6/1/08 - 02733

Final

Remedial Investigation Report
Area of Concern (AOC) I
Former Naval Ammunition Support Detachment
Vieques, Puerto Rico

NAVFAC
Naval Facilities Engineering Command

Prepared for

Department of the Navy
NAVFAC ATLANTIC

Contract No. N62470-02-D-3052
CTO-007

Appendix 1 of 2

June 2008

Prepared by

CH2MHILL

Appendix A
AOC I – 2000 (PA/SI) Soil Boring Logs
Surface/Subsurface

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-001	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD LOCATION : AOC-I-SS01/SB01

ELEVATION :

DRILLING CONTRACTOR : IPSI (Abraham Nuñes)

DRILLING METHOD AND EQUIPMENT USED : Hand auger/direct push

WATER LEVELS : START : 1400 END : 1415 LOGGER : K. Karvazy 11/29/2000

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS. TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
	0-6"				Greenish gray silty sand, low moisture mixed with gravel.	0 / 0 Sample collected 0-6"
	3				Light brown sandy silt	
5	4'-6'				Light brown sandy silt	0 / 0 4'-6' sample collected
					End direct push @ 6' bls	
10						
15						
20						
25						

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PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-002	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD LOCATION : AOC-I-SS02/SB02

ELEVATION : DRILLING CONTRACTOR : IPSI (Abraham Nuñes)

DRILLING METHOD AND EQUIPMENT USED : Hand auger/direct push

WATER LEVELS : START : 1415 END : 1440 LOGGER : K. Karvazy 11/29/2000

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0	0-6"				Greenish gray silty sand, mixed with gravel backfill	0 / 0 Sample collected @ 1420 0-6"
					Greenish grey sandy silt. No gravel.	
					Light brown sandy silt	
5	4'-6'				Yellowish orange sandy-clayed silt Light brown sandy silt	0 / 0 Sample collected 5"-6" @ 1440
					End direct push @ 6' bls	
10						
15						
20						
25						

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PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-003	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD LOCATION : AOC-I-SS03/SB03

ELEVATION : DRILLING CONTRACTOR : IPSI (Abraham Nuñes)

DRILLING METHOD AND EQUIPMENT USED : Hand auger/direct push

WATER LEVELS : START : 1445 END : 1500 LOGGER : K. Karvazy 11/29/2000

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
	0-6'				Greenish gray silty sand, mixed with poorly graded gravel. Light yellowish orange silty sand with some gravel.	OVM (ppm): Breathing Zone 0 Above Hole 0 0-6' sample collected @ 1445
5	4'-5'				Drilling stops-can not penetrate past 5'.	0 0 Sample collected 4'-5' @ 1500
10						
15						
20						
25						

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PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-004	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD LOCATION : AOC-I-SS04/SB04

ELEVATION : DRILLING CONTRACTOR : IPSI (Abraham Nuñez)

DRILLING METHOD AND EQUIPMENT USED : Hand auger/direct push

WATER LEVELS : START : 1500 END : 1515 LOGGER : K. Karvazy 11/29/2000

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0	0-6'				Same as SS03	0 / 0
						1505 0-6" collected
					also mixed throughout soil column.	
5	4'-6'				Yellowish orange sandy silt with fines of gravel also mixed throughout soil column.	0 / 0
						1515 Sample collected b/w 5' and 6'
					End direct push @ 6' bls	
10						
15						
20						
25						

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PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-005	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD LOCATION : AOC-I-SS05/SB05

ELEVATION : DRILLING CONTRACTOR : IPSI (Abraham Nuñes)

DRILLING METHOD AND EQUIPMENT USED : Hand auger/direct push

WATER LEVELS : START : 1520 END : 1540 LOGGER : K. Karvazy 11/29/2000

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0	0-6"				Yellowish orange (light) silty sand mixed with gravel (poorly graded) (1-3 cm)	0 / 0 1520 sample collected 0-6"
5	4.5'-5.5'				Light brown sandy silt mixed with gravel (1-2 cm) End direct push @ 6' bls	0 / 0 1535 Sample collected
10						
15						
20						
25						

NASD-AOC-.xls

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PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-006	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : AOC Investigation LOCATION : AOC-I NASD

ELEVATION : NA DRILLING CONTRACTOR : IPSI (Inland Pollution Services Inc.)

DRILLING METHOD AND EQUIPMENT USED : Stainless Steel Hand auger/Geoprobe GH 40 Model 5096

WATER LEVELS : NA START : 11/30/00 END : 11/30/00 LOGGER : H. Hernandez

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE. MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0	0-6"				gravel (1-3 cm) mixed with light brown silty sand Fine/Med.	0 / 0 Sample @ 0925 w/auger
5	4'-6'	4 ft			Light brown. Fine/Medium silty sand mix with 50% (0.5-3cm) gravel	0 / 0 Sample 0930 w/ss split spoon (Macrocore Liner)
					End of boring @ 6 ft. bls.	
10						
15						
20						
25						

NASD-AOC-_.xls

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PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-007	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : AOC Investigation LOCATION : AOC-I NASD VIEQUES

ELEVATION : NA DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : SS Hand auger/Geoprobe GH 40 Model 5096

WATER LEVELS : None START : 11/30/00 END : 11/30/00 LOGGER : H. Hernandez

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS. TESTS, AND INSTRUMENTATION.
	0-6"				Surface gravel (0.1-3 cm) 50% gravel (0.5-3 cm) mixed w/brown fine/med. Mix silty soil, moist.	OVM (ppm): Breathing Zone 0 Above Hole 0 Sample @ 1000 0-6" ID # NDE055 W/SS hand auger.
5	2-4.5	3 ft.			50% Gravel Light brown to brown Fine/Medium silty sand, volcanic sandstone @ 4'-5'	0 0 1014 Sample 2-4.5' ID # NDE056 4' Macrocore 4' Liner
					Refusal @ 4.5 ft bls	
10						
15						
20						
25						

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PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-OO8	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : AOC Investigation LOCATION : AOC-I NASD VIEQUES

ELEVATION : NA DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : SS Hand auger/Geoprobe GH 40 Model 5096

WATER LEVELS : None START : 11/30/00 END : 11/30/00 LOGGER : H. Hernandez

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
	0-6"				Surface gravel (0.5)-(3 cm) Turning to brown silty soil fine/med mix 50% gravel (0.5-3 cm) Irregular/angular.	0 / 0 1005 collect surface soil Sample w/ hand auger ID # NDEO57
5	4'-6'	4 ft.			Light brown/yellowish orange silty sand fine/med. Mix 30% gravel, irregular/angular turning to olive/light gray, no volcanic sandstone, soft clay.	0 / 0 ID # NDEO58 Sample Time 1025 Sampled with Macrocore and Macrocore Liner
10					End of boring @ 8 ft bls	
15						
20						
25						

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PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-009	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : AOC Investigation LOCATION : AOC-I NASD VIEQUES

ELEVATION : NA DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : SS Hand auger/Geoprobe GH 40 Model 5096

WATER LEVELS : NA START : 11/30/00 END : 11/30/00 LOGGER : H. Hernandez

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
	0-6'				Surface: crushed gravel (0.5-3 cm) angular irreg. Moist olive brown fine/med mix silty sand.	0 / 0 Sample @ 1016 0-6' sample ID # NDE059 with hand auger
5	4'-6'	4 ft.			Light brown/yellowish orange silty sand fine/med. Mix 30% gravel, irregular/angular turning to olive/light gray, no volcanic sandstone, soft clay.	0 / 0 Sample @ 1100 4-6 ft bls Sample ID # NDE060 W Macrocore and macrocore liner
					End of boring @ 6 ft bls	
10						
15						
20						
25						

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PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-O10	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : AOC Investigation LOCATION : AOC-I NASD VIEQUES

ELEVATION : NA DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : SS Hand auger/Geoprobe GH 40 Model 5096

WATER LEVELS : NA START : 11/30/00 END : 11/30/00 LOGGER : H. Hernandez

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0	0-6"				Surface: gravel (0.5-2 cm) Turning to gravel very angular Irregular mix (50%) very olive/brown moist medium/fine silty sand.	0 / 0 Sample ID # NDE061 Sample time: 1105 Sample w/ss hand auger
5	3'-6'	3 ft.			Gravel (0.5-3 cm) 50% angular silty clay sand fine/med. Grain. Light brown/olive mix. Clayey portion (10%) light brown silty sand olive color.	0 / 0 Sample ID # NDE063 Sample time: 1120 Composite from 3-6 ft bls w/ macrocore and macrocore sampler
10					End of boring @ 6 ft bls	
15						
20						
25						

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PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-O11	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : AOC Investigation LOCATION : AOC-I NASD VIEQUES

ELEVATION : NA DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : SS Hand auger/Geoprobe GH 40 Model 5096

WATER LEVELS : NA START : 11/30/00 END : 11/30/00 LOGGER : H. Hernandez

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
						OVM (ppm): Breathing Zone / Above Hole
	0-6"				Surface: crushed gravel (0.5-4 cm) angular 2' 50% Gravel, angular 50% brown silty sand fine/medium grain.	0 / 0 Sample time: 1300 Sample ID # NDE062 FDI NDE06 w/ss hand auger
5	4'-6'	3 ft			To 4' gravel (0.5-4cm) mixed 50% with brown silty sand fine medium, moist. 5' Turning gravel (0.5-4 cm) 50% with moist medium soft clay color; olive/brown rock in sample broken up. End of boring @ 6 ft bls.	0 / 0 Sample time: 1313 Sample ID # NDE065 W/ macrocore and macrocore liner.
10						
15						
20						
25						

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PROJECT NUMBER	BORING NUMBER
160403.FI.ZZ	AOC-I-012 SHEET 1 OF 1

SOIL BORING LOG

PROJECT : AOC Investigation LOCATION : AOC-I NASD VIEQUES

ELEVATION : NA DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : SS Hand auger/Geoprobe GH 40 Model 5096

WATER LEVELS : NA START : 11/30/00 END : 11/30/00 LOGGER : H. Hernandez

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0	0-6"				Surface: crushed gravel, angular (0.5-3 cm) olive brown silty sand, moist fine med grain.	0 / 0 Sample ID # NDE066 Sample time: 1328 w/hand auger
5	4'-6'	2 ft.			Rock/gravel (0.5-4cm) angular sand/silty/grayed mix sand coarse to med. Reddish brown olive gray.	0 / 0 Sample time: 1343 Sample ID # NDE067 W/ macrocore liner.
					End of boring @ 6 ft bls.	
10						
15						
20						
25						

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-013	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : AOC Investigation LOCATION : AOC-I NASD VIEQUES

ELEVATION : NA DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : SS Hand auger/Geoprobe GH 40 Model 5096

WATER LEVELS : NA START : 11/30/00 END : 11/30/00 LOGGER : H. Hernandez

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
						OVM (ppm): Breathing Zone / Above Hole
	0-6"				Surface: crushed angular gravel. mixed with fine/ medium sandy silt brown, moist (50%) crushed angular gravel (50%) (0.5-3 cm)	0 / 0 Sample time: 1340 (0-6") Sample ID # NDE068 w/ss hand auger
5	4'-6'	3 ft.			2'3' mostly very angular gravel (0.5-4 cm) 80%, 20% silty clayed sand fine grain. 3'-6" 50% Very angular gravel 50% light brown moist with, yellow/orange areas in between mixed End of boring @ 6 ft bls.	0 / 0 Sample time: 1402 (4'-6") Sample ID # NDE069 W/ macrocore and macrocore liner.
10						
15						
20						
25						

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PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-O14	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : AOC Investigation LOCATION : AOC-I NASD VIEQUES

ELEVATION : NA DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : SS Hand auger/Geoprobe GH 40 Model 5096

WATER LEVELS : NA START : 11/30/00 END : 11/30/00 LOGGER : H. Hernandez

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
	0-6"				Surface: angular gravel, (0.5-4cm) some grass 1' Dark brown med soft (moist) silty clay 80% with 20% (0-2 cm) angular gravel mix. Clay has some pockets of yellow/orange	OVM (ppm): Breathing Zone 0 Above Hole 0 Sample time: 1347 (0-6") Sample ID # NDE070 w/ss hand auger
					2'-3' Reddish brown silty fine sand mix with angular gravel (0.5-1 cm)	
5					3' larger pieces of angular rock/gravel mixed with silty. Clayey sand (fine) reddish brown/olive gray mix gravel (0.5-5cm)	
	4'-6'	3 ft.			5' gravel same as above 50% brownish/red med. soft clay	Breathing Zone 0 Above Hole 0 Sample time: 1418 (4'-6') Sample ID # NDE071 W/ macrocore and macrocore liner.
					End of boring @ 6 ft bls.	
10						
15						
20						
25						

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PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-O15	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : AOC Investigation LOCATION : AOC-I NASD VIEQUES

ELEVATION : NA DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : SS Hand auger/Geoprobe GH 40 Model 5096

WATER LEVELS : NA START : 11/30/00 END : 11/30/00 LOGGER : H. Hernandez

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0	0-6"				Surface; grass some angular gravel (0.5-2 cm) 1' brown clayey silt, medium soft 70%, 10% fine sand, 20% angular gravel. Same pockets up yellow/orange	0 / 0 Sample time: 1355 (0-6") Sample ID # NDE072 w/ss hand auger
5	4'-6'	3.5 ft			To 6' angular gravel (0.5-5 cm) 50% mixed with brownish red/olive mix colors silty sand (fine)	0 / 0 Sample time: 1430 (4'-6') Sample ID # NDE073 W/ macrocore and macrocore liner.
10					End of boring @ 6 ft bls.	
15						
20						
25						

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PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-016	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : AOC Investigation LOCATION . AOC-I NASD VIEQUES

ELEVATION : NA DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : SS Hand auger/Geoprobe GH 40 Model 5096

WATER LEVELS : NA START : 11/30/00 END : 11/30/00 LOGGER : H. Hernandez

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0	0-6"				Surface: angular gravel (0 5-3 cm) 0.5" Angular gravel (0.5-6cm) mixed with olive/ brown silty sand fine to med. grain.	0 / 0 Sample time: 1411 (0-6") Sample ID # NDE075 w/ss hand auger
5	4'-6'	3 ft.			4-6 Olive gray to med brown silty clay angular gravel 50% (0.5-4 cm)	0 / 0 Sample time: 1449 (4'-6') Sample ID # NDE076 W/ macrocore and macrocore liner.
					End of boring @ 6 ft bls.	
10						
15						
20						
25						

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PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-017	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : AOC Investigation LOCATION : AOC-I NASD VIEQUES

ELEVATION : NA DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : SS Hand auger/Geoprobe GH 40 Model 5096

WATER LEVELS : NA START : 11/30/00 END : 11/30/00 LOGGER : H. Hernandez

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0	0-6'				Surface: Grass, gravel/angular (0.5-2 cm) 1' Olive brown silty soil fine grain, Moist mix with 30% (0.5-1.5 cm) gravel angular	0 / 0 Sample time: 1415 (0-6') Sample ID # NDE077
5	4'-6'	3 ft			80% Rock & gravel (0.5-4 cm) 20% silty clayey mix fine olive brown	0 / 0 Sample time: 1512 (4'-6") Sample ID # NDE078
	4'-6'	4 ft			50% Rock & Gravel (0.5-4 cm) 50% Silty Clayey mix Will combine to have sufficient sample.	0 / 0
10					End of boring @ 6 ft bls	
15						
20						
25						

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-018	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD LOCATION : AOC-1 SS/BP 18

ELEVATION : DRILLING CONTRACTOR :

DRILLING METHOD AND EQUIPMENT USED : Direct Push - Geoprobe/SS Handauger

WATER LEVELS : START : END : LOGGER : K. Karvazy 12/01/2000

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0	0-6"				Silty sand, moist, some root and gravel (1-2 cm) brown	0 / 0 Sample collected/FD 0-6' @ 0835 NDE074FD1 NDE079
5	4'-6' end dpt				Silty sand mixed with 50% gravel Redish brown clay	0 / 0 Sample Collected 5'-6' @ 840 AM (NDE080)
10						
15						
20						
25						

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-O19	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD, PHASE II LOCATION : AOC-I SS/SB 19

ELEVATION : DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : SS stainless steel hand auger/Geoprobe

WATER LEVELS : START : END : LOGGER : K. Karvazy 12/01/2000

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0	0-6'				Surface: gravel and overgrown grass 0-3' Olive brown sandy silt mixed with gravel 0-1 cm. 3-6" redish brown clay medium soft	0 / 0 0845 NDE081 SAMPLE COLLECTED 0-6
5	4'-6'				Light brown sandy silt with <5% gravel (<1 cm)	0 / 0 Sample collected 4'-6' 0900 NDE082 (ID)
	end direct push					
10						
15						
20						
25						

NASD-AOC-I.xls

CH2MHILL

PROJECT NUMBER	BORING NUMBER
160403.FI.ZZ	AOC-I-O20 SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD LOCATION : AOC-I SS/SB 20

ELEVATION : DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : Geoprobe (direct push) / handauger

WATER LEVELS : START : END : LOGGER : K. Karvazy 12/01/2000

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
	0-6"				Surface: gravel and grass 0-3" brown sandy silt 3"-6" brown clay	0 / 0 Sample collected/w/FD D-6" @ 8:51 ID, NDE083 NDE084FDI
5	4'-6'				Olive gray - greenish gray sandy silt with <5% gravel (< 1 cm). Yellowish orange clay also present ~15%	0 / 0 Sample collected 0915 (NDE085) 4'-6'
	end direct push					
10						
15						
20						
25						

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-021	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD, PHASE II LOCATION : AOC-I SS/SB 21

ELEVATION : DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : Geoprobe/handauger

WATER LEVELS : START : END : LOGGER : K. Karvazy 12/01/2000

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
						OVM (ppm): Breathing Zone / Above Hole
	0-6"				0-3" light brown silty sand 3"-6" brown clay mixed with sand and gravel (1-3 cm)	0 / 0 921 sample collected 0-6" NDE086
5	4'-6'				Yellowish orange silty sand mixed with gravel (1-3 cm)	20 / 125 940 Sample collected 4'-6' solvent odor very strong .125 ppm Sample ID: NDE087
	end geoprobe direct push					
10						
15						
20						
25						

NASD-AOC-I.xls

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-022	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : LOCATION : NASD AOC-I SS/SB 22

ELEVATION : DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : END : LOGGER : K. Karvazy 12/01/2000

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0	0'6"				0-3" Olive gray silty sand with gravel (1-2 cm)(10%) 3-6" olive gray silty sand mixed with & reddish brown clay and some gravel (<1 cm)	0 / 0 Sample collected @ 932, 0-6" NDE088 Soil staining on surface
5	4'-6'				Olive gray sandy silt mixed with gravel (1-4 cm)(<5%)	0 / 0 Sample collected @ 1007 4'-6' no odor DE089. No reading on PID despite soil stains.
	end direct push					
10						
15						
20						
25						

NASD-AOC-I.xls

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-023	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD LOCATION : AOC-I SS/SB 23

ELEVATION : DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : Geoprobe/S.S. Handauger

WATER LEVELS : START : 1015 END : LOGGER : K. Karvazy 12/01/2000

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0	0-6"				Surface: Over grown grass/ 1/4" gravel 0-6" Light brown sandy silt with <5% gravel	0 / 0 NDE090 NDE091FDI collected @ 1009, 0-6"
5	4'-6"				Reddish-brown firm clay mixed with gravel (1-4 cm)	0 / 0 Sample collected @ 1031 NDE092 4'-6'
	end direct push					
10						
15						
20						
25						

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-024	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD LOCATION : AOC-I SS/SB 24

ELEVATION : DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : Handauger/Geoprobe

WATER LEVELS : START : 1015 END : LOGGER : K. Karvazy 12/01/2000

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
	0-6"				Surface: 1/4" gravel/Over grown grass 0-6" Medium brown sandy silt mixed with some gravel (5%)(1-2 cm) moist, soft.	0 / 0 Sample collected 1025 AM 0-6" NDE093
5	4'-6'				Greenish gray silty sand mixed with gravel (angular, 1-4 cm)	0 / 0 Sample collected @ 1100 AM 4'-6' NDE094
	end direct push					
10						
15						
20						
25						

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-025	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD LOCATION : AOC-I SS/SB 25

ELEVATION : DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : SS auger/Geoprobe

WATER LEVELS : START : END : LOGGER : K. Karvazy 12/01/2000

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0	0-6"				Surface: 1/4 inch gravel brown sandy silt mixed with gravel (1-3 cm) moist	0 / 0 1102 AM SS025 w/MS/MSD NDE095
5	4'-6'				Redish brown/olive gray sandy silt and sandy clay mixed gravel (1-4 cm)	0 / 0 1118 Sudsurface 4'-6' collected NDE095
	end geoprobe					
10						
15						
20						
25						

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
160403.FI.ZZ	AOC-I-026	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD LOCATION : AOC-I SS/SB 26

ELEVATION : DRILLING CONTRACTOR : IPSI

DRILLING METHOD AND EQUIPMENT USED : Handauger/Geoprobe

WATER LEVELS : START : 1015 END : LOGGER : K. Karvazy 12/01/2000

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
	0-6"				Surface: 1/4" gravel 0-6" Dark grey sandy silt mixed with gravel surface: 1/4" gravel(5%)(1-2 cm) Light brown clayey/sandy silt w/<5% gravel	OVM (ppm): Breathing Zone 0 Above Hole 0 1105 Sample collected w/Field dup, 0-6" NDE097 NDE099FDI
5	4'-6'				Light gray sandy silt w/<5% gravel (1-2 cm)	0 0 Sample collected 4'-6' NDE098 AT 1140
	end					
10						
15						
20						
25						

NASD-AOC-.xls

Appendix A
AOC I – 2004 (RI) Soil Boring Logs
Surface/Subsurface

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISB04 SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 09-09-04

WEATHER: Overcast, 90° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobil B-61 drill rig with 4-1/4" I.D. H.S.A's, and 3" diameter stainless steel split spoon.

WATER LEVELS : N/A START : 0710 END : 0745 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0					0.0' to 3.0' WELL GRADED GRAVEL WITH SAND (GW), dark grayish brown (10YR, 4/2), damp, dense.	0.0 ppm 0.0 ppm
2						
4	4.0				3.0' to 4.0' LEAN CLAY (CL), brownish yellow (10YR, 6/6), dry, stiff, some saprolite, trace sand.	
		12	SS-1	33 - 50/5"	4.0' to 5.0' Same as above (3 to 4').	Headspace = 0.0 ppm
	5.0					Sample Time: 0745
6					END OF BORING AT 5.0 FEET BLS.	Rock encountered at 5.0 feet bls.
						Note: Boring grouted to surface upon completion.
8						Note: This boring location was previously sampled in November 2000 and is included in the "Final Expanded PA/SI Phase II Seven Sites" report (Nov, 2002). - The new boring location was adjacent to the old boring location, but is shown as one location on Figures.
10						

Sampler Signature: John Swenfurth Date: 09/09/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISS06 SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-20-04

WEATHER: Partly cloudy, windy, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 1040 END : 1100 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0'					0.0' to 1.0' WELL GRADED GRAVEL WITH SAND (GW), dark grayish brown (10YR, 4/2), dry, very dense, up to 1/2 inch diameter, gravel, trace root fragments.	0.0 ppm / 0.0 ppm / 0.0 ppm
0.5		NA	NA	NA		
						Sample Time: 1100
1.0					1.0' to 2.0' LEAN CLAY WITH SAND (CL), dark yellowish brown (10YR, 4/4), dry, stiff.	
						Note: This boring location was previously sampled in November 2000 and is included in the "Final Expanded PA/SI Phase II Seven Sites" report (Nov, 2002). - New boring location was adjacent to the old boring location, but is shown as one location on Figures.
1.5						
2.0	2.0'				END OF BORING AT 2.0 FEET BLS.	
2.5						

Sampler Signature: John Swenfurth Date: 08/20/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISB06 SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 09-09-04

WEATHER: Overcast, 90° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobil B-61 drill rig with 4-1/4" I.D. H.S.A's, and 3" diameter stainless steel split spoon.

WATER LEVELS : N/A START : 0820 END : 0830 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0					0.0' to 3.0' WELL GRADED GRAVEL WITH SAND (GW), dark grayish brown (10YR, 4/2), damp, dense.	0.0 ppm 0.0 ppm
2						
4	4.0'				3.0' to 4.0' WELL GRADED GRAVEL WITH CLAY (GW-GC), dark yellowish brown (10YR, 4/4), dry, stiff, up to 1/8" diameter gravel.	Sample Time: 0830
	4.5'	6	SS-1	50/5"	4.0' to 4.5' WELL GRADED GRAVEL WITH SAND (GW), dark yellowish brown (10YR, 4/4) dry, some andesite rock fragments.	Headspace = 0.0 ppm
					END OF BORING AT 4.5 FEET BLS.	Rock encountered at 4.5 feet bls.
6						Note: Boring grouted to surface upon completion.
8						Note: This boring location was previously sampled in November 2000 and is included in the "Final Expanded PA/SI Phase II Seven Sites" report (Nov, 2002). - The new boring location was adjacent to the old boring location, but is shown as one location on Figures.
10						

Sampler Signature: John Swenfurth Date: 09/09/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAISB19	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 09-09-04

WEATHER: Overcast, 90° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobil B-61 drill rig with 4-1/4" I.D. H.S.A's, and 3" diameter stainless steel split spoon.

WATER LEVELS : N/A START : 0845 END : 0900 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0					0.0' to 1.0' WELL GRADED GRAVEL WITH SAND (GW), dark brown (10YR, 3/3), damp, dense.	0.0 ppm 0.0 ppm
					1.0' to 4.0' WELL GRADED GRAVEL WITH CLAY (GW-GC), brownish yellow (10YR, 6/6), dry, dense, up to 1/8" diameter gravel.	
2						
4	4.0'					
		18	SS-1	44 - 49 - 50/4"	4.0' to 5.5' WELL GRADED GRAVEL WITH CLAY (GW-GC), brownish yellow (10YR, 6/6), dry, dense, up to 1/8" diameter gravel, some fractured weathered rock (saprolite), trace sand.	Headspace = 0.0 ppm Sample Time: 0900
	5.5'					
6					END OF BORING AT 5.5 FEET BLS.	Rock encountered at 5.5 feet bls. Note: Boring grouted to surface upon completion. Note: This boring location was previously sampled in November 2000 and is included in the "Final Expanded PA/SI Phase II Seven Sites" report (Nov, 2002). - The new boring location was adjacent to the old boring location, but is shown as one location on Figures.
8						
10						

Sampler Signature: John Swenfurth Date: 09/09/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISS20 SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-20-04

WEATHER: Partly cloudy, windy, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 0920 END : 0930 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0'					0.0' to 0.2' POORLY GRADED GRAVEL (GP), brown (10YR, 5/3), dry, loose, up to 1/4-inch diameter gravel, trace roots. 0.2' to 1.5' LEAN CLAY WITH SAND (CL), strong brown (7.5YR, 4/6), dry, low plasticity, cohesive, trace gravel.	0.0 ppm Breathing Zone: 0.0 ppm Above Hole: 0.0 ppm
0.5		NA	NA	NA		Sample Time: 0930
1.0						Note: This boring location was previously sampled in November 2000 and is included in the "Final Expanded PA/SI Phase II Seven Sites" report (Nov, 2002). - New boring location was adjacent to the old boring location, but is shown as one location on Figures.
1.5					1.5' to 2.0' LEAN CLAY WITH SAND (CL), brown (10YR, 4/3), dry, stiff.	
2.0	2.0'				END OF BORING AT 2.0 FEET BLS.	
2.5						

Sampler Signature: John Swenfurth Date: 08/20/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISB20 SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 09-09-04

WEATHER: Overcast, 90° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobil B-61 drill rig with 4-1/4" I.D. H.S.A's, and 3" diameter stainless steel split spoon.

WATER LEVELS : N/A START : 0905 END : 0915 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0					0.0' to 1.0' WELL GRADED GRAVEL WITH SAND (GW), dark brown (10YR, 3/3), damp, dense.	0.0 ppm 0.0 ppm
					1.0' to 4.0' LEAN CLAY WITH GRAVEL (CL), yellowlish brown (10YR, 5/4), dry, dense, up to 1/8" diameter gravel.	
2						
4	4.0					
	5.0	14	SS-1	44 - 47 - 50/3"	4.0' to 5.0' WELL GRADED GRAVEL WITH CLAY (GW-GC), brownish yellow (10YR, 6/6), dry, dense, up to 1/8" diameter gravel, some fractured weathered rock (saprolite), trace sand.	Headspace = 0.0 ppm Sample Time: 0915
					END OF BORING AT 5.0 FEET BLS.	Rock encountered at 5.0 feet bls.
6						Note: Boring grouted to surface upon completion.
						Note: This boring location was previously sampled in November 2000 and is included in the "Final Expanded PA/SI Phase II Seven Sites" report (Nov, 2002). - The new boring location was adjacent to the old boring location, but is shown as one location on Figures.
8						
10						

Sampler Signature: John Swenfurth Date: 09/09/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISB21 SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 09-09-04

WEATHER: Overcast, 90° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobil B-61 drill rig with 4-1/4" I.D. H.S.A's, and 3" diameter stainless steel split spoon.

WATER LEVELS : N/A START : 0950 END : 1000 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0					0.0' to 1.0' WELL GRADED GRAVEL WITH SAND (GW), dark brown (10YR, 3/3), damp, dense.	0.0 ppm 0.0 ppm
					1.0' to 4.0' WELL GRADED GRAVEL WITH CLAY (GW-GC), yellowish brown (10YR, 5/4), dry, dense, up to 1/8" diameter gravel.	
2						
4	4.0					
	5.0	8	SS-1	44 - 50/5"	4.0' to 5.0' WELL GRADED GRAVEL WITH CLAY (GW-GC), brown (10YR, 4/3), dry, dense, up to 1/8" diameter gravel, some fractured weathered rock (saprolite), trace sand.	Headspace = 0.0 ppm Sample Time: 1000
					END OF BORING AT 5.0 FEET BLS.	Rock encountered at 5.0 feet bls.
6						Note: Boring grouted to surface upon completion.
						Note: This boring location was previously sampled in November 2000 and is included in the "Final Expanded PA/SI Phase II Seven Sites" report (Nov, 2002). - The new boring location was adjacent to the old boring location, but is shown as one location on Figures.
8						
10						

Sampler Signature: John Swenfurth Date: 09/09/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISS22 SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-20-04

WEATHER: Partly cloudy, windy, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 0930 END : 0950 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0'						0.0 ppm 0.0 ppm 0.0 ppm
0.5		NA	NA	NA	0.0' to 2.0' WELL GRADED GRAVEL WITH SAND (GW), dark yellowish brown (10YR, 4/4), dry, very dense, up to 1/2 inch diameter gravel, trace root fragments.	Sample Time: 0950
1.0						Note: This boring location was previously sampled in November 2000 and is included in the "Final Expanded PA/SI Phase II Seven Sites" report (Nov, 2002). - New boring location was adjacent to the old boring location, but is shown as one location on Figures.
1.5						Note: Boring located on western edge of a concrete pad.
2.0	2.0'				END OF BORING AT 2.0 FEET BLS.	
2.5						

Sampler Signature: John Swenfurth Date: 08/20/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAISB22	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 09-09-04

WEATHER: Overcast, 90° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobil B-61 drill rig with 4-1/4" I.D. H.S.A's, and 3" diameter stainless steel split spoon.

