or semi-quantitative.
*	*	Duplicate value outside QC protocols which indicates a possible matrix problem.	Value may be semi-quantitative.
+	+	Correlation coefficient for standard additions in less than 0.995. See review and laboratory narrative.	Data value may be biased.
[ ]	B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
UJ		DL is estimated because of a QC protocol. DL is possibly above or below CRDL.	Compound or element was not detected.
J		Value is above CRDL and is an estimated value because of a QC Protocol.	Value may be semi-quantitative.
U	U	Compound was analyzed for but not detected.	Compound was not detected.
	M	Duplicate injection precision not met.	Value may be semi-quantitative.
	W	Post digestion spike for furnance AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance.	Value may be semi-quantitative.
NA		Value not available due to insufficient data.	
NR		Value not recommended to be calculated, since chemical has proven to be a human carcinogen.	
( )		Estimated value.	

Source: Ecology and Environment, Inc. 1988.

Table 4- Cont.

Sample Collection Information and Parameters	Sample Number											
	>_1	>_2	>_3	>_4	>_5	>_6	>_7	>_8	>_9	>_10	>_11	>_12
Pesticides/PCBs Cont.												
Aroclor 1232												
Aroclor 1242												
Aroclor 1248												
Aroclor 1254												
Aroclor 1260												
Analyte Detected (values in ug/ [ppm])	MEX 218	219	220	221	222	223	224	225				
aluminum	4700 J*	8040 J*	1240 J*	1160 J*	859 J*	9510 J*	10100 J*	13600 J*				
antimony												
arsenic	11.9	8.9 B	23 +B	3.8	1.5 B	16.4 +	8.9	16.3 +				
barium	116	105	630	494	233	303	103	175				
beryllium		.77 B				1.5	1.1	1.9				
cadmium						3.5 J*						
calcium	178000 J*	70400 J*	284000 J*	245000 J*	259000 J*	30600 J*	78800 J*	3440 J*				
chromium	10.5 J*	30.2 J*	16.6 J*	8.2 J*	6.1 J*	22.9 J*	16.5 J*	17.5 J*				
cobalt	7.7 B	11.6				33.4	12.5	12.4 B				
copper	86.6 JEN*	20.4 JEN*	6.2 JEN*	14.3 JEN*		118 JEN*	21.2 JEN*	5.8 JBEN*				
iron	14100 J*	20400 J*	2710 J*	3720 J*	2330 J*	31700 J*	29300 J*	22800 J*				
lead	20.9 *	198 *	27 *	3.5 *	1.4 *	36 *	19 *	26.4 *				
magnesium	18300	23600	77700	67300	74400	13700	22500	2650				
manganese	427 *	345 *	91 *	156 *	98.2 *	1860 *	478 *	1480 *				
mercury						6.14						
nickel	15.8 J*	23.3 J*		12.8 J*	10.3 J*	65.8 J*	37.6 J*	26.1 J*				
potassium		982 B				1420	1420	1480				
selenium												
silver												
sodium	115 B	91.4 B	113 B	123 B	94.1 B	150 B	117 B	74.1 B				
thallium												
vanadium	19.2	28.2	9 B	9.4 B	8.1 B	36.5	33.7	38.4				
zinc	82.1 JN*	105 JN*	55.1 JN*	50.3 JN*	45.1 JN*	645 JN*	130 JN*	90.6 JN*				
cyanide												

-- Not detected.

The qualifier "*" does not affect the data for lead + zinc.

M Fox

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CRL Receipt Date 7/23/90 FIT Receipt Date 8/7/90 Review Completed 8/9/90

TO: R. Earlywine
FROM: ~~Mary Gzyra~~ C. Kouris
SUBJECT: Marble Cliff Quarries
PAN: F0H08435B (1 hour charged for review) Case # 14298

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
#	Low Soil	# 11	Low Soil
	Low Water		Low Water
	Drinking Water		Drinking Water
	Other		Other

Project Data Status X Completed!!

_____ Incomplete, awaiting _____

FIT Data Review Findings:

Check Data Sheets for Transcription Errors

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

Book No. 9 Page No. _____ Date Sampled _____

0759:2

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8/7/90

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

8/7/90

DATE: 8-7-90

SUBJECT: Review of Region V CLP Data
Received for Review on July 23, 1990

FROM: Curtis Ross, Director (5SCRL)
Central Regional Laboratory Jay Thakker

TO: Data User: FIT

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

SITE NAME: MARBLE CLIFF QUARRIES (OH) SMO Case No. 14298

EPA Data Set No. _____ No. of Samples: 11 D.U./Activity Numbers 1

CRL No. _____

SMO Traffic No. MEKN50-60

CLP Laboratory: BETZ Hrs. Required for Review: 8.5

+1 DX 8/3/90

Following are our findings.

See next page

MF 8/1/90

( ) 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: Dr. Alfred Haeberer/Joan Fisk/Gary Ward, EPA Support Services
Ross K. Robeson, EMSL-Las Vegas
Don Trees, CLP/Sample Management Office

Below are the out of control audits for case 14298 which contained 11 low level soil samples analyzed for total metals and total cyanide.

ICP ANALYSES: The 59.6% Sb spike recovery and the 72.5% Ag spike recovery indicate a low bias. All Sb and Ag data are < IDL and are estimated(UJ) due to a possible elevated detection limits.

The reviewer corrected form 1(MEKN50) and 9(serial dilution) for Ca results.

The 17.9% Cu serial dilution indicates interference and all Cu data are estimated(J).

The preparation blank(184.91 mg/kg),ICB(541.3 ug/l), and a CCB(1227.4 ug/l) all indicate contamination for K. Sample data for K(MEKN50,52,54,55,57-59) are estimated(J) due to contamination.