WATER LEVELS : N/A START : 0925 END : 0945 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0					0.0' to 1.0' WELL GRADED GRAVEL WITH SAND (GW), dark brown (10YR, 3/3), damp, dense.	0.0 ppm 0.0 ppm
					1.0' to 4.0' WELL GRADED GRAVEL WITH CLAY (GW-GC), brownish yellow (10YR, 6/6), dry, dense, up to 1/8" diameter gravel.	
2						
4	4.0					
		24	SS-1	12 - 17 - 34- 50/5"	4.0' to 5.0' WELL GRADED GRAVEL WITH CLAY (GW-GC), brown (10YR, 4/3), dry, dense, up to 1/8" diameter gravel, some fractured weathered rock (saprolite), trace sand.	Headspace = 0.0 ppm Sample Time: 0945 MS/MSD sample collected.
6	6.0				END OF BORING AT 6.0 FEET BLS.	Rock encountered at 6.0 feet bls. Note: Boring grouted to surface upon completion.
8						Note: This boring location was previously sampled in November 2000 and is included in the "Final Expanded PA/SI Phase II Seven Sites" report (Nov, 2002). - The new boring location was adjacent to the old boring location, but is shown as one location on Figures.
10						

Sampler Signature: John Swenfurth Date: 09/09/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAISS27	SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-18-04

WEATHER: Partly cloudy, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 0735 END : 0745 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0'					0.0' to 1.5' WELL GRADED GRAVEL WITH SILT AND SAND (GW-GM), brown (10YR, 4/3), dry, very dense, fine to medium grained sand, up to 1/4" gravel pieces - andesite, trace root fragements. Note: ants throughout sample.	0.0 ppm 0.0 ppm 0.0 ppm
0.5		NA	NA	NA		
1.0						
1.5	1.5'					Solid rock encountered at 1.5 ' bls.
					END OF BORING AT 1.5 FEET BLS.	Sample Time: 0745
2.0						
2.5						

Sampler Signature: John Swenfurth Date: 08/18/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISS28 SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-18-04

WEATHER: Partly cloudy, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 0820 END : 0830 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0'					0.0' to 2.0' WELL GRADED GRAVEL WITH SILT AND SAND (GW-GM), brown (10YR, 4/3), moist, very dense, fine to medium grained sand, up to 1/4" gravel pieces - andesite, trace root fragements. Note: Boring located at base of berm.	0.0 ppm / 0.0 ppm / 0.0 ppm
0.5		NA	NA	NA		
1.0						
1.5						Sample Time: 0830 Field Duplicate collected at this location.
2.0	2.0'				END OF BORING AT 2.0 FEET BLS.	
2.5						

Sampler Signature: John Swenfurth Date: 08/18/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAISS29	SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-18-04

WEATHER: Cloudy, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 0845 END : 0855 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0'					0.0' to 2.0' WELL GRADED GRAVEL WITH CLAY AND SAND (GW-GC), dark grayish brown (10YR, 4/2), dry, very dense, fine to medium grained sand, up to 1/4" gravel pieces - andesite, trace root fragements. Note: Boring located in center of gravel road.	0.0 ppm / 0.0 ppm / 0.0 ppm
0.5		NA	NA	NA		
1.0						
1.5						Sample Time: 0855
2.0	2.0'				END OF BORING AT 2.0 FEET BLS.	
2.5						

Sampler Signature: John Swenfurth Date: 08/18/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISS30 SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-18-04

WEATHER: Sunny, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 0900 END : 0910 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0'					0.0' to 2.0' WELL GRADED GRAVEL WITH CLAY AND SAND (GW-GC), yellowish brown (10YR, 5/6), dry, very dense, fine to medium grained sand, up to 1/4" gravel pieces - andesite. Note: Boring located on side of gravel road.	0.0 ppm 0.0 ppm 0.0 ppm
0.5		NA	NA	NA		
1.0						
1.5						Sample Time: 0910
2.0	2.0'				END OF BORING AT 2.0 FEET BLS.	
2.5						

Sampler Signature: John Swenfurth Date: 08/18/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISS31 SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-18-04

WEATHER: Sunny, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 0915 END : 0940 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0'					0.0' to 1.5' WELL GRADED GRAVEL WITH CLAY AND SAND (GW-GC), brown (10YR, 5/3), dry, very dense, fine to medium grained sand, up to 1/4" gravel pieces - andesite. Note: Boring located on edge of gravel road.	0.0 ppm 0.0 ppm 0.0 ppm
0.5						
		NA	NA	NA		
						Sample Time: 0940
1.0						
1.5	1.5'					Solid rock encountered at 1.5 ' bls.
					END OF BORING AT 1.5 FEET BLS.	
2.0						
2.5						

Sampler Signature: John Swenfurth Date: 08/18/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISS32 SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-18-04

WEATHER: Cloudy, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 1000 END : 1030 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0'					0.0' to 1.5' WELL GRADED GRAVEL WITH CLAY AND SAND (GW-GC), yellowish brown (10YR, 5/4), dry, very dense, fine to medium grained sand, up to 1/4" gravel pieces - andesite.	0.0 ppm / 0.0 ppm / 0.0 ppm
0.5		NA	NA	NA		
						Sample Time: 1030
1.0						
1.5	1.5'					Solid rock encountered at 1.5 ' bls.
					END OF BORING AT 1.5 FEET BLS.	
2.0						
2.5						

Sampler Signature: John Swenfurth Date: 08/18/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISS33 SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-19-04

WEATHER: Partly cloudy, no breeze, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 0750 END : 0810 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0'					0.0' to 0.4' WEATHERED ASPHALT - crumbly	0.0 ppm 0.0 ppm 0.0 ppm Note: Asphalt removed from sample.
0.5		NA	NA	NA	0.4' to 2.0' WELL GRADED GRAVEL WITH CLAY AND SAND (GW-GC), yellowish brown (10YR, 5/4), dry, very dense, low plasticity, fine to medium grained sand, up to 1/4 inch diameter gravel - andesite.	
1.0					Note: Boring location in center of road leading to site. The stake was offset 18 feet to the west.	
1.5						Sample Time: 0810 MS/MSD collected at this location.
2.0	2.0'				END OF BORING AT 2.0 FEET BLS.	
2.5						

Sampler Signature: John Swenfurth Date: 08/19/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAISS34	SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-19-04

WEATHER: Partly cloudy, no breeze, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 0815 END : 0830 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
0.0'						OVM (ppm): Breathing Zone / Above Hole
		NA	NA	NA	0.0' to 1.0' WELL GRADED GRAVEL WITH SAND (GW), yellowish brown (10YR, 5/4), dry, fine to medium grained sand, up to 1 inch diameter gravel - andesite.	0.0 ppm 0.0 ppm 0.0 ppm
0.5						
1.0					1.0' to 2.0' WELL GRADED GRAVEL WITH CLAY (GW-GC), yellowish brown (10YR, 5/4), dry, low plasticity, up to 1/8 inch diameter gravel.	
1.5					Note: Boring location within gravel access way.	Sample Time: 0830
2.0	2.0'				END OF BORING AT 2.0 FEET BLS.	
2.5						

Sampler Signature: John Swenfurth Date: 08/19/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISS35 SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-19-04

WEATHER: Cloudy, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 0900 END : 0920 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0'						0.0 ppm 0.0 ppm 0.0 ppm
0.5		NA	NA	NA	0.0' to 1.5' <u>WELL GRADED GRAVEL WITH SAND</u> (GW), yellowish brown (10YR, 5/4), dry, very dense, fine to medium grained sand, up to 1" diameter gravel pieces - andesite.	
1.0						Sample Time: 0920
1.5	1.5'					Solid rock encountered at 1.5 ' bls.
					END OF BORING AT 1.5 FEET BLS.	
2.0						
2.5						

Sampler Signature: John Swenfurth Date: 08/19/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAISS36	SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-19-04

WEATHER: Cloudy, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 0925 END : 0945 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0'					0.0' to 0.2' POORLY GRADED GRAVEL (GP), up to 1 inch diameter.	0.0 ppm 0.0 ppm 0.0 ppm
					0.2' to 0.4' ASPHALT layer, weathered.	
0.5					0.4' to 0.8' WELL GRADED GRAVEL WITH SAND (GW), dark grayish brown (10YR 4/2), dry, fine to medium grained sand, up to 1/4 inch diameter gravel.	
		NA	NA	NA		
					0.8' to 1.5' WELL GRADED GRAVEL WITH SAND (GW), yellowish brown (10YR, 5/4), dry, fine to medium grained sand, up to 1/4 inch diameter gravel.	Sample Time: 0945
1.0						
1.5	1.5'					Solid rock encountered at 1.5 ' bls.
					END OF BORING AT 1.5 FEET BLS.	
2.0						
2.5						

Sampler Signature: John Swenfurth Date: 08/19/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAISS37	SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-19-04

WEATHER: Cloudy, breezy, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 1015 END : 1040 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0'					0.0' to 0.2' POORLY GRADED GRAVEL (GP).	0.0 ppm 0.0 ppm 0.0 ppm
					0.2' to 1.0' WELL GRADED SAND WITH GRAVEL (SW), black (7.5YR, 2.5/1), dry, fine sand, up to 1/4" diameter gravel, trace organic material.	
0.5		NA	NA	NA		
						Sample Time: 1040 Field Duplicate collected at this location.
1.0					1.0' to 2.0' WELL GRADED SAND WITH GRAVEL (SW), dark greenish gray (10Y, 4/1), dry, fine sand, up to 1 inch diameter gravel.	
1.5						
2.0	2.0'				END OF BORING AT 2.0 FEET BLS.	
2.5						

Sampler Signature: John Swenfurth Date: 08/19/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISS38 SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-19-04

WEATHER: Cloudy, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 1110 END : 1130 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION	COMMENTS
0.0'						DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
					0.0' to 1.0' WELL GRADED GRAVEL (GW), brown.	0.0 ppm 0.0 ppm 0.0 ppm
0.5		NA	NA	NA		
						Sample Time: 1130
1.0					1.0' to 2.0' WELL GRADED GRAVEL WITH SAND (GW), yellowish brown (10YR, 5/6), dry, fine to medium grained sand, up to 1 inch diameter gravel.	
1.5						Note: Boring located in gravel access road.
2.0	2.0'				END OF BORING AT 2.0 FEET BLS.	
2.5						

Sampler Signature: John Swenfurth Date: 08/19/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISS39 SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-20-04

WEATHER: Partly cloudy, windy, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 0755 END : 0820 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0'					0.0' to 2.0' WELL GRADED GRAVEL WITH SAND (GW), brown (10YR, 5/3), dry, very dense, fine to medium grained sand, up to 1/8 inch diameter gravel - andesite, trace root fragments.	0.0 ppm / 0.0 ppm / 0.0 ppm
0.5		NA	NA	NA		
						Sample Time: 0820
1.0						
1.5						
2.0	2.0'				END OF BORING AT 2.0 FEET BLS.	
2.5						

Sampler Signature: John Swenfurth Date: 08/20/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISS40 SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-20-04

WEATHER: Partly cloudy, windy, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 0825 END : 0850 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0'					0.0' to 2.0' WELL GRADED GRAVEL WITH SAND (GW), brown (10YR, 5/3), dry, very dense, fine to medium grained sand, up to 1/8 inch diameter gravel - andesite, trace root fragments.	0.0 ppm / 0.0 ppm / 0.0 ppm
0.5		NA	NA	NA		
						Sample Time: 0850
1.0						
1.5						
2.0	2.0'				END OF BORING AT 2.0 FEET BLS.	
2.5						

Sampler Signature: John Swenfurth Date: 08/20/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISS41 SHEET 1 OF 1

SURFACE SOIL LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 8-20-04

WEATHER: Partly cloudy, windy, hot DRILLING CONTRACTOR : CH2M HILL

DRILLING METHOD AND EQUIPMENT USED : 3-inch diameter stainless steel hand auger with stainless steel spoon and bowl. (30 lb. spud bar).

WATER LEVELS : N/A START : 1000 END : 1030 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0'					0.0' to 1.0' WELL GRADED GRAVEL (GW), dark grayish brown (10YR, 4/2), dry, very dense, up to 1/2 inch diameter gravel.	0.0 ppm 0.0 ppm 0.0 ppm
0.5		NA	NA	NA		
						Sample Time: 1030
1.0					1.0' to 2.0' LEAN CLAY WITH SAND (CL), dark yellowish brown (10YR, 4/4), dry, stiff, low plasticity, fine to medium grained sand.	
1.5						
2.0	2.0'					
					END OF BORING AT 2.0 FEET BLS.	
2.5						

Sampler Signature: John Swenfurth Date: 08/20/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAISB41 SHEET 1 OF 1

SOIL BORING LOG

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC - I** DATE: 09-09-04

WEATHER: Overcast, 90° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobil B-61 drill rig with 4-1/4" I.D. H.S.A's, and 3" diameter stainless steel split spoon.

WATER LEVELS : N/A START : 0755 END : 0805 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0					0.0' to 1.0' WELL GRADED GRAVEL (GW), dark grayish brown (10YR, 4/2), dry, very dense, up to 1/2 inch diameter gravel.	0.0 ppm 0.0 ppm
					1.0' to 3.0' LEAN CLAY WITH SAND (CL), dark yellowish brown (10YR, 4/4), dry, stiff, low plasticity, fine to medium grained sand.	
2						
					3.0' to 4.0' LEAN CLAY (CL), dark yellowish brown (10YR, 4/4), dry, stiff, trace saprolite, trace sand.	
4	4.0'					
		18	SS-1	24 - 33 - 50/5"	4.0' to 5.5' Same as above (3 to 4').	Headspace = 0.0 ppm Sample Time: 0805
	5.5'					
6					END OF BORING AT 5.5 FEET BLS.	Rock encountered at 5.5 feet bls. Note: Boring grouted to surface upon completion.
8						
10						

Sampler Signature: John Swenfurth Date: 09/09/2004

Appendix A
AOC I – 2004/2005 (RI) Soil/Rock Boring Logs for Monitoring Wells

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAIMW01	SHEET 1 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-30-04

WEATHER: Sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : NA START : 08-26-04, 1200 END : 08-30-04, 1630 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0						
	2.0	12	SS-1	11 - 35 - 23 - 25	0.0' to 1.0' WELL GRADED GRAVEL WITH SAND (GW), dark grayish brown (10YR, 4/2), dry, very dense, coarse grained sand.	Video loging of borehole from 0 to 31' bls. - included on attached CD. Headspace: 0.0 ppm 0.0 ppm 0.0 ppm
2						
	4.0					
4						
	6.0	12	SS-2	7 - 7 - 5 - 5	4.0' to 5.0' Weathered rock. Some clay with low plasticity, some gravel and sand, brown (10YR, 5/3), dry.	Headspace: 0.0 ppm 0.0 ppm 0.0 ppm
6						
	7.0					Auger refusal at 7.0 ft bls.
					8.0' to 12.0' hard drilling.	Air hammer drilling started.
8						
10						0.0 ppm 0.0 ppm
12						

Sampler Signature: John Swenfurth Date: 08/30/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAIMW01	SHEET 2 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-30-04

WEATHER: Sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : NA START : 08-26-04, 1200 END : 08-30-04, 1630 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
14					12.0' to 18.0' air hammer advanced more rapidly. Possible fractured rock.	0.0 ppm 0.0 ppm
16						
18					18.0' to 20.0' hard drilling.	
20					20.0' to 27.0' drilling advanced more rapidly. Possible fractured rock.	0.0 ppm 0.0 ppm
22						
24						

Sampler Signature: John Swenfurth Date: 08/30/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAIMW01	SHEET 3 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-30-04

WEATHER: Sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : NA START : 08-25-04, 0900 END : 08-30-04, 1630 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
						0.0 ppm 0.0 ppm
26						
					27.0' to 32.0' hard drilling.	
28						
30						0.0 ppm 0.0 ppm
32				1 - NQ	32.0' to 33.0' Andesite, greenish gray (6/10GY), fine grained, white quartz veins, slightly weathered, hard, massive bedding. Joints are close. Perpendicular fracturing. Highly fractured pieces - 1" in length. 33.0' to 34.0' Similar to above except fractures are further apart - 4" in length.	Rock coring began at 32.0' bls. - NWJ drill rods used with an NQ coring bit. Five foot long core barrel. Recovery 5 ft/ 5 ft = 100% RQD 2.5 ft/5 ft = 50%
34					34.0' to 35.0' Iron stained fractures. Two pieces - 5" length.	0.0 ppm 0.0 ppm
					35.0' to 36.0' highly fractured. Pieces - 1" in length.	
36						

Sampler Signature: John Swenfurth Date: 08/30/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAIMW01 SHEET 4 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-30-04

WEATHER: Sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : NA START : 08-25-04, 0900 END : 08-30-04, 1630 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
38					36.0' to 37.0' Highly fractured andesite rock. - 2" in length.	Note: 220 gallons water used fom coring 32' to 37' bls. Several attempts made to core 37' to 42'. Borehole kept caving in. Switched to air hammer at 37.0' bls.
40						0.0 ppm 0.0 ppm
42						
44						
46					END OF BORING AT 45.0 FEET BLS. **NOTE:** This boring was originally started on 8/26/04. Several attempts were made to keep the borehole open to 45 feet bls. The borehole caved when the air hammer was removed due to the highly fractured rock. This location was grouted up on 8/27/04, and a new boring was drilled 15 feet north of the previous boring with similar lithology. The new location also encounted caving, but the well was able to be set at 42' bls.	Note: Monitoring Well NDAIMW01 installed in borehole with screen from 32' to 42' bls.
48						

Sampler Signature: John Swenfurth Date: 08/30/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAIMW02	SHEET 1 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-12-04

WEATHER: Sunny, 90° F, humid DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : 35 feet bls. START : 08-12-04, 0800 END : 08-13-04, 1000 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0						
2	2.0	24	SS-1	11 - 42 - 42 - 23	0.0' to 0.5' WELL GRADED GRAVEL (GW), gray (7.5YR, 6/1), dry, very dense, 1" diameter gravel (andesite). 0.5' to 2.0' WELL GRADED GRAVEL WITH SILT AND SAND (GW-GM), gray (7.5YR, 6/1), dry, very dense, 1/2" diameter gravel (andesite).	Headspace: 0.0 ppm 0.0 ppm 0.0 ppm
4	5.0					
6	7.0	12	SS-2	24 - 38 - 31 - 22	5.0' to 6.0' Same as above (0.5' to 2.0') 6.0' to 7.0' Rock - Andesite, dark bluish gray (4/10B)	Headspace: 0.0 ppm 0.0 ppm 0.0 ppm Rock encountered at 6.0' bls. Air hammer drilling started on 8/12/04 @ 0930 at 7.0' bls.
8					7.0' to 9.0' hard drilling.	
10					9.0' to 14.0' Air hammer advanced more rapidly, possible fractured rock.	0.0 ppm 0.0 ppm
12						

Sampler Signature: John Swenfurth Date: 08/13/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAIMW02	SHEET 2 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-12-04

WEATHER: Sunny, 90° F, humid DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : 35 feet bls. START : 08-12-04, 0800 END : 08-13-04, 1000 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT) / RECOVERY (IN) / #/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
14			14.0' to 33.0' hard drilling.	
				0.0 ppm 0.0 ppm
16				
18				
20				0.0 ppm 0.0 ppm
22				
24				

Sampler Signature: John Swenfurth Date: 08/13/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAIMW02 SHEET 3 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-12-04

WEATHER: Sunny, 90° F, humid DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : 35 feet bls. START : 08-12-04, 0800 END : 08-13-04, 1000 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
						0.0 ppm 0.0 ppm
					25.0' Rock - andesite, greenish gray (6/5GY).	
26						
28						Water level rose in open borehole to 28.0' bls upon completion of boring.
30						0.0 ppm 0.0 ppm
32						
					33.0' to 35.0' Air hammer advanced more rapidly, possible fractured rock.	
34						
						0.0 ppm 0.0 ppm
					35.0' Hard drilling. Moist drill cuttings returned. First water encountered.	
36						

Sampler Signature: John Swenfurth Date: 08/13/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAIMW02	SHEET 4 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-12-04

WEATHER: Sunny, 90° F, humid DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : 35 feet bls. START : 08-12-04, 0800 END : 08-13-04, 1000 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT) / RECOVERY (IN) / #/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Above Hole
38				0.0 ppm 0.0 ppm
40				8/12/04 stopped drilling for the day 1700. 8/13/03 start drilling 0830. Note: 7 gallons of potable water added to borehole to cool air hammer.
42				
44				0.0 ppm 0.0 ppm
46			END OF BORING AT 45.0 FEET BLS.	Note: Monitoring Well NDAIMW02 installed in borehole with screen from 33' to 43' bls.
48				

Sampler Signature: John Swenfurth Date: 08/13/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAIMW03 SHEET 1 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-17-04

WEATHER: Sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : 35 feet bls. START : 08-17-04, 0800 END : 08-24-04, 1420 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT) / RECOVERY (IN) / #/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0	18 / SS-1	13 - 35 - 50/5"	0.0' to 1.5' WELL GRADED GRAVEL WITH SAND (GW), gray (7.5YR, 6/1), dry, very dense, 1/2" diameter gravel, trace roots.	Headspace: 0.0 ppm 0.0 ppm 0.0 ppm
2 — 2.0				Auger refusal at 2.5 ft bls.
				Air hammer drilling started on 8/17/04 @ 0830 at 2.5' bls.
4			4.0' air hammer advanced rapidly. possible fractured rock. Gray (5/N)	0.0 ppm 0.0 ppm
6				
8				
10				0.0 ppm 0.0 ppm
12				

Sampler Signature: John Swenfurth Date: 08/24/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAIMW03 SHEET 2 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-17-04

WEATHER: Sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : 35 feet bls. START : 08-17-04, 0800 END : 08-24-04, 1420 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT) / RECOVERY (IN) / #/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
14				
			15.0' to 17.0' hard drilling	0.0 ppm 0.0 ppm
16				
			17.0' to 23.0' air hammer advanced rapidly. possible fractured rock.	
18				
20				
22				0.0 ppm 0.0 ppm
			23.0' to 25.0' hard drilling.	Note: hydrocarbon odor in borehole. 0.0 ppm 0.0 ppm
24				

Sampler Signature: John Swenfurth Date: 08/24/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAIMW03 SHEET 3 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-17-04

WEATHER: Sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : 35 feet bls. START : 08-17-04, 0800 END : 08-24-04, 1420 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
26					25.0' to 29.0' air hammer advanced rapidly. possible fractured rock.	0.0 ppm 0.0 ppm
28						
30					29.0' to 35.0' hard drilling.	0.0 ppm 0.0 ppm 30.0' air hammer and drill rods pulled to check borehole for water. No water present.
32						
34						33.0' air hammer and drill rods pulled to check borehole for water. No water present.
36					35.0' to 35.5' air hammer advanced rapidly. possible fractured rock. Moist drill cuttings returned. First water encountered.	0.0 ppm 0.0 ppm

Sampler Signature: John Swenfurth Date: 08/24/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAIMW03 SHEET 4 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-17-04

WEATHER: Sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : 35 feet bls. START : 08-17-04, 0800 END : 08-24-04, 1420 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Above Hole
38					35.5' to 37.0' hard drilling. 37.0' to 38.0' air hammer advanced rapidly. possible fractured rock. 38.0' to 42.0' hard drilling.	
40						0.0 ppm 0.0 ppm
42					42.0' to 43.0' very hard drilling. Took several attempts for air hammer to advance past this point. 43.0' to 45.0' hard drilling.	Note: 10 gallons of water added to borehole to cool drill bit.
44						
46					END OF BORING AT 45.0 FEET BLS. **NOTE:** This boring was originally started on 8/17/04. Several attempts were made to keep the borehole open to 40 feet bls. The borehole caved when the air hammer was removed due to the highly fractured rock. This location was grouted up on 8/20/04, and a new boring was drilled 2 feet west of previous boring with similar lithology on 8/23-24/04. The new location also encounted caving, but the well was able to be set at 37' bls.	Note: Monitoring Well NDAIMW03 installed in borehole with screen from 27' to 37' bls.
48						

Sampler Signature: John Swenfurth Date: 08/24/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAIMW04 SHEET 1 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-16-04

WEATHER: Overcast, 92° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : NA START : 08-16-04, 0930 END : 08-20-04, 1100 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0						
	2.0	12	SS-1	15 - 15 - 15 - 23	0.0' to 2.0' WELL GRADED GRAVEL WITH SAND (GW), grayish brown (10YR, 5/2), dry, dense, 1/4" diameter gravel, trace roots.	Headspace: 0.0 ppm 0.0 ppm 0.0 ppm
2						
	4.0	18	SS-2	26 - 38 - 41 - 50	2.0' to 4.0' WELL GRADED SAND WITH GRAVEL (SW), yellowish brown (10YR, 5/4), dry, very dense, 1/8" diameter gravel.	Headspace: 0.0 ppm 0.0 ppm 0.0 ppm
4						
	5.0	12	SS-3	33 - 50/5"	4.0' to 5.0' WELL GRADED GRAVEL (GW), yellowish brown (10YR, 5/4), dry, very dense, 1/4" diameter gravel (andesite).	Headspace: 0.0 ppm 0.0 ppm 0.0 ppm Auger refusal at 5.0 ft bls.
					5.0' to 26.0' Air hammer advanced rapidly. possible fractured rock.	Air hammer drilling started on 8/16/04 @ 1015 at 5.0' bls.
6						
8						
						Heavy hydrocarbon like odor at 9.0' Headspace reading = 330 ppm from rock fragments collected. At base of borehole = 20 ppm Breathing zone = 0 ppm
10						
12						

Sampler Signature: John Swenfurth Date: 08/20/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAIMW04 SHEET 2 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-16-04

WEATHER: Overcast, 92° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : NA START : 08-16-04, 0930 END : 08-20-04, 1100 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
14					15.0' Rock - Andesite, greenish gray (5GY, 5/1)	0.0 ppm 0.0 ppm
16						
18						
20						
22						
24						

Sampler Signature: John Swenfurth Date: 08/20/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAIMW04 SHEET 3 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-16-04

WEATHER: Overcast, 92° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : NA START : 08-16-04, 0930 END : 08-20-04, 1100 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
						0.0 ppm 0.0 ppm
26					26.0' hard drilling.	
						Rock coring began at 28.0' bls. - NWJ drill rods used with an NQ coring bit. Five foot long core barrel.
28	28.0					
				1 - NQ	28.0' to 30.0' Andesite, greenish gray (6/10GY), fine grained, white quartz veins, slightly weathered, hard, massive bedding. Some iron oxide staining on fracture surfaces. Joints are close. Perpendicular fracturing. Recovery 2 ft/ 5 ft = 40% RQD 0 ft/2 ft = 0%	Note: 250 gallons of water used from 28-33' on 1st run to keep the drill bit cool. - borehole filled with medium grained sand from 33' up to 24' after 1st coring run.
30				2 - NQ	30.0' to 30.5' Andesite, greenish gray (6/10GY), fine grained, white quartz veins, slightly weathered, hard, massive bedding. Some iron oxide staining on fracture surfaces. Joints are close. Perpendicular fracturing. Highly fractured pieces - 1/4" in length. Recovery 0.5 ft/ 5 ft = 10% RQD 0 ft/0.5 ft = 0%	- 250 gallons of water used from 28-33' on second run. - second run only recovered 0.5 feet of rock.
32				3 - NQ	No recovery. Boring caved in to 30 ft.	0.0 ppm 0.0 ppm
	33.0					Drillers quit for day, followed by two days of drill rig maintenance.
34						Air hammer drilling began 8/20/04 @ 1000. Note: Decision made to continue with air hammer because of the large amount of cave in and the highly fractured zone which causes poor recovery. 0.0 ppm 0.0 ppm
36						

Sampler Signature: John Swenfurth Date: 08/20/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAIMW04 SHEET 4 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-16-04

WEATHER: Overcast, 92° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : NA START : 08-16-04, 0930 END : 08-20-04, 1100 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
38						
40						0.0 ppm / 0.0 ppm
42						
44						0.0 ppm / 0.0 ppm
					END OF BORING AT 45.0 FEET BLS.	
46						
48						

Sampler Signature: John Swenfurth Date: 08/20/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAIMW05	SHEET 1 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-23-04

WEATHER: Sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : 34 feet bls. START : 08-23-04, 0930 END : 08-23-04, 1130 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0						
		12	SS-1	9 - 14 - 17 - 47	0.0' to 1.0' WELL GRADED GRAVEL WITH SAND (GW), grayish brown (10YR, 5/2), dry, dense, 1/2" diameter gravel (andesite),	Headspace: 0.0 ppm / 0.0 ppm / 0.0 ppm
2	2.0					Auger refusal at 2.0 ft bls.
					2.0' to 18.0' air hammer advanced rapidly. possible fractured rock.	Air hammer drilling started on 8/23/04 @ 0945 at 2.0' bls.
4						
						0.0 ppm / 0.0 ppm
6						
8						
10						0.0 ppm / 0.0 ppm
12						

Sampler Signature: John Swenfurth Date: 08/23/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAIMW05	SHEET 2 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-23-04

WEATHER: Sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : 34 feet bls. START : 08-23-04, 0930 END : 08-23-04, 1130 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
14						0.0 ppm 0.0 ppm
16						
18					18.0' to 19.0' LEAN CLAY (CL), grayish brown (10YR, 5/2), dry, low plasticity, cohesive.	
20						Note: hydrocarbon odor in borehole. Headspace = 32.0 ppm At borehole = 2.0 ppm Breathing zone = 0.0 ppm
22						
24						

Sampler Signature: John Swenfurth Date: 08/23/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAIMW05 SHEET 3 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-23-04

WEATHER: Sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : 34 feet bls. START : 08-23-04, 0930 END : 08-23-04, 1130 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
26						0.0 ppm 0.0 ppm
28						
30						0.0 ppm 0.0 ppm
32						
34					34.0' Moist drill cuttings returned. First water encountered.	
36						0.0 ppm 0.0 ppm

Sampler Signature: John Swenfurth Date: 08/23/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAIMW05	SHEET 4 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-23-04

WEATHER: Sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : 34 feet bls. START : 08-23-04, 0930 END : 08-23-04, 1130 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
38						
					39.0' hard drilling.	
40						0.0 ppm 0.0 ppm
42						
44						
					END OF BORING AT 45.0 FEET BLS.	
46						Note: Monitoring Well NDAIMW05 installed in borehole with screen from 32' to 42' bls.
48						

Sampler Signature: John Swenfurth Date: 08/23/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAIMW06 SHEET 1 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-25-04

WEATHER: Sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : NA START : 08-25-04, 0900 END : 08-26-04, 0915 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT) / RECOVERY (IN) / #/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0				
	18 / SS-1	10 - 22 - 27 - 25	0.0' to 0.5' WELL GRADED GRAVEL WITH SAND (GW), dark grayish brown (10YR, 4/2), damp, dense, coarse grained sand. 0.5' to 1.5' WELL GRADED GRAVEL WITH SAND (GW), light yellowish brown (2.5Y, 6/3), dry, dense, up to 1/2" diamteter gravel.	Video loging of borehole from 0 to 32' bls. - included on attached CD. Headspace: 0.0 ppm 0.0 ppm 0.0 ppm
2 — 2.0				
				Video loging of borehole from 0 to 32' bls.
4 — 4.0				
	18 / SS-2	9-11- 31 - 50/5"	4.0' to 5.0' Same as above (0.5' to 1.5')	Headspace: 0.0 ppm 0.0 ppm 0.0 ppm
5.5			5.0' to 5.5' LEAN CLAY WITH GRAVEL (CL), white (2.5Y, 8/1), dry, hard.	Auger refusal at 5.5 ft bls.
6			5.5' to 8.0' hard drilling.	Air hammer drilling started on 8/25/04 @ 1000.
8			8.0' to 10.0' GRAVELLY LEAN CLAY WITH SAND (CL), brown (10YR, 4/3), dry. air hammer advanced rapidly.	
10			10.0' to 12.0' hard drilling.	0.0 ppm 0.0 ppm
12				

Sampler Signature: John Swenfurth Date: 08/26/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAIMW06 SHEET 2 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-25-04

WEATHER: Sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : NA START : 08-25-04, 0900 END : 08-26-04, 0915 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
14					13.0' LEAN CLAY (CL) in drill cuttings.	0.0 ppm 0.0 ppm
16						
18						
20						0.0 ppm 0.0 ppm
22					22.0' to 25.0' hard drilling.	
24						

Sampler Signature: John Swenfurth Date: 08/26/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAIMW06 SHEET 3 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-25-04

WEATHER: Sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : NA START : 08-25-04, 0900 END : 08-26-04, 0915 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
26						0.0 ppm 0.0 ppm
28						
30						0.0 ppm 0.0 ppm
32				1 - NQ	32.0' to 33.0' Andesite, greenish gray (6/10GY), fine grained, white quartz veins, slightly weathered, hard, massive bedding. Joints are close. Perpendicular fracturing. Highly fractured pieces - 1" in length. 33.0' to 34.0' iron oxide staining on fracture surfaces. Slightly stained.	Rock coring began at 32.0' bls. - NWJ drill rods used with an NQ coring bit. Five foot long core barrel. Note: 220 gallons of water used from 32-37' on 1st run to keep the drill bit cool.
34					34.0' to 36.0' Similar to above. Highly fractured pieces - 2" in length. Recovery 5 ft/ 5 ft = 100% RQD 0 ft/5 ft = 0%	0.0 ppm 0.0 ppm
36						

Sampler Signature: John Swenfurth Date: 08/26/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAIMW06	SHEET 4 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 08-25-04

WEATHER: Sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : NA START : 08-25-04, 0900 END : 08-26-04, 0915 LOGGER : John Swenfurth

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Above Hole
					36.0' to 37.0' Highly fractured andesite rock. Similar to 32 to 33'.	Note: Two attempts made to core from 37' to 42'. Borehole was caved in. Cores retreived material above 37'.
				2 - NQ	37.0' to 39.0' Same as above.	
38						110 gallons of water used during coring.
					39.0' to 39.8' POORLY GRADED SAND (GP), brown. (washed in from water added during drilling).	
					39.8' to 40.0' Andesite cobble.	
40					Recovery 3 ft/ 5 ft = 60%	0.0 ppm 0.0 ppm
					RQD 0 ft/5 ft = 0%	Note: Drilling ended for day 1700 hours on 8/25/04.
						8/26, 0900 air hammer drilling began.
					40.0' to 45.0' air hammer advanced rapidly, possible fractured rock.	
					- yellowish brown clay in cuttings.	
42						
44						
					END OF BORING AT 45.0 FEET BLS.	
46						
48						

Sampler Signature: John Swenfurth Date: 08/26/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAIMW07 SHEET 1 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 09-02-04

WEATHER: Hot, humid, sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : NA START : 09-02-04, 0830 END : 09-02-04, 1630 LOGGER : Marty Clasen

DEPTH BELOW SURFACE (FT)	INTERVAL (FT) / RECOVERY (IN) / #/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0.0				
2	2.0 / N/A / S-1	sample from auger cuttings.	0.0' to 2.0' WELL GRADED GRAVEL WITH SAND (GW), yellowish brown (10YR, 5/4), dry, very dense, coarse grained sand.	Video loging of borehole from 0 to 30' bls. - included on attached CD. Headspace: 3.5 ppm 0.0 ppm 0.0 ppm
4	4.0			
6	6.0 / 4 / SS-2	2 - 2 - 4 - 6	4.0' to 6.0' Same as above, except loose.	Headspace: 2.3 ppm 0.0 ppm 1.1 ppm
8	9.0			Auger refusal at 9.0 ft bls.
10			9.0' slight odor when augers removed. - Andesite, greenish gray (5GY, 6/3). 10.0' hard drilling.	Air hammer drilling started. 0.4 ppm 8.5 ppm
12				

Sampler Signature: John Swenfurth Date: 09/02/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAIMW07	SHEET 2 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 09-02-04

WEATHER: Hot, humid, sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : NA START : 09-02-04, 0830 END : 09-02-04, 1630 LOGGER : Marty Clasen

DEPTH BELOW SURFACE (FT)	INTERVAL (FT) / RECOVERY (IN) / #/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
14				Headspace: 179 ppm 0.0 ppm 0.0 ppm
			15.0' to 16.0' Andesite, greenish gray (5GY, 6/3), fine grained, hard, trace iron oxide staining. Strong diesel odor.	
16				
18				
20			20.0' to 21.0' Same as above. Strong diesel odor.	Headspace: 43.5 ppm 0.0 ppm 0.0 ppm
22				
24				

Sampler Signature: John Swenfurth Date: 09/02/2004

CH2MHILL

PROJECT NUMBER 180357.FI.ZZ

BORING NUMBER NDAIMW07 SHEET 3 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 09-02-04

WEATHER: Hot, humid, sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : NA START : 09-02-04, 0830 END : 09-02-04, 1630 LOGGER : Marty Clasen

DEPTH BELOW SURFACE (FT)	INTERVAL (FT) / RECOVERY (IN) / #/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
26			25.0' to 26.0' Same as above (15' to 16'). Strong diesel odor.	Headspace: 175 ppm 0.5 ppm 1.3 ppm
28				
30			30.0' to 31.0' Same as above (15' to 16'). Strong diesel odor.	Headspace: 268 ppm 0.4 ppm 1.5 ppm
32		1 - NQ	32.0' to 33.0' Andesite, greenish gray (5GY, 5/1), fine grained, white quartz veins, slightly weathered, hard, massive bedding. Joints are close. Perpendicular fracturing. fractured pieces - 3" in length. Iron staining in joints. 33.0' to 35.0' 1/4" to 3" jagged andesite. Highly fractured.	Rock coring began at 32.0' bls. - NWJ drill rods used with an NQ coring bit. Five foot long core barrel. Recovery 5 ft/ 5 ft = 100% RQD 2.5 ft/5 ft = 50%
34				Note: 275 gallons of water added to borehole during coring.
36			35.0' to 37.0' Similar to 32' to 34'. Similar iron staining.	

Sampler Signature: John Swenfurth Date: 09/02/2004

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.ZZ	NDAIMW07	SHEET 4 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I** DATE: 09-02-04

WEATHER: Hot, humid, sunny, 93° F DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil/rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVELS : NA START : 09-02-04, 0830 END : 09-02-04, 1630 LOGGER : Marty Clasen

DEPTH BELOW SURFACE (FT)	INTERVAL (FT) / RECOVERY (IN) / #/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
38				Several attempts made to core 37' to 42'. Borehole kept caving in with sediment before reaching 37.0'. Switched to air hammer at 37.0' bls.
40				0.0 ppm 0.0 ppm
42				
44				
			END OF BORING AT 45.0 FEET BLS.	
46				
48				

Sampler Signature: John Swenfurth Date: 09/02/2004

CH2MHILL

PROJECT NUMBER 180357.FI.FK.AI

BORING NUMBER NDAIMW08 SHEET 1 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NAVFAC-ATLANTIC (VIEQUES) LOCATION : AOC-I DATE: 11/30/2005

WEATHER: Sunny, hot, humid, 80s DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile drill B-61 HDX, 4.25 HSA to bedrock, rock coring and air hammer.

WATER LEVELS : START : 11/30/2005 1040 END : 11/30/05 1630 LOGGER : Lisa Carter

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
2	0 - 2'	15"	1-SPT	5-7-10-12 (17)	LEAN CLAY (CL); dark brown (7.5 YR 3/2), dry, very stiff, with organic matter- little -, and rock fragment, 2mm - 4mm, low plasticity.	0 ppm / 0.1 ppm
4	2 - 4'	12"	2-SPT	15-18-13-20 (31)	SANDY SILT (ML); light olive brown (2.5 Y 5/4), non plastic, very stiff, with rock fragments (4.745 mm - 19 mm), fine to medium grained quartz sand, dry.	0 ppm / 0.1 ppm
6	4 - 6'	10"	3-SPT	22 - 50/5" (>50)	Lithology same as 2-4' interval. Encountered rock at 5' (refusal of SPT). Little rock fragments - 4.75 mm - 19 mm.	0 ppm / 0.1 ppm
	6 - 6.5'	5"	4-SPT	50/5.5" (>50)	Lithology same as 2 - 4'. Begin encountering weathered rock. White veins of weathered quartz, very stiff, dry.	0 ppm / 0 ppm Switch to coring 3-inch diameter wire line casing with NQ rod, 5-ft long core barrel.
8	6 - 10'	36"/36" 100%	1-NQ	RQD = 0% Very poor	ANDESITE; highly weathered and fractured. Greenish gray with most surface areas having dark iron oxide staining, white quartz veins, rock is soft, fine grained.	70 gallons of water used to coarse 1-NQ
10	10 - 15'	60"/60" 100%	2-NQ	RQD= 57% Fair (34.5"/60")	ANDESITE, highly fractured, but less so than previous interval, also less iron oxide weathering. Slightly more quartz veins, rock is soft, fine grained, fractures are mostly perpendicular.	110 gallons of water used to core 2-NQ 0 ppm
12						

Sampler Signature: Lisa Carter Date: 11/30/2005

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.FK.AI	NDAIMW08	SHEET 2 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NAVFAC-ATLANTIC (VIEQUES) LOCATION : AOC-I DATE: 11/30/2005

WEATHER: Sunny, hot, humid, 80s DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile drill B-61 HDX, 4.25 HSA to bedrock, rock coring and air hammer.

WATER LEVELS : START : 11/30/2005 1040 END : 11/30/05 1630 LOGGER : Lisa Carter

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Above Hole
12					See previous page.	
15						
18	15 - 20'	60"/60" 100%	3-NQ	RQD = 28% Poor 4-5-4-4 (17"/60")	ANDESITE: greenish gray, highly weathered and fractured with iron oxide staining on fracture surfaces, white quartz veins. The fractured rock pieces range in size from 1/4" to 5", fractures mostly perpendicular to core.	Use 135 gallons of water on 3-NQ 0.1 ppm
21	20 - 25'	60"/60" 100%	4-NQ	RQD = 98% Excellent 59"/60" 17-14-13-4-7-4	ANDESITE, greenish gray, little iron oxide, massive rock, hard, joints closely spaced, white quartz fracture veins, open fractures noted at 22.5' and 24.5' bgs. Very large, partially open quartz vein at 25' bgs, fractures are perpendicular to oblique to core.	120 gallons of water used on 4-NQ
24						

Sampler Signature: Lisa Carter Date: 11/30/2005

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
180357.FI.FK.AI	NDAIMW08	SHEET 3 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NAVFAC-ATLANTIC (VIEQUES) LOCATION : AOC-I DATE: 11/30/2005

WEATHER: Sunny, hot, humid, 80s DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile drill B-61 HDX, 4.25 HSA to bedrock, rock coring and air hammer.

WATER LEVELS : START : 11/30/2005 1040 END : 11/30/05 1630 LOGGER : Lisa Carter

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Above Hole
24						
27	25 - 30'	56"/60" 93%	5-NQ	RQD= 88% Good 44-9 (53"/60")	ANDESITE continues as in previous interval. Large open fractures at 25' and 26' bgs. Large closed fractures at 28.5' bgs. Rock is slightly weathered with discoloration only on open fracture surfaces. Most fractures perpendicular to core.	120 gallons of water used on core 5-NQ 0.1 ppm
30						
33	30 - 35'	60"/60" 100%	6-NQ	RQD = 98% Excellent 29-18-12 59"/60"	ANDESITE continues as in previous interval. 25' to 30'. Large open fractures at 31' and 34' bgs. Quartz deposit noted on 31' fracture. Large closed fracture at 30' bgs. Rock weathered and highly fractured from 34.6' to 34.8' bgs with iron oxide staining.	80 gallons of water used on core 6-NQ
36						

Sampler Signature: Lisa Carter Date: 11/30/2005

CH2MHILL

PROJECT NUMBER 180357.FI.FK.AI

BORING NUMBER NDAIMW08 SHEET 4 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NAVFAC-ATLANTIC (VIEQUES) LOCATION : AOC-I DATE: 11/30/2005

WEATHER: Sunny, hot, humid, 80s DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile drill B-61 HDX, 4.25 HSA to bedrock, rock coring and air hammer.

WATER LEVELS : START : 11/30/2005 1040 END : 11/30/05 1630 LOGGER : Lisa Carter

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Above Hole
36	35 - 40'	60"/60" 100%	7-NQ	RQD = 86% Good 26-11-11-4 52"/60"	ANDESITE continues. Highly fractured area parallel to core at 39' bgs. Highly weathered fractures at 39.5' bgs, closed fractures between 36' and 39' bgs. Most fractures are oblique to core and filled with quartz, hard.	120 gallons of water used to core 7-NQ 0.1 ppm
39						
42	40 - 45'	60"/60" 100%	8-NQ	RQD = 78% 4-5-16-7-15 47"/60"	ANDESITE continues. More fractured than previous interval, iron oxide staining on fracture surfaces large open fractures at 40-42' bgs, 42' and 43' bgs. Quartz veins wider than previous veins, hard.	100 gallons of water used to core 8-NQ.
45						
48					Terminate coring at 45' bgs	Air Hammer hole to 45' bgs for well installation

Sampler Signature: Lisa Carter Date: 11/30/2005

CH2MHILL

PROJECT NUMBER 180357.FI.FK.AI

BORING NUMBER NDAIMW09 SHEET 1 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NAVFAC-ATLANTIC (VIEQUES) LOCATION : AOC-I DATE: 12/1/2005

WEATHER: Sunny, hot, humid, 80s DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile drill B-61 HDX, 4.25 HSA to bedrock, rock coring and air hammer.

WATER LEVELS : Encountered at 38' START : 12/01/2005 1400 END : 12/02/05 1130 LOGGER : Lisa Carter

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
0	0 - 2'	20"/24" 83%	1-SPT	8-14-16-16 (30)	GRAVELLY CLAY (CL); light olive brown (2.5 Y 5/4), dry, medium density, 2mm-4.75 mm, dry to slightly moist, large rock fragments (4.75mm - 19mm) at 2' BGS.	0 ppm / 0 ppm
2	2 - 4'	9"/24" 37%	2-SPT	15-13-10-12 (23)	Lithology continues from 2'-4'. More rock fragments present. Soil structure starting to take on characteristics of weathered rock, iron oxide staining present on rock fragments, dry, dense.	0 ppm / 0 ppm
4	4 - 6'	8"/24" 33%	3-SPT	5-7-7-13	Lithology continues from previous intervals. Rock fragments present soil structure showing increasing weathered rock characteristics.	0 ppm / 0 ppm
6	6 - 8'	10"/24" 41%	4-SPT	16-18-14-17	CLAY (CL); light yellowish brown (2.5 Y 6/4), dry stiff, little rock fragments, 2mm - 4.75 mm, less weathered rock structures, some iron oxide staining.	0 ppm / 0.2 ppm
8	8 - 10'	13"/24" 54%	5-SPT	11-13-13-15 (26)	SANDY CLAY(CL); brownish yellow (10 YR 6/6), dry, stiff, very fine grained quartz sand, soil has some weathered rock structure. Some iron oxide staining, few rock fragments, 2mm - 4.75mm.	0 ppm / 0.2 ppm
10	10 - 12'	17"/24" 71%	6-SPT	17-19-34-50/5 (53)	SANDY CLAY (CL); brownish yellow (10 YR 6/6), dry, stiff, very fine grained quartz sand, white weathered quartz veins in sample, weathered rock starting at approx. 11' BGS. Increasing white veins.	0 ppm / 0 ppm
12						

Sampler Signature: Lisa Carter Date: 12/1/2005

CH2MHILL

PROJECT NUMBER 180357.FI.FK.AI | **BORING NUMBER** NDAIMW09 SHEET 2 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NAVFAC-ATLANTIC (VIEQUES) LOCATION : AOC-I DATE: 12/2/2005

WEATHER: Sunny, hot, humid, 80s DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile drill B-61 HDX, 4.25 HSA to bedrock, rock coring and air hammer.

WATER LEVELS : Encountered at 38' START : 12/01/2005 1400 END : 12/02/05 1130 LOGGER : Lisa Carter

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone / Above Hole
12	12 - 14'	19"/24" 79%	7-SPT	18-27-33-50/5 (60)	SANDY CLAY (CL); light gray (5 Y 7/2), dry to slightly moist, stiff, very fine grained sand, some rock fragments, 2mm - 4.75 mm, weathered rock fragments, white veins of clay, weathered rock structures.	0 ppm 0 ppm
15	14 - 16'	12"/12" 100%	8-SPT	25-50/5" (>50)	SANDY CLAY (CL); continues with weathered rock more pronounced. Refusal at 12" quartz rock fragments, dry.	0 ppm 0 ppm
18	16 - 20'	45"/60" 75%	1-NQ	RQD = 40% Poor 10" 5" 4" 5" 24"/60" 40%	ANDESITE; greenish gray, lightly weathered and highly fractured rock. Some iron oxide staining on fracture surfaces. Fractures. Fractures are mineral filled, some with quartz and appear to be closed. Rock is fine grained and soft. Fractures are oblique and perpendicular to core. Joints are closely spaced.	0 ppm 300 gallons of water used in core run 1-NQ
21	20 - 25'	22"/60" 36%	2-NQ	RQD = 21% Very poor 8" 5" 13"/60"	ANDESITE continues greenish gray highly weathered rock with clay interval from 23' to 24' BGS. Fine grained, closely spaced joints. Soft fractures are mineral filled and filled with quartz.	180 gallons of water used in core run 2-NQ 0 ppm
24						

Sampler Signature: Lisa Carter Date: 12/1/2005

CH2MHILL

PROJECT NUMBER 180357.FI.FK.AI

BORING NUMBER NDAIMW09 SHEET 3 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NAVFAC-ATLANTIC (VIEQUES) LOCATION : AOC-I DATE: 12/2/2005

WEATHER: Sunny, 70s DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile drill B-61 HDX, 4.25 HSA to bedrock, rock coring and air hammer.

WATER LEVELS : Encountered at 38' START : 12/01/2005 1400 END : 12/02/05 1130 LOGGER : Lisa Carter

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Above Hole
24						
27	25 - 30'	15"/60" 25%	3-NQ	RQD= 0% Very poor	Weathered rock, highly weathered rock, largest recovered rock section is 2" long. Most of core was broken into rock fragments from 19mm to 75mm. Iron oxide staining on most fragment surface areas. White quartz veins present in sections of andesite matrix, greenish gray, some quartz rock fragments present. Rock is soft and fine grained.	200 gallons of water used to core 3-NQ 0 ppm
30						
33	30 - 35'	30"/60" 50%	4-NQ	RQD = 0% Very poor	Weathered rock, highly weathered and fractured gray clay, high plasticity, soft intermixed with rock fragments. Largest recovered rock section is approx. 2" long. Most of core was broken into rock fragments from 4.75mm to 75mm. Iron oxide staining present on fractured surfaces. White quartz veins present in sections of andesite matrix. Greenish gray, some quartz rock fragments and other mineral fragments present. Rock is soft and fine grained.	250 gallons of water used to core 4-NQ 0 ppm
36						

Sampler Signature: Lisa Carter Date: 12/2/2005

CH2MHILL

PROJECT NUMBER 180357.FI.FK.AI

BORING NUMBER NDAIMW09 SHEET 4 OF 4

Soil/Rock Boring Logs for Monitoring Well Installation

PROJECT : NAVFAC-ATLANTIC (VIEQUES) LOCATION : AOC-I DATE: 12/2/2005

WEATHER: Sunny, 70s DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile drill B-61 HDX, 4.25 HSA to bedrock, rock coring and air hammer.

WATER LEVELS : Encountered at 38' START : 12/01/2005 1400 END : 12/02/05 1130 LOGGER : Lisa Carter

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Above Hole
36	34 - 40'	19"/60" 31%	5-NQ	RQD = 0% Very poor	Highly weathered and fractured rock fragments ranging in size from 2mm - 75 mm. Greenish gray andesite with gray clay, highly plastic, soft. Rock fragments have iron oxide staining on surfaces. Competent Andesite fragments have white quartz veins.	300 gallons of water used to core 5-NQ. Core bit removed from hole has no "teeth" left on it.
39						
42					Terminate coring at 40' bgs due to difficulties with weathered rock and loss of water.	Air Hammer hole to 45' bgs for well installation
45						
46						

Sampler Signature: Lisa Carter Date: 12/2/2005

Appendix B
Photographs of Rock Cores

Appendix B
Rock Core Photographs
AOC I Remedial Investigation Report
Vieques, Puerto Rico

Appendix B
Rock Core Photographs
AOC I Remedial Investigation Report
Vieques, Puerto Rico

Appendix B
Rock Core Photographs
AOC I Remedial Investigation Report
Vieques, Puerto Rico

Appendix B
Rock Core Photographs
AOC I Remedial Investigation Report
Vieques, Puerto Rico

Appendix C

Video Logs of Borings - Included on Appendices CD

To View the Video Logs of the borings please contact:

Public Affairs Office
NAVFAC Atlantic
6506 Hampton Blvd.
Norfolk, VA 23508-1278
757-322-8005

NFECL_PAO@navy.mil

Appendix D
Well Completion Diagrams

PROJECT NUMBER	WELL NUMBER		
180357.FI.ZZ	NDAIMW01	SHEET 1	OF 1

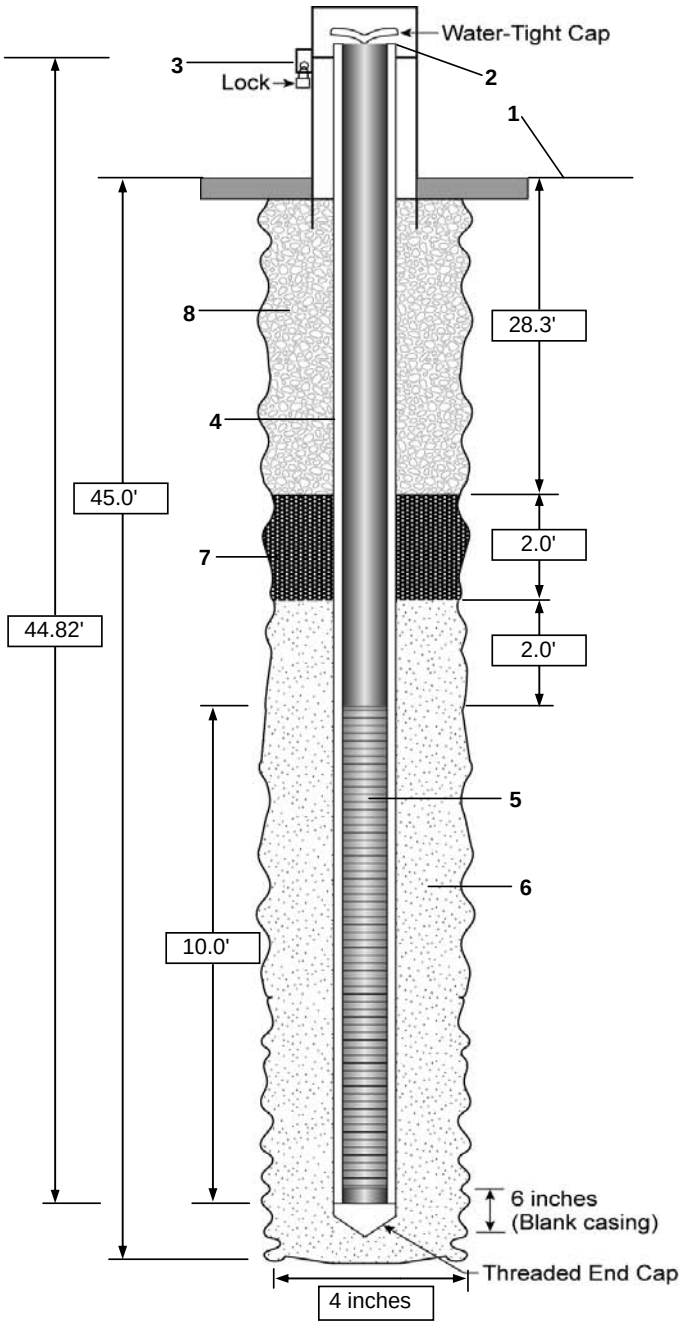
WELL COMPLETION DIAGRAM

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I**

DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVEL : 17.68' BTOC, 09/22/04 START : 08/30/04 1630 END: 8/31/04, 1300 LOGGER : Marty Clasen



1- Ground elevation at well: 32.74' AMSL

2- Top of casing elevation: 35.27' AMSL

3- Wellhead protection cover type: Steel protective casing with locking cap.

a) concrete pad dimensions: 3'x3'

4- Dia./type of well casing: 2"/Schedule 40 PVC

5- Screen slot size: 0.010" slot size

6- Type screen filter: 20/30 Silica Sand

a) Quantity used: 1-1/2 bags

7- Type of seal: 1/4" diameter bentonite pellets (Cetco)

a) Quantity used: 1/4 bag

8- Grout

a) Grout mix used: Type II Portland Cement & bentonite powder

b) Method of placement: Tremie pipe - gravity feed

c) Vol. of well casing grout: 13.9 gallons

Development method: 12-V Whale pump

Volume purged during development: 35 gallons

Comments

Flat PVC screw on end cap.

Grouting completed on 8/31/04 at 1300

Bentonite seal curred for 45 minutes

PROJECT NUMBER	WELL NUMBER		
180357.FI.ZZ	NDAIMW02	SHEET 1	OF 1

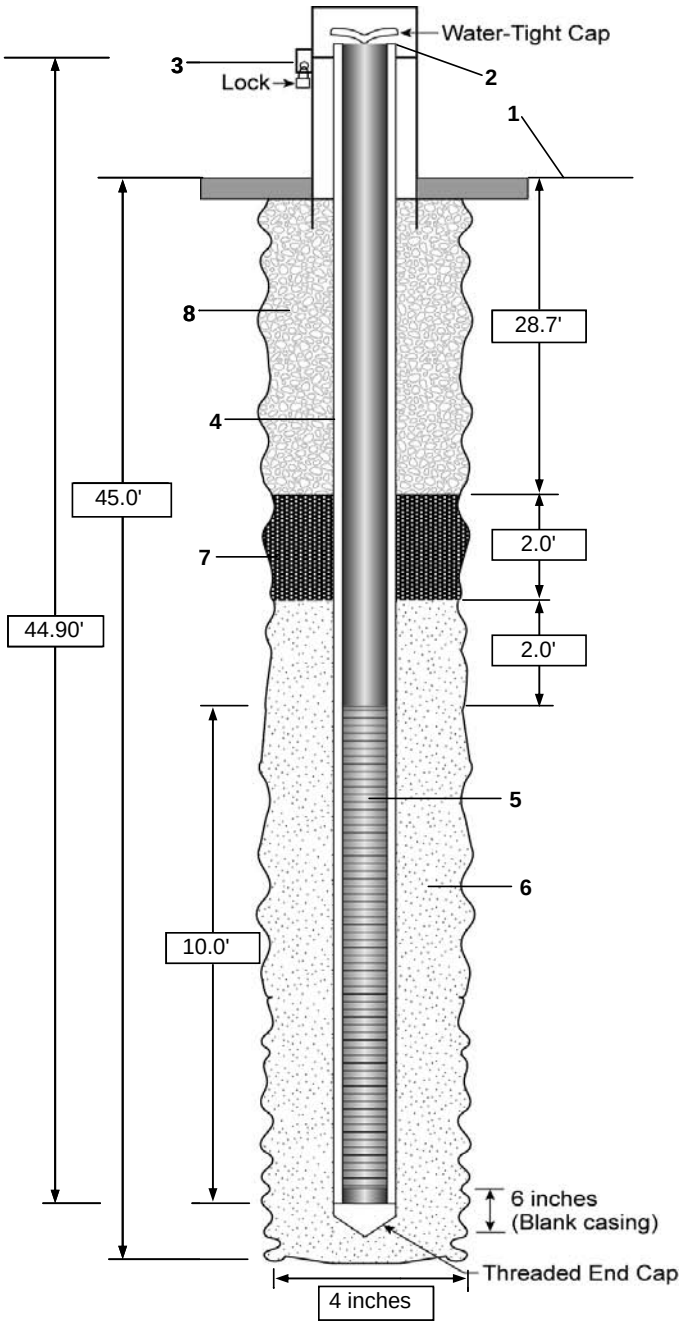
WELL COMPLETION DIAGRAM

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I**

DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVEL : 17.28' BTOC, 09/22/04 START : 08/13/04 1000 END :08/20/04, 0930 LOGGER : John Swenfurth



1-	Ground elevation at well	32.35' AMSL
2-	Top of casing elevation	34.54' AMSL
3-	Wellhead protection cover type	Steel protective casing with locking cap.
	a) concrete pad dimensions	3'x3'
4-	Dia./type of well casing	2"/Schedule 40 PVC
5-	Screen slot size	0.010" slot size
6-	Type screen filter	20/30 Silica Sand
	a) Quantity used	1-1/2 (50 lb. bags)
7-	Type of seal	1/4" diameter bentonite pellets (Cetco)
	a) Quantity used	1/4 bucket
8-	Grout	
	a) Grout mix used	Type II Portland Cement & bentonite powder
	b) Method of placement	Tremie pipe - gravity feed
	c) Vol. of well casing grout	14 gallon
	Development method	12-V Whale pump
	Volume purged during development	110 gallons

Comments

Flat PVC screw on end cap.

Grouting completed on 08/20/04 at 0930

Bentonite seal curred for 45 minutes

PROJECT NUMBER	WELL NUMBER		
180357.FI.ZZ	NDAIMW03	SHEET 1	OF 1

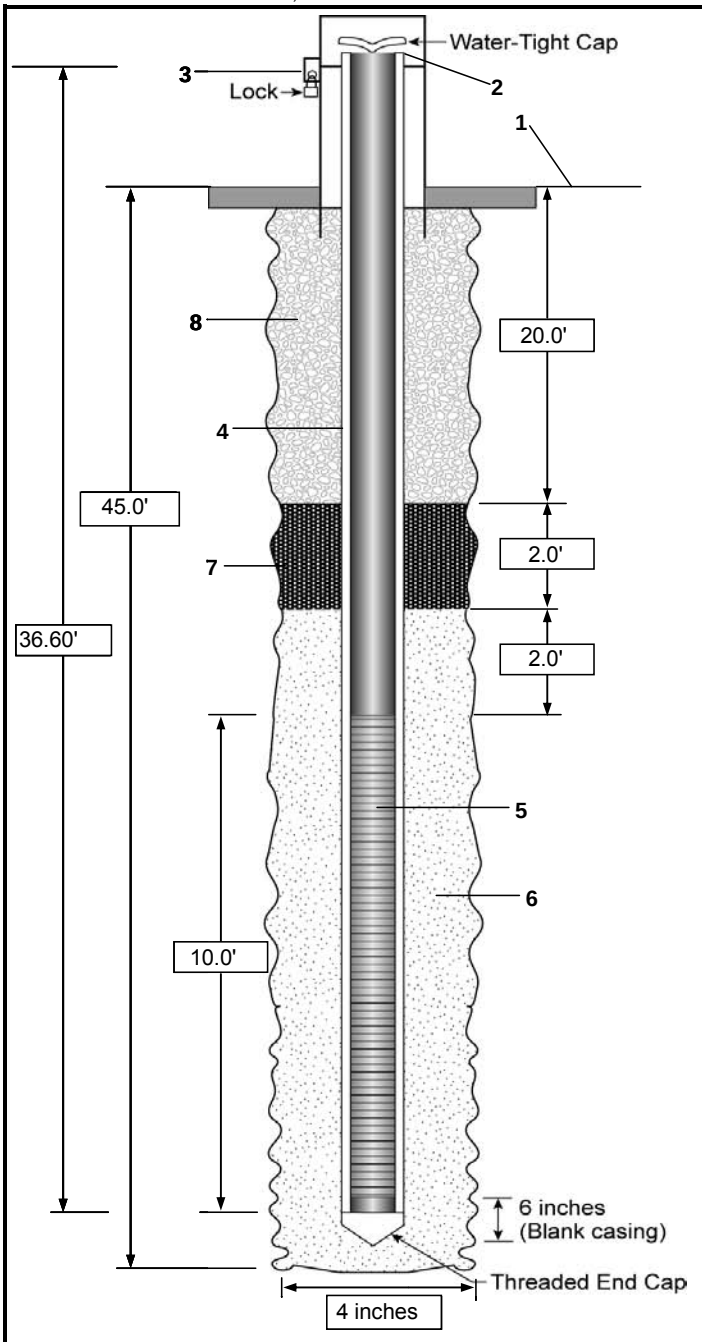
WELL COMPLETION DIAGRAM

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I**

DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVEL : 17.54' BTOC, 09/22/04 START : 08/24/04 1430 END :08/24/04, 1530 LOGGER : John Swenfurth



1- Ground elevation at well: 32.58' AMSL

2- Top of casing elevation: 34.77' AMSL

3- Wellhead protection cover type: Steel protective casing with locking cap.

a) concrete pad dimensions: 3'x3'

4- Dia./type of well casing: 2"/Schedule 40 PVC

5- Screen slot size: 0.010" slot size

6- Type screen filter: 20/30 Silica Sand
a) Quantity used: 2 (50 lb. bags)

7- Type of seal: Bentonite Pellets, 1/4" diameter (Cetco)
a) Quantity used: 1/4 bucket

8- Grout
a) Grout mix used: Type II Portland Cement & bentonite powder
b) Method of placement: Tremie pipe - gravity feed
c) Vol. of well casing grout: 14 gallon

Development method: Centrifugal pump and surge block

Volume purged during development: 55 gallons

Comments

Flat PVC screw on end cap.

Grouting completed on 08/24/04 at 1530

Bentonite seal curred for 45 minutes.

PROJECT NUMBER	WELL NUMBER		
180357.FI.ZZ	NDAIMW04	SHEET 1	OF 1

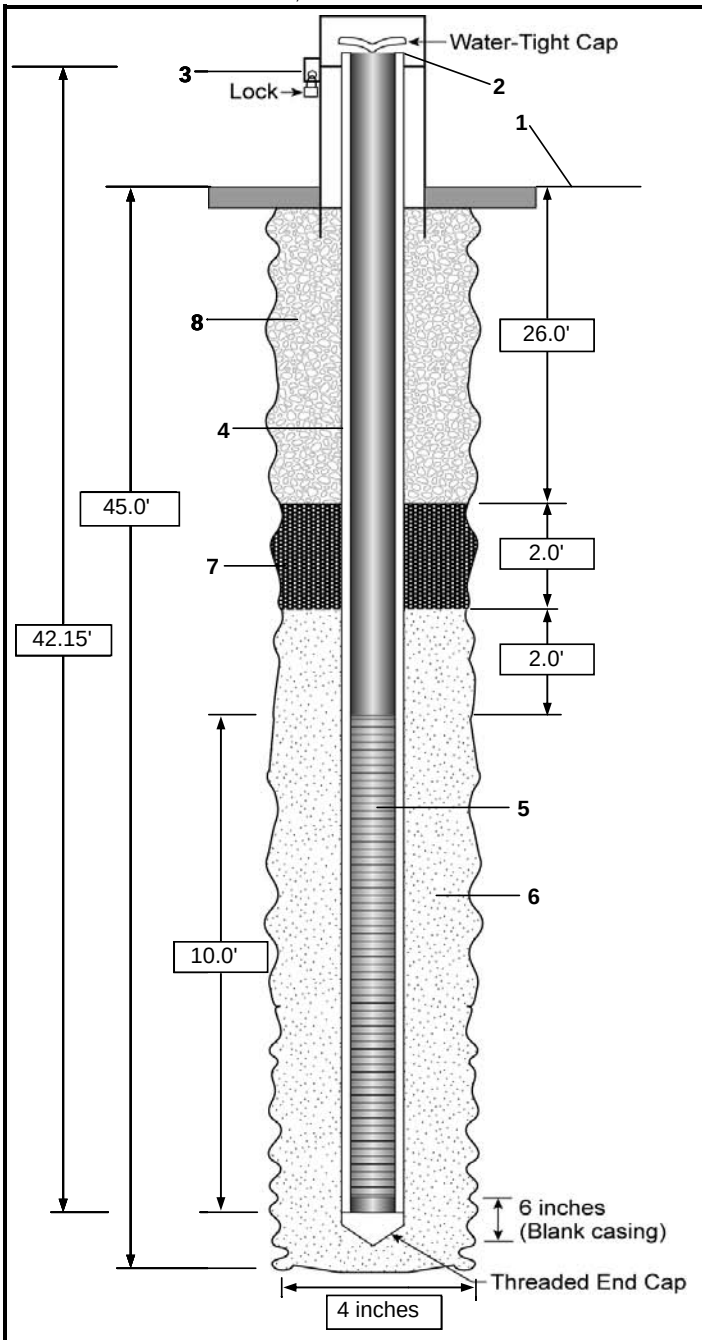
WELL COMPLETION DIAGRAM

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I**

DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVEL : 17.95' BTOC, 09/22/04 START : 08/20/04 1100 END :08/20/04, 1400 LOGGER : John Swenfurth



1- Ground elevation at well: 32.81' AMSL

2- Top of casing elevation: 34.96' AMSL

3- Wellhead protection cover type: Steel protective casing with locking cap.

a) concrete pad dimensions: 3'x3'

4- Dia./type of well casing: 2"/Schedule 40 PVC

5- Screen slot size: 0.010" slot size

6- Type screen filter: 20/30 Silica Sand

a) Quantity used: 1-1/2 (50 lb. bags)

7- Type of seal: Bentonite Pellets, 1/4" diameter (Cetco)

a) Quantity used: 1/4 bucket

8- Grout

a) Grout mix used: Type II Portland Cement & bentonite powder

b) Method of placement: Tremie pipe - gravity feed

c) Vol. of well casing grout: 12.8 gallons

Development method: 12-v Whale pump and surge block

Volume purged during development: 270 gallons

Comments

Flat PVC screw on end cap.

Grouting completed on 08/20/04 at 1400

Bentonite seal curred for 45 minutes.

PROJECT NUMBER	WELL NUMBER		
180357.FI.ZZ	NDAIMW05	SHEET 1	OF 1

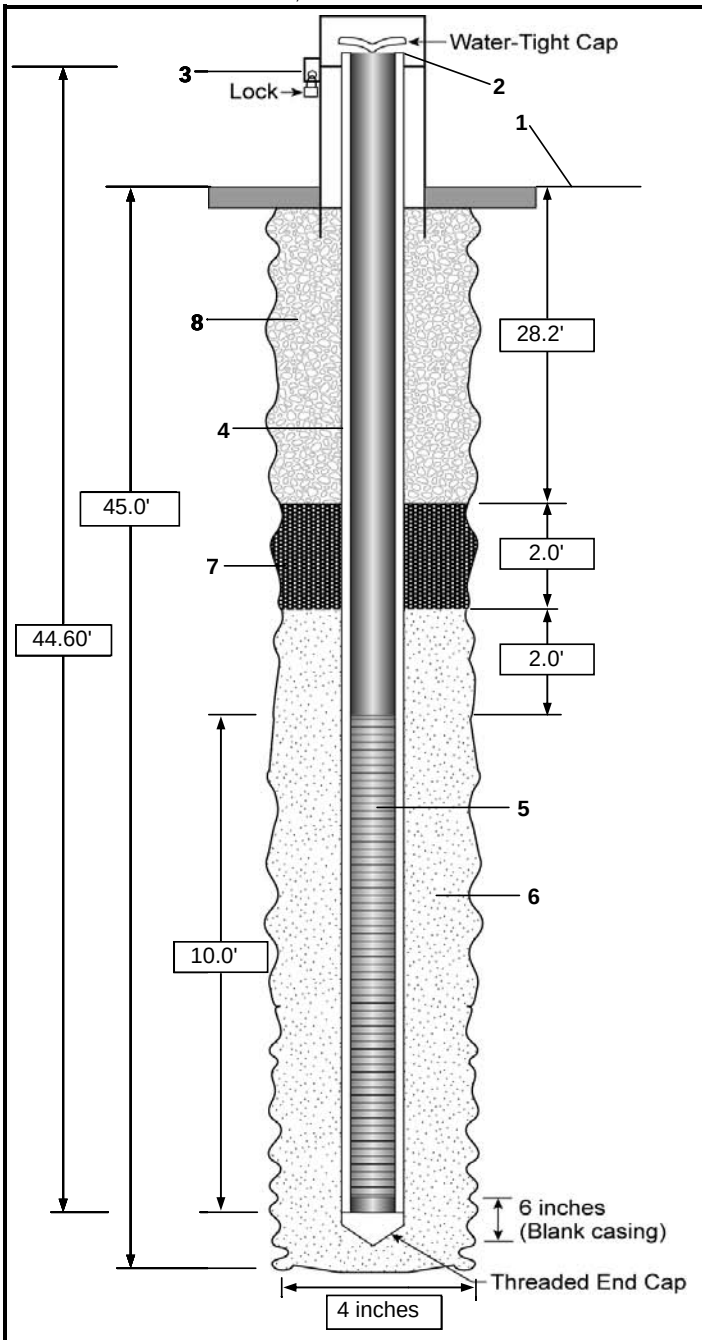
WELL COMPLETION DIAGRAM

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I**

DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVEL : 18.26' BTOC, 09/22/04 START : 08/23/04 1130 END :08/23/04, 1530 LOGGER : John Swenfurth



1- Ground elevation at well: 32.44' AMSL

2- Top of casing elevation: 34.82' AMSL

3- Wellhead protection cover type: Steel protective casing with locking cap.

a) concrete pad dimensions: 3'x3'

4- Dia./type of well casing: 2"/Schedule 40 PVC

5- Screen slot size: 0.010" slot size

6- Type screen filter: 20/30 Silica Sand

a) Quantity used: 1-1/2 (50 lb. bags)

7- Type of seal: Bentonite Pellets, 1/4" diameter (Cetco)

a) Quantity used: 1/4 bucket

8- Grout

a) Grout mix used: Type II Portland Cement & bentonite powder

b) Method of placement: Tremie pipe - gravity feed

c) Vol. of well casing grout: 13.7 gallons

Development method: 12-v Whale pump

Volume purged during development: 165 gallons

Comments

Flat PVC screw on end cap.

Grouting completed on 08/23/04 at 1530

Bentonite seal curred for 45 minutes.