GFAA ANALYSES: The preparation blank for Pb(.508 mg/kg) indicates contamination. The 62.8% Pb spike recovery indicates a low bias. The lab flagged(+) on Pb(MEKN51,57). For Pb: MEKN58,59 are estimated(J) due to contamination and a low bias; MEKN51,57 are estimated(J) due to a poor MSA correlation coefficient and a low bias; and the rest of the data are estimated(J) due to a low bias.

The 68.5% As spike recovery indicates a low bias and all data are estimated(J).

The lab flagged(W) on Se(MEKN50-55,58,59). The lab did not flag(*) on the duplicate of Se(200%) because the sample difference did not exceed 2 X CRDL. Data for Se(MEKN50-55,58,59) are estimated(UJ) ~~J)~~ due to interference.
MFS/6/90

OTHER QUALIFIERS: All Hg and CN data are acceptable.

DATE: 8/1/90

M. Fletcher

DPO: [ ] ACTION [ ] FYI Region 5

INORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. 14298 LABORATORY BETZ

SDG NO. M6KN57 DATA USER FIT

SOW 7/88 REVIEW COMPLETION DATE 8/1/90

NO. OF SAMPLES _____ WATER 11 SOIL _____ OTHER

REVIEWER [ ] ESD [✓] ESAT [ ] OTHER, CONTRACT/CONTRACTOR _____

	ICP	AA	Hg	CYANIDE
1. HOLDING TIMES	O	O	O	O
2. INITIAL CALIBRATIONS				
3. CONTINUING CALIBRATIONS				
4. FIELD BLANKS ("F" = not applicable)	✓	✓		
5. LABORATORY BLANKS	X	M		
6. ICS	O	MF 8/4/90		
7. LCS		O		
8. DUPLICATE ANALYSIS	✓	✓		
9. MATRIX SPIKE	X	M		
10. MSA		M		
11. SERIAL DILUTION	X			
12. SAMPLE VERIFICATION	O	O		
13. REGIONAL QC ("F" = not applicable)	✓	✓		
14. OVERALL ASSESSMENT	X	M	✓	✓

O = No problems or minor problems that do not affect data usability.
X = No more than *about* 5% of the data points are qualified as either estimated or unusable.
M = More than *about* 5% of the data points are qualified as estimated.
Z = More than *about* 5% of the data points are qualified as unusable.

DPO ACTION ITEMS: _____

AREAS OF CONCERN: _____

QC EXCEPTION SUMMARY REPORT

CASE # 14298
DATA SET #
LAB Q.C.#
DATE: 8/3/90

SITE Marble Hill Quarries
LAB Betz
REVIEWED BY M. Stevens

MATRIX: Soil
CONC. : Low
MATRIX:
CONC. :

WATER SAMPLE SPK.
WATER SAMPLE DUP.
SOIL SAMPLE SPK.
SOIL SAMPLE DUP.

	OVERALL CASE QC									MATRIX SPECIFIC QC						SAMPLE SPECIFIC QC		FIELD QC			REGIONAL QC			OTHER/ COMMENTS
	Holding Time	Cal Blanks	Int Calver	Cont Calver	Prep Blk AQ	Prep Blk SOL	ICS %R	ICS % AQ	ICS % SOL	Sol Dup RPD	Sol Spk %R	AQ Dup RPD	AQ Spk %R	Sol Dup AQ	Sol Dup SOL	GFAA Dup	GFAA Spike	Blank	Dup RPD	Spike %R	Shad Blank	Shad Spike %R	Spike Sample RPD	
Aluminum																								
Antimony											59.6													
Arsenic											68.5													
Barium																								
Beryllium																								
Cadmium																								
Calcium																								
Chromium																								
Cobalt																								
Copper															179									
Iron																								
Lead						508					62.8													
Magnesium																								
Manganese																								
Mercury																								
Nickel																								
Potassium		13574				18491																		
Selenium																								
Silver											72.5													
Sodium																								
Thallium																								
Tin																								
Vanadium																								
Zinc																								
Cyanide																								

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: BETZ LABS THE WOODLANDS Contract: 68-D9-0083

Lab Code: BETZ Case No.: 14298 SAS No.: _____ SDG No.: MEKN50

SOW No.: 7/88

EPA Sample No.	Lab Sample ID
MEKN50	MEKN50
MEKN50D	MEKN50D
MEKN50S	MEKN50S
MEKN51	MEKN51
MEKN52	MEKN52
MEKN53	MEKN53
MEKN54	MEKN54
MEKN55	MEKN55
MEKN56	MEKN56
MEKN57	MEKN57
MEKN58	MEKN58
MEKN59	MEKN59
MEKN60	MEKN60

RECEIVED
JUL 2 - 1990
US EPA CENTRAL REGIONAL LAB.
535 S. CLARK ST.
CHICAGO, ILLINOIS 60605

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No NO
If yes - were raw data generated before application of background corrections ? Yes/No

Comments:

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

Signature: Karen Alfano for W. Walton Name: ~~W. Walton~~ William W. Walton

Date: July 20, 1990 Title: Laboratory Manager

~~00005~~ 004 - Enc ~~00003~~

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MEKN50

Lab Name: BETZ_LABS_THE_WOODLANDS__ Contract: 68-D9-0083

Lab Code: BETZ__ Case No.: 14298 SAS No.: _____ SDG No.: MEKN50

Matrix (soil/water): SOIL_ Lab Sample ID: MEKN50____

Level (low/med): LOW__ Date Received: 06/15/90

% Solids: _86.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5000			P
7440-36-0	Antimony	4.9	U	N	P
7440-38-2	Arsenic	9.0		SN	F
7440-39-3	Barium	213			P
7440-41-7	Beryllium	0.48	B		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	101528 ~~203000~~			P
7440-47-3	Chromium	9.5			P
7440-48-4	Cobalt	8.0	B		P
7440-50-8	Copper	28.2		E	P
7439-89-6	Iron	12600			P
7439-92-1	Lead	9.8		N	F
7439-95-4	Magnesium	39500			P
7439-96-5	Manganese	191			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	29.9			P
7440-09-7	Potassium	943	B		P
7782-49-2	Selenium	0.23	U	W	F
7440-22-4	Silver	0.46	U	N	P
7440-23-5	Sodium	170	B		P
7440-28-0	Thallium	0.52	B		F
7440-62-2	Vanadium	11.4	B		P
7440-66-6	Zinc	77.4			P
	Cyanide	1.8			C

mg 8/1/90

Color Before: BROWN____ Clarity Before: _____ Texture: COARSE

Color After: YELLOW___ Clarity After: _____ Artifacts: YES___

Comments:

ROOTS

FORM I - IN

7/88

005

~~00001~~ cnk

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MEKN51

Lab Name: BETZ_LABS_THE_WOODLANDS__ Contract: 68-D9-0083

Lab Code: BETZ__ Case No.: 14298 SAS No.: _____ SDG No.: MEKN50

Matrix (soil/water): SOIL_ Lab Sample ID: MEKN51____

Level (low/med): LOW__ Date Received: 06/15/90

% Solids: _69.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17900			P
7440-36-0	Antimony	6.1	U	N	P
7440-38-2	Arsenic	9.7		SN	F
7440-39-3	Barium	210			P
7440-41-7	Beryllium	0.87	B		P
7440-43-9	Cadmium	0.87	U		P
7440-70-2	Calcium	19100			P
7440-47-3	Chromium	20.9			P
7440-48-4	Cobalt	7.8	B		P
7440-50-8	Copper	25.7		E	P
7439-89-6	Iron	25400			P
7439-92-1	Lead	22.9		+N	F
7439-95-4	Magnesium	4390			P
7439-96-5	Manganese	921			P
7439-97-6	Mercury	0.14			CV
7440-02-0	Nickel	31.6			P
7440-09-7	Potassium	2880			P
7782-49-2	Selenium	0.29	U	W	F
7440-22-4	Silver	0.58	U	N	P
7440-23-5	Sodium	88.0	B		P
7440-28-0	Thallium	0.58	U		F
7440-62-2	Vanadium	36.7			P
7440-66-6	Zinc	89.7			P
	Cyanide	1.4	U		C

Color Before: BROWN____ Clarity Before: _____ Texture: COARSE

Color After: YELLOW___ Clarity After: _____ Artifacts: YES___

Comments:
ROOTS

FORM I - IN

7/88

006

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MEKN52

Lab Name: BETZ LABS THE WOODLANDS Contract: 68-D9-0083

Lab Code: BETZ Case No.: 14298 SAS No.: _____ SDG No.: MEKN50

Matrix (soil/water): SOIL Lab Sample ID: MEKN52

Level (low/med): LOW Date Received: 06/15/90

% Solids: 85.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	570			P
7440-36-0	Antimony	4.9	U	N	P
7440-38-2	Arsenic	2.2	B	N	F
7440-39-3	Barium	617			P
7440-41-7	Beryllium	0.23	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	198000			P
7440-47-3	Chromium	6.1			P
7440-48-4	Cobalt	1.2	U		P
7440-50-8	Copper	16.6		E	P
7439-89-6	Iron	1830			P
7439-92-1	Lead	2.8		N	F
7439-95-4	Magnesium	56800			P
7439-96-5	Manganese	82.9			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	9.7			P
7440-09-7	Potassium	342	B		P
7782-49-2	Selenium	0.23	U	W	F
7440-22-4	Silver	0.47	U	N	P
7440-23-5	Sodium	168	B		P
7440-28-0	Thallium	0.47	U		F
7440-62-2	Vanadium	1.5	B		P
7440-66-6	Zinc	25.3			P
	Cyanide	1.2	U		C

Color Before: BROWN Clarity Before: _____ Texture: FINE

Color After: COLORLESS Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MEKN53

Lab Name: BETZ_LABS_THE_WOODLANDS__ Contract: 68-D9-0083

Lab Code: BETZ__ Case No.: 14298 SAS No.: _____ SDG No.: MEKN50

Matrix (soil/water): SOIL_ Lab Sample ID: MEKN53____

Level (low/med): LOW__ Date Received: 06/15/90

% Solids: _67.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	9720			P_
7440-36-0	Antimony_	6.2	U	N	P_
7440-38-2	Arsenic__	5.9		N	F_
7440-39-3	Barium___	99.9			P_
7440-41-7	Beryllium	0.38	B		P_
7440-43-9	Cadmium__	0.88	U		P_
7440-70-2	Calcium__	122000			P_
7440-47-3	Chromium_	15.3			P_
7440-48-4	Cobalt___	5.3	B		P_
7440-50-8	Copper___	23.1		E	P_
7439-89-6	Iron____	14700			P_
7439-92-1	Lead____	14.3		SN	F_
7439-95-4	Magnesium	56000			P_
7439-96-5	Manganese	372			P_
7439-97-6	Mercury__	0.14	U		CV
7440-02-0	Nickel___	23.8			P_
7440-09-7	Potassium	1370	B		P_
7782-49-2	Selenium_	0.29	U	W	F_
7440-22-4	Silver___	0.59	U	N	P_
7440-23-5	Sodium___	212	B		P_
7440-28-0	Thallium_	0.59	U		F_
7440-62-2	Vanadium_	18.5			P_
7440-66-6	Zinc____	64.8			P_
_____	Cyanide__	1.5	U		C_