PROJECT NUMBER	WELL NUMBER		
180357.FI.ZZ	NDAIMW06	SHEET 1	OF 1

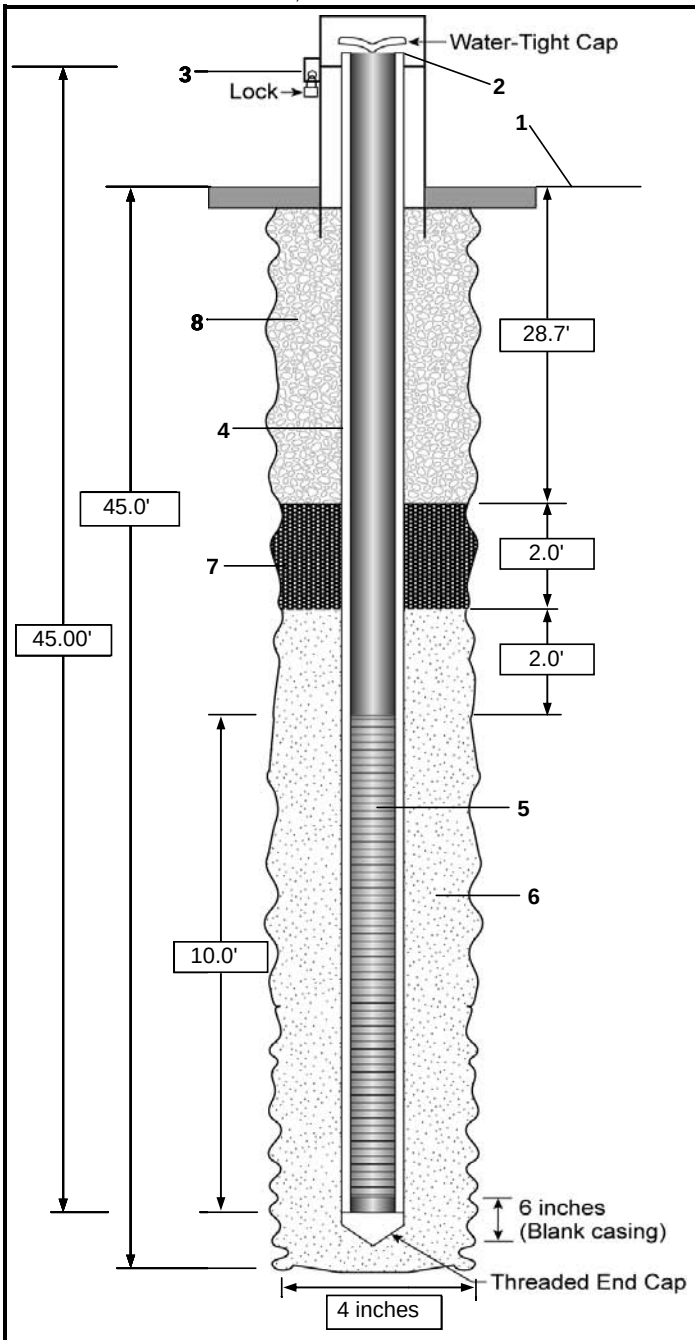
WELL COMPLETION DIAGRAM

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I**

DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVEL : 25.04' BTOC, 09/22/04 START : 08/26/04 0915 END :08/26/04, 1340 LOGGER : John Swenfurth



1- Ground elevation at well: 32.47' AMSL

2- Top of casing elevation: 34.75' AMSL

3- Wellhead protection cover type: Steel protective casing with locking cap.

a) concrete pad dimensions: 3'x3'

4- Dia./type of well casing: 2"/Schedule 40 PVC

5- Screen slot size: 0.010" slot size

6- Type screen filter: 20/30 Silica Sand

a) Quantity used: 1-1/2 (50 lb. bags)

7- Type of seal: Bentonite Pellets, 1/4" diameter (Cetco)

a) Quantity used: 1/4 bucket

8- Grout

a) Grout mix used: Type II Portland Cement & bentonite powder

b) Method of placement: Tremie pipe - gravity feed

c) Vol. of well casing grout: 14 gallons

Development method: centrifugal pump

Volume purged during development: 110 gallons

Comments

Flat PVC screw on end cap.

Grouting completed on 08/26/04 at 1340

Bentonite seal curred for 45 minutes.

PROJECT NUMBER	WELL NUMBER		
180357.FI.ZZ	NDAIMW07	SHEET 1	OF 1

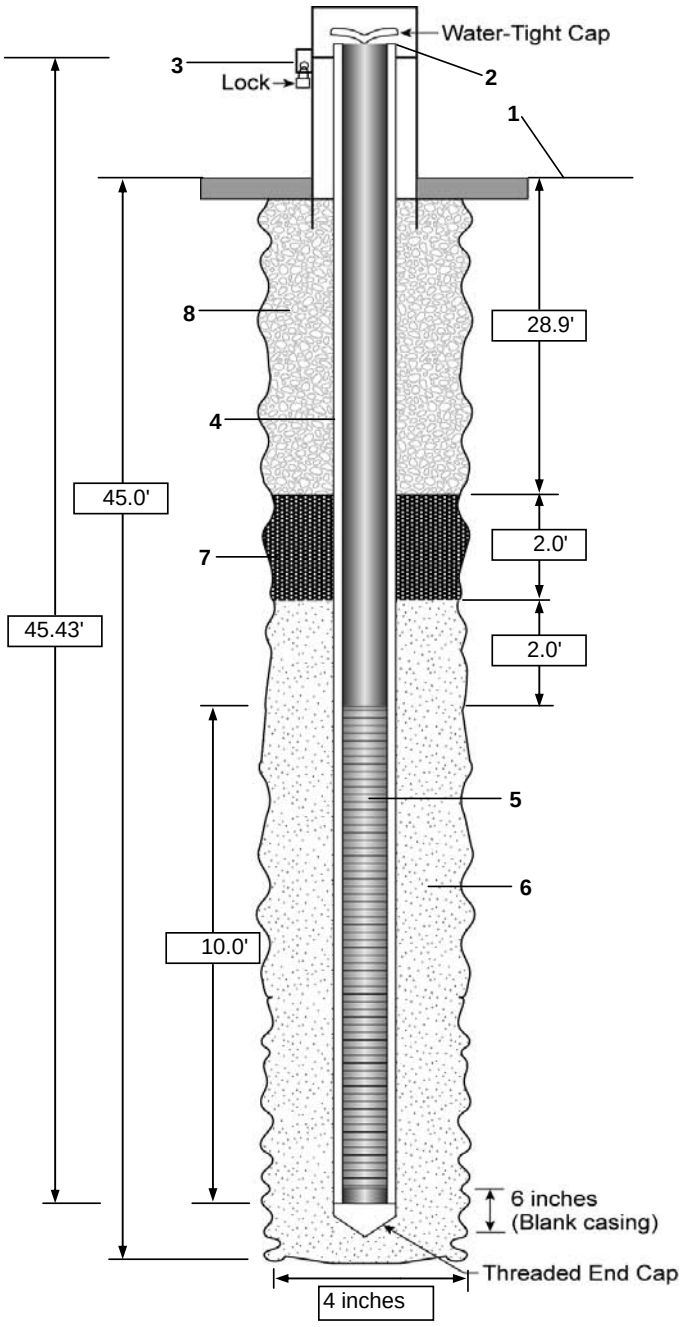
WELL COMPLETION DIAGRAM

PROJECT : NASD RI/FS INVESTIGATION LOCATION : **AOC I**

DRILLING CONTRACTOR : Geoworks, Inc.

DRILLING METHOD AND EQUIPMENT USED : Mobile B-61, 4-1/4" I.D. HSA's; at soil rock interface switched to 4" O.D. air hammer (carbide bit).

WATER LEVEL : 18.14' BTOC, 09/22/04 START : 09/02/04, 1430 END :09/02/04 1700 LOGGER : Marty Clasen



1- Ground elevation at well: 32.64' AMSL

2- Top of casing elevation: 35.16' AMSL

3- Wellhead protection cover type: Steel protective casing with locking cap.

a) concrete pad dimensions: 3'x3'

4- Dia./type of well casing: 2"/Schedule 40 PVC

5- Screen slot size: 0.010" slot size

6- Type screen filter: 20/30 Silica Sand

a) Quantity used: 1-1/2 (50 lb. bags)

7- Type of seal: Bentonite Pellets, 1/4" diameter (Cetco)

a) Quantity used: 1/4 bucket

8- Grout

a) Grout mix used: Type II Portland Cement & bentonite powder

b) Method of placement: Tremie pipe - gravity feed

c) Vol. of well casing grout: 14 gallons

Development method: centrifugal pump

Volume purged during development: 24 gallons

Comments

Flat PVC screw on end cap.

Grouting completed on 09/02/04 at 1700

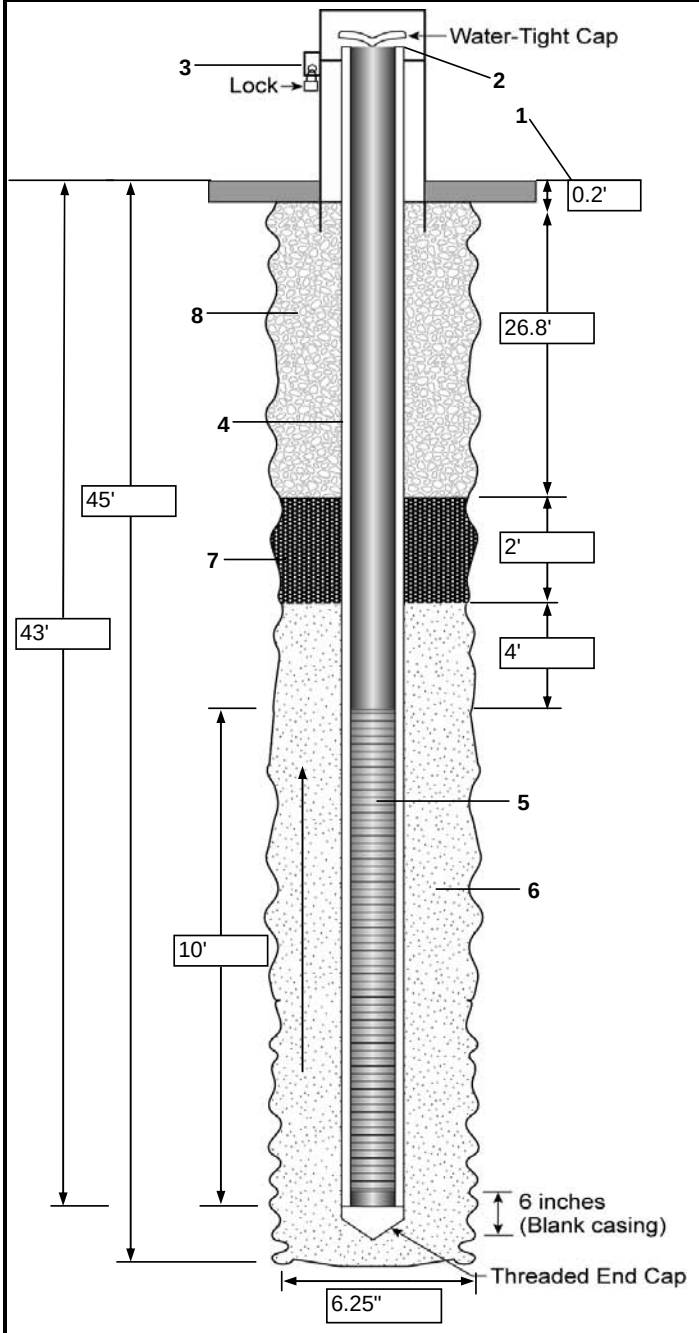
Bentonite seal curred for 45 minutes.

CH2MHILL

PROJECT NUMBER	WELL NUMBER		
180357.FI.FK.AI	NDAIMW08	SHEET 1	OF 1

WELL COMPLETION DIAGRAM

PROJECT :	NAVFAC-Atlantic	LOCATION :	AOC-I	DATE:	12/1/2005
DRILLING CONTRACTOR :	Geoworks, Inc.				
DRILLING METHOD AND EQUIPMENT USED :	Mobile B-61, 6.25" diameter air hammer				
WATER LEVEL : 24.01 ft BTOC on 3/17/06	START :	12/1/05 0840	END : 12/16/05	LOGGER : Lisa Carter	



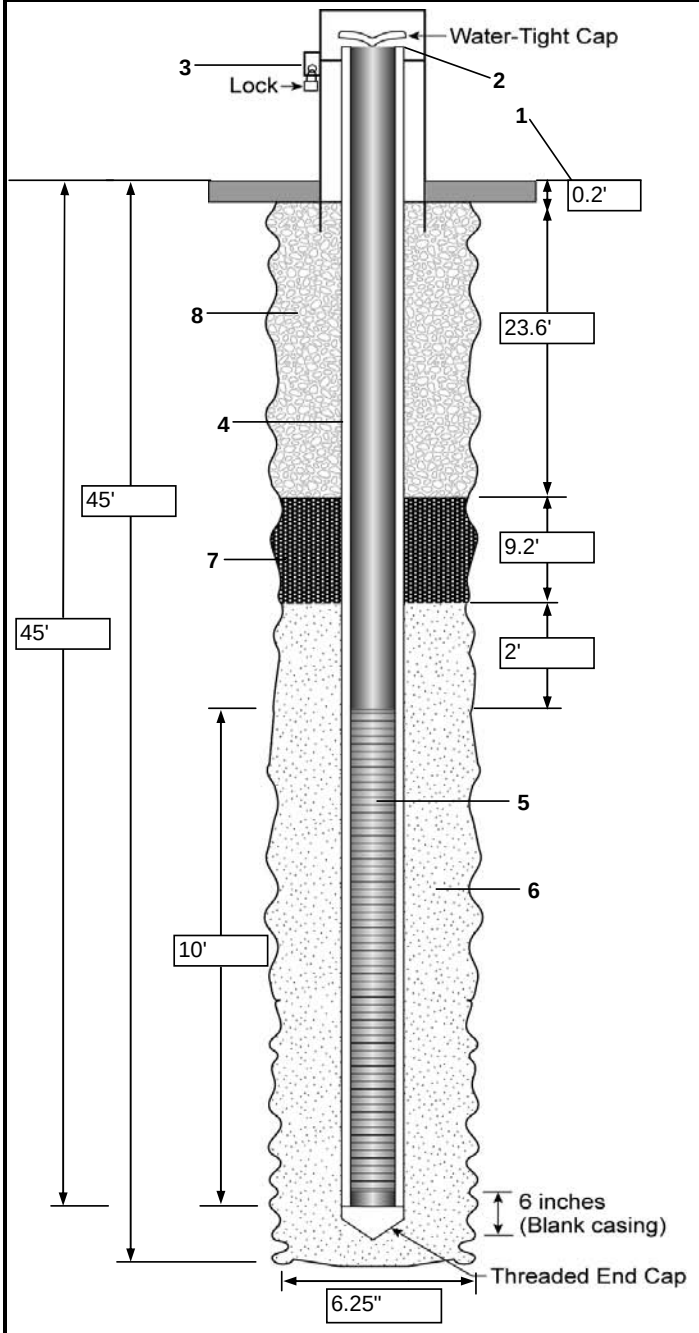
1-	Ground elevation at well	30.04 ft
2-	Top of casing elevation	33.81 ft
3-	Wellhead protection cover type	4 x steel protective posts set in concrete 4' x 4' square steel with hinged lid.
	a) concrete pad dimensions	3 x 60# bags. 3' x 3' x 4' thick, 3' into borehole.
4-	Dia./type of well casing	2" diameter PVC schedule 40.
5-	Screen slot size	0.010" slot size.
6-	Type screen filter	6/28 silica sand.
	a) Quantity used	6 bags
7-	Type of seal	Cetco bentonite pellets 3/8" size.
	a) Quantity used	1/2 5 gallon bucket
8-	Grout	Ponce x 2 bags Portland cement /
	a) Grout mix used	Premium Gel x 1/2 bag bentonite powder / Clean sand
	b) Method of placement	Dumped from 5 gal bucket
	c) Vol. of well casing grout	5 x 5 gal. buckets
	Development method	Surge Block and SS Monsoon Pump
	Volume purged during developmer	~330 gallons

Comments

PROJECT NUMBER	WELL NUMBER	
180357.FI.FK.AI	NDAIMW09	SHEET 1 OF 1

WELL COMPLETION DIAGRAM

PROJECT :	NAVFAC-Atlantic	LOCATION :	AOC-I	DATE:	12/2/2005
DRILLING CONTRACTOR :	Geoworks, Inc.				
DRILLING METHOD AND EQUIPMENT USED :	Mobile B-61 HDX, 6.25" diameter air hammer				
WATER LEVEL : 23.39 ft BTOC on 3/17/06	START :	12/2/05 1300	END : 12/5/05	LOGGER : Lisa Carter	



1-	Ground elevation at well	32.06 ft
2-	Top of casing elevation	35.11 ft
3-	Wellhead protection cover type	4 x steel protective posts set in concrete 4" x 4" square steel with hinged lid.
	a) concrete pad dimensions	2.5 x 60# bags. 3' x 3' x 3" thick,
4-	Dia./type of well casing	2" diameter PVC schedule 40.
5-	Screen slot size	0.010" slot size.
6-	Type screen filter	6/28 silica sand.
	a) Quantity used	6 bags
7-	Type of seal	Cetco bentonite pellets 3/8" size.
	a) Quantity used	1/2 5 gallon bucket
8-	Grout	Ponce x 2 bags Portland cement / Premium Gel x 1/2 bag bentonite powder / Clean sand
	a) Grout mix used	
	b) Method of placement	Dumped from 5 gal bucket
	c) Vol. of well casing grout	7 x 5 gal. buckets
	Development method	Surge Block and SS Monsoon Pump
	Volume purged during developmer	~450 gallons

Comments

Appendix E
Well Development Logs

CH2MHILL	PROJECT NUMBER 180357.FI.ZZ	WELL NUMBER NDAIMW01	SHEET 1 OF 1

WELL DEVELOPMENT LOG

PROJECT : **RI/FS Investigation, West Vieques, NASD** LOCATION **AOC I**

DEVELOPMENT CONTRACTOR : **CH2MHILL**

DEVELOPMENT METHOD AND EQUIPMENT USED : **12-v Whale pump with vinyl tubing**

START WATER LEVELS (BTOC): **32.10'** START : **9/9/2004** END : **9/10/2004** LOGGER : **John Swenfurth**

TOTAL DEPTH (BTOC): **44.82'**

MAXIMUM DRAWDOWN DURING PUMPING: **Went dry**

RANGE AND AVERAGE DISCHARGE RATE: **See remarks**

TOTAL QUANTITY OF WATER DISCHARGED: **35 gallons**

DISPOSITION OF DISCHARGE WATER: **55-gallon drums**

Time	Water Volume Discharged	Water Level	Turbidity	Temperature		Conductivity	Remarks
9/9/2004							
15:20	Start Whale pump						
16:00	10	went dry. Tuned pump off, surged					gray, silty
16:20	Pump off to let well recover						
16:30	Pump on						
16:35	15	went dry. Tuned pump off					
16:50	Pump on. Restricted flow						cloudy
17:15	16	Pump off. Well went dry again					
9/10/2004							
6:30		31.88	Start pumping. Surged well with pump				
6:55	17	went dry at slow pumping rate. Turned pump off					
7:00	start pump						cloudy, 30 seconds clear
7:04	dry, pump off						
7:09	pump on						
7:11	pump off, dry						
7:25	18	43.01	38.7	29.01	7.76	1332	clear
7:30	pump off						
8:05	pump on	32.5	125	30.16	7.05	1366	clear, 360 ml/min
8:25		33.5	66.8	30.27	7.16	1373	clear
8:30	25	33.5	water level holds				230 ml/min
8:35	surged, then pumped dry						
8:40	pump off						cloudy
8:45	26	43	332	31	7.05	1397	
9:00	pump off , dry						480 ml/min
9:25		35	sruged well with pump				
9:35	33	42	>1000	31.91	7.18	1427	cloudy
9:40			448				
9:50	34	41.8	221	32.01	7.14	1428	clear
10:00	34.5	41.5	42.5	31.91	7.13	1432	clear., 192 ml/min. will hold at this pumping rate
10:07	34.7	42.7	41.7	31.66	7.18	1422	clear
10:20	35	43	119	31.07	7.1	1405	clear. 384 ml/min
10:25	dry well, pump off						
10:35	surged well and pumped dry. Cleared after 1 minute pumping. Development complete						

Notes

CH2MHILL

PROJECT NUMBER	WELL NUMBER	
180357.FI.ZZ	NDAIMW02	SHEET 1 OF 1

WELL DEVELOPMENT LOG

PROJECT : **RI/FS Investigation, West Vieques, NASD** LOCATION **AOC I**

DEVELOPMENT CONTRACTOR : **CH2MHILL**

DEVELOPMENT METHOD AND EQUIPMENT USED : **12-v Whale pump with vinyl tubing**

START WATER LEVELS (BTOC): **31.50'** START : **8/23/2004** END : **8/23/2004** LOGGER : **Isaac Lynch, Mike Weatherby**

TOTAL DEPTH (BTOC): **44.90'**

MAXIMUM DRAWDOWN DURING PUMPING: **1.2 feet**

RANGE AND AVERAGE DISCHARGE RATE: **see remarks**

TOTAL QUANTITY OF WATER DISCHARGED: **110 gallons**

DISPOSITION OF DISCHARGE WATER: **55-gallon drums**

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (µmhos/cm)	Remarks (color, odor, sheen, sediment, etc.)
9:55	12 v Whale pump turned on at 1100 ml/min = 0.289 gpm. Gray silty water						
10:05	Pump off to fix tubing						
10:25	Pump back on at 2600 ml/min = 0.69 gpm. Gray silty water						
10:40	12	31.2					
10:50	Pump off						
10:55	Pump on	32.05					
11:20	30	32.7	20	30.03	6.68	1123	slightly silty gray
11:50	45		10	29.91	6.82	1148	slight turbidity. Transparent to clear
12:00	surged well						
12:30	63	32.28	<5	29.93	6.67	1148	clear, petroleum odor
12:32	surged well						
13:00	surged well						
13:30	110	32.2	6.62	29	6.71	1167	clear, slight petroleum odor
13:35	Shut pump off. Development complete						

Notes

CH2MHILL

PROJECT NUMBER	WELL NUMBER	
180357.FI.ZZ	NDAIMW03	SHEET 1 OF 1

WELL DEVELOPMENT LOG

PROJECT : **RI/FS Investigation, West Vieques, NASD** LOCATION **AOC I**

DEVELOPMENT CONTRACTOR : **CH2M HILL**

DEVELOPMENT METHOD AND EQUIPMENT USED : **Centrifugal pumps and surge block**

START WATER LEVELS (BTOC): **29.6'** START : **8/26/2004** END : **8/27/2004** LOGGER : **John Swenfurth/ Mike Weatherby**

TOTAL DEPTH (BTOC): **36.6'**

MAXIMUM DRAWDOWN DURING PUMPING: **4.1 feet**

RANGE AND AVERAGE DISCHARGE RATE: **~0.5 gpm**

TOTAL QUANTITY OF WATER DISCHARGED: **55 gallons**

DISPOSITION OF DISCHARGE WATER: **55-gallon metal drums**

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (µmhos/cm)	Remarks (color, odor, sheen, sediment, etc.)
08/26/2004							
17:30	0.5						well went dry several times. Shut off pump
8/27/2004							
8:15	start purging						
9:45	13	NA	High	30.26	7.67	1073	very turbid, flow rate at 1 gpm steady
10:30	stop pump. Surged 20 gallons pumped. Surged well with surge block						
10:45	Grundfos pump on 2000 ml/min = 0.526 gpm						very silty gray water. Slight odor
11:18	40	33.5	620	30.4	7.28	1076	opaque, clearing up. Slight odor
11:30	47	33.5	57	30.4	7.26	1089	clear, slight odor
11:45	51	33.7	32	30.8	7.25	1103	clear, slight odor
12:00	55	33.8	19	30.7	7.25	1104	clear, slight odor
12:00	Pump off. Development complete						

Notes

CH2MHILL	PROJECT NUMBER 180357.FI.ZZ	WELL NUMBER NDAIMW04	SHEET 1 OF 1

WELL DEVELOPMENT LOG

PROJECT : **RI/FS Investigation, West Vieques, NASD** LOCATI **AOC I**

DEVELOPMENT CONTRACTOR : **CH2MHILL**

DEVELOPMENT METHOD AND EQUIPMENT USED : **12-v Whale pump with vinyl tubing**

START WATER LEVELS (BTOC): **32.78'** START : **8/23/2004** END : **8/23/2004** LOGGER **Isaac Lynch, Mike Weatherby**

TOTAL DEPTH (BTOC): **42.10'**

MAXIMUM DRAWDOWN DURING PUMPING: **1.6 feet**

RANGE AND AVERAGE DISCHARGE RATE: **see remarks**

TOTAL QUANTITY OF WATER DISCHARGED: **270 gallons**

DISPOSITION OF DISCHARGE WATER: **55-gallon drums**

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (µmhos/cm)	Remarks (color, odor, sheen, sediment, etc.)
11:07	12 v Whale pump turned on. Very gray silty water, no odor						
11:45	12	32.8	20	30.03	6.65	1267	very slight gray silt, transparent to clear
11:50	surged well						petroleum odor
12:30	40	32.95	10	29.73	6.71	1263	clear to slight turbidity. Strong petroleum odor
12:37	surged well						strong petroleum odor
13:00	surged well						strong petroleum odor
13:25	surged well						strong petroleum odor
13:30	86	32.9	37	29.77	6.68	1272	strong petroleum odor
15;30	140	33.01	10	29.7	6.67	1265	clear. Strong petroleum odor
15:35	surged well with pump - pump off. Bottom of well						
16:08	165	32.9	32	29.36	6.69	1266	light gray, still clearing up
16:10	170	pump off. Surged with surge block					clear before surging
17:00	switched to GRUNDFOS pump Q=2 gpm						
17:25	202	34.04	32	30.37	6.73	1271	slightly silty
17:40	215	34.2	47	30.24	7.08	1275	slightly silty
18:00	255	34.35	2.7	30.28	6.83	1271	clear, petroleum odor
18:15	270	34.38	2.21	30.22	6.9	1269	clear, petroleum odor
	Development Complete						

Notes

CH2MHILL	PROJECT NUMBER 180357.FI.ZZ	WELL NUMBER NDAIMW05	SHEET 1 OF 1

WELL DEVELOPMENT LOG

PROJECT : **RI/FS Investigation, West Vieques, NASD** LOCATION **AOC I**

DEVELOPMENT CONTRACTOR : **CH2M HILL**

DEVELOPMENT METHOD AND EQUIPMENT USED : **12-v Whale pump with vinyl tubing**

START WATER LEVEL (BTOC): **31.79'** START : **8/25/2004** END : **8/26/2004** LOGGER : **John Swenfurth**

TOTAL DEPTH (BTOC): **44.6'**

MAXIMUM DRAWDOWN DURING PUMPING: **11.61 feet**

RANGE AND AVERAGE DISCHARGE RATE: **see remarks**

TOTAL QUANTITY OF WATER DISCHARGED: **165 gallons**

DISPOSITION OF DISCHARGE WATER: **55-gallon drum**

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (µmhos/cm)	Remarks (color, odor, sheen, sediment, etc.)
18:00	22	38.95	NA	30.87	7.02	1616	very turbid, brown
18:02	pump off. Stopped for the day						
8/26/004							
8:30	started pump						
8:55	32	38	NA	29.99	7.62	1587	turbid, light brown
9:05	40	38.02	114	29.68	7.1	1563	cloudy
9:30	55	39	137	30.1	7.03	1550	cloudy
9:45	60	40.9	224	29.91	7.02	1554	cloudy
10:45	81	43.4	225	30.01	7.42	813	cloudy
11:00	87		206				
11:25	95	40.6	16.8	30.07	7.1	811	clear
12:00	110		3.77				fuel odor in water
14:35	pump on						
15:00	125	37.7	22.4	30.08	7.37	1585	clear, high petroleum odor
16:05	150	37.6	15.9	29.7	7.27	1563	clear, high petroleum odor
16:15	165	39	20.4	29.57	7.08	1560	clear, high petroleum odor
	shut off pump. Development complete						

Notes

CH2MHILL

PROJECT NUMBER	WELL NUMBER	
180357.FI.ZZ	NDAIMW06	SHEET 1 OF 1

WELL DEVELOPMENT LOG

PROJECT : **RI/FS Investigation, West Vieques, NASD** LOCATION : **AOC I**

DEVELOPMENT CONTRACTOR : **CH2M HILL**

DEVELOPMENT METHOD AND EQUIPMENT USED : **Centrifugal pumps and surge block**

START WATER LEVELS (BTOC): **33.2'** START : **8/28/2004** END : **9/1/2004** LOGGER : **Isaac Lynch**

TOTAL DEPTH (BTOC): **45.00'**

MAXIMUM DRAWDOWN DURING PUMPING: **10.3'**

RANGE AND AVERAGE DISCHARGE RATE: **approx. 500 ml/min**

TOTAL QUANTITY OF WATER DISCHARGED: **110 gallons**

DISPOSITION OF DISCHARGE WATER: **55-gallon drums**

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (µmhos/cm)	Remarks (color, odor, sheen, sediment, etc.)
8/28/2004							
9:00	Grundfos pump on at 750 ml/min						very silty, tan water
9:30	Flow down to 500 ml/min = 0.13 gpm						still very silty
9:45	6	-	-	-	-	-	still very silty
11:00	16	39.4	>1000	30.1	6.83	2200	opaque, minor silt
13:00	30	39.7	>1000	28.2	6.94	2150	opaque, minor silt
15:00	40	39.9	>1000	28.3	6.99	2002	shut pump down. Allow well to recover. Clearing up
15:30	pump back on at 500 ml/min = 0.13 gpm						
16:30	47	38.9	>1000	28.4	7.05	1975	
17:30	54	39.9	802	28.4	7.04	1995	Pump off for the day
8/29/2004							
9:30	Grundfos pump on at 500 ml/min, well still drawing down						
10:35	59	43.5	51.1	28.9	7.34	2300	clear, no odor.
	Shut pump down to allow recovery. Cannot set pump at well recovery rate. Recovery rate is <500 ml/min today						
11:00	Pump on	35.68					
11:10	60	40.1	78.5	30.2	7.4	2315	clear, no odor
16:20		41.2	63.5	30.9	7.31	2300	clear, no odor
16:30	Grundfos pump off. Will switch to bladder pump						
16:45		35.9					Set bladder pump at 250 ml/min. Will let run overnight
8/30/2004							
9:00	Pump running at low flow						
9:05	65	41.52	43.4	29.2	7.55	2340	clear. Salinity 0.89 ppt
14:00	75	42.1	19.2	30.1	7.38	2345	clear. Salinity 0.89 ppt
17:30	85	43.05	7.41	30.2	7.42	2331	clear. Salinity 0.91 ppt
	Battery dying. Shut off pump						
8/31/2004	Start bladder at 200 ml/min						
11:00	86	33.5	8.35	30.05	7.4	2291	clear, no odor
9/1/2004							
9:00	110	41.5	2.31	30.01	7.43	2260	clear, no odor
9:10	bladder pump off. Battery dying down						

Notes

Pumped a total of 110 gallons from this well in 62.5 hours. The parameters of the water being discharged are stable and reflect the local groundwater parameters. The parameters are much higher than those parameters of the water used for drilling:

Drilling water parameters:

Ph 8.01

COND 171

salinity 0.09

temp 31.25

CH2MHILL	PROJECT NUMBER 180357.FI.ZZ	WELL NUMBER NDAIMW07	SHEET 1 OF 1

WELL DEVELOPMENT LOG

PROJECT : **RI/FS Investigation, West Vieques, NASD** LOCATION : **AOC I**

DEVELOPMENT CONTRACTOR : **CH2M HILL**

DEVELOPMENT METHOD AND EQUIPMENT USED : **Centrifugal pumps and surge block**

START WATER LEVELS (BTOC): **31.86'** START : **9/10/2004** END : **9/10/2004** LOGGER : **John Swenfurth**

TOTAL DEPTH (BTOC): **45.43'**

MAXIMUM DRAWDOWN DURING PUMPING: **Well went dry.**

RANGE AND AVERAGE DISCHARGE RATE: **see remarks**

TOTAL QUANTITY OF WATER DISCHARGED: **24 gallons**

DISPOSITION OF DISCHARGE WATER: **55 gallon drums**

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (µmhos/cm)	Remarks (color, odor, sheen, sediment, etc.)
10:50	start pump						
10:57	10	dry. Pump off					cloudy, slight odor
11:15	Let recover to 38 ' BTOC. Surged with pump						
11:20	Pump on						gray
11:22	well went dry. Pump off						
11:40	Pump on at slower rate						1152 ml/min
11:45	dry, pump off						cloudy
11:50	pump on						320 ml/min Slight odor
12:15	-	-	-	-	-	-	240 ml/ min. Holds WL
12:20		42	85.4	34.53	7.41	1458	
12:30	pump off, let well recharge						
13:10	13	35.5					
13:30	dry, pump off						261 ml/min
13:37	14	40.5					
14:00	15	40	367	33.33	7.27	1439	
14:05	dry, pump off	Surged then removed water column					Cloudy
14:15	pump on						
14:25	dry, pump off						
14:37	16	38	surged well				gray
14:42	dry, pump off						
14:52	18	43	-	31.13	7.02	1371	gray
15:00	dry, pump off						
15:15	19	37.7	747	30.86	7.1	1363	cloudy
15:28	dry, pump off						
15:45	pump on						
16:00	20	pump off, dry					
16:15	pump on	39	>1000	30.46	7.46	1351	cloudy
16:17	dry, pump off						
16:20	21	43	287	31.28	7.32	1365	338 ml/min
16:35	21	43	55.2	30.97	7.2	1364	holding at this flow rate. Clearing
16:42			93.6				
16:50	23		35.7				
16:55	24		17.7				
17:00	Pump off. Development complete						

Notes

CH2MHILL

PROJECT NUMBER	WELL NUMBER
180357.FI.FK.AI	MW-8

WELL DEVELOPMENT LOG

PROJECT : NAVFAC - Atlantic (Vieques) LOCATION : AOC - I Date: 12/6/05

DEVELOPMENT CONTRACTOR : CH2M HILL

DEVELOPMENT METHOD AND EQUIPMENT USED : Mega monsoon pump, YSI, Herin WLI/2 stage whale pump.

START WATER LEVELS : 18.42' BTOC START : 1530 12/6/05 END : 0837 12/16/05 LOGGER : C. Hayslip & C. Houck

MAXIMUM DRAWDOWN DURING PUMPING: 41.03' BTOC

RANGE AND AVERAGE DISCHARGE RATE: 250 mL/min

TOTAL QUANTITY OF WATER DISCHARGED: 268 gallons

DISPOSITION OF DISCHARGE WATER: 55 gallon drums TD = 43.95'

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (µmhos/cm)	Remarks (Color, odor, sheen,etc.)
1530	0	18.42	999	30.2	7.17	1035	Milky, 15 gal removed
12/7/2005 1436	0	18.4	High	29.89	7	1081	Milky grey, TD = 43.95
1511	Pump off 8.1	Stable 37.28	Lower	30.5	7.01	1240	Milky grey, Q=0.13 gpm
12/8/2005 1000	Pump on 22.5	-	High	29.9	7.15	1320	Milky grey
1715	Pump off 62	41.03	High	30.43	7.02	1422	Cloudy grey
12/9/2005 728	Pump on	(Initial) 18.48	High	-	-	-	Milky grey
1520	Pump off 110 total	34.7	Very clear	31.03	6.93	1504	Clear, colorless
12/15/2005 1630	250 total	-	Very clear	30.64	6.8	1557	Very clear, colorless
1634	250	-	Very clear	30.56	6.77	1556	Very clear, colorless
12/16/2005 0732	250	22.71	32.8	29.56	6.96	1549	Colorless DTW:18.73' BTOC
0736	250	23.04	31.6	29.74	6.96	1554	Clear, colorless
0745	252	22.88	16.8	29.9	6.95	1558	Clear,colorless,flow=250m L/min
0758	255	22.88	9.58	29.94	6.94	1558	Clear, colorless
0806	257	23.02	6.66	30.03	6.94	1560	Clear, colorless
0814	260	22.86	5.34	30.52	6.93	1573	Clear, colorless
0823	265	22.88	5.27	30.35	6.93	1571	Clear, colorless
0837	268	23.48	4.86	30.16	6.93	1566	Clear, colorless

Notes: Well will be pumped over several days in order to remove the same amount of water that could of possible entered aquifer during well installation

12/6/05 1540 - Well went dry, reduced flow rate to 225 mL/min with pump setting at 12.4 volts and well still would not keep up with flow.
1605 - Well went dry 40.5' BTOC
1605 - Well went dry 40.5' BTOC
1635 - Check well level 39.05' BTOC end pumping for the day.