Color Before: BROWN____ Clarity Before: _____ Texture: FINE __

Color After: COLORLESS Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MEKN54

Lab Name: BETZ LABS THE WOODLANDS Contract: 68-D9-0083

Lab Code: BETZ Case No.: 14298 SAS No.: _____ SDG No.: MEKN50

Matrix (soil/water): SOIL Lab Sample ID: MEKN54

Level (low/med): LOW Date Received: 06/15/90

% Solids: 77.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1070			P
7440-36-0	Antimony	5.4	U	N	P
7440-38-2	Arsenic	2.0	B	N	F
7440-39-3	Barium	25.6	B		P
7440-41-7	Beryllium	0.26	U		P
7440-43-9	Cadmium	0.77	U		P
7440-70-2	Calcium	249000			P
7440-47-3	Chromium	11.0			P
7440-48-4	Cobalt	1.3	U		P
7440-50-8	Copper	20.2		E	P
7439-89-6	Iron	2610			P
7439-92-1	Lead	2.8		SN	F
7439-95-4	Magnesium	111000			P
7439-96-5	Manganese	92.9			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	18.6			P
7440-09-7	Potassium	319	B		P
7782-49-2	Selenium	0.26	U	W	F
7440-22-4	Silver	0.51	U	N	P
7440-23-5	Sodium	193	B		P
7440-28-0	Thallium	0.51	U		F
7440-62-2	Vanadium	2.4	B		P
7440-66-6	Zinc	63.7			P
	Cyanide	1.3	U		C

Color Before: BROWN Clarity Before: _____ Texture: COARSE

Color After: COLORLESS Clarity After: _____ Artifacts: YES

Comments:
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EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MEKN55

Lab Name: BETZ LABS THE WOODLANDS Contract: 68-D9-0083

Lab Code: BETZ Case No.: 14298 SAS No.: SDG No.: MEYN50

Matrix (soil/water): SOIL Lab Sample ID: MEKN55

Level (low/med): LOW Date Received: 6/15/90

% Solids: 80.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1360.00			P
7440-36-0	Antimony	5.20	U	N	P
7440-38-2	Arsenic	1.40	B	N	F
7440-39-3	Barium	41.80	B		P
7440-41-7	Beryllium	.25	U		P
7440-43-9	Cadmium	.75	U		P
7440-70-2	Calcium	220000.00			P
7440-47-3	Chromium	9.90			P
7440-48-4	Cobalt	1.20	U		P
7440-50-8	Copper	19.10		E	P
7439-89-6	Iron	2400.00			P
7439-92-1	Lead	4.50		SN	F
7439-95-4	Magnesium	94000.00			P
7439-96-5	Manganese	93.40			P
7439-97-6	Mercury	.97			CV
7440-02-0	Nickel	14.20			P
7440-09-7	Potassium	243.00	B		P
7782-49-2	Selenium	.25	U	W	F
7440-22-4	Silver	.50	U	N	P
7440-23-5	Sodium	212.00	B		P
7440-28-0	Thallium	.50	U		F
7440-62-2	Vanadium	1.80	B		P
7440-66-6	Zinc	37.10			P
	Cyanide	1.20	U		C

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: COLORLESS Clarity After: Artifacts: YES

Comments:
ROOTS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MEKN56

Lab Name: BETZ_LABS_THE_WOODLANDS__ Contract: 68-D9-0083

Lab Code: BETZ__ Case No.: 14298 SAS No.: _____ SDG No.: MEKN50

Matrix (soil/water): SOIL_ Lab Sample ID: MEKN56____

Level (low/med): LOW__ Date Received: 06/15/90

% Solids: _75.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	11400			P_
7440-36-0	Antimony_	5.6	U	N	P_
7440-38-2	Arsenic__	14.9		SN	F_
7440-39-3	Barium___	4590			P_
7440-41-7	Beryllium	0.56	B		P_
7440-43-9	Cadmium__	4.2			P_
7440-70-2	Calcium__	42100			P_
7440-47-3	Chromium_	28.2			P_
7440-48-4	Cobalt___	10.7	B		P_
7440-50-8	Copper___	39.9		E	P_
7439-89-6	Iron____	30500			P_
7439-92-1	Lead____	320		SN	F_
7439-95-4	Magnesium	15600			P_
7439-96-5	Manganese	392			P_
7439-97-6	Mercury__	0.19			CV
7440-02-0	Nickel___	26.8			P_
7440-09-7	Potassium	1610			P_
7782-49-2	Selenium_	0.73	B		F_
7440-22-4	Silver___	0.53	U	N	P_
7440-23-5	Sodium___	170	B		P_
7440-28-0	Thallium_	0.73	B		F_
7440-62-2	Vanadium_	21.9			P_
7440-66-6	Zinc____	4300			P_
_____	Cyanide__	1.3	U		C_
_____	_____	_____			__