CH2MHILL

PROJECT NUMBER	WELL NUMBER
180357.FI.FK.AI	MW-9

WELL DEVELOPMENT LOG

PROJECT : NAVFAC - Atlantic (Vieques) LOCATION : AOC - I Date: 12/7/05

DEVELOPMENT CONTRACTOR : CH2M HILL

DEVELOPMENT METHOD AND EQUIPMENT USED : Mega monsoon pump, YSI, Herin WLI/2 stage whale pump.

START WATER LEVELS : 17.81' BTOC START : 1531 12/7/05 END : 1530 12/9/05 LOGGER : C. Hayslip & C. Houck

MAXIMUM DRAWDOWN DURING PUMPING: 27.18' BTOC

RANGE AND AVERAGE DISCHARGE RATE: 150 mL/min

TOTAL QUANTITY OF WATER DISCHARGED: ~400 gallons

DISPOSITION OF DISCHARGE WATER: 55 gallon drums

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (µmhos/cm)	Remarks (Color, odor, sheen,etc.)
12/7/2005 1531	0	17.81	High	29.26	7.1	1455	Cloudy gray, TD= 48.05
1605	Pump off 15	stable 27.18	Low	29.8	8.71	1600	Clear, colorless, Q = 0.5
12/8/2005 940	Pump on 15	17.86	Low	29.05	6.83	1622	Clear
1705	Pump off 205	23.95	Low	29.34	6.74	1530	Clear, Q = 0.36 gpm
12/9/2005 728	Pump on -	(Initial) 17.87	Low	-	-	-	Clear
1530	Pump off 400 total	21.13	Very low	29.8	6.87	1623	Clear, colorless

Notes: Well will be pumped over several days in order to remove the same amount of water that could of possible entered aquifer during well installation.

Additional well development done on 12/13/07 shown on following sheet.

CH2MHILL

PROJECT NUMBER	WELL NUMBER
180357.FI.FK.AI	MW-9

WELL DEVELOPMENT LOG

PROJECT : NAVFAC - Atlantic (Vieques) LOCATION : AOC - I Date: 12/13/05

DEVELOPMENT CONTRACTOR : CH2M HILL

DEVELOPMENT METHOD AND EQUIPMENT USED : Mega monsoon pump, YSI, Herin WLI/2 stage whale pump.

START WATER LEVELS : 17.81' BTOC START : 1115 END : 1240 LOGGER : C. Hayslip & C. Houck

MAXIMUM DRAWDOWN DURING PUMPING: 23.92' BTOC

RANGE AND AVERAGE DISCHARGE RATE: 150 mL/min

TOTAL QUANTITY OF WATER DISCHARGED: ~450 gallons

DISPOSITION OF DISCHARGE WATER: 55 gallon drums

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (µmhos/cm)	Remarks (Color, odor, sheen,etc.)
1115	-	20.95	0	29.3	6.76	1734	
1120	-	22.88	0	29.38	6.74	1738	
1125	-	22.91	0	29.39	6.73	1738	
1130	-	22.95	0	29.38	6.73	1734	
1135	-	22.86	1.05	29.38	6.72	1737	
1140	-	22.87	0	29.37	6.72	1736	
1145	-	22.98	0	29.37	6.72	1738	
1150	-	23.01	0	29.37	6.71	1735	
1155	-	23.05	0	29.36	6.71	1736	
1200	-	23.92	0	29.37	6.7	1736	
1205	-	21.15	0.01	29.38	6.71	1736	
1210	-	22.45	0	29.36	6.71	1720	
1215	-	22.47	0	29.37	6.69	1740	
1220	-	22.5	0	29.42	6.69	1737	
1230	-	22.56	0	29.43	6.69	1739	
1240	-	22.81	0	29.57	6.68	1738	
	Final ~50 Gallons purged						

Notes: Pumped a total of ~450 gallons of water out of MW-9 to ensure that all water that was used while installing the well was removed.

Appendix F
Groundwater Sampling Data Sheets

GROUNDWATER SAMPLING DATA SHEET

CH2M HILL, INC.

Project Number: 180357.FI.ZZ

Client: US Navy
Location: AOC I
Event: Round 1 groundwater sampling
Date: 9/23/2004
Weather: hot, 90's, light wind

Well ID: NDAIMW01
Sample ID: NDAIGW01-R01
MS/MSD YES / NO
Sample Team: Isaac Lynch/John Swenfurth

Total Depth: 44.82 FT.(BTOC)
Depth to water: (-)17.75 FT.(BTOC)
Water Column: 27.07 FT.
(x).163 GAL/FT.
Well Volume: 4.41 GAL.
Total Purge Volume: 13.5 GAL.
Purge Device: Geopump bladder pump, teflon bladder, stainless steel fittings, teflon tubing
Sample Time 13:15
Sample Appearance clear, no odor

Measuring Device: Heron Dipper-T electronic water level indicator
Date and Time: 09/23/2004 1030
WELL DIAMETER
[(2" DIA.= .163 GAL/FT.) (4" DIA. = .653 GAL/FT.)]
(1" DIA.= .041 GAL/FT.) (1 1/4 " DIA.= .064 GAL/FT.)

FIELD PARAMETERS

Time	DTW (BTOC)	Purged Vol. (gals)	pH	Cond. µmhos/cm	Temp., °C	DO	ORP	Turbidity	Color / Odor / Comments
10:45	17.75	0	-	-	-	-	-	-	Pump on. Flow rate at 360 ml/min = 0.09 gpm
11:00	18.35	1.75	7.07	1070	29.7	2.01	409	143	clear, no odor
11:15	18.2	3	6.8	1020	29.7	3.1	449	60.1	clear, no odor
11:30	18.2	4	6.74	1016	29.7	3.12	450	49.5	clear, no odor
11:45	18.15	5.5	6.85	1015	29.7	3.3	451	20.2	clear, no odor
12:00	18.15	6.5	6.96	1015	29.7	3.28	450	10.9	clear, no odor
12:15	18.1	8.25	6.89	1009	29.7	3.18	469	8.4	clear, no odor
12:30	18.1	9.8	6.86	1008	29.7	3.19	481	7.5	clear, no odor. Average flow rate is 350 ml/min
12:45	18.1	10.5	6.85	1009	29.7	3.21	482	7.1	clear, no odor
13:00	18.15	12	6.84	1009	29.7	3.3	483	7.2	clear, no odor
13:15	18.15	13.5	6.83	1008	29.7	3.31	490	7.7	clear, no odor

Notes:
Flow at 250 ml/min for sample collection
Samples collected for SVOCs, VOCS, Pest, PCBs, TDS, metals, dissolved metals (filtered with 0.45µ inline filter)

16:00 Collected NDAIGWEB02-R01 equipment blank using bladder pump and DI water.
16:15 Collected NDAIGWAB01-R01 for CN only

Signed by: Isacc Lynch **Date and time:** 09/23/2004 1330

GROUNDWATER SAMPLING DATA SHEET

CH2M HILL, INC.

Project Number: 180357.FI.ZZ

Client: US Navy
Location: AOC I
Event: Round 1 groundwater sampling
Date: 9/21/2004
Weather: partly cloudy, hot, humid

Well ID: NDAIMW02
Sample ID: NDAIGW02-R01 and NDAIFD01P-R01
MS/MSD YES / NO
Sample Team: Isaac Lynch/John Swenfurth

Total Depth: 44.9 FT.(BTOC)
Depth to water: (-)17.23 FT.(BTOC)
Water Column: 27.67 FT.
(x).163 GAL/FT.
Well Volume: 4.5 GAL.
Total Purge Volume: 13.53 GAL.

Measuring Device: Heron Dipper-T electronic water level indicator
Date and Time: 09/21/2004 0850

WELL DIAMETER
[(2" DIA.= .163 GAL/FT.) (4" DIA. = .653 GAL/FT.)]
(1" DIA.= .041 GAL/FT.) (1 1/4 " DIA.= .064 GAL/FT.)

Purge Device: Geopump bladder pump, teflon bladder, stainless steel fittings, teflon tubing
Sample Time 12:00
Sample Appearance clear

FIELD PARAMETERS

Time	DTW (BTOC)	Purged Vol. (gals)	pH	Cond. µmhos/cm	Temp., °C	DO	ORP	Turbidity	Color / Odor / Comments
9:00	17.23	0							Start Pump; 400 ML/min = 0.105 gpm,
9:10	17.31	1.05	7	960	30.3	7.25	171	-	clear
9:50	17.29	5.4	7.23	982	30.2	5.73	185	45.2	H2S odor
10:20	17.3	5.5	7.27	1071	30.2	6.55	179	27.4	flow changed
10:30	17.43	6	7.23	1068	30.2	7.2	163.8	13.3	clear, H2S odor
10:48	17.33	7	7.26	1073	30.4	5.93	158	7.37	clear, H2S odor
11:20	6:57	8	7.3	1080	30.5	5.95	147	4.38	clear
11:40	6:57	9.2	7.22	1083	30.5	5.3	142	4.31	clear, 250 ml/min
12:00		11							sample time, Field Dup collected

Notes:
Pump set 2' above bottom of well
Samples collected for:
SVOC: 2, 1L
VOC: 3 vials
metals: 1 plastic
dissolved metals: 1 plastic. Field filtered with 0.45 microm in-line disposable filter
Pesticides: 1 1-L
PCB: 1 1-L
TDS: 1 plastic

CN added to sample parameters. Collected on 9/22/04 at 16:15 using teflon tubing and disposable bailer. Sample was crystal clear, no additional purging. CN field duplicate also collected. One bailer of groundwater removed prior to sampling

18:45 Equiment blank collected. HPLC water run through bladder pump into containers
19:00 ambient blank collected with HPLC water.

Signed by: Isacc Lynch **Date and time:** 09/21/2004 1300

GROUNDWATER SAMPLING DATA SHEET

CH2M HILL, INC.

Project Number: 180357.FI.ZZ

Client: US Navy
Location: AOC I
Event: Round 1 groundwater sampling
Date: 9/21/2004
Weather: partly cloudy, hot, humid

Well ID: NDAIMW03
Sample ID: NDAIGW03-R01 at 17:00
MS/MSD YES / NO
Sample Team: Isaac Lynch/John Swenfurth

Total Depth: 36.6 FT.(BTOC)
Depth to water: (-)17.48 FT.(BTOC)
Water Column: 19.12 FT.
(x).163 GAL/FT.
Well Volume: 3.12 GAL.
Total Purge Volume: 9.35 GAL.

Measuring Device: Heron Dipper-T electronic water level indicator
Date and Time: 09/21/2004 0920

WELL DIAMETER
[(2" DIA.= .163 GAL/FT.) (4" DIA. = .653 GAL/FT.)]
(1" DIA.= .041 GAL/FT.) (1 1/4 " DIA.= .064 GAL/FT.)

Purge Device: Geopump bladder pump, teflon bladder, stainless steel fittings, teflon tubing
Sample Time 1700
Sample Appearance opaque

FIELD PARAMETERS

Time	DTW (BTOC)	Purged Vol. (gals)	pH	Cond. µmhos/cm	Temp., °C	DO	ORP	Turbidity	Color / Odor / Comments
14:48	17.48	0	-	-	-	-	-	-	Pump Started; flow rate at 450 ML/min =0.118
15:00	17.75	1.4	8.03	959	30.8	2.25	129	>1000	slity gray, slight odor
15:20	17.8	3.75	7.73	1090	30.6	1.18	58.9	>1000	silty gray
15:40	17.81	5.25	7.68	1102	30.5	0.65	454	548	silty gray (light)
16:00	17.8	7	7.64	1103	30.5	0.55	455	263	clearing up, opague
16:10	17.8	7.9	7.63	1099	30.4	0.51	463	240	clearing up, opague
16:20	17.81	8.75	7.64	1098	30.4	0.47	459	155	clearing up, opague
16:30	17.81	9.1	7.65	1099	30.4	0.48	460	109	clearing up, opague
16:40	17.81	9.75	7.66	1100	30.4	0.46	459	98	clearing up, opague
16:45	17.81	10	7.66	1099	30.4	0.46	459	101	clearing up, opague
17:00	17.81		7.67	1100	30.4	0.46	460	99	clearing up, opague

Notes:
Pump set 2' above bottom of well
Samples collected for: total of 10 bottles
SVOC: 2, 1L
VOC: 3 vials
metals: 1 plastic
dissolved metals: 1 plastic. Field filtered with 0.45 microm in-line disposable filter
Pesticides: 1 1-L
PCB: 1 1-L
TDS: 1 plastic

CN added to sample parameters. Collected on 9/22/04 at 16:40 using teflon tubing and disposable bailer. Sample was crystal clear, no additional purging,

Signed by: Isacc Lynch **Date and time:** 09/21/2004 1700

GROUNDWATER SAMPLING DATA SHEET

CH2M HILL, INC.

Project Number: 180357.FI.ZZ

Client:	US Navy	Well ID:	NDAIMW04
Location:	AOC I	Sample ID:	NDAIGW04-R01
Event:	Round 1 groundwater sampling	MS/MSD	YES / NO
Date:	9/23/2004	Sample Team:	Isaac Lynch/John Swenfurth
Weather:	Hot, 90's, light wind		

Total Depth:	41.1 FT.(BTOC)	Measuring Device:	Heron Dipper-T electronic water level indicator
Depth to water:	(-)17.99 FT.(BTOC)	Date and Time:	09/23/2004 0800
Water Column:	24.11 FT.		WELL DIAMETER
	(x).163 GAL/FT.	[(2" DIA.= .163 GAL/FT.) (4" DIA. = .653 GAL/FT.)]	
Well Volume:	3.9 GAL.	(1" DIA.= .041 GAL/FT.) (1 1/4 " DIA.= .064 GAL/FT.)	
Total Purge Volume:	11.7 GAL.		
Purge Device:	Geopump bladder pump, teflon bladder, stainless steel fittings, teflon tubing		
Sample Time	0945		
Sample Appearance	clear, strong petroleum odor detected		

FIELD PARAMETERS

Time	DTW (BTOC)	Purged Vol. (gals)	pH	Cond. µmhos/cm	Temp., °C	DO	ORP	Turbidity	Color / Odor / Comments
8:15	17.99	0	-	-	-	-	-	-	Pump on at 500 ml/min = 0.13 gpm
8:25	18.2	1.5	7.03	1119	29.6	0.44	379	10	clear, strong petroleum odor
9:00	18.2	6	6.88	1124	29.8	0.28	387	8.22	clear, strong petroleum odor
9:10	18.2	8.5	6.82	1127	29.8	0.24	383	5.69	clear, strong petroleum odor
9:30	18.2	11	6.8	1130	29.8	0.22	377	6.25	clear, strong petroleum odor
9:45	18.2	13	6.8	1131	29.8	0.21	376	5.28	clear, strong petroleum odor. Flow rate at 250 ml/min

Notes:

Pump set at 39' btoc. Flow at 250 ml/min for sample collection

Samples collected for SVOCs, VOCS, Pest, PCBs, TDS, metals, dissolved metals (filtered with 0.45µ in-line filter)

Signed by: Isacc Lynch **Date and time:** 09/23/2004 1000

GROUNDWATER SAMPLING DATA SHEET

CH2M HILL, INC.

Project Number: 180357.FI.ZZ

Client: US Navy
Location: AOC I
Event: Round 1 groundwater sampling
Date: 9/22/2004
Weather: Hot, 90's, light wind

Well ID: NDAIMW05
Sample ID: NDAIGW05-R01
MS/MSD YES / NO
Sample Team: Isaac Lynch/John Swenfurth

Total Depth: 44.6 FT.(BTOC)
Depth to water: (-)18.51 FT.(BTOC)
Water Column: 26.09 FT.
(x).163 GAL/FT.
Well Volume: 4.25 GAL.
Total Purge Volume: 12.75 GAL.

Measuring Device: Heron Dipper-T electronic water level indicator
Date and Time: 09/22/2004 1415
WELL DIAMETER
[(2" DIA.= .163 GAL/FT.) (4" DIA. = .653 GAL/FT.)]
(1" DIA.= .041 GAL/FT.) (1 1/4 " DIA.= .064 GAL/FT.)

Purge Device: Geopump bladder pump, teflon bladder, stainless steel fittings, teflon tubing
Sample Time 1645
Sample Appearance clear, strong petroleum odor detected

FIELD PARAMETERS

Time	DTW (BTOC)	Purged Vol. (gals)	pH	Cond. µmhos/cm	Temp., °C	DO	ORP	Turbidity	Color / Odor / Comments
14:25	18.51	0	-	-	-	-	-	-	Bladder pump on at 425 ml/min = 0.111 gpm
14:40	-	-	7.21	1305	30.08	0.97	369	>1000	
14:45	-	-	-	-	-	-	-	-	Bladder pump came apart. Pulled pump and fished for parts. Reset pump
15:00	18.51	0	-	-	-	-	-	-	Pump back on at 425 ml/min
15:15	18.8	2.5	6.93	1273	30.4	2.69	374	205	clearing up, slight odor
15:30	18.82	3.5	6.93	1274	30.2	2.48	374	52.9	clearing up, slight odor
15:45	18.8	6	6.91	1265	30.23	0.93	371	21.2	clear
16:00	18.81	7.5	6.93	1264	30.1	0.67	368	13.9	clear
16:15	18.82	10.5	6.95	1260	30.1	0.44	369	8.41	clear
16:30	18.83	12	6.97	1259	30.1	0.43	367	8.51	clear
16:45	18.83	12.75	6.98	1257	30.1	0.42	366	8.79	clear, strong petroleum odor

Notes:
Pump set at middle of screen at 41' btoc. Flow at <250 ml/min for sample collection
Samples collected for SVOCs, VOCS, Pest, PCBs, TDS, metals, dissolved metals (filtered with 0.45µ inline filter)

MS/MSD collected

CN added to sample parameters. Collected on 9/22/04 at 1650 using teflon tubing and disposable bailer. Sample was crystal clear, no additional purging

Signed by: Isacc Lynch **Date and time:** 09/22/2004 1645

GROUNDWATER SAMPLING DATA SHEET

CH2M HILL, INC.

Project Number: 180357.FI.ZZ

Client: US Navy
Location: AOC I
Event: Round 1 groundwater sampling
Date: 9/22/2004
Weather: hot, 90's, light wind

Well ID: NDAIMW06
Sample ID: NDAIGW06-R01
MS/MSD YES / NO
Sample Team: Isaac Lynch/John Swenfurth

Total Depth: 45.00 FT.(BTOC)
Depth to water: (-)25.04 FT.(BTOC)
Water Column: 19.96 FT.
(x).163 GAL/FT.
Well Volume: 3.25 GAL.
Total Purge Volume: 9.76 GAL.

Measuring Device: Heron Dipper-T electronic water level indicator
Date and Time: 09/24/2004 0920
WELL DIAMETER
[(2" DIA.= .163 GAL/FT.) (4" DIA. = .653 GAL/FT.)]
(1" DIA.= .041 GAL/FT.) (1 1/4 " DIA.= .064 GAL/FT.)

Purge Device: Geopump bladder pump, teflon bladder, stainless steel fittings, teflon tubing
Sample Time 1335
Sample Appearance clear

FIELD PARAMETERS

Time	DTW (BTOC)	Purged Vol. (gals)	pH	Cond. µmhos/cm	Temp., °C	DO	ORP	Turbidity	Color / Odor / Comments
9:20	25.04	0	-	-	-	-	-	-	Problems with pump. Had to change control box.
10:20	25.75	0	-	-	-	-	-	-	Pump Started. At 400 ML/min =0.105 gpm
10:35	29.95	1	7.45	1900	30.7	4.62	344	>1000	white, silty, flow down to 300 ml/min
10:50	31.25	2	7.54	1886	30.6	4.34	388	326	white, silty, no odor
11:10	31.4	3.25	7.6	1871	30.6	3.65	371	316	white, silty, no odor
11:30	33.5	5	7.59	1863	30.6	3.01	374	319	clearing up
11:50	33.6	6.1	7.55	1859	30.4	2.39	378	400	clearing up
12:00	33.65	7.2	7.54	1857	30.4	2.37	379	515	clearing up
12:15	33.5	8.5	7.53	1852	30.5	1.91	385	252	clearing up
12:30	33.51	9.5	7.51	1851	30.5	1.8	386	230	clearing up
12:45	33.45	10.1	7.49	1849	30.5	1.67	392	222	clearing up
13:00	33.45	11	7.41	1851	30.5	1.33	400	109	clear
13:10	33.5	11.8	7.46	1852	30.5	1.31	402	45.6	clear
13:20	33.5	12.5	7.47	1852	30.5	1.3	400	46.9	clear
13:30	33.52	12.75	7.46	1852	30.5	1.22	401	33.5	clear
13:35	33.51	13	7.47	1853	30.5	1.21	401	29.9	clear

Notes:
Pump set 41' btoc. Flow at <250 ml/min for sample collection
Samples collected for SVOCs, VOCS, Pest, PCBs, TDS, metals, dissolved metals (filtered with 0.45µ inline filter)

CN added to sample parameters. Collected on 9/22/04 at 16:50 using teflon tubing and disposable bailer. Sample was crystal clear, no additional purging

Signed by: Isacc Lynch **Date and time:** 09/22/04 1340

GROUNDWATER SAMPLING DATA SHEET

CH2M HILL, INC.

Project Number: 180357.FI.ZZ

Client:	US Navy	Well ID:	NDAIMW07
Location:	AOC I	Sample ID:	NDAIGW07-R01
Event:	Round 1 groundwater sampling	MS/MSD	YES / NO
Date:	9/24/2004	Sample Team:	Isaac Lynch/John Swenfurth
Weather:	hot, 90's, light wind		

Total Depth:	45.43 FT.(BTOC)	Measuring Device:	Heron Dipper-T electronic water level indicator
Depth to water:	(-)18.24 FT.(BTOC)	Date and Time:	09/24/2004 0850
Water Column:	27.19 FT.		WELL DIAMETER
	(x).163 GAL/FT.		[(2" DIA.= .163 GAL/FT.) (4" DIA. = .653 GAL/FT.)]
Well Volume:	4.4 GAL.		(1" DIA.= .041 GAL/FT.) (1 1/4 " DIA.= .064 GAL/FT.)
Total Purge Volume:	13.2 GAL.		
Purge Device:	Geopump bladder pump, teflon bladder, stainless steel fittings, teflon tubing		
Sample Time	1130		
Sample Appearance	clear		

FIELD PARAMETERS

Time	DTW (BTOC)	Purged Vol. (gals)	pH	Cond. µmhos/cm	Temp., °C	DO	ORP	Turbidity	Color / Odor / Comments
9:00	18.24	0	-	-	-	-	-	-	Pump Started. Flow rate at 400 ML/min =0.105 gpr
9:15	20.1	1	6.7	1223	29.9	0.62	395	22.5	clear
9:30	20.1	3	6.7	1222	29.9	0.58	399	19.7	clear, slight odor
9:45	20.1	3.5	6.64	1217	29.95	0.57	412	6.13	clear, slight odor
10:00	20.1	5	6.62	1176	29.9	0.47	411	5.5	avg flow is 300 ml/min; clear
10:15	20.2	6.5	6.64	1171	29.9	0.39	417	3.12	clear, slight odor
10:30	20.3	8	6.51	1164	29.9	0.38	460	3.1	clear, slight odor
10:45	20.3	9.5	6.41	1163	29.9	0.37	461	2.91	clear, slight odor
11:00	20.4	10.5	6.31	1161	30.1	0.36	479	3.51	clear, slight odor
11:15	20.45	12	6.28	1160	30.1	0.36	481	3	clear, slight odor
11:30	20.45	13.5	6.26	1159	30.1	0.36	494	2.95	clear, slight odor

Notes:

Pump set 41.5' btoc. Flow reduced to 250 ml/min during sampling

Samples collected for SVOCs, VOCS, Pest, PCBs, TDS, metals, dissolved metals (filtered with 0.45µ inline filter)

Signed by: Isacc Lynch **Date and time:** 09/24/2004 1145

GROUNDWATER SAMPLING DATA SHEET

CH2M HILL, INC.

Project Number: 180357.FI.FK.AI

Client:	NAVFAC -Atlantic	Well ID:	NDAIMW01
Location:	Vieques - AOC I	Sample ID:	WAI-GW01-06A / WAI-GW01P-06A
Event:		MS/MSD:	YES
Date:	1/10/06	Sample Team:	C. Hayslip
Weather:	Clear, sunny, windy		J. Scott
	80 F		
Total Depth:	44.8 FT.(BTOC)	Measuring Device:	Heron WLI
Depth to water:	(-) 17.57 FT.(BTOC)	Date and Time:	1/10/06 0810
Water Column:	27.23 FT.	WELL DIAMETER	
	(x) 0.163 GAL/FT.	[(2" DIA.= .163 GAL/FT.) (4" DIA. = .653 GAL/FT.)]	
Well Volume:	4.4 GAL.	(1" DIA.= .041 GAL/FT.) (1 1/4 " DIA.= .064 GAL/FT.)	
Total Purge Volume:	~10.0 GAL.		
Purge Device:	Proactive SS Monsoon pump with 3/8" teflon tubing.		
Sample Time:	1645 hrs		
Sample Appearance:	Clear		

FIELD PARAMETERS

Time	Purged Vol. (gals)	pH	Cond. µmhos/cm	Temp., °C	DO (%)	ORP mV	Turbidity NTUs	Salinity ppt	Color / Odor / Water Level
1558	0	7.26	1301	28.61	36.3	142.5	472	0.64	17.57
1603	2.00	7.09	1310	28.98	15.2	123.1	91.7	0.65	19.34
1608	3.25	6.95	1360	29.00	11.5	105.6	17.3	0.67	20.17
1613	4.75	6.92	1373	28.95	10.3	93.5	17.3	0.68	19.4
1618	6.00	6.90	1379	28.96	9.7	80.9	3.7	0.68	19.69
1623	6.75	6.90	1379	28.65	9.4	75.2	3.09	0.68	19.6
1628	8.00	6.90	1381	29.07	10.2	64.2	1.9	0.69	19.6
1633	9.00	6.89	1381	28.85	9.4	64.4	1.59	0.69	19.6
1638	10.00	6.89	1384	29.00	9.5	61.7	0.98	0.69	19.6
		Sample at 1645 hrs							
		MS/MSD sample							

Signed by: Chris Hayslip Date and Time 1/10/2006

GROUNDWATER SAMPLING DATA SHEET

CH2M HILL, INC.

Project Number: 180357.FI.FK.AI

Client:	NAVFAC -Atlantic	Well ID:	NDAIMW04
Location:	Vieques - AOC I	Sample ID:	WAI-GW04-06A
Event:		MS/MSD:	NO
Date:	1/10/06	Sample Team:	C. Hayslip
Weather:	Clear, sunny, windy		J. Scott
	84 F		
Total Depth:	42.18 FT.(BTOC)	Measuring Device:	Heron WLI
Depth to water:	(-) 17.53 FT.(BTOC)	Date and Time:	1/10/06 0808
Water Column:	24.65 FT.	WELL DIAMETER	
	(x) 0.163 GAL/FT.	[(2" DIA.= .163 GAL/FT.) (4" DIA. = .653 GAL/FT.)]	
Well Volume:	4.02 GAL.	(1" DIA.= .041 GAL/FT.) (1 1/4 " DIA.= .064 GAL/FT.)	
Total Purge Volume:	~15.5 GAL.		
Purge Device:	Proactive SS Monsoon pump with 3/8" teflon tubing.		
Sample Time	1450 hrs		
Sample Appearance	Clear		

FIELD PARAMETERS

Time	Purged Vol. (gals)	pH	Cond. µmhos/cm	Temp., °C	DO (%)	ORP mV	Turbidity NTUs	Salinity ppt	Color / Odor / Water Level	
1338	0	7.21	1346	29.6	124.8	-7.3	999	0.67	Hydrocarbon odor	
1343	0.5	6.83	1347	29.98	121	-36.6	999	0.66	Hydrocarbon odor	17.85
1348	2.0	6.77	1301	29.77	103.6	-32.9	355	0.64	Hydrocarbon odor	17.7
1353	4.0	6.77	1293	29.82	91.7	-36.4	85.3	0.64	Hydrocarbon odor	17.76
1358	5.0	6.77	1286	29.89	97.5	-38.3	61.1	0.64	Hydrocarbon odor	17.7
1403	5.3	6.77	1290	29.8	115.4	-36.9	45.6	0.64	Hydrocarbon odor	17.5
1408	5.8	6.84	1300	30.42	120.1	-22.8	44.3	0.64	Hydrocarbon odor	17.67
1413	8.5	6.76	1282	29.75	110.7	-36	12.2	0.63	Hydrocarbon odor	17.88
1418	10.0	6.76	1282	29.75	102.4	-38.5	10	0.63	Hydrocarbon odor	17.88
1423	10.5	6.75	1280	29.72	104.9	-39.1	8.15	0.63	Hydrocarbon odor	17.96
1428	13.5	6.75	1274	29.73	95.8	-42.1	6.72	0.63	Hydrocarbon odor	17.92
1433	15.0	6.76	1275	29.74	95.7	-41.3	6.91	0.63	Hydrocarbon odor	17.91
1438	15.5	6.81	1284	30.02	96.6	-41.1	7.53	0.63	Hydrocarbon odor	17.91
SAMPLE at 1450 hrs										

Notes:

Dissolved oxygen values were discredited during this sample because even though they were stabilized, they were still fairly high. Water samples did not effervesce here. Still a strong hydrocarbon smell at this site. Upon completion of sample, D.O. membrane was changed and meter recalibrated.

Signed by: Chris Hayslip Date and Time 1/10/2006

GROUNDWATER SAMPLING DATA SHEET

CH2M HILL, INC.

Project Number: 180357.FI.FK.AI

Client:	NAVFAC -Atlantic	Well ID:	NDAIMW06
Location:	Vieques - AOC I	Sample ID:	WAI-GW06-06A
Event:		MS/MSD:	NO
Date:	1/10/06	Sample Team:	Jennifer Meyers
Weather:	Sunny, 80 F, with light breeze and occassional showers.		Michael Zamboni
Total Depth:	45 FT.(BTOC)	Measuring Device:	Heron WLI
Depth to water:	(-) 20.65 FT.(BTOC)	Date and Time:	1/10/06 0800
Water Column:	24.35 FT.		
	(x) 0.163 GAL/FT.	[(2" DIA.= .163 GAL/FT.) (4" DIA. = .653 GAL/FT.)]	
Well Volume:	4.0 GAL.	(1" DIA.= .041 GAL/FT.) (1 1/4 " DIA.= .064 GAL/FT.)	
Total Purge Volume:	~14 GAL.		
Purge Device:	Proactive SS Monsoon pump with 3/8" teflon tubing.		
Sample Time	1041 hrs		
Sample Appearance	Clear		

WELL DIAMETER

FIELD PARAMETERS

Time	Purged Vol. (gals)	pH	Cond. µmhos/cm	Temp., °C	DO (%)	ORP mV	Turbidity NTUs	Salinity ppt	Color / Flow / Water Level	
0813	0	9.32	1276	29.36	25.2	69.8	235	0.55		23.75
0816	-	9.46	1271	29.44	22.0	54.9	167	0.58		24.25
0821	1.00	9.43	1290	29.67	20.2	41.8	91	0.59	Slightly gre	600 ml/m 24.55
0829	-	8.50	1465	29.92	20.2	66.4	50.6	0.67	Slightly gre	225 ml/m 25.7
0834	-	8.04	1567	29.94	20.7	79.0	43.4	0.71		25.78
0839	-	7.64	1726	29.97	28.4	85.8	38.7	0.74	Clearer	25.88
0845	-	7.41	1835	29.99	29.1	86.2	32.6	0.85		26.37
0850	-	7.35	1964	30.01	43.9	88.0	24.5	0.97		27.58
0855	-	7.29	2042	29.98	44.7	85.2	38.7	0.97		26.95
0900	-	7.26	2125	30.16	46.8	81.8	33.4	0.98		27.45
0905	5	7.21	2247	30.29	54.3	77.8	27.2	1.03		29.2
0917	-	7.19	2293	30.18	62.2	78.0	20.3	1.05		28.8
0920	-	7.17	2332	30.13	65.6	77.0	17.5	1.08		28.2
0925	-	7.14	2432	30.14	69.6	76.1	16.3	1.12		28.71
0930	-	7.13	2480	30.38	66.7	76.6	14.9	1.14		28.74
0935	-	7.12	2500	30.38	74.3	76.7	12.7	1.15	Clear, no odor	28.65
0940	-	7.11	2554	30.39	71.3	77.1	10.4	1.18	Clear, no odor	28.5
0945	-	7.11	2562	30.35	75.5	77.1	10.5	1.18	Clear, no odor	28.08
0950	9	7.10	2583	30.3	65.0	78.6	9.82	1.21	Clear, no odor	28.14

Signed by: J. Meyers Date and Time 1/10/2006

 Well ID: NDAIMW06

FIELD PARAMETERS									
Time	**Purged Vol. (gals)**	**pH**	**Cond. µmhos/cm**	**Temp., °C**	**DO (%)**	**ORP mV**	**Turbidity NTUs**	**Salinity ppt**	**Color / Flow / Water Level**
0955	-	7.09	2634	30.32	73.5	76.0	8.74	1.22	28.36
1000	-	7.09	2655	30.33	72.9	75.6	6.9	1.23	28.29
1005	-	7.08	2697	30.4	72.1	76.5	6.51	1.24	29.94
1015	-	7.07	2757	30.68	74.8	79.9	4.28	1.27	29.99
1020	-	7.05	2786	30.6	76.7	87.5	3.92	1.29	29.64
1030	-	7.05	2823	30.61	83.3	89.7	3.75	1.3	29.59
1035	-	7.04	2817	30.42	75.4	90.3	3.63	1.3	29.06
1040	14	7.04	2837	30.39	80.0	90.9	3.37	1.31	Clear 28.81
1041	**Collect sample**								

Notes:

GROUNDWATER SAMPLING DATA SHEET

CH2M HILL, INC.