Color Before: BROWN____ Clarity Before: _____ Texture: COARSE

Color After: YELLOW___ Clarity After: _____ Artifacts: YES___

Comments:
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MEKN57

Lab Name: BETZ_LABS_THE_WOODLANDS__ Contract: 68-D9-0083

Lab Code: BETZ__ Case No.: 14298 SAS No.: _____ SDG No.: MEKN50

Matrix (soil/water): SOIL_ Lab Sample ID: MEKN57____

Level (low/med): LOW__ Date Received: 06/15/90

% Solids: _86.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	822			P
7440-36-0	Antimony	4.8	U	N	P
7440-38-2	Arsenic	1.4	B	N	F
7440-39-3	Barium	100			P
7440-41-7	Beryllium	0.23	U		P
7440-43-9	Cadmium	0.69	U		P
7440-70-2	Calcium	266000			P
7440-47-3	Chromium	8.5			P
7440-48-4	Cobalt	1.2	U		P
7440-50-8	Copper	20.5		E	P
7439-89-6	Iron	1920			P
7439-92-1	Lead	13.9		+N	F
7439-95-4	Magnesium	72100			P
7439-96-5	Manganese	88.7			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	8.7	B		P
7440-09-7	Potassium	258	B		P
7782-49-2	Selenium	0.23	U		F
7440-22-4	Silver	0.46	U	N	P
7440-23-5	Sodium	193	B		P
7440-28-0	Thallium	0.46	U		F
7440-62-2	Vanadium	2.7	B		P
7440-66-6	Zinc	33.7			P
	Cyanide	1.2	U		C

Color Before: BROWN____ Clarity Before: _____ Texture: COARSE

Color After: COLORLESS Clarity After: _____ Artifacts: YES___

Comments:
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MEKN58

Lab Name: BETZ LABS THE WOODLANDS Contract: 68-D9-0083

Lab Code: BETZ Case No.: 14298 SAS No.: _____ SDG No.: MEKN50

Matrix (soil/water): SOIL Lab Sample ID: MEKN58

Level (low/med): LOW Date Received: 06/15/90

% Solids: 85.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1410			P
7440-36-0	Antimony	5.0	U	N	P
7440-38-2	Arsenic	2.0	B	N	F
7440-39-3	Barium	238			P
7440-41-7	Beryllium	0.24	U		P
7440-43-9	Cadmium	0.72	U		P
7440-70-2	Calcium	217000			P
7440-47-3	Chromium	10.3			P
7440-48-4	Cobalt	1.2	U		P
7440-50-8	Copper	19.5		E	P
7439-89-6	Iron	2800			P
7439-92-1	Lead	2.1		N	F
7439-95-4	Magnesium	91500			P
7439-96-5	Manganese	76.2			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	19.7			P
7440-09-7	Potassium	521	B		P
7782-49-2	Selenium	0.24	U	W	F
7440-22-4	Silver	0.48	U	N	P
7440-23-5	Sodium	178	B		P
7440-28-0	Thallium	0.48	U		F
7440-62-2	Vanadium	3.0	B		P
7440-66-6	Zinc	58.6			P
	Cyanide	1.2	U		C

Color Before: BROWN Clarity Before: _____ Texture: FINE

Color After: COLORLESS Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MEKN59

Lab Name: BETZ_LABS_THE_WOODLANDS__ Contract: 68-D9-0083

Lab Code: BETZ__ Case No.: 14298 SAS No.: _____ SDG No.: MEKN50

Matrix (soil/water): SOIL_ Lab Sample ID: MEKN59____

Level (low/med): LOW__ Date Received: 06/15/90

% Solids: _79.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	1090			P_
7440-36-0	Antimony_	5.3	U	N	P_
7440-38-2	Arsenic__	2.1	B	N	F_
7440-39-3	Barium___	248			P_
7440-41-7	Beryllium	0.25	U		P_
7440-43-9	Cadmium__	0.75	U		P_
7440-70-2	Calcium__	216000			P_
7440-47-3	Chromium_	9.7			P_
7440-48-4	Cobalt___	1.3	U		P_
7440-50-8	Copper___	18.8		E	P_
7439-89-6	Iron____	2490			P_
7439-92-1	Lead____	2.1		N	F_
7439-95-4	Magnesium	87100			P_
7439-96-5	Manganese	88.3			P_
7439-97-6	Mercury__	0.11	U		CV
7440-02-0	Nickel___	12.6			P_
7440-09-7	Potassium	490	B		P_
7782-49-2	Selenium_	0.25	U	W	F_
7440-22-4	Silver___	0.50	U	N	P_
7440-23-5	Sodium___	225	B		P_
7440-28-0	Thallium_	0.50	U		F_
7440-62-2	Vanadium_	2.0	B		P_
7440-66-6	Zinc____	39.1			P_
_____	Cyanide__	1.3	U		C_
_____	_____				__

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: COLORLESS Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MEKN60

Lab Name: BETZ_LABS_THE_WOODLANDS__ Contract: 68-D9-0083

Lab Code: BETZ__ Case No.: 14298 SAS No.. _____ SDG No.: MEKN50

Matrix (soil/water): SOIL_ Lab Sample ID: MEKN60____

Level (low/med): LOW__ Date Received: 06/15/90

% Solids: _74.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15700			P
7440-36-0	Antimony	5.6	U	N	P
7440-38-2	Arsenic	9.6		SN	F
7440-39-3	Barium	186			P
7440-41-7	Beryllium	0.80	B		P
7440-43-9	Cadmium	0.80	U		P
7440-70-2	Calcium	30800			P
7440-47-3	Chromium	20.0			P
7440-48-4	Cobalt	8.1	B		P
7440-50-8	Copper	26.2		E	P
7439-89-6	Iron	26000			P
7439-92-1	Lead	30.6		N	F
7439-95-4	Magnesium	5590			P
7439-96-5	Manganese	812			P
7439-97-6	Mercury	0.12			CV
7440-02-0	Nickel	34.1			P
7440-09-7	Potassium	2160			P
7782-49-2	Selenium	0.49	B		F
7440-22-4	Silver	0.54	U	N	P
7440-23-5	Sodium	126	B		P
7440-28-0	Thallium	0.54	U		F
7440-62-2	Vanadium	31.6			P
7440-66-6	Zinc	89.6			P
	Cyanide	1.4	U		C

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

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BLANKS

Lab Name: BETZ LABS THE WOODLANDS Contract: 68-D9-0083

Lab Code: BETZ Case No.: 14298 SAS No.: SDG No.: MEAN50

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	20.0	U	20.0	U	20.0	U	20.0	U	4.000	U	P
Antimony	21.0	U	-24.2	B	-50.6	B	-55.0	B	4.200	U	P
Arsenic	1.0	U	1.0	U	1.0	U			0.200	U	F
Barium	6.0	U	6.0	U	6.0	U	6.0	U	1.200	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Cadmium	3.0	U	3.0	U	3.0	U	-3.1	B	0.600	U	P
Calcium	77.0	U	77.0	U	77.0	U	77.0	U	15.400	U	P
Chromium	9.0	U	9.0	U	9.0	U	9.0	U	1.800	U	P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Copper	2.0	U	3.7	B	2.0	U	2.0	U	0.508	B	P
Iron	11.0	U	11.0	U	11.0	U	11.0	U	2.200	U	P
Lead	1.0	U	1.0	U	1.0	U			0.508	B	F
Magnesium	77.0	U	77.0	U	77.0	U	77.0	U	15.400	U	P
Manganese	2.0	U	2.0	B	2.0	B	2.5	B	0.470	B	P
Mercury	0.2	U	0.2	U	0.2	U			0.100	U	CV
Nickel	5.0	U	5.0	U	5.0	U	-5.8	B	1.000	U	P
Potassium	541.3	B	1227.4	B	455.3	B	885.7	B	184.910	B	P
Selenium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	F
Silver	2.0	U	-3.5	B	-6.0	B	-4.9	B	0.400	U	P
Sodium	193.0	U	193.0	U	193.0	U	193.0	U	38.600	U	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Vanadium	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Zinc	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Cyanide	20.0	U	20.0	U	20.0	U	20.0	U	0.020	U	C

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3
BLANKS

Lab Name: BETZ LABS THE WOODLANDS Contract: 68-D9-0083

Lab Code: BETZ Case No.: 14298 SAS No.: SDG No.: MEKN50

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony	21.0	U	26.4	B	51.8	B					P
Arsenic	1.0	U	1.0	U							F
Barium	6.0	U	6.0	U	6.0	U					P
Beryllium											NR
Cadmium											NR
Calcium	77.0	U	77.0	U	77.0	U					P
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead	1.0	U	1.0	U	1.0	U					F
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium			1.0	U	1.0	U					F
Silver											NR
Sodium											NR
Thallium			2.0	U	2.0	U					F
Vanadium											NR
Zinc	2.0	U	2.0	U	2.0	U					P
Cyanide									1.000	U	C

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BLANKS

Lab Name: BETZ LABS THE WOODLANDS Contract: 68-D9-0083

Lab Code: BETZ Case No.: 14298 SAS No.: _____ SDG No.: MERNSO

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic	1.0	U	1.0	U	1.0	U					F
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead	1.0	U	1.0	U	-1.3	B	1.0	U			F
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium	1.0	U	1.0	U	1.0	U					F
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide									1.000	U	C

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3
BLANKS

Lab Name: BETZ_LABS_THE_WOODLANDS__ Contract: 68-D9-0083

Lab Code: BETZ__ Case No.: 14298 SAS No.: _____ SDG No.: MEKN50

Preparation Blank Matrix (soil/water): SOIL_

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic	1.0	U	1.0	U	1.0	U					F
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead			1.0	U	1.0	U	1.0	U			F
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium	1.0	U	1.0	U							F
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide									1.000	U	C

U.S. EPA - CLP

0004

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MEKN50S

Lab Name: BETZ LABS THE WOODLANDS Contract: 68-D9-0083

Lab Code: BETZ Case No.: 14298 SAS No.: _____ SDG No.: MEKN50

Matrix: SOIL Level (low/med): LOW

% Solids for Sample: 80.1

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	69.2381		4.8780	U	116.14	59.6	N	P
Arsenic	75-125	15.3357		8.9765		9.29	68.5	N	F
Barium	75-125	618.3577		212.6063		464.58	87.3		P
Beryllium	75-125	11.1080		0.4808	B	11.61	91.5		P
Cadmium	75-125	9.2334		0.6969	U	11.61	79.5		P
Calcium									NR
Chromium	75-125	53.9350		9.4564		46.46	95.7		P
Cobalt	75-125	111.3078		7.9791	B	116.14	89.0		P
Copper	75-125	77.4425		28.1649		58.07	84.9		P
Iron									NR
Lead	75-125	12.6922		9.7700		4.65	62.8	N	F
Magnesium									NR
Manganese	75-125	334.9895		191.4123		116.14	123.6		P
Mercury	75-125	0.5855		0.1106	U	0.53	110.5		CV
Nickel	75-125	124.4135		29.9048		116.14	81.4		P
Potassium									NR
Selenium	75-125	1.9861		0.2323	U	2.32	85.6		F
Silver	75-125	8.4204		0.4646	U	11.61	72.5	N	P
Sodium									NR
Thallium	75-125	10.8455		0.5203	B	11.61	88.9		F
Vanadium	75-125	121.7422		11.3937	B	116.14	95.0		P
Zinc	75-125	173.0778		77.4425		116.14	82.3		P
Cyanide	75-125	9.0827		1.8425		5.82	124.4		C

Comments:
ROOTS

U.S. EPA - CLP

00005

SB

POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MEKN50A

Lab Name: BETZ LABS THE WOODLANDS Contract: 68-D9-0083

Lab Code: BETZ Case No.: 14293 SAS No.: _____ SDG No.: MEKN50

Matrix: SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
Aluminum									NR
Antimony		66.08		21.00	U	120.0	55.1		P
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

U.S. EPA - CLP

DUPLICATES

EPA SAMPLE NO.