Project Number: 180357.FI.FK.AI

Client:	NAVFAC -Atlantic	Well ID:	NDAIMW07
Location:	Vieques - AOC I	Sample ID:	WAI-GW07-06A
Event:		MS/MSD:	NO
Date:	1/10/06	Sample Team:	C. Hayslip
Weather:	Partly cloudy, windy, 80 F		J. Scott

Total Depth:	45.32 FT.(BTOC)	Measuring Device:	Heron WLI
Depth to water:	(-)17.73 FT.(BTOC)	Date and Time:	1/10/06 0803
Water Column:	27.59 FT.		WELL DIAMETER
	(x) 0.163 GAL/FT.	[(2" DIA.= .163 GAL/FT.) (4" DIA. = .653 GAL/FT.)]	
Well Volume:	4.50 GAL.	(1" DIA.= .041 GAL/FT.) (1 1/4 " DIA.= .064 GAL/FT.)	
Total Purge Volume:	~11.5 GAL.		
Purge Device:	Proactive SS Monsoon pump with 3/8" teflon tubing.		
Sample Time	1035 hrs		
Sample Appearance	Clear		

FIELD PARAMETERS

Time	Purged Vol. (gals)	pH	Cond. µmhos/cm	Temp., °C	DO (%)	ORP mV	Turbidity NTUs	Salinity ppt	Color / Odor / Water Level	
0846	0	6.87	1340	27.66	120.3	-42	-	0.68		
0854	1	6.82	1383	28.59	103.5	-102	225	0.69	Strong hydrocarbon oc	20.8
0859	1.75	6.80	1373	27.61	108.1	-106	47.1	0.68	Strong hydrocarbon oc	21.22
0904	2.5	6.80	1362	28.56	130.1	-102	18.3	0.68	Strong hydrocarbon oc	21.09
0909	3	6.79	1358	28.46	120.9	-94.1	18.1	0.67	Strong hydrocarbon oc	20.86
0914	3.5	6.77	1341	28.19	122.1	-86.8	17.1	0.66	Strong hydrocarbon oc	20.61
0919	4	6.75	1319	27.92	122.8	-82.8	11.4	0.65	Strong hydrocarbon oc	20.4
0924	4.5	6.76	1313	28.87	132.4	-77	20.4	0.65	Strong hydrocarbon oc	20.51
0929	5	6.76	1305	29.42	129.6	-74.6	10.9	0.65	Strong hydrocarbon oc	21.05
0934	5.5	6.75	1297	29.41	123.8	-72.2	5.97	0.64	Strong hydrocarbon oc	21.1
0939	6.25	6.75	1286	29.67	124.4	-68	12.4	0.63	Strong hydrocarbon oc	20.66
0944	7	6.75	1291	28.93	110.9	-67.6	27.1	0.64	Strong hydrocarbon oc	21.1
0949	7.25	6.75	1287	29.02	113.1	-65.3	11.4	0.64	Strong hydrocarbon oc	21.25
0954	8	6.73	1280	28.29	67.6	-65.1	21.7	0.63	Strong hydrocarbon oc	20.69
0959	8.5	6.74	1282	28.6	131.5	-63.6	10.4	0.64	Strong hydrocarbon oc	20.6
1004	9	6.74	1280	28.81	131	-62.6	6.21	0.63	Strong hydrocarbon oc	20.6
1009	9.5	6.74	1284	28.76	127.8	-62.7	10.3	0.63	Strong hydrocarbon oc	20.6
1014	10	6.74	1278	29.97	135.1	-57.6	6.98	0.63	Strong hydrocarbon oc	20.57
1019	10.5	6.75	1273	30.04	128	-62.5	4.33	0.63	Strong hydrocarbon oc	20.52

Signed by: Chris Hayslip Date and Time 1/10/2006

 Well ID: NDAIMW07

FIELD PARAMETERS										
Time	**Purged Vol. (gals)**	**pH**	**Cond. µmhos/cm**	**Temp., °C**	**DO (%)**	**ORP mV**	**Turbidity NTUs**	**Salinity ppt**	**Color / Odor / Comments**	
1024	11	6.74	1276	30	130.3	-61.7	4.83	0.63	Strong hydrocarbon oc	20.63
1029	11.5	6.73	1271	29.83	128	-59.5	4.61	0.63	Strong hydrocarbon oc	20.61
		SAMPLE at 1035 hrs								

Notes:

Sampling because samples were actively effervesing (bubbling). Hard time bottling VOA samples because after filling bottle, water in sample would bubble out air necessitating further filling.

Strong hydrocarbon smell throughout sampling.

GROUNDWATER SAMPLING DATA SHEET

CH2M HILL, INC.

Project Number: 180357.FI.FK.AI

Client:	NAVFAC -Atlantic	Well ID:	NDAIMW08
Location:	Vieques - AOC I	Sample ID:	WAI-GW08-06A
Event:		MS/MSD:	NO
Date:	1/10/06	Sample Team:	J. Meyers
Weather:	Sunny, 80F		M. Zamboni
	light breeze, occassional showers		
Total Depth:	46.77 FT.(BTOC)	Measuring Device:	Heron WLI
Depth to water:	(-) 19.68 FT.(BTOC)	Date and Time:	1/10/06 1420
Water Column:	27.09 FT.	WELL DIAMETER	
	(x) 0.163 GAL/FT.	[(2" DIA.= .163 GAL/FT.) (4" DIA. = .653 GAL/FT.)]	
Well Volume:	4.4 GAL.	(1" DIA.= .041 GAL/FT.) (1 1/4 " DIA.= .064 GAL/FT.)	
Total Purge Volume:	~7 GAL.		
Purge Device:	Proactive SS Monsoon pump with 3/8" teflon tubing.		
Sample Time	1645 hrs		
Sample Appearance	Clear		

FIELD PARAMETERS

Time	Purged Vol. (gals)	pH	Cond. µmhos/cm	Temp., °C	DO (%)	ORP mV	Turbidity NTUs	Salinity ppt	Color / Odor / Water Level	
1525	-	6.91	1561	29.86	57.1	216.9	> 1000	0.71	Milky	21.4
1530	1.00	6.92	1565	30.09	37.6	194.4	970	0.71	150 ml/min	21.96
1535	-	6.92	1569	30.32	28.3	193.2	412	0.71	200 ml/min	22.18
1540	-	6.92	1582	30.66	7.4	198.6	50.9	0.71	350 ml/min	23.61
1545	2.50	6.92	1573	30.47	7.7	198.8	65.3	0.71		23.7
1550	-	6.92	1573	30.48	5.8	199.2	41.8	0.71	300 ml/min	24.01
1555	-	6.92	1563	30.27	5.6	200.5	44.9	0.7		23.14
1600	-	6.92	1562	30.35	5.1	200.2	24.9	0.7	200 ml/min	23.11
1605	-	6.92	1557	30.29	4.9	200.1	21.4	0.7	Clear	22.88
1610	5	6.91	1555	30.25	4.7	200.2	18.1	0.7		22.77
1615	-	6.91	1557	30.37	4.2	200.8	10.5	0.7	300 ml/min	23.2
1620	-	6.91	1555	30.33	4.1	202.1	11.4	0.7	300 ml/min	23.12
1625	-	6.92	1554	30.4	4.1	203.2	9.49	0.7	250 ml/min	23.12
1630	-	6.91	1552	30.36	3.9	202.1	15.5	0.7		23.06
1635	7	6.91	1590	30.34	4.4	206.3	7.42	0.72	300 ml/min	23.55
1640	-	6.92	1586	30.31	4.6	203.2	7.92	0.71		23.36
1645	-	6.92	1587	30.37	4.4	201.6	7.36	0.71		23.55
	Collect Sample									

Signed by: J. Meyers Date and Time 1/10/2006

GROUNDWATER SAMPLING DATA SHEET

CH2M HILL, INC.

Project Number: 180357.FI.FK.AI

Client:	NAVFAC -Atlantic	Well ID:	NDAIMW09
Location:	Vieques - AOC I	Sample ID:	WAI-GW09-06A
Event:		MS/MSD:	NO
Date:	1/11/06	Sample Team:	J. Meyers
Weather:	Partly cloudy, breezy, humid, occassional showers, 80 F		M. Zamboni
Total Depth:	48.05 FT.(BTOC)	Measuring Device:	Heron WLI
Depth to water:	(-) 18.81 FT.(BTOC)	Date and Time:	1/11/06 0700
Water Column:	29.24 FT.	WELL DIAMETER	
	(x) 0.163 GAL/FT.	[(2" DIA.= .163 GAL/FT.) (4" DIA. = .653 GAL/FT.)]	
Well Volume:	4.8 GAL.	(1" DIA.= .041 GAL/FT.) (1 1/4 " DIA.= .064 GAL/FT.)	
Total Purge Volume:	~5.75 GAL.		
Purge Device:	Proactive SS Monsoon pump with 3/8" teflon tubing.		
Sample Time	0832 hrs		
Sample Appearance	Clear		

FIELD PARAMETERS

Time	Purged Vol. (gals)	pH	Cond. µmhos/cm	Temp., °C	DO (%)	ORP mV	Turbidity NTUs	Salinity ppt	Color / Odor / Water Level	
0735	0	6.84	1562	29.1	15.6	161.9	684	0.78	Milky brown /	21.35
0740	1.00	6.82	1555	28.61	17.2	152.3	443	0.77		20.1
0745	2.00	6.82	1558	28.59	17.1	147.7	170	0.77	Clearing 250 ml/min	19.72
0750	2.50	6.92	1553	28.73	16.9	140.7	32.8	0.78	Clear 250 ml/min	19.97
0755	3.00	6.82	1551	28.79	17	136.5	23.7	0.77	Clear 250 ml/min	19.86
0800	4.00	6.82	1552	28.77	17.1	132.9	16.1	0.77	Clear	19.78
0805	-	6.81	1550	28.74	17.5	131	10.3	0.77	Clear 250 ml/min	19.71
0810	4.50	6.81	1549	28.74	17	128.6	8.61	0.77	Clear 250 ml/min	19.71
0815	-	6.82	1547	28.96	17.1	125.3	10.1	0.77	Clear 250 ml/min	19.83
0820	-	6.81	1536	28.81	17.6	124.1	4.47	0.77	Clear 250 ml/min	19.65
0825	5.5	6.81	1542	28.83	18.1	123.6	4.41	0.77	Clear 250 ml/min	19.73
0830	5.75	6.81	1542	28.95	18.1	122.7	3.88	0.77	Clear 250 ml/min	19.76
0832	**Collect sample**									

Signed by: J. Meyers Date and Time 1/11/2006

Appendix G
In-Situ Permeability Test Data Sheets and Photographs

Definitions of Slug Test Calculation Symbols

Rw	well radius - radial distance from center of well to normal K of aquifer
Rc	casing radius - radius of the casing or other section of the well where the rise of the water level is measured. If the water level rises in the screened or open section of the well with a gravel pack around it, the thickness and porosity of the gravel envelope should be taken into account when calculating the equivalent value of Rc for the rising water level (Bouwer and Rice, 1976)
Confinement Depth	Bottom of the aquifer
Hsat	saturated thickness of the aquifer
Lw	water column in well
Le	screen length
C	dimensionless parameter as a function of Le/Rw (from Bouwer and Rice paper)
Y(o)	Y at t=0, on straight line drawn through points
Y(t)	Y at t=t, on straight line through points
t	time passed between Y(o) and Y(t), could be where straight line crosses x and y axes, must correspond with Y(o) and Y(t) data points

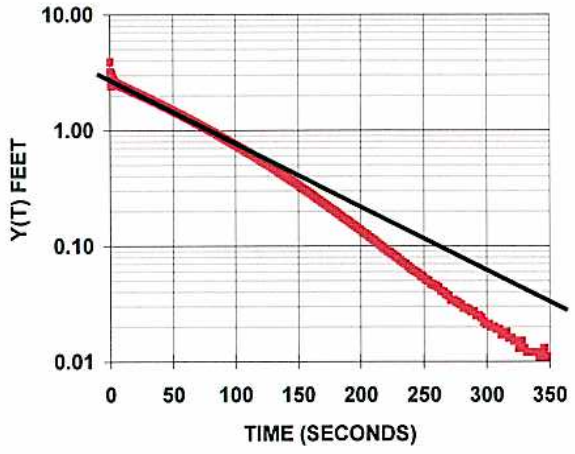
CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357.FI.ZZ
CLIENT: Navy Clean III
TEST DATE: September 23, 2004
WELL NO.: NDAI MW01
COMPILED BY: Pete Larkin/TPA
TEST METHOD: Slug In Test 1
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0.00	21.672	3.937	12.65	20.082	2.347	61.68	19.023	1.288
0.30	20.957	3.222	13.49	20.059	2.324	63.68	18.990	1.255
0.60	20.643	2.908	14.38	20.036	2.301	65.68	18.956	1.221
0.90	20.918	3.183	15.32	20.010	2.275	67.68	18.924	1.189
1.20	20.166	2.431	16.32	19.984	2.249	69.68	18.893	1.158
1.50	20.782	3.047	17.38	19.956	2.221	71.68	18.862	1.127
1.80	20.190	2.455	18.50	19.928	2.193	73.68	18.831	1.096
2.10	20.639	2.904	19.69	19.898	2.163	75.68	18.801	1.066
2.40	20.255	2.520	20.95	19.866	2.131	77.68	18.771	1.036
2.70	20.527	2.792	22.28	19.834	2.099	79.68	18.744	1.009
3.00	20.293	2.558	23.69	19.800	2.065	81.68	18.716	0.981
3.30	20.447	2.712	25.18	19.764	2.029	83.68	18.689	0.954
3.59	20.319	2.584	26.68	19.730	1.995	85.68	18.662	0.927
3.90	20.388	2.653	28.28	19.691	1.956	87.68	18.636	0.901
4.20	20.322	2.587	29.98	19.653	1.918	89.68	18.611	0.876
4.50	20.343	2.608	31.78	19.612	1.877	113.68	18.348	0.613
4.85	20.305	2.570	33.68	19.569	1.834	185.68	17.914	0.179
5.22	20.317	2.582	35.68	19.524	1.789	239.68	17.799	0.064
5.61	20.276	2.541	37.68	19.481	1.746	293.68	17.760	0.025
6.03	20.274	2.539	39.68	19.438	1.703	363.68	17.743	0.008
6.47	20.263	2.528	41.68	19.398	1.663	413.68	17.739	0.004
6.94	20.242	2.507	43.68	19.356	1.621	479.68	17.737	0.002
7.44	20.224	2.489	45.68	19.317	1.582	End Data		
7.97	20.211	2.476	47.68	19.277	1.542			
8.52	20.200	2.465	49.68	19.239	1.504			
9.12	20.183	2.448	51.68	19.201	1.466			
9.75	20.164	2.429	53.68	19.165	1.430			
10.41	20.145	2.410	55.68	19.128	1.393			
11.11	20.125	2.390	57.68	19.093	1.358			
11.86	20.102	2.367	59.68	19.056	1.321			

MW 01 SLUG IN TEST 1



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	44.82 ft
Depth to Water (Dtw)=	17.74 ft
Confinement Depth(Dtc)=	44.82 ft
Hsat (Dtc-Dtw)=	27.08 ft
Lw (Wd-Dtw)=	27.08 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.76
Yo=	2.7 ft
t=	100 sec
Y(t)=	0.8 ft
Hydraulic Cond. (K)=	**1.4 ft/day**

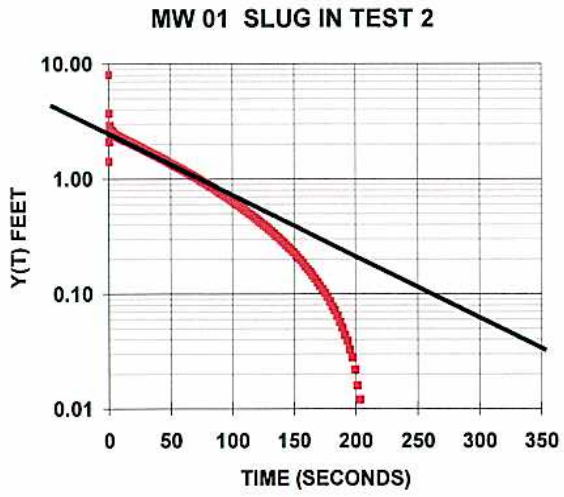
Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357.FI.ZZ
CLIENT: Navy Clean III
TEST DATE: September 23, 2004
WELL NO.: NDAI MW01
COMPILED BY: Pete Larkin/TPA
TEST METHOD: Slug In Test 2
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0.00	25.954	8.081	12.65	20.089	2.216	61.68	19.050	1.177
0.30	19.306	1.433	13.49	20.066	2.193	63.68	19.016	1.143
0.60	21.601	3.728	14.38	20.042	2.169	65.68	18.983	1.110
0.90	19.979	2.106	15.32	20.017	2.144	67.68	18.953	1.080
1.20	20.787	2.914	16.32	19.993	2.120	69.68	18.921	1.048
1.50	20.410	2.537	17.38	19.965	2.092	71.68	18.891	1.018
1.80	20.455	2.582	18.50	19.937	2.064	73.68	18.861	0.988
2.10	20.527	2.654	19.69	19.908	2.035	75.68	18.830	0.957
2.40	20.311	2.438	20.95	19.876	2.003	77.68	18.802	0.929
2.70	20.522	2.649	22.28	19.844	1.971	79.68	18.774	0.901
3.00	20.298	2.425	23.69	19.811	1.938	81.68	18.746	0.873
3.30	20.472	2.599	25.18	19.776	1.903	83.68	18.719	0.846
3.59	20.304	2.431	26.68	19.742	1.869	85.68	18.692	0.819
3.90	20.418	2.545	28.28	19.705	1.832	87.68	18.666	0.793
4.20	20.308	2.435	29.98	19.667	1.794	89.68	18.642	0.769
4.50	20.370	2.497	31.78	19.628	1.755	115.68	18.359	0.486
4.85	20.304	2.431	33.68	19.586	1.713	159.68	18.046	0.173
5.22	20.325	2.452	35.68	19.540	1.667	185.68	17.937	0.064
5.61	20.297	2.424	37.68	19.499	1.626	199.68	17.895	0.022
6.03	20.277	2.404	39.68	19.457	1.584	207.68	17.875	0.002
6.47	20.269	2.396	41.68	19.415	1.542	End Data		
6.94	20.251	2.378	43.68	19.376	1.503			
7.44	20.233	2.360	45.68	19.337	1.464			
7.97	20.215	2.342	47.68	19.300	1.427			
8.52	20.201	2.328	49.68	19.260	1.387			
9.12	20.186	2.313	51.68	19.224	1.351			
9.75	20.167	2.294	53.68	19.188	1.315			
10.41	20.149	2.276	55.68	19.152	1.279			
11.11	20.131	2.258	57.68	19.117	1.244			
11.86	20.110	2.237	59.68	19.083	1.210			



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	44.82 ft
Depth to Water (Dtw)=	17.74 ft
Confinement Depth(Dtc)=	44.82 ft
Hsat (Dtc-Dtw)=	27.08 ft
Lw (Wd-Dtw)=	27.08 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.76
Yo=	2.7 ft
t=	100 sec
Y(t)=	0.7 ft
Hydraulic Cond. (K)=	**1.5 ft/day**

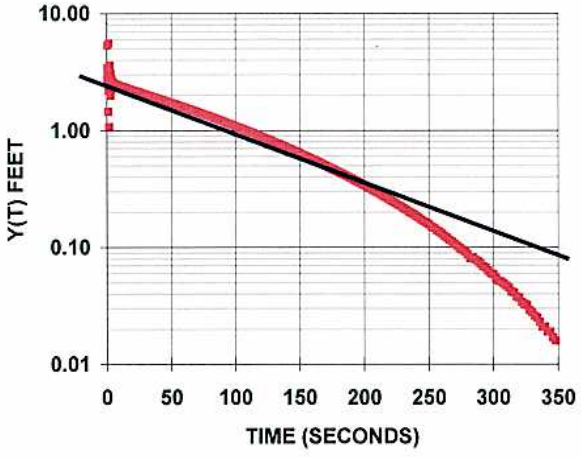
Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357.FI.ZZ
CLIENT: Navy Clean III
TEST DATE: September 23, 2004
WELL NO.: NDAI MW01
COMPILED BY: Pete Larkin/TPA
TEST METHOD: Slug Out Test 1
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0.00	12.381	5.341	15.88	15.426	2.296	70.18	16.277	1.445
0.30	14.958	2.764	17.00	15.449	2.273	72.18	16.303	1.419
0.60	14.253	3.469	18.19	15.471	2.251	74.18	16.329	1.393
0.90	14.451	3.271	19.45	15.495	2.227	76.18	16.354	1.368
1.20	16.270	1.452	20.78	15.518	2.204	78.18	16.377	1.345
1.50	12.160	5.562	22.19	15.543	2.179	80.18	16.402	1.320
1.80	15.513	2.209	23.68	15.569	2.153	82.18	16.427	1.295
2.09	16.640	1.082	25.18	15.596	2.126	84.18	16.452	1.270
2.40	14.133	3.589	26.78	15.624	2.098	86.18	16.475	1.247
2.70	15.105	2.617	28.48	15.652	2.070	88.18	16.499	1.223
3.00	15.716	2.006	30.28	15.682	2.040	90.18	16.522	1.200
3.35	14.649	3.073	32.18	15.716	2.006	92.18	16.545	1.177
3.72	15.464	2.258	34.18	15.751	1.971	94.18	16.568	1.154
4.11	14.985	2.737	36.18	15.782	1.940	96.18	16.592	1.130
4.53	15.278	2.444	38.18	15.812	1.910	98.18	16.612	1.110
4.97	15.125	2.597	40.18	15.845	1.877	136.18	16.978	0.744
5.44	15.222	2.500	42.18	15.876	1.846	176.18	17.258	0.464
5.94	15.199	2.523	44.18	15.906	1.816	226.18	17.491	0.231
6.47	15.212	2.510	46.18	15.937	1.785	272.18	17.619	0.103
7.02	15.239	2.483	48.18	15.966	1.756	320.18	17.685	0.037
7.62	15.248	2.474	50.18	15.996	1.726	356.18	17.710	0.012
8.25	15.262	2.460	52.18	16.026	1.696	384.18	17.720	0.002
8.91	15.279	2.443	54.18	16.056	1.666	End Data		
9.61	15.296	2.426	56.18	16.085	1.637			
10.36	15.313	2.409	58.18	16.112	1.610			
11.15	15.328	2.394	60.18	16.140	1.582			
11.99	15.348	2.374	62.18	16.168	1.554			
12.88	15.367	2.355	64.18	16.195	1.527			
13.82	15.385	2.337	66.18	16.224	1.498			
14.82	15.406	2.316	68.18	16.251	1.471			



SLUG TEST CALCS. (Bouwer and Rice)	
Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	44.82 ft
Depth to Water (Dtw)=	17.74 ft
Confinement Depth(Dtc)=	44.82 ft
Hsat (Dtc-Dtw)=	27.08 ft
Lw (Wd-Dtw)=	27.08 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.76
Yo=	2.5 ft
t=	100 sec
Y(t)=	1 ft
Hydraulic Cond. (K)=	**1.0 ft/day**

Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

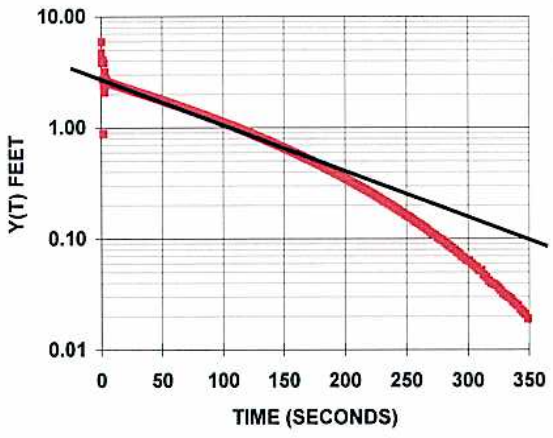
CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357
CLIENT: Navy Clean III
TEST DATE: September 23, 2004
WELL NO.: NDAI MW01
COMPILED BY: Pete Larkin/TPA
TEST METHOD: Slug Out Test 2
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0.00	12.990	4.748	13.19	15.332	2.406	63.38	16.163	1.575
0.30	11.810	5.928	14.08	15.352	2.386	65.38	16.192	1.546
0.60	13.861	3.877	15.02	15.372	2.366	67.38	16.219	1.519
0.90	13.754	3.984	16.02	15.390	2.348	69.38	16.247	1.491
1.20	13.654	4.084	17.08	15.410	2.328	71.38	16.274	1.464
1.50	14.998	2.740	18.20	15.431	2.307	73.38	16.300	1.438
1.80	16.851	0.887	19.39	15.453	2.285	75.38	16.327	1.411
2.10	13.891	3.847	20.65	15.476	2.262	77.38	16.351	1.387
2.40	15.311	2.427	21.98	15.500	2.238	79.38	16.377	1.361
2.70	15.646	2.092	23.39	15.526	2.212	81.38	16.403	1.335
3.00	14.550	3.188	24.88	15.553	2.185	83.38	16.426	1.312
3.29	15.362	2.376	26.38	15.579	2.159	85.38	16.451	1.287
3.60	15.171	2.567	27.98	15.606	2.132	87.38	16.474	1.264
3.90	14.995	2.743	29.68	15.636	2.102	89.38	16.498	1.240
4.20	15.253	2.485	31.48	15.667	2.071	91.38	16.523	1.215
4.55	15.093	2.645	33.38	15.700	2.038	93.38	16.546	1.192
4.92	15.179	2.559	35.38	15.735	2.003	117.38	16.799	0.939
5.31	15.154	2.584	37.38	15.767	1.971	151.38	17.092	0.646
5.73	15.178	2.560	39.38	15.800	1.938	189.38	17.334	0.404
6.17	15.176	2.562	41.38	15.833	1.905	233.38	17.524	0.214
6.64	15.193	2.545	43.38	15.865	1.873	279.38	17.641	0.097
7.14	15.198	2.540	45.38	15.896	1.842	315.38	17.693	0.045
7.67	15.211	2.527	47.38	15.926	1.812	361.38	17.724	0.014
8.22	15.229	2.509	49.38	15.959	1.779	391.38	17.734	0.004
8.82	15.242	2.496	51.38	15.989	1.749	419.38	17.737	0.001
9.45	15.255	2.483	53.38	16.019	1.719	End Data		
10.11	15.268	2.470	55.38	16.049	1.689			
10.81	15.282	2.456	57.38	16.079	1.659			
11.56	15.296	2.442	59.38	16.107	1.631			
12.35	15.313	2.425	61.38	16.136	1.602			

MW 01 SLUG OUT TEST 2



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	44.82 ft
Depth to Water (Dtw)=	17.74 ft
Confinement Depth(Dtc)=	44.82 ft
Hsat (Dtc-Dtw)=	27.08 ft
Lw (Wd-Dtw)=	27.08 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.76
Yo=	2.8 ft
t=	100 sec
Y(t)=	1.2 ft
Hydraulic Cond. (K)=	**1.0 ft/day**

Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

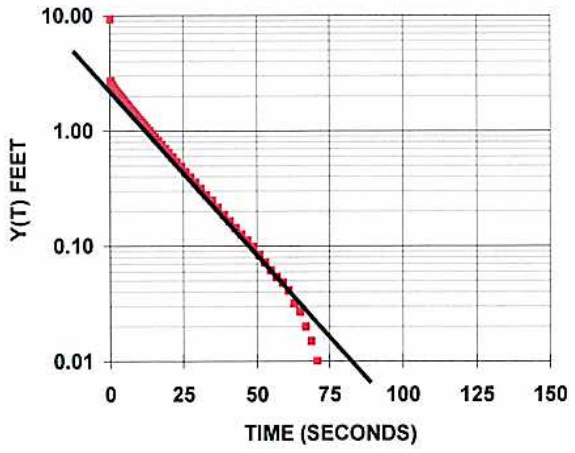
CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357.FI.ZZ
CLIENT: Navy Clean III
TEST DATE: September 23, 2004
WELL NO.: NDAI MW02
COMPILED BY: Pete Larkin/TPA
TEST METHOD: Slug In Test 1
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0.00	26.724	9.337	14.42	18.328	0.941	66.78	17.407	0.020
0.30	20.107	2.720	15.42	18.267	0.880	68.78	17.402	0.015
0.60	19.926	2.539	16.48	18.207	0.820	70.78	17.397	0.010
0.90	19.893	2.506	17.60	18.149	0.762	72.78	17.393	0.006
1.20	19.796	2.409	18.79	18.090	0.703	74.78	17.389	0.002
1.50	19.739	2.352	20.05	18.033	0.646	End of Data		
1.80	19.662	2.275	21.38	17.978	0.591			
2.10	19.619	2.232	22.79	17.925	0.538			
2.40	19.570	2.183	24.28	17.875	0.488			
2.69	19.520	2.133	25.78	17.828	0.441			
3.00	19.477	2.090	27.38	17.784	0.397			
3.30	19.428	2.041	29.08	17.742	0.355			
3.60	19.383	1.996	30.88	17.702	0.315			
3.95	19.326	1.939	32.78	17.665	0.278			
4.32	19.276	1.889	34.78	17.634	0.247			
4.71	19.221	1.834	36.78	17.603	0.216			
5.13	19.166	1.779	38.78	17.574	0.187			
5.57	19.110	1.723	40.78	17.551	0.164			
6.04	19.057	1.670	42.78	17.531	0.144			
6.54	19.005	1.618	44.78	17.513	0.126			
7.07	18.942	1.555	46.78	17.499	0.112			
7.62	18.885	1.498	48.78	17.486	0.099			
8.22	18.825	1.438	50.78	17.471	0.084			
8.85	18.763	1.376	52.78	17.459	0.072			
9.51	18.702	1.315	54.78	17.449	0.062			
10.21	18.640	1.253	56.78	17.441	0.054			
10.96	18.577	1.190	58.78	17.435	0.048			
11.75	18.516	1.129	60.78	17.428	0.041			
12.59	18.453	1.066	62.78	17.419	0.032			
13.48	18.391	1.004	64.78	17.414	0.027			

MW 02 SLUG IN TEST 1



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	44.9 ft
Depth to Water (Dtw)=	17.33 ft
Confinement Depth(Dtc)=	44.9 ft
Hsat (Dtc-Dtw)=	27.57 ft
Lw (Wd-Dtw)=	27.57 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.77
Yo=	2.7 ft
t=	50 sec
Y(t)=	0.09 ft
Hydraulic Cond. (K)=	**7.7 ft/day**

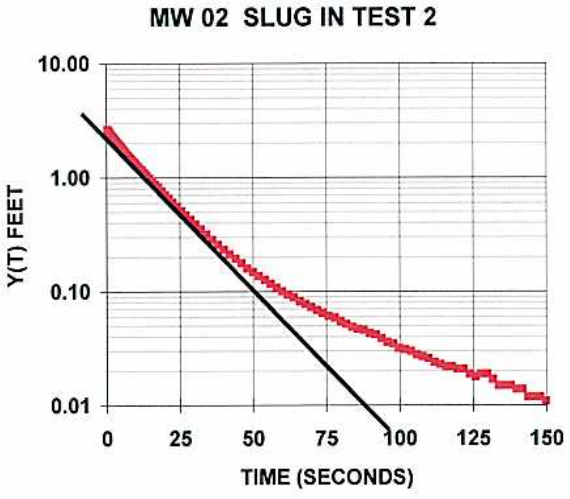
Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357.FI.ZZ
CLIENT: Navy Clean III
TEST DATE: September 23, 2004
WELL NO.: NDAI MW02
COMPILED BY: Pete Larkin/TPA
TEST METHOD: Slug In Test 2
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0.00	28.894	11.554	12.16	18.495	1.155	59.98	17.441	0.101
0.30	19.998	2.658	12.95	18.437	1.097	61.98	17.434	0.094
0.60	19.932	2.592	13.79	18.381	1.041	63.98	17.429	0.089
0.90	19.883	2.543	14.68	18.325	0.985	65.98	17.422	0.082
1.20	19.775	2.435	15.62	18.268	0.928	67.98	17.418	0.078
1.50	19.729	2.389	16.62	18.210	0.870	69.98	17.413	0.073
1.80	19.672	2.332	17.68	18.156	0.816	71.98	17.409	0.069
2.10	19.616	2.276	18.80	18.100	0.760	73.98	17.405	0.065
2.40	19.565	2.225	19.99	18.048	0.708	75.98	17.401	0.061
2.70	19.516	2.176	21.25	17.996	0.656	77.98	17.399	0.059
3.00	19.465	2.125	22.58	17.945	0.605	79.98	17.395	0.055
3.30	19.419	2.079	23.99	17.897	0.557	81.98	17.392	0.052
3.60	19.375	2.035	25.48	17.850	0.510	83.98	17.389	0.049
3.89	19.331	1.991	26.98	17.808	0.468	85.98	17.387	0.047
4.20	19.285	1.945	28.58	17.768	0.428	87.98	17.386	0.046
4.50	19.247	1.907	30.28	17.729	0.389	89.98	17.383	0.043
4.80	19.207	1.867	32.08	17.692	0.352	91.98	17.382	0.042
5.15	19.160	1.820	33.98	17.658	0.318	93.98	17.379	0.039
5.52	19.113	1.773	35.98	17.626	0.286	95.98	17.376	0.036
5.91	19.065	1.725	37.98	17.598	0.258	97.98	17.375	0.035
6.33	19.017	1.677	39.98	17.574	0.234	107.98	17.367	0.027
6.77	18.969	1.629	41.98	17.553	0.213	121.98	17.361	0.021
7.24	18.918	1.578	43.98	17.535	0.195	139.98	17.354	0.014
7.74	18.866	1.526	45.98	17.517	0.177	159.98	17.350	0.010
8.27	18.813	1.473	47.98	17.500	0.160	195.98	17.345	0.005
8.82	18.766	1.426	49.98	17.489	0.149	217.98	17.342	0.002
9.42	18.712	1.372	51.98	17.477	0.137	251.98	17.341	0.001
10.05	18.659	1.319	53.98	17.467	0.127	273.98	17.341	0.001
10.71	18.604	1.264	55.98	17.457	0.117			
11.41	18.549	1.209	57.98	17.448	0.108			



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	44.9 ft
Depth to Water (Dtw)=	17.33 ft
Confinement Depth(Dtc)=	44.9 ft
Hsat (Dtc-Dtw)=	27.57 ft
Lw (Wd-Dtw)=	27.57 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.77
Yo=	2.6 ft
t=	50 sec
Y(t)=	0.1 ft
Hydraulic Cond. (K)=	**7.4 ft/day**

Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

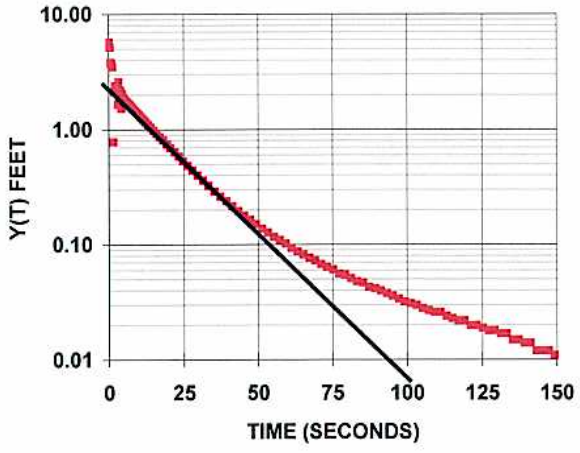
CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357.FI.ZZ
CLIENT: Navy Clean III
TEST DATE: September 23, 2004
WELL NO.: NDAI MW02
COMPILED BY: Pete Larkin/TPA
TEST METHOD: Slug Out Test 2
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0.00	11.564	5.754	13.19	16.215	1.103	63.38	17.230	0.088
0.30	12.161	5.157	14.08	16.275	1.043	65.38	17.236	0.082
0.60	13.517	3.801	15.02	16.335	0.983	67.38	17.241	0.077
0.90	13.631	3.687	16.02	16.395	0.923	69.38	17.245	0.073
1.20	13.824	3.494	17.08	16.453	0.865	71.38	17.250	0.068
1.50	16.536	0.782	18.20	16.512	0.806	73.38	17.254	0.064
1.80	15.191	2.127	19.39	16.570	0.748	75.38	17.257	0.061
2.10	14.922	2.396	20.65	16.626	0.692	77.38	17.262	0.056
2.40	15.142	2.176	21.98	16.682	0.636	79.38	17.263	0.055
2.70	15.208	2.110	23.39	16.734	0.584	81.38	17.267	0.051
3.00	15.675	1.643	24.88	16.785	0.533	83.38	17.270	0.048
3.29	14.712	2.606	26.38	16.832	0.486	85.38	17.271	0.047
3.60	15.531	1.787	27.98	16.876	0.442	87.38	17.275	0.043
3.90	15.123	2.195	29.68	16.918	0.400	89.38	17.276	0.042
4.20	15.795	1.523	31.48	16.956	0.362	91.38	17.278	0.040
4.55	15.281	2.037	33.38	16.991	0.327	115.38	17.295	0.023
4.92	15.454	1.864	35.38	17.027	0.291	177.38	17.311	0.007
5.31	15.493	1.825	37.38	17.056	0.262	205.38	17.315	0.003
5.73	15.553	1.765	39.38	17.079	0.239	239.38	17.317	0.001
6.17	15.592	1.726	41.38	17.101	0.217	End Data		
6.64	15.643	1.675	43.38	17.122	0.196			
7.14	15.694	1.624	45.38	17.139	0.179			
7.67	15.747	1.571	47.38	17.154	0.164			
8.22	15.808	1.510	49.38	17.167	0.151			
8.82	15.862	1.456	51.38	17.180	0.138			
9.45	15.921	1.397	53.38	17.190	0.128			
10.11	15.978	1.340	55.38	17.201	0.117			
10.81	16.036	1.282	57.38	17.208	0.110			
11.56	16.097	1.221	59.38	17.216	0.102			
12.35	16.155	1.163	61.38	17.224	0.094			

MW 02 SLUG OUT TEST 2



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	44.9 ft
Depth to Water (Dtw)=	17.33 ft
Confinement Depth(Dtc)=	44.9 ft
Hsat (Dtc-Dtw)=	27.57 ft
Lw (Wd-Dtw)=	27.57 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.77
Yo=	2.4 ft
t=	50 sec
Y(t)=	0.12 ft
Hydraulic Cond. (K)=	**6.8 ft/day**

Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

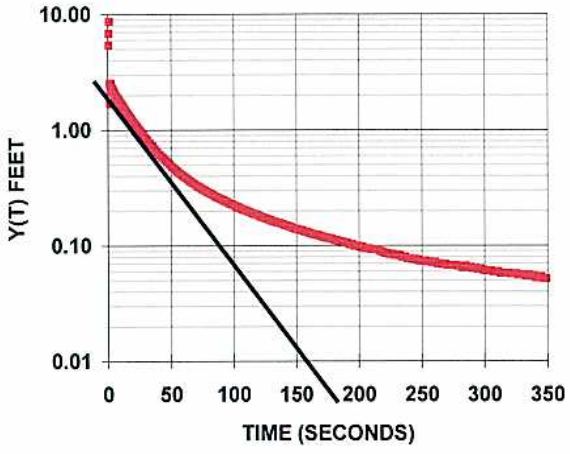
CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357.FI.ZZ
CLIENT: Navy Clean III
TEST DATE: September 24, 2004
WELL NO.: NDAI MW03
COMPILED BY: Pete Larkin/TPA
TEST METHOD: Slug In Test 1
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0.00	29.485	11.840	13.78	19.127	1.482	85.08	17.914	0.269
0.30	23.051	5.406	14.72	19.076	1.431	105.08	17.858	0.213
0.60	24.481	6.836	15.72	19.024	1.379	133.08	17.807	0.162
0.90	26.380	8.735	16.78	18.975	1.330	161.08	17.774	0.129
1.20	15.775	0.001	17.90	18.921	1.276	195.08	17.748	0.103
1.50	20.182	2.537	19.09	18.869	1.224	235.08	17.725	0.080
1.80	19.333	1.688	20.35	18.817	1.172	263.08	17.715	0.070
2.10	19.810	2.165	21.68	18.764	1.119	293.08	17.709	0.064
2.40	20.149	2.504	23.09	18.711	1.066	331.08	17.701	0.056
2.70	19.965	2.320	24.58	18.660	1.015	371.08	17.695	0.050
2.99	19.955	2.310	26.08	18.610	0.965	401.08	17.691	0.046
3.30	19.913	2.268	27.68	18.562	0.917	431.08	17.688	0.043
3.60	19.875	2.230	29.38	18.512	0.867	469.08	17.687	0.042
3.90	19.840	2.195	31.18	18.465	0.820	501.08	17.684	0.039
4.25	19.800	2.155	33.08	18.420	0.775	533.07	17.683	0.038
4.62	19.763	2.118	35.08	18.373	0.728	581.07	17.682	0.037
5.01	19.726	2.081	37.08	18.333	0.688	629.07	17.679	0.034
5.43	19.684	2.039	39.08	18.294	0.649	701.08	17.679	0.034
5.87	19.646	2.001	41.08	18.260	0.615	755.08	17.677	0.032
6.34	19.606	1.961	43.08	18.229	0.584	807.08	17.676	0.031
6.84	19.568	1.923	45.08	18.200	0.555	End of Data		
7.37	19.526	1.881	47.08	18.172	0.527			
7.92	19.491	1.846	49.08	18.149	0.504			
8.52	19.449	1.804	51.08	18.125	0.480			
9.15	19.406	1.761	53.08	18.106	0.461			
9.81	19.364	1.719	55.08	18.086	0.441			
10.51	19.319	1.674	57.08	18.068	0.423			
11.26	19.273	1.628	59.08	18.052	0.407			
12.05	19.226	1.581	61.08	18.037	0.392			
12.89	19.177	1.532	63.08	18.022	0.377			

MW 03 SLUG IN TEST 1



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	48 ft
Depth to Water (Dtw)=	17.69 ft
Confinement Depth(Dtc)=	48 ft
Hsat (Dtc-Dtw)=	30.31 ft
Lw (Wd-Dtw)=	30.31 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.82
Yo=	2.4 ft
t=	50 sec
Y(t)=	0.47 ft
Hydraulic Cond. (K)=	**3.7 ft/day**

Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

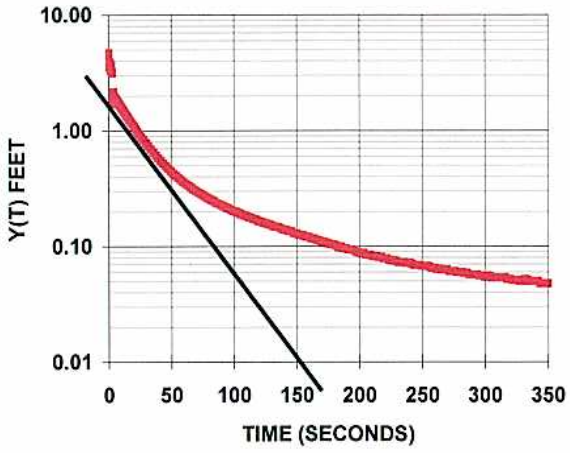
CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357.FI.ZZ
CLIENT: Navy Clean III
TEST DATE: September 24, 2004
WELL NO.: NDAI MW03
COMPILED BY: Pete Larkin/TPA
TEST METHOD: Slug Out Test 1
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0.00	13.229	4.449	16.70	16.429	1.249	73.88	17.392	0.286
0.30	12.949	4.729	17.89	16.483	1.195	105.88	17.487	0.191
0.60	14.148	3.530	19.15	16.536	1.142	139.88	17.538	0.140
0.90	14.027	3.651	20.48	16.591	1.087	173.88	17.570	0.108
1.20	13.754	3.924	21.89	16.644	1.034	205.88	17.593	0.085
1.50	14.011	3.667	23.38	16.696	0.982	239.88	17.606	0.072
1.79	14.338	3.340	24.88	16.747	0.931	285.88	17.619	0.059
2.10	14.043	3.635	26.48	16.797	0.881	363.88	17.632	0.046
2.40	13.987	3.691	28.18	16.845	0.833	421.88	17.636	0.042
2.70	14.401	3.277	29.98	16.892	0.786	457.88	17.640	0.038
3.05	14.526	3.152	31.88	16.938	0.740	499.88	17.640	0.038
3.42	15.873	1.805	33.88	16.985	0.693	537.87	17.644	0.034
3.81	15.965	1.713	35.88	17.027	0.651	571.87	17.644	0.034
4.23	15.510	2.168	37.88	17.065	0.613	609.87	17.645	0.033
4.67	15.713	1.965	39.88	17.099	0.579	651.87	17.646	0.032
5.14	15.716	1.962	41.88	17.129	0.549	701.88	17.646	0.032
5.64	15.756	1.922	43.88	17.157	0.521	763.88	17.647	0.031
6.17	15.794	1.884	45.88	17.183	0.495	841.88	17.649	0.029
6.72	15.841	1.837	47.88	17.207	0.471	889.88	17.649	0.029
7.32	15.884	1.794	49.88	17.229	0.449	951.88	17.649	0.029
7.95	15.930	1.748	51.88	17.250	0.428	1001.88	17.649	0.029
8.61	15.974	1.704	53.88	17.269	0.409	1073.88	17.650	0.028
9.31	16.021	1.657	55.88	17.286	0.392	End Data		
10.06	16.069	1.609	57.88	17.301	0.377			
10.85	16.118	1.560	59.88	17.317	0.361			
11.69	16.169	1.509	61.88	17.330	0.348			
12.58	16.220	1.458	63.88	17.341	0.337			
13.52	16.271	1.407	65.88	17.353	0.325			
14.52	16.323	1.355	67.88	17.365	0.313			
15.58	16.376	1.302	69.88	17.374	0.304			

MW 03 SLUG OUT TEST 1



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	48 ft
Depth to Water (Dtw)=	17.69 ft
Confinement Depth(Dtc)=	48 ft
Hsat (Dtc-Dtw)=	30.31 ft
Lw (Wd-Dtw)=	30.31 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.82
Yo=	2 ft
t=	50 sec
Y(t)=	0.4 ft
Hydraulic Cond. (K)=	**3.7 ft/day**

Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

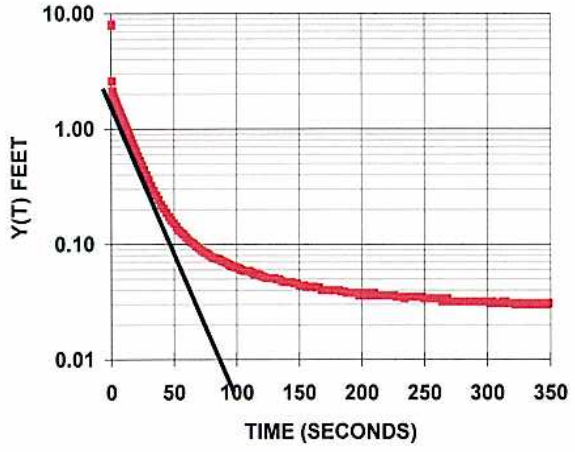
CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357
CLIENT: Navy Clean III
TEST DATE: September 24, 2004
WELL NO.: NDAI MW04
COMPILED BY: Pete Larkin/TPA
TEST METHOD: Slug In Test 1
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0.00	30.456	12.423	21.88	18.617	0.584	134.38	18.083	0.050
0.29	26.107	8.074	23.38	18.569	0.536	194.38	18.071	0.038
0.60	25.935	7.902	24.98	18.521	0.488	280.38	18.065	0.032
0.90	20.633	2.600	26.68	18.475	0.442	340.38	18.063	0.030
1.20	20.171	2.138	28.48	18.432	0.399	426.38	18.061	0.028
1.55	20.079	2.046	30.38	18.393	0.360	488.38	18.059	0.026
1.92	19.982	1.949	32.38	18.355	0.322	586.37	18.059	0.026
2.31	19.944	1.911	34.38	18.324	0.291	616.37	18.058	0.025
2.73	19.896	1.863	36.38	18.298	0.265	660.38	18.058	0.025
3.17	19.840	1.807	38.38	18.276	0.243	End Data		
3.64	19.788	1.755	40.38	18.254	0.221			
4.14	19.731	1.698	42.38	18.237	0.204			
4.67	19.670	1.637	44.38	18.221	0.188			
5.22	19.613	1.580	46.38	18.207	0.174			
5.82	19.556	1.523	48.38	18.195	0.162			
6.45	19.500	1.467	50.38	18.186	0.153			
7.11	19.443	1.410	52.38	18.176	0.143			
7.81	19.386	1.353	54.38	18.166	0.133			
8.56	19.327	1.294	56.38	18.160	0.127			
9.35	19.267	1.234	58.38	18.155	0.122			
10.19	19.206	1.173	60.38	18.148	0.115			
11.08	19.146	1.113	62.38	18.141	0.108			
12.02	19.085	1.052	64.38	18.138	0.105			
13.02	19.023	0.990	66.38	18.134	0.101			
14.08	18.962	0.929	68.38	18.130	0.097			
15.20	18.902	0.869	70.38	18.126	0.093			
16.39	18.841	0.808	72.38	18.122	0.089			
17.65	18.782	0.749	74.38	18.119	0.086			
18.98	18.725	0.692	76.38	18.117	0.084			
20.39	18.671	0.638	78.38	18.114	0.081			

MW 04 SLUG IN TEST 1



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	42.1 ft
Depth to Water (Dtw)=	18.05 ft
Confinement Depth(Dtc)=	42.1 ft
Hsat (Dtc-Dtw)=	24.05 ft
Lw (Wd-Dtw)=	24.05 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.68
Yo=	2 ft
t=	50 sec
Y(t)=	0.11 ft
Hydraulic Cond. (K)=	**6.4 ft/day**

Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

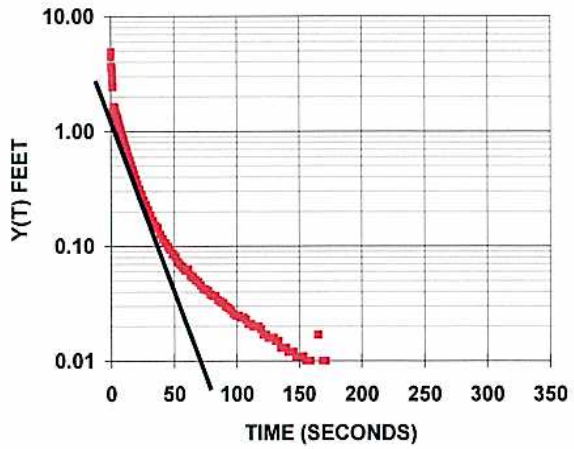
CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357
CLIENT: Navy Clean III
TEST DATE: September 24, 2004
WELL NO.: NDAI MW04
COMPILED BY: Pete Larkin/TPA
TEST METHOD: Slug Out Test 1
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0.00	13.543	4.494	17.59	17.570	0.467	79.58	17.999	0.038
0.30	13.101	4.936	18.85	17.613	0.424	97.58	18.011	0.026
0.60	14.348	3.689	20.18	17.652	0.385	119.58	18.018	0.019
0.90	14.464	3.573	21.59	17.689	0.348	139.58	18.024	0.013
1.20	14.675	3.362	23.08	17.724	0.313	165.58	18.020	0.017
1.49	15.213	2.824	24.58	17.754	0.283	191.58	18.031	0.006
1.80	15.575	2.462	26.18	17.783	0.254	209.58	18.033	0.004
2.10	16.550	1.487	27.88	17.806	0.231	227.58	18.035	0.002
2.40	16.717	1.320	29.68	17.830	0.207	247.58	18.035	0.002
2.75	16.396	1.641	31.58	17.850	0.187	End Data		
3.12	16.474	1.563	33.58	17.870	0.167			
3.51	16.465	1.572	35.58	17.885	0.152			
3.93	16.660	1.377	37.58	17.892	0.145			
4.37	16.613	1.424	39.58	17.910	0.127			
4.84	16.668	1.369	41.58	17.921	0.116			
5.34	16.725	1.312	43.58	17.930	0.107			
5.87	16.745	1.292	45.58	17.937	0.100			
6.42	16.851	1.186	47.58	17.943	0.094			
7.02	16.911	1.126	49.58	17.951	0.086			
7.65	16.971	1.066	51.58	17.956	0.081			
8.31	17.032	1.005	53.58	17.964	0.073			
9.01	17.090	0.947	55.58	17.968	0.069			
9.76	17.151	0.886	57.58	17.971	0.066			
10.55	17.209	0.828	59.58	17.975	0.062			
11.39	17.267	0.770	61.58	17.974	0.063			
12.28	17.322	0.715	63.58	17.981	0.056			
13.22	17.377	0.660	65.58	17.983	0.054			
14.22	17.429	0.608	67.58	17.986	0.051			
15.28	17.478	0.559	69.58	17.988	0.049			
16.40	17.526	0.511	71.58	17.991	0.046			

MW 04 SLUG OUT TEST 1



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	42.1 ft
Depth to Water (Dtw)=	18.05 ft
Confinement Depth(Dtc)=	42.1 ft
Hsat (Dtc-Dtw)=	24.05 ft
Lw (Wd-Dtw)=	24.05 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.68
Yo=	2 ft
t=	50 sec
Y(t)=	0.04 ft
Hydraulic Cond. (K)=	**8.6 ft/day**

Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

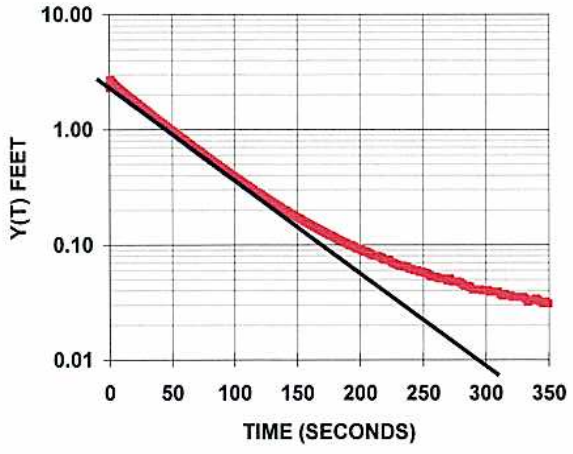
CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357
CLIENT: Navy Clean III
TEST DATE: September 24, 2004
WELL NO.: NDAI MW05
COMPILED BY: Pete Larkin/TPA
TEST METHOD: Slug In 1
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0.00	28.499	10.069	13.19	20.465	2.035	63.38	19.199	0.769
0.30	20.825	2.395	14.08	20.429	1.999	65.38	19.171	0.741
0.60	20.744	2.314	15.02	20.392	1.962	67.38	19.143	0.713
0.90	21.071	2.641	16.02	20.353	1.923	69.38	19.117	0.687
1.20	21.176	2.746	17.08	20.313	1.883	71.38	19.092	0.662
1.50	21.078	2.648	18.20	20.273	1.843	73.38	19.068	0.638
1.80	21.077	2.647	19.39	20.230	1.800	75.38	19.044	0.614
2.10	21.032	2.602	20.65	20.186	1.756	77.38	19.022	0.592
2.40	21.013	2.583	21.98	20.139	1.709	79.38	19.000	0.570
2.70	20.984	2.554	23.39	20.094	1.664	81.38	18.979	0.549
3.00	20.962	2.532	24.88	20.046	1.616	83.38	18.960	0.530
3.29	20.944	2.514	26.38	19.999	1.569	85.38	18.941	0.511
3.60	20.924	2.494	27.98	19.951	1.521	87.38	18.923	0.493
3.90	20.906	2.476	29.68	19.901	1.471	89.38	18.905	0.475
4.20	20.889	2.459	31.48	19.852	1.422	91.38	18.888	0.458
4.55	20.868	2.438	33.38	19.800	1.370	133.38	18.654	0.224
4.92	20.846	2.416	35.38	19.745	1.315	179.38	18.547	0.117
5.31	20.824	2.394	37.38	19.695	1.265	231.38	18.496	0.066
5.73	20.799	2.369	39.38	19.647	1.217	277.38	18.478	0.048
6.17	20.774	2.344	41.38	19.602	1.172	339.38	18.464	0.034
6.64	20.751	2.321	43.38	19.556	1.126	391.38	18.455	0.025
7.14	20.725	2.295	45.38	19.514	1.084	467.38	18.450	0.020
7.67	20.699	2.269	47.38	19.474	1.044	End data		
8.22	20.676	2.246	49.38	19.434	1.004			
8.82	20.650	2.220	51.38	19.397	0.967			
9.45	20.623	2.193	53.38	19.361	0.931			
10.11	20.593	2.163	55.38	19.326	0.896			
10.81	20.563	2.133	57.38	19.293	0.863			
11.56	20.532	2.102	59.38	19.261	0.831			
12.35	20.499	2.069	61.38	19.229	0.799			

MW 05 SLUG IN TEST 1



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	48 ft
Depth to Water (Dtw)=	18.45 ft
Confinement Depth(Dtc)=	48 ft
Hsat (Dtc-Dtw)=	29.55 ft
Lw (Wd-Dtw)=	29.55 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.81
Yo=	2.6 ft
t=	100 sec
Y(t)=	0.4 ft
Hydraulic Cond. (K)=	**2.1 ft/day**

Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

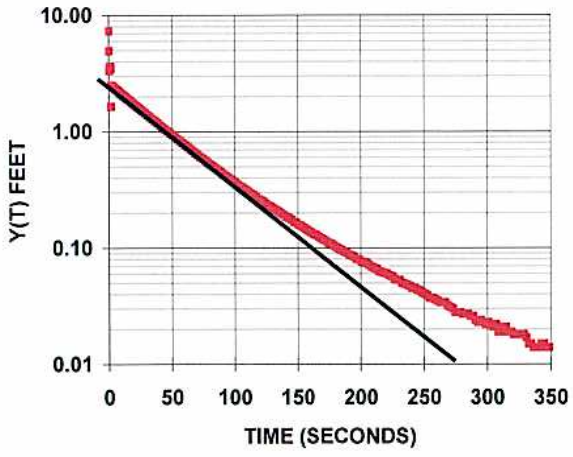
CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357
CLIENT: Navy Clean III
TEST DATE: September 24, 2004
WELL NO.: NDAI MW05
COMPILED BY: Pete Larkin/TPA
TEST METHOD: Slug Out 1
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0.00	11.071	7.360	14.42	16.481	1.950	66.78	17.747	0.684
0.30	13.480	4.951	15.42	16.520	1.911	68.78	17.772	0.659
0.60	15.070	3.361	16.48	16.561	1.870	70.78	17.797	0.634
0.90	14.945	3.486	17.60	16.602	1.829	72.78	17.822	0.609
1.20	14.786	3.645	18.79	16.647	1.784	74.78	17.844	0.587
1.50	14.809	3.622	20.05	16.691	1.740	76.78	17.866	0.565
1.80	14.937	3.494	21.38	16.738	1.693	78.78	17.886	0.545
2.10	16.771	1.660	22.79	16.785	1.646	80.78	17.906	0.525
2.40	15.910	2.521	24.28	16.832	1.599	82.78	17.926	0.505
2.69	15.953	2.478	25.78	16.881	1.550	84.78	17.944	0.487
3.00	15.956	2.475	27.38	16.930	1.501	86.78	17.962	0.469
3.30	15.982	2.449	29.08	16.981	1.450	88.78	17.979	0.452
3.60	15.994	2.437	30.88	17.033	1.398	90.78	17.995	0.436
3.95	16.012	2.419	32.78	17.085	1.346	92.78	18.011	0.420
4.32	16.028	2.403	34.78	17.142	1.289	94.78	18.026	0.405
4.71	16.046	2.385	36.78	17.193	1.238	118.78	18.167	0.264
5.13	16.065	2.366	38.78	17.241	1.190	138.78	18.239	0.192
5.57	16.113	2.318	40.78	17.289	1.142	174.78	18.321	0.110
6.04	16.099	2.332	42.78	17.334	1.097	200.78	18.355	0.076
6.54	16.130	2.301	44.78	17.377	1.054	236.78	18.383	0.048
7.07	16.155	2.276	46.78	17.418	1.013	280.78	18.404	0.027
7.62	16.187	2.244	48.78	17.457	0.974	324.78	18.413	0.018
8.22	16.216	2.215	50.78	17.495	0.936	400.78	18.424	0.007
8.85	16.246	2.185	52.78	17.531	0.900	468.78	18.430	0.001
9.51	16.274	2.157	54.78	17.565	0.866	End data		
10.21	16.306	2.125	56.78	17.599	0.832			
10.96	16.338	2.093	58.78	17.630	0.801			
11.75	16.372	2.059	60.78	17.662	0.769			
12.59	16.407	2.024	62.78	17.692	0.739			
13.48	16.442	1.989	64.78	17.720	0.711			

MW 05 SLUG OUT TEST 1



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	48 ft
Depth to Water (Dtw)=	18.45 ft
Confinement Depth(Dtc)=	48 ft
Hsat (Dtc-Dtw)=	29.55 ft
Lw (Wd-Dtw)=	29.55 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.81
Yo=	2.5 ft
t=	100 sec
Y(t)=	0.37 ft
Hydraulic Cond. (K)=	**2.2 ft/day**

Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

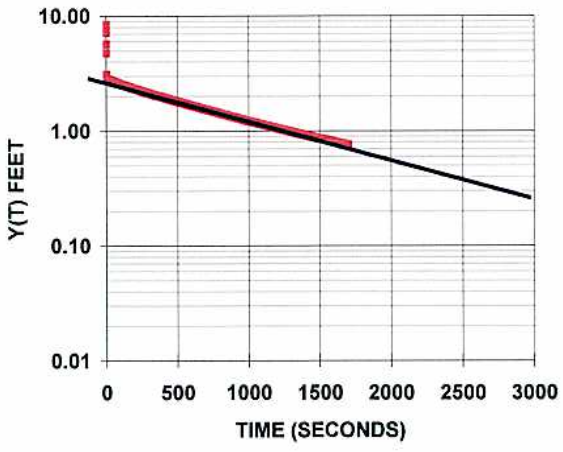
CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357
CLIENT: Navy Clean III
TEST DATE: September 24, 2004
WELL NO.: NDAI MW06
COMPILED BY: Pete Larkin/TPA
TEST METHOD: Slug In Test 1
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0.00	33.974	8.454	14.42	28.334	2.814	91.28	28.108	2.588
0.30	32.759	7.239	15.42	28.332	2.812	96.88	28.095	2.575
0.60	31.269	5.749	16.48	28.328	2.808	102.78	28.080	2.560
0.90	30.320	4.800	17.60	28.322	2.802	109.08	28.064	2.544
1.20	28.642	3.122	18.79	28.319	2.799	115.68	28.050	2.530
1.50	28.524	3.004	20.05	28.315	2.795	122.68	28.027	2.507
1.80	28.486	2.966	21.38	28.309	2.789	130.18	28.016	2.496
2.10	28.457	2.937	22.79	28.304	2.784	138.07	27.996	2.476
2.40	28.471	2.951	24.28	28.299	2.779	146.48	27.978	2.458
2.69	28.438	2.918	25.78	28.294	2.774	155.38	27.957	2.437
3.00	28.448	2.928	27.38	28.290	2.770	164.78	27.936	2.416
3.30	28.434	2.914	29.08	28.283	2.763	174.78	27.915	2.395
3.60	28.421	2.901	30.88	28.278	2.758	185.38	27.893	2.373
3.95	28.409	2.889	32.78	28.272	2.752	196.58	27.868	2.348
4.32	28.403	2.883	34.88	28.265	2.745	208.48	27.844	2.324
4.71	28.404	2.884	37.07	28.257	2.737	458.38	27.393	1.873
5.13	28.396	2.876	39.38	28.251	2.731	788.38	26.955	1.435
5.57	28.391	2.871	41.88	28.243	2.723	998.38	26.741	1.221
6.04	28.384	2.864	44.48	28.235	2.715	1208.38	26.568	1.048
6.54	28.379	2.859	47.28	28.226	2.706	1568.38	26.342	0.822
7.07	28.374	2.854	50.18	28.219	2.699	1703.38	26.275	0.755
7.62	28.371	2.851	53.28	28.210	2.690	End Data		
8.22	28.367	2.847	56.58	28.201	2.681			
8.85	28.365	2.845	60.08	28.192	2.672			
9.51	28.362	2.842	63.78	28.182	2.662			
10.21	28.359	2.839	67.68	28.171	2.651			
10.96	28.355	2.835	71.88	28.160	2.640			
11.75	28.351	2.831	76.28	28.148	2.628			
12.59	28.346	2.826	80.98	28.134	2.614			
13.48	28.342	2.822	85.98	28.123	2.603			

MW 06 SLUG IN TEST 1



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	48 ft
Depth to Water (Dtw)=	26.01 ft
Confinement Depth(Dtc)=	48 ft
Hsat (Dtc-Dtw)=	21.99 ft
Lw (Wd-Dtw)=	21.99 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.63
Yo=	2.8 ft
t=	1500 sec
Y(t)=	0.8 ft
Hydraulic Cond. (K)=	**0.1 ft/day**

Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

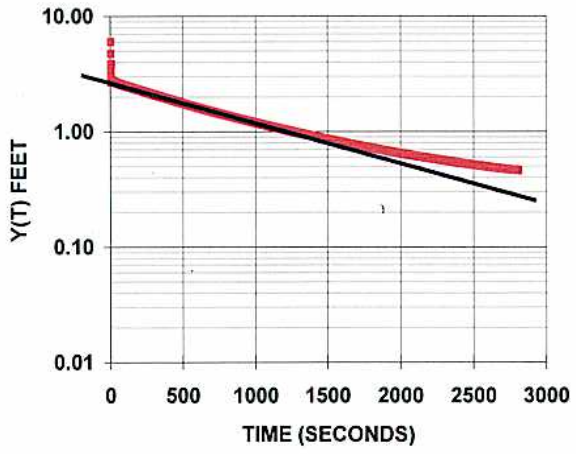
CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357
CLIENT: Navy Clean III
TEST DATE: September 23, 2004
WELL NO.: NDAI MW06
COMPILED BY: Pete Larkin/TPA
TEST METHOD: Slug Out Test 1
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0.00	12.235	13.733	16.70	23.230	2.738	71.88	23.382	2.586
0.30	19.941	6.027	17.89	23.234	2.734	73.88	23.387	2.581
0.60	22.913	3.055	19.15	23.238	2.730	75.88	23.392	2.576
0.90	21.215	4.753	20.48	23.242	2.726	77.88	23.397	2.571
1.20	22.237	3.731	21.89	23.245	2.723	79.88	23.403	2.565
1.50	22.721	3.247	23.38	23.251	2.717	81.88	23.407	2.561
1.79	23.134	2.834	24.88	23.256	2.712	83.88	23.412	2.556
2.10	22.763	3.205	26.48	23.261	2.707	85.88	23.416	2.552
2.40	22.175	3.793	28.18	23.265	2.703	87.88	23.422	2.546
2.70	22.149	3.819	29.98	23.270	2.698	89.88	23.426	2.542
3.05	22.248	3.720	31.88	23.275	2.693	91.88	23.430	2.538
3.42	22.084	3.884	33.88	23.282	2.686	93.88	23.435	2.533
3.81	22.095	3.873	35.88	23.288	2.680	95.88	23.440	2.528
4.23	23.274	2.694	37.88	23.293	2.675	97.88	23.444	2.524
4.67	23.169	2.799	39.88	23.299	2.669	99.88	23.451	2.517
5.14	23.171	2.797	41.88	23.304	2.664	149.88	23.564	2.404
5.64	23.172	2.796	43.88	23.309	2.659	179.88	23.628	2.340
6.17	23.172	2.796	45.88	23.315	2.653	235.88	23.742	2.226
6.72	23.190	2.778	47.88	23.321	2.647	285.88	23.840	2.128
7.32	23.198	2.770	49.88	23.326	2.642	331.88	23.925	2.043
7.95	23.199	2.769	51.88	23.331	2.637	375.88	24.004	1.964
8.61	23.201	2.767	53.88	23.336	2.632	445.88	24.124	1.844
9.31	23.204	2.764	55.88	23.340	2.628	509.87	24.223	1.745
10.06	23.207	2.761	57.88	23.345	2.623	561.87	24.298	1.670
10.85	23.209	2.759	59.88	23.352	2.616	649.87	24.414	1.554
11.69	23.213	2.755	61.88	23.357	2.611	813.88	24.597	1.371
12.58	23.215	2.753	63.88	23.362	2.606	983.88	24.758	1.210
13.52	23.219	2.749	65.88	23.366	2.602	1567.88	25.142	0.826
14.52	23.222	2.746	67.88	23.373	2.595	1993.88	25.316	0.652
15.58	23.226	2.742	69.88	23.377	2.591	2811.88	25.505	0.463

MW 06 SLUG OUT TEST 1



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	48 ft
Depth to Water (Dtw)=	26.01 ft
Confinement Depth(Dtc)=	48 ft
Hsat (Dtc-Dtw)=	21.99 ft
Lw (Wd-Dtw)=	21.99 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.63
Yo=	2.9 ft
t=	1500 sec
Y(t)=	0.7 ft
Hydraulic Cond. (K)=	**0.1 ft/day**

Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

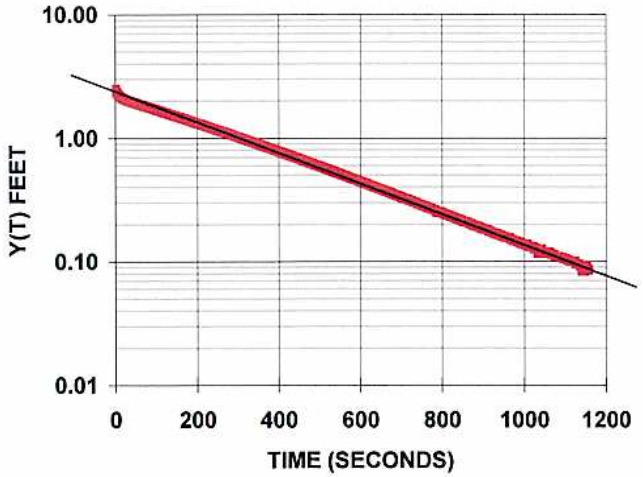
CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357.FI.FK.AI
CLIENT: Navy Clean III
TEST DATE 1/16/2006
WELL NO.: NDAIMW08
COMPILED BY: Kenji Butler
TEST METHOD: Slug Out Test 1
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0	16.771	2.502	81	17.495	1.778	162	17.818	1.455
3	16.915	2.358	84	17.51	1.763	165	17.828	1.445
6	17.001	2.272	87	17.519	1.754	168	17.840	1.433
9	17.061	2.212	90	17.536	1.737	171	17.850	1.423
12	17.107	2.166	93	17.548	1.725	174	17.862	1.411
15	17.143	2.13	96	17.560	1.713	177	17.874	1.399
18	17.172	2.101	99	17.572	1.701	180	17.883	1.39
21	17.196	2.077	102	17.586	1.687	183	17.893	1.38
24	17.217	2.056	105	17.598	1.675	186	17.905	1.368
27	17.234	2.039	108	17.610	1.663	189	17.912	1.361
30	17.253	2.02	111	17.622	1.651	192	17.924	1.349
33	17.268	2.005	114	17.637	1.636	195	17.936	1.337
36	17.284	1.989	117	17.649	1.624	198	17.945	1.328
39	17.299	1.974	120	17.661	1.612	201	17.955	1.318
42	17.315	1.958	123	17.673	1.600	204	17.965	1.308
45	17.33	1.943	126	17.682	1.591	207	17.974	1.299
48	17.344	1.929	129	17.694	1.579	210	17.984	1.289
51	17.359	1.914	132	17.706	1.567	360	18.403	0.87
54	17.373	1.9	135	17.718	1.555	510	18.696	0.577
57	17.387	1.886	138	17.730	1.543	660	18.897	0.376
60	17.402	1.871	141	17.742	1.531	810	19.031	0.242
63	17.416	1.857	144	17.754	1.519	960	19.117	0.156
66	17.428	1.845	147	17.763	1.510	1110	19.17	0.103
69	17.442	1.831	150	17.775	1.498	1155	19.184	0.089
72	17.454	1.819	153	17.785	1.488	1158	19.187	0.086
75	17.469	1.804	156	17.797	1.476	End of Data		
78	17.481	1.792	159	17.809	1.464			