MEKN50D

Lab Name: BETZ LABS THE WOODLANDS Contract: 68-D9-0083

Lab Code: BETZ Case No.: 14298 SAS No.: SDG No.: MEKN50

Matrix (water/soil): SOIL Level (low/med): LOW

% Solids for Sample: 86.1 % Solids for Duplicate: 85.6

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

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	%RPD	Q	M
Aluminum		5000.2416		6056.1324		19.1		P
Antimony		4.8780	U	4.8780	U			P
Arsenic	2.3	8.9765		7.8871		12.9		F
Barium	46.5	212.6063		240.6620		12.4		P
Beryllium		.4808	B	.5436	B	12.3		P
Cadmium		.6969	U	.6969	U			P
Calcium		203056.9663		187477.5610		8.0		P
Chromium	2.3	9.4564		10.1463		7.0		P
Cobalt		7.9791	B	8.7410	B	9.1		P
Copper	5.8	28.1649		28.5134		1.2		P
Iron		12576.3229		11757.4564		6.7		P
Lead		9.7700		9.2520		5.4		F
Magnesium		39459.5912		42425.8792		7.2		P
Manganese		191.4123		218.8897		13.4		P
Mercury		.1106	U	.1056	U			CV
Nickel	9.3	29.9048		36.4088		19.6		P
Potassium		943.2729	B	1050.8084	B	10.8		P
Selenium		.2323	U	.3833	B	200.0		F
Silver		.4646	U	.4646	U			P
Sodium		169.6237	B	177.5726	B	4.6		P
Thallium		.5203	B	.5947	B	13.3		F
Vanadium	11.6	11.3937	B	13.1127		14.0		P
Zinc		77.4425		76.9988		.6		P
Cyanide	.6	1.8425		1.8388		.2		C

IO
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: BETZ LABS THE WOODLANDS Contract: 68-D9-0083

Lab Code: BETZ Case No.: 14298 SAS No.: SDG No.: MERN50

ICP ID Number: ICP523 Date: 4/15/90

Flame AA ID Number: MAS50B

Furnace AA ID Number: AAS6488

Analyte	Wave-length (nm)	Back ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	237.34		200	20.0	P
Antimony	217.59		60	21.0	P
Arsenic	197.20	BZ	10	1.0	F
Barium	493.41		200	6.0	P
Beryllium	313.11		5	1.0	P
Cadmium	214.44		5	3.0	P
Calcium	317.93		5000	77.0	P
Chromium	267.72		10	9.0	P
Cobalt	228.62		50	5.0	P
Copper	324.75		25	2.0	P
Iron	259.94		100	11.0	P
Lead	283.30	BZ	3	1.0	F
Magnesium	383.83		5000	77.0	P
Manganese	257.61		15	2.0	P
Mercury	253.70		0.2	.2	CV
Nickel	231.60		40	5.0	P
Potassium	766.47		5000	413.0	P
Selenium			5		NR
Silver	328.07		10	2.0	P
Sodium	589.59		5000	193.0	P
Thallium	276.80	BZ	10	2.0	F
Vanadium	292.40		50	2.0	P
Zinc	213.86		20	2.0	P

Comments:

IO
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: BETZ LABS THE WOODLANDS Contract: 68-D9-0083

Lab Code: BETZ Case No.: 14298 SAS No.: SDG No.: MEKN50

ICP ID Number: Date: //17/90

Flame AA ID Number:

Furnace AA ID Number: ASS6488

Analyte	Wave-length (nm)	Back ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		
Antimony			60		
Arsenic			10		
Barium			200		
Beryllium			5		
Cadmium			5		
Calcium			5000		
Chromium			10		
Cobalt			50		
Copper			25		
Iron			100		
Lead			3		
Magnesium			5000		
Manganese			15		
Mercury			0.2		
Nickel			40		
Potassium			5000		
Selenium	196.00	BZ	5	1.0	F
Silver			10		
Sodium			5000		
Thallium			10		
Vanadium			50		
Zinc			20		

Comments:

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
230 South Dearborn Stree
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: FOH0843
PROJECT NAME: TDD: F05-8905-012
Case: 14298
SAMPLERS: (Signature) Julie Visser
Cooler # 194

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	8 oz metals/cyanide						REMARKS: Tag Numbers	Low concen. Matrix
MEKN50	6/12/90	1250		X	S1	1	1						186104	soil
MEKN51	6/12/90	1320		X	S2	1	1						186108	soil
MEKN52	6/12/90	1330		X	S3	1	1						186112	soil
MEKN53	6/12/90	1500		X	S4	1	1						186116	soil
MEKN54	6/12/90	1510		X	S5	1	1						186120	soil
MEKN55	6/12/90	1450		X	S6	1	1						186124	soil
MEKN56	6/12/90	1530		X	S7	1	1						186128	soil
MEKN57	6/12/90	1545		X	S8	1	1						186132	soil
MEKN58	6/12/90	1600		X	S9	1	1						186136	soil
MEKN59	6/12/90	1600		X	S10	1	1						186140	soil
MEKN60	6/12/90	1630		X	S11	1	1						186144	soil

Lot Numbers:
8 oz. - 0075023
(ITR in cooler #194)

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Julie Visser	6/12/90 1900				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Shipped Fed Ex to BETZPA Airbill: 1060857490 Custody Seals: 128889, 128890	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 08638

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: F0H0843
PROJECT NAME: TDD: F05-8905-012
case: 14298

SAMPLERS: (Signature) Julie Vissel

cooler #50

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	ABN, pest./PCB 8 oz	VOA 120 ml					REMARKS: Tag Numbers	Low concen matrix
EKN65	6/12/90	1250		X	S1	3	1	2					186101-186103	soil
EKN66	6/12/90	1320		X	S2	3	1	2					186105-186107	soil
EKN67	6/12/90	1330		X	S3	3	1	2					186109-186111	soil
EKN68	6/12/90	1500		X	S4	3	1	2					186113-186115	soil
EKN69	6/12/90	1510		X	S5	3	1	2					186117-186119	soil
EKN70	6/12/90	1450		X	S6	3	1	2					186121-186123	soil
EKN71	6/12/90	1530		X	S7	3	1	2					186125-186127	soil
EKN72	6/12/90	1545		X	S8	3	1	2					186129-186131	soil
EKN73	6/12/90	1600		X	S9	3	1	2					186133-186135	soil
EKN74	6/12/90	1600		X	S10	3	1	2					186137-186139	soil
EKN75	6/12/90	1620		X	S11	3	1	2				JV 6/12/90	~~186141~~ 186143	soil
													186141	
					(OTR in cooler #50)								Lot Numbers	
													8 oz - 0135023	
													120 ml - W0085013	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Julie Vissel	6/12/90 1900				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Shipped Fed Ex to PEI Airbill: 1060857534 custody Seals: 128887, 128888	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 08626

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: FOH0843
PROJECT NAME: TDD: F05-8905-012 Case: 14298
SAMPLERS: (Signature) Julie Visser

Cooler # 194

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	8oz metals/cyanide						REMARKS: Tag Numbers	REMARKS: Low concen. Matrix
MEKN50	6/12/90	1250		X	S1	1	1						186104	soil
MEKN51	6/12/90	1320		X	S2	1	1						186108	soil
MEKN52	6/12/90	1330		X	S3	1	1						186112	soil
MEKN53	6/12/90	1500		X	S4	1	1						186116	soil
MEKN54	6/12/90	1510		X	S5	1	1						186120	soil
MEKN55	6/12/90	1450		X	S6	1	1						186124	soil
MEKN56	6/12/90	1530		X	S7	1	1						186128	soil
MEKN57	6/12/90	1545		X	S8	1	1						186132	soil
MEKN58	6/12/90	1600		X	S9	1	1						186136	soil
MEKN59	6/12/90	1600		X	S10	1	1						186140	soil
MEKN60	6/12/90	1630		X	S11	1	1						186144	soil

Lot Numbers:
8oz - 0075023
(ITB in cooler #194)

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Julie Visser	6/12/90 1900				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Shipped Fed Ex to BETZ PA Airbill: 1060857490 Custody Seals: 128889, 128890	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 08638

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: FOH0843
PROJECT NAME: TDD: F05-8905-012 case: 14298
SAMPLERS: (Signature) Julie Vissel

cooler #50

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	ABN, pest./PCB 8 oz	VOA 120 ml					REMARKS: Tag Numbers	Low concen matrix
EKN65	6/12/90	1250		X	S1	3	1	2					186101-186103	soil
EKN66	6/12/90	1320		X	S2	3	1	2					186105-186107	soil
EKN67	6/12/90	1330		X	S3	3	1	2					186109-186111	soil
EKN68	6/12/90	1500		X	S4	3	1	2					186113-186115	soil
EKN69	6/12/90	1510		X	S5	3	1	2					186117-186119	soil
EKN70	6/12/90	1450		X	S6	3	1	2					186121-186123	soil
EKN71	6/12/90	1530		X	S7	3	1	2					186125-186127	soil
EKN72	6/12/90	1545		X	S8	3	1	2					186129-186131	soil
EKN73	6/12/90	1600		X	S9	3	1	2					186133-186135	soil
EKN74	6/12/90	1600		X	S10	3	1	2					186137-186139	soil
EKN75	6/12/90	1620		X	S11	3	1	2				JV 6/13/90	~~186141~~-186143	soil
													186141	
					(OTR in cooler #50)								Lot Numbers	
													8 oz - 0135033	
													120 ml - W0085013	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Julie Vissel	6/12/90 1900				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Shipped Fed Ex to PEI Airbill: 1060857534 Custody Seals: 128887, 128888	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 08636

EDITING LOG

WRITER	DOCUMENT NAME	CHARGE NUMBER	DATE			ED. PAGE COUNT	EDITOR	HOURS
			SUBMITTED	REQUESTED	RETURNED			
J. Brunner	FEMP Comments	030-006704	4/11	4/11	4/11	5	Scott	done
T. Payne	SOW	078-01QC	4/11	4/11	4/11	1	Scott	done
11	COI	051-R1100107QC	4/12	4/12	4/12	3	Scott	done

WEEK OF _____

EDITING LOG

WRITER	DOCUMENT NAME	CHARGE NUMBER	DATE			ED. PAGE COUNT	EDITOR	HOURS
			SUBMITTED	REQUESTED	RETURNED			

WEEK OF _____

SITE DOSIMETER LOG

PROJECT/PAN # FOH0843 SB SITE NAME Marble Cliff Quarries Dump

SITE SAFETY OFFICER Jeryl Kolb WEEK OF 6/11/90

NAME AND DOSIM. #	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Earlywine 271		S: 7 P: 1					
Kolb 181		S: 4 P: 2					
Visser 268		S: 0 P: 0					
Hackler 284		S: 5 P: 3					
Danzer 251		S: 5 P: 3					

To the nearest half-hour, record time spent downrange as "S" (e.q., S:2.5hrs), time spent in active PDS operation as "P", and any time spent downrange in rescue activity as "R".

HS005(2/24/89)