MW 08 SLUG OUT TEST 1



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	46.61 ft
Depth to Water (Dtw)=	19.52 ft
Confinement Depth(Dtc)=	46.61 ft
Hsat (Dtc-Dtw)=	27.09 ft
Lw (Wd-Dtw)=	27.09 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.76
Yo=	2.5 ft
t=	800 sec
Y(t)=	0.25 ft
Hydraulic Cond. (K)=	**0.3 ft/day**

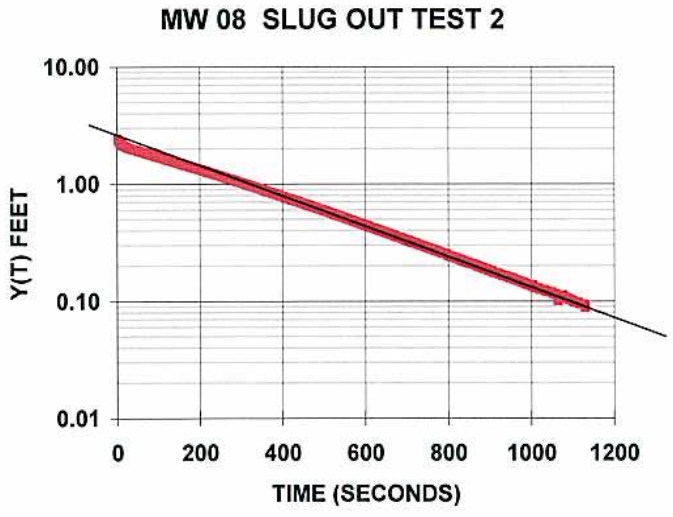
Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357.FI.FK.AI
CLIENT: Navy Clean III
TEST DATE: 1/16/2006
WELL NO.: NDAIMW08
COMPILED BY: Kenji Butler
TEST METHOD: Slug Out Test 2
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0	16.827	2.449	81	17.488	1.788	162	17.812	1.464
3	16.915	2.361	84	17.503	1.773	165	17.824	1.452
6	16.997	2.279	87	17.515	1.761	168	17.833	1.443
9	17.054	2.222	90	17.527	1.749	171	17.843	1.433
12	17.1	2.176	93	17.541	1.735	174	17.855	1.421
15	17.136	2.14	96	17.553	1.723	177	17.865	1.411
18	17.165	2.111	99	17.565	1.711	180	17.876	1.4
21	17.186	2.09	102	17.577	1.699	183	17.884	1.392
24	17.208	2.068	105	17.589	1.687	186	17.898	1.378
27	17.227	2.049	108	17.601	1.675	189	17.905	1.371
30	17.244	2.032	111	17.615	1.661	351	18.375	0.901
33	17.261	2.015	114	17.627	1.649	501	18.681	0.595
36	17.277	1.999	117	17.639	1.637	675	18.917	0.359
39	17.292	1.984	120	17.651	1.625	825	19.046	0.23
42	17.309	1.967	123	17.663	1.613	990	19.137	0.139
45	17.323	1.953	126	17.678	1.598	1065	19.175	0.101
48	17.337	1.939	129	17.687	1.589	1128	18.034	1.242
51	17.352	1.924	132	17.699	1.577	1131	18.044	1.232
54	17.366	1.91	135	17.711	1.565	End of Data		
57	17.38	1.896	138	17.723	1.553			
60	17.392	1.884	141	17.732	1.544			
63	17.409	1.867	144	17.745	1.531			
66	17.421	1.855	147	17.754	1.522			
69	17.436	1.84	150	17.769	1.507			
72	17.448	1.828	153	17.778	1.498			
75	17.46	1.816	156	17.788	1.488			
78	17.474	1.802	159	17.802	1.474			



SLUG TEST CALCS. (Bouwer and Rice)	
Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	46.61 ft
Depth to Water (Dtw)=	19.52 ft
Confinement Depth(Dtc)=	48 ft
Hsat (Dtc-Dtw)=	28.48 ft
Lw (Wd-Dtw)=	27.09 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.76
Yo=	2.5 ft
t=	600 sec
Y(t)=	0.45 ft
Hydraulic Cond. (K)=	**0.3 ft/day**

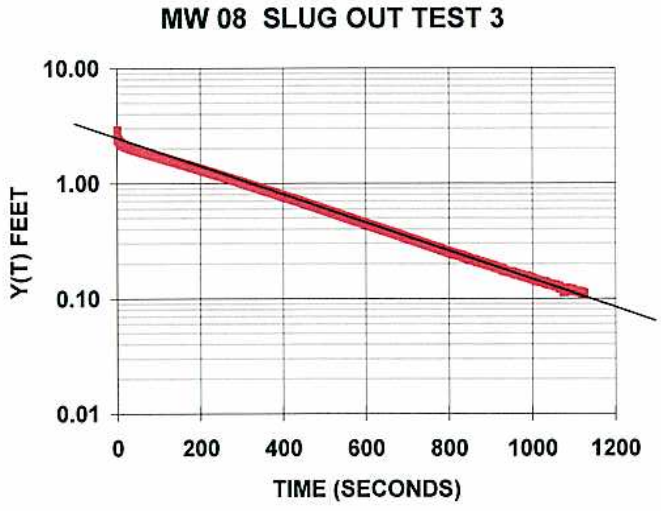
Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357.FI.FK.AI
CLIENT: Navy Clean III
TEST DATE: 1/16/2006
WELL NO.: NDAIMW08
COMPILED BY: Kenji Butler
TEST METHOD: Slug Out Test 3
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0	16.41	2.89	81	17.512	1.788	162	17.841	1.459
3	16.889	2.411	84	17.524	1.776	165	17.853	1.447
6	16.988	2.312	87	17.539	1.761	168	17.862	1.438
9	17.059	2.241	90	17.553	1.747	171	17.872	1.428
12	17.112	2.188	93	17.565	1.735	174	17.881	1.419
15	17.148	2.152	96	17.579	1.721	177	17.896	1.404
18	17.177	2.123	99	17.589	1.711	180	17.905	1.395
21	17.203	2.097	102	17.603	1.697	183	17.915	1.385
24	17.227	2.073	105	17.615	1.685	186	17.924	1.376
27	17.246	2.054	108	17.627	1.673	189	17.936	1.364
30	17.265	2.035	111	17.642	1.658	192	17.946	1.354
33	17.282	2.018	114	17.654	1.646	195	17.958	1.342
36	17.299	2.001	117	17.666	1.634	198	17.968	1.332
39	17.313	1.987	120	17.678	1.622	201	17.977	1.323
42	17.328	1.972	123	17.690	1.610	204	17.987	1.313
45	17.342	1.958	126	17.702	1.598	360	18.43	0.87
48	17.359	1.941	129	17.714	1.586	501	18.708	0.592
51	17.373	1.927	132	17.726	1.574	642	18.902	0.398
54	17.388	1.912	135	17.738	1.562	813	19.056	0.244
57	17.404	1.896	138	17.747	1.553	996	19.149	0.151
60	17.414	1.886	141	17.761	1.539	1110	19.185	0.115
63	17.431	1.869	144	17.771	1.529	1125	19.19	0.11
66	17.445	1.855	147	17.783	1.517	End of Data		
69	17.457	1.843	150	17.793	1.507			
72	17.471	1.829	153	17.805	1.495			
75	17.486	1.814	156	17.819	1.481			
78	17.498	1.802	159	17.829	1.471			



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	46.61 ft
Depth to Water (Dtw)=	19.52 ft
Confinement Depth(Dtc)=	46.61 ft
Hsat (Dtc-Dtw)=	27.09 ft
Lw (Wd-Dtw)=	27.09 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.76
Yo=	2.25 ft
t=	600 sec
Y(t)=	0.35 ft
Hydraulic Cond. (K)=	**0.3 ft/day**

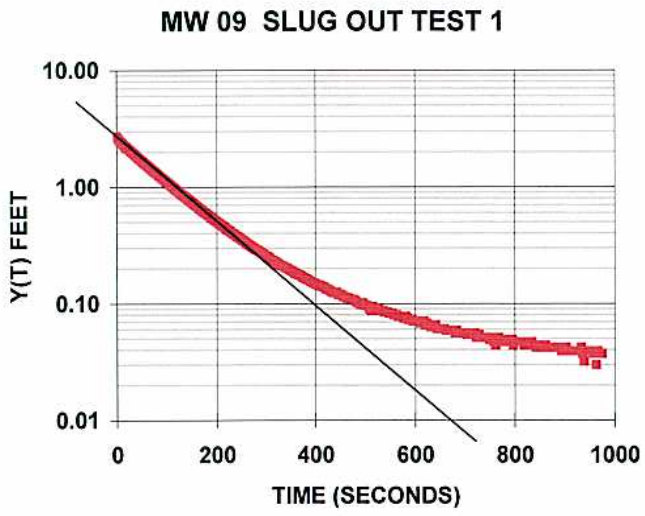
Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357.FI.FK.AI
CLIENT: Navy Clean III
TEST DATE: 1/13/2006
WELL NO.: NDAIMW09
COMPILED BY: Kenji Butler
TEST METHOD: Slug Out Test 1
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0	10.567	2.707	84	12.001	1.273	168	12.62	0.654
3	10.665	2.609	87	12.032	1.242	171	12.637	0.637
6	10.766	2.508	90	12.063	1.211	174	12.651	0.623
9	10.843	2.431	93	12.092	1.182	177	12.663	0.611
12	10.908	2.366	96	12.121	1.153	180	12.678	0.596
15	10.977	2.297	99	12.15	1.124	183	12.692	0.582
18	11.042	2.232	102	12.176	1.098	186	12.704	0.57
21	11.102	2.172	105	12.202	1.072	189	12.718	0.556
24	11.159	2.115	108	12.226	1.048	192	12.73	0.544
27	11.217	2.057	111	12.253	1.021	195	12.742	0.532
30	11.26	2.014	114	12.277	0.997	198	12.752	0.522
33	11.315	1.959	117	12.301	0.973	201	12.764	0.51
36	11.365	1.909	120	12.325	0.949	204	12.776	0.498
39	11.416	1.858	123	12.344	0.93	207	12.785	0.489
42	11.464	1.81	126	12.368	0.906	210	12.797	0.477
45	11.509	1.765	129	12.39	0.884	213	12.807	0.467
48	11.552	1.722	132	12.411	0.863	216	12.817	0.457
51	11.598	1.676	135	12.43	0.844	219	12.826	0.448
54	11.639	1.635	138	12.45	0.824	333	13.062	0.212
57	11.68	1.594	141	12.469	0.805	435	13.148	0.126
60	11.72	1.554	144	12.488	0.786	492	13.175	0.099
63	11.759	1.515	147	12.505	0.769	567	13.196	0.078
66	11.797	1.477	150	12.524	0.75	642	13.208	0.066
69	11.835	1.439	153	12.541	0.733	699	13.218	0.056
72	11.867	1.407	156	12.557	0.717	804	13.227	0.047
75	11.903	1.371	159	12.574	0.7	972	13.237	0.037
78	11.936	1.338	162	12.591	0.683	975	13.237	0.037
81	11.97	1.304	165	12.606	0.668	End of Data		



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	48.05 ft
Depth to Water (Dtw)=	18.61 ft
Confinement Depth(Dtc)=	48.05 ft
Hsat (Dtc-Dtw)=	29.44 ft
Lw (Wd-Dtw)=	29.44 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.81
Yo=	2.5 ft
t=	400 sec
Y(t)=	0.1 ft
Hydraulic Cond. (K)=	**0.9 ft/day**

Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

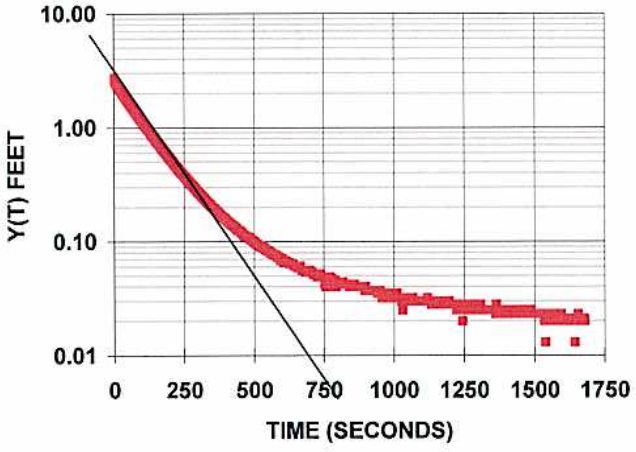
CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357.FI.FK.AI
CLIENT: Navy Clean III
TEST DATE 1/13/2006
WELL NO.: NDAIMW09
COMPILED BY: Kenji Butler
TEST METHOD: Slug Out Test 2
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0	10.546	2.738	84	11.97	1.314	168	12.596	0.688
3	10.666	2.618	87	12.001	1.283	171	12.613	0.671
6	10.759	2.525	90	12.030	1.254	174	12.625	0.659
9	10.831	2.453	93	12.059	1.225	177	12.642	0.642
12	10.898	2.386	96	12.090	1.194	180	12.654	0.63
15	10.963	2.321	99	12.119	1.165	183	12.668	0.616
18	11.023	2.261	102	12.143	1.141	186	12.683	0.601
21	11.081	2.203	105	12.172	1.112	189	12.695	0.589
24	11.138	2.146	108	12.196	1.088	192	12.707	0.577
27	11.191	2.093	111	12.222	1.062	195	12.721	0.563
30	11.244	2.04	114	12.246	1.038	198	12.731	0.553
33	11.294	1.99	117	12.270	1.014	201	12.745	0.539
36	11.344	1.94	120	12.294	0.990	204	12.755	0.529
39	11.392	1.892	123	12.316	0.968	207	12.767	0.517
42	11.438	1.846	126	12.340	0.944	210	12.776	0.508
45	11.483	1.801	129	12.359	0.925	213	12.788	0.496
48	11.527	1.757	132	12.380	0.904	216	12.798	0.486
51	11.57	1.714	135	12.402	0.882	219	12.808	0.476
54	11.611	1.673	138	12.421	0.863	222	12.82	0.464
57	11.651	1.633	141	12.443	0.841	351	13.079	0.205
60	11.692	1.592	144	12.459	0.825	537	13.196	0.088
63	11.728	1.556	147	12.479	0.805	1017	13.252	0.032
66	11.766	1.518	150	12.498	0.786	1356	13.259	0.025
69	11.802	1.482	153	12.515	0.769	1659	13.264	0.020
72	11.838	1.446	156	12.532	0.752	1680	13.264	0.020
75	11.872	1.412	159	12.548	0.736	End of Data		
78	11.905	1.379	162	12.563	0.721			
81	11.937	1.347	165	12.582	0.702			

MW 09 SLUG OUT TEST 2



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	48.05 ft
Depth to Water (Dtw)=	18.53 ft
Confinement Depth(Dtc)=	48.05 ft
Hsat (Dtc-Dtw)=	29.52 ft
Lw (Wd-Dtw)=	29.52 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.81
Yo=	2.75 ft
t=	250 sec
Y(t)=	0.325 ft
Hydraulic Cond. (K)=	**1.0 ft/day**

Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

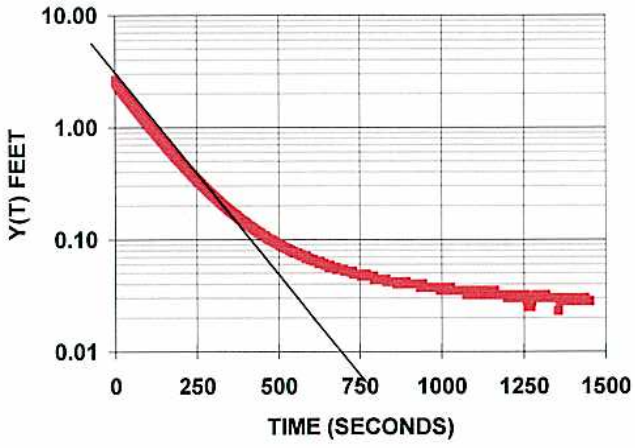
CH2MHILL

CH2M HILL SLUG TEST DATA

PROJECT NO: 180357.FI.FK.AI
CLIENT: Navy Clean III
TEST DATE 1/13/2006
WELL NO.: NDAIMW09
COMPILED BY: Kenji Butler
TEST METHOD: Slug Out Test 3
ANALYSIS METHOD: Bouwer and Rice - Fully Penetrating Well

ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)	ELAPSED TIME (sec)	TRANSDUCER READING (ft)	Y(t) (ft)
0	10.625	2.659	84	12.037	1.247	168	12.652	0.632
3	10.723	2.561	87	12.068	1.216	171	12.663	0.621
6	10.817	2.467	90	12.1	1.184	174	12.678	0.606
9	10.884	2.4	93	12.128	1.156	177	12.692	0.592
12	10.951	2.333	96	12.157	1.127	180	12.707	0.577
15	11.016	2.268	99	12.183	1.101	183	12.719	0.565
18	11.081	2.203	102	12.212	1.072	186	12.733	0.551
21	11.138	2.146	105	12.236	1.048	189	12.745	0.539
24	11.196	2.088	108	12.263	1.021	192	12.764	0.52
27	11.251	2.033	111	12.287	0.997	195	12.769	0.515
30	11.304	1.98	114	12.311	0.973	198	12.779	0.505
33	11.354	1.93	117	12.335	0.949	201	12.791	0.493
36	11.407	1.877	120	12.356	0.928	354	13.103	0.181
39	11.452	1.832	123	12.38	0.904	516	13.199	0.085
42	11.503	1.781	126	12.402	0.882	675	13.228	0.056
45	11.548	1.736	129	12.423	0.861	729	13.232	0.052
48	11.591	1.693	132	12.443	0.841	879	13.244	0.04
51	11.634	1.65	135	12.464	0.82	993	13.247	0.037
54	11.675	1.609	138	12.483	0.801	1167	13.252	0.032
57	11.718	1.566	141	12.5	0.784	1323	13.254	0.03
60	11.757	1.527	144	12.519	0.765	1440	13.256	0.028
63	11.798	1.486	147	12.539	0.745	1452	13.256	0.028
66	11.833	1.451	150	12.553	0.731	End of Data		
69	11.869	1.415	153	12.572	0.712			
72	11.908	1.376	156	12.589	0.695			
75	11.939	1.345	159	12.604	0.68			
78	11.973	1.311	162	12.62	0.664			
81	12.006	1.278	165	12.635	0.649			

MW 09 SLUG OUT TEST 3



SLUG TEST CALCS. (Bouwer and Rice)

Well Radius (Rw)=	0.167 ft
Casing Radius (Rc)=	0.0833 ft
Sand pack porosity (n)=	0.2
Adjusted Rc (if Lw<=Le)=	0.0833 ft
Well Depth (Wd)=	48.05 ft
Depth to Water (Dtw)=	18.57 ft
Confinement Depth(Dtc)=	48.05 ft
Hsat (Dtc-Dtw)=	29.48 ft
Lw (Wd-Dtw)=	29.48 ft
Le (screen length)=	10 ft
Le/Rw=	60
C=	3.00
ln(Re/Rw)=	3.81
Yo=	2.5 ft
t=	250 sec
Y(t)=	0.35 ft
Hydraulic Cond. (K)=	**0.9 ft/day**

Note: Definitions for Slug Test Calculation Symbols can be found at the front of this Appendix.

Lowering PVC slug into monitoring well for hydraulic conductivity test

Source: RI Field Sampling Event (Aug/Sept. 2004)

Hydraulic conductivity testing in progress

Source: RI Field Sampling Event (Aug/Sept. 2004)

Groundwater Sampling and Hydraulic Conductivity Photographs
AOC I Remedial Invesitgation Report
Vieques, Puerto Rico

Appendix H
Survey Data

2000 (PA/SI) Field Investigation Survey Data - Surveyed 2001

Survey Data in UTM NAD 83 (m), Lat/Long, and Elevation in Meters and Feet.

Location ID	North	East	Latitude	Longitude	Elevation Ground (m)	Elevation Ground (ft)
SB-1	2006301.445	234279.345	18 7' 45.408" N	65 30' 40.448" W	9.894	32.46
SB-2	2006298.152	234280.143	18 7' 45.301" N	65 30' 40.419" W	9.836	32.27
SB-3	2006295.118	234286.818	18 7' 45.205" N	65 30' 40.191" W	9.891	32.45
SB-4	2006295.838	234291.036	18 7' 45.231" N	65 30' 40.048" W	9.793	32.13
SB-5	2006297.089	234296.390	18 7' 45.274" N	65 30' 39.867" W	9.610	31.53
SB-6	2006297.606	234298.974	18 7' 45.292" N	65 30' 39.779" W	9.513	31.21
SB-7	2006298.494	234302.069	18 7' 45.322" N	65 30' 39.674" W	9.415	30.89
SB-8	2006298.927	234304.662	18 7' 45.337" N	65 30' 39.586" W	9.330	30.61
SB-9	2006299.375	234307.409	18 7' 45.353" N	65 30' 39.493" W	9.251	30.35
SB-10	2006299.864	234309.636	18 7' 45.370" N	65 30' 39.417" W	9.193	30.16
SB-11	2006300.439	234311.937	18 7' 45.390" N	65 30' 39.339" W	9.181	30.12
SB-12	2006301.034	234313.933	18 7' 45.410" N	65 30' 39.272" W	9.156	30.04
SB-13	2006302.653	234316.072	18 7' 45.463" N	65 30' 39.200" W	9.123	29.93
SB-14	2006305.932	234318.294	18 7' 45.571" N	65 30' 39.126" W	9.089	29.82
SB-15	2006308.207	234318.116	18 7' 45.645" N	65 30' 39.133" W	9.107	29.88
SB-16	2006310.381	234315.888	18 7' 45.714" N	65 30' 39.210" W	9.202	30.19
SB-17	2006309.885	234311.262	18 7' 45.696" N	65 30' 39.367" W	9.275	30.43
SB-18	2006308.610	234306.430	18 7' 45.653" N	65 30' 39.530" W	9.238	30.31
SB-19	2006311.135	234302.754	18 7' 45.733" N	65 30' 39.657" W	9.223	30.26
SB-20	2006312.294	234297.992	18 7' 45.769" N	65 30' 39.819" W	9.318	30.57
SB-21	2006314.239	234300.849	18 7' 45.833" N	65 30' 39.723" W	9.348	30.67
SB-22	2006315.109	234304.156	18 7' 45.863" N	65 30' 39.611" W	9.357	30.70
SB-23	2006316.418	234313.033	18 7' 45.909" N	65 30' 39.310" W	9.083	29.80
SB-24	2006324.985	234310.827	18 7' 46.187" N	65 30' 39.389" W	9.062	29.73
SB-25	2006330.998	234306.633	18 7' 46.381" N	65 30' 39.534" W	8.967	29.42
SB-26	2006328.310	234292.593	18 7' 46.287" N	65 30' 40.010" W	9.406	30.86

2004 (RI) Field Investigation Survey Data - Surveyed October 2004

Survey Data in UTM NAD 83 (m), Lat/Long, and Elevation in Meters and Feet.

Location ID	North	East	Latitude	Longitude	Elevation Ground (m)	Elevation Ground (ft)
MW-01	2006284.378	234301.327	18 7' 44.862678" N	65 30' 39.692729" W	10.749	35.27
MW-02	2006302.033	234307.737	18 7' 45.439438" N	65 30' 39.482999" W	10.528	34.54
MW-03	2006310.744	234313.919	18 7' 45.725351" N	65 30' 39.276880" W	10.598	34.77
MW-04	2006313.682	234300.434	18 7' 45.814887" N	65 30' 39.736688" W	10.657	34.96
MW-05	2006334.239	234303.277	18 7' 46.484396" N	65 30' 39.649578" W	10.615	34.82
MW-06	2006353.112	234284.750	18 7' 47.089687" N	65 30' 40.288212" W	10.593	34.75
MW-07	2006317.159	234305.919	18 7' 45.930352" N	65 30' 39.551822" W	10.717	35.16
SS-04	2006296.465	234290.731	18 7' 45.250895" N	65 30' 40.058592" W	10.341	33.93
SS-06	2006299.228	234297.779	18 7' 45.343854" N	65 30' 39.820270" W	10.084	33.08
SS-19	2006311.112	234302.477	18 7' 45.732248" N	65 30' 39.666050" W	9.810	32.18
SS-20	2006312.200	234297.583	18 7' 45.765439" N	65 30' 39.832947" W	9.886	32.43
SS-21	2006314.881	234299.777	18 7' 45.853569" N	65 30' 39.759599" W	9.927	32.57
SS-22	2006315.235	234304.182	18 7' 45.867038" N	65 30' 39.609987" W	9.922	32.55
SS-27	2006296.936	234315.875	18 7' 45.277375" N	65 30' 39.203966" W	9.682	31.77
SS-28	2006292.458	234310.947	18 7' 45.129621" N	65 30' 39.369413" W	9.797	32.14
SS-29	2006288.350	234303.805	18 7' 44.992894" N	65 30' 39.610327" W	10.002	32.82
SS-30	2006288.913	234295.750	18 7' 45.007615" N	65 30' 39.884458" W	10.146	33.29
SS-31	2006295.259	234280.940	18 7' 45.207364" N	65 30' 40.390913" W	10.439	34.25
SS-32	2006302.859	234272.343	18 7' 45.450575" N	65 30' 40.686735" W	9.883	32.42
SS-33	2006341.732	234275.276	18 7' 46.715555" N	65 30' 40.605055" W	9.579	31.43
SS-34	2006342.112	234288.033	18 7' 46.733563" N	65 30' 40.171502" W	10.057	33.00
SS-35	2006341.687	234304.955	18 7' 46.727244" N	65 30' 39.595995" W	9.924	32.56
SS-36	2006340.375	234321.272	18 7' 46.691846" N	65 30' 39.040611" W	9.373	30.75
SS-37	2006345.851	234324.845	18 7' 46.871426" N	65 30' 38.921678" W	9.457	31.03
SS-38	2006350.095	234309.095	18 7' 47.002418" N	65 30' 39.459145" W	10.247	33.62
SS-39	2006353.174	234295.026	18 7' 47.096257" N	65 30' 39.938892" W	10.030	32.91
SS-40	2006349.285	234280.546	18 7' 46.963424" N	65 30' 40.429381" W	9.705	31.84
SS-41	2006298.184	234293.704	18 7' 45.308089" N	65 30' 39.958306" W	10.235	33.58

2005/2006 (RI) Field Investigation Survey Data - Surveyed March 2006

Survey Data in UTM NAD 83 (m), Lat/Long, and Elevation in Meters and Feet.

Description	North	East	Latitude	Longitude	Elevation Ground (m)	Elevation Ground (ft)
MW-08	2006334.84	234263.58	18 7' 46.486161" N	65 30' 40.999528" W	10.306	33.81
MW-09	2006356.87	234325.36	18 7' 47.229871" N	65 30' 38.909365" W	10.700	35.11

Appendix I
2004 IDW Disposal Information

revd - 11/9/04

PEL Laboratories, Inc.

Florida Department of Health #E84207
July 1, 2004 - June 30, 2005

CWA - Extractable Organics, General Chemistry,Metals,
Pesticides-herbicides-PCB's, Volatile Organics
RCRA/CERCLS - Extractable Organics, General Chemistry, Metals
Pesticides-Herbicides-PCB's, Volatile Organics

- CERTIFICATE OF ANALYSIS -

Report Date: 11/01/2004

To: Kevin Sanders
CH2M Hill
3011 S.W. Williston Road
Gainesville, FL 326147009

W 352-335-5877

PROJECT ID: VIEQUES - IDW / 180357.FI.22
WORK ORDER: 2409211
DATE RECEIVED: Friday, October 22, 2004

Project Notes: For 8260 TCLP analysis, sample -01 required an additional 1:10 dilution due to excessive foaming upon the purge step. Heavy emulsions were encountered during the extraction of the 8270 samples. These emulsions may have contributed to the low surrogate recoveries in the samples. For the 8081 analysis, sample -01 had surrogate recoveries below criteria. The most probable cause for the variances is matrix effect. For the 8151 analysis, the surrogate was below criteria for the samples and QC. The samples and QC was re-extracted and re-analyzed out of hold. With acceptable criteria. Both sets of data is reported.

(†): Short Hold Time Analysis Date

Samples reported on dry weight basis

PEL Contact: Mark Gudnason / extension: 242

4420 Pendola Point Road • Tampa, Florida 33619
(813)247-2805 • FAX: (813)248-1537
Website: www.pelab.com

PEL Laboratories, Inc.

DATA QUALIFIER CODES

State of Florida, Department of Environmental Protection &
Department of Health & Rehabilitative Services / NELAC

J Estimated value; value not accurate. This code shall be used in the following instances:

1. Surrogate recovery limits have been exceeded.
2. No known quality control criteria exists for the component
3. The reported value failed to meet the established quality control criteria for either precision or accuracy
4. The sample matrix interfered with the ability to make an accurate determination
5. If the data is questionable because of improper laboratory or field protocols (e.g. composite sample was collected instead of a grab sample)

Note: a "J" value shall be accompanied by justification for it's use, and shall not be used if another code applies (e.g. L, V, Y, Q).

L Off-scale high. Actual value is known to be greater then the value given. To be used when the concentration of the analyte is above the acceptable limit for quantitation (exceeds the linear range of the highest calibration standard) and the calibration curve is known to exhibit a negative deflection.

Q Sample held beyond acceptable holding time. This code shall be used if the value is derived from a sample that was prepared or analyzed after the approved holding time restrictions for the sample preparation or analysis.

U Indicates that the compound was analyzed for but not detected. This shall be used to indicate that the specified component was not detected. The value associated with the qualifier shall be the laboratory reporting limit. Unless requested by the client, values less than the reporting limit shall not be reported.

V Indicates that the analyte was detected in both the sample and the associated method blank.
Note: The value in the blank shall not be subtracted from associated samples.

Y The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Kevin Sanders
CH2M Hill

WORK ORDER: 2409211
PROJECT ID: VIEQUES - IDW / 180357.FI.22

PEL Lab# : 240921101
Client ID : WEST IDW I&E W
Matrix : GW

Collection Information:
Sample Date: 10/21/2004 9:00:00 AM
ND = Less than RL

Parameter	Method	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
Flash Point	1010	ND	10/27/2004 9:03		Fahrenheit		1
pH	150.1	8.08	(†) 10/23/2004 12:22		pH		1
Sulfide	376.1	0.4	10/26/2004 12:05		mg/L	0.08	1
Arsenic	6010 TCLP	ND	10/27/2004 20:19	10/27/2004	mg/L	0.018	1
Barium	6010 TCLP	0.0814	10/27/2004 20:19	10/27/2004	mg/L	0.00491	1
Cadmium	6010 TCLP	ND	10/27/2004 20:19	10/27/2004	mg/L	0.00356	1
Chromium	6010 TCLP	ND	10/27/2004 20:19	10/27/2004	mg/L	0.013	1
Lead	6010 TCLP	ND	10/27/2004 20:19	10/27/2004	mg/L	0.022	1
Selenium	6010 TCLP	0.0565	10/27/2004 20:19	10/27/2004	mg/L	0.026	1
Silver	6010 TCLP	0.0137	10/27/2004 20:19	10/27/2004	mg/L	0.0065	1
Mercury	7470 TCLP	ND	10/28/2004 16:26	10/27/2004	mg/L	0.000162	1
Chlordane	8081 TCLP	ND	10/28/2004 19:29	10/28/2004	ug/L	0.1	1
Endrin	8081 TCLP	ND	10/28/2004 19:29	10/28/2004	ug/L	0.0036	1
gamma-BHC (Lindane)	8081 TCLP	ND	10/28/2004 19:29	10/28/2004	ug/L	0.0048	1
Heptachlor	8081 TCLP	ND	10/28/2004 19:29	10/28/2004	ug/L	0.0028	1
Heptachlor epoxide	8081 TCLP	ND	10/28/2004 19:29	10/28/2004	ug/L	0.0028	1
Methoxychlor	8081 TCLP	ND	10/28/2004 19:29	10/28/2004	ug/L	0.0036	1
Toxaphene	8081 TCLP	ND	10/28/2004 19:29	10/28/2004	ug/L	0.36	1
2,4,5,6-tetrachloro-m-xylene(SUR	8081 TCLP	41 J4	10/28/2004 19:29	10/28/2004	%	(45 - 125)	1
Decachlorobiphenyl(SURR)	8081 TCLP	1.9 J4	10/28/2004 19:29	10/28/2004	%	(34 - 133)	1
2,4,5-TP (Silvex)	8151 TCLP	ND	10/30/2004 17:09	10/28/2004	ug/L	0.076	1
2,4,5-TP (Silvex)	8151 TCLP	ND	10/29/2004 10:42	10/28/2004	ug/L	0.076	1
2,4'-D	8151 TCLP	ND	10/29/2004 10:42	10/28/2004	ug/L	0.3	1
2,4'-D	8151 TCLP	ND	10/30/2004 17:09	10/28/2004	ug/L	0.3	1
DCAA(SURR)	8151 TCLP	90.9	10/30/2004 17:09	10/28/2004	%	(60 - 130)	1
DCAA(SURR)	8151 TCLP	46 J3	10/29/2004 10:42	10/28/2004	%	(60 - 130)	1
1,1-Dichloroethene	8260 TCLP	ND	10/29/2004 9:18		ug/l	90	10
1,2-Dichloroethane	8260 TCLP	ND	10/29/2004 9:18		ug/l	29	10
2-Butanone	8260 TCLP	ND	10/29/2004 9:18		ug/l	85	10
Benzene	8260 TCLP	ND	10/29/2004 9:18		ug/l	15	10
Carbon tetrachloride	8260 TCLP	ND	10/29/2004 9:18		ug/l	37	10
Chlorobenzene	8260 TCLP	ND	10/29/2004 9:18		ug/l	32	10
Chloroform	8260 TCLP	ND	10/29/2004 9:18		ug/l	25	10
Tetrachloroethene	8260 TCLP	ND	10/29/2004 9:18		ug/l	50	10
Trichloroethene	8260 TCLP	ND	10/29/2004 9:18		ug/l	27	10
Vinyl chloride	8260 TCLP	ND	10/29/2004 9:18		ug/l	40	10
1,2-Dichloroethane-d4(SURR)	8260 TCLP	104	10/29/2004 9:18		%	(80 - 120)	10
4-Bromofluorobenzene(SURR)	8260 TCLP	100	10/29/2004 9:18		%	(86 - 115)	10
Dibromofluoromethane(SURR)	8260 TCLP	99.8	10/29/2004 9:18		%	(86 - 118)	10
Toluene d8(SURR)	8260 TCLP	96.8	10/29/2004 9:18		%	(88 - 110)	10
1,4-Dichlorobenzene	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	5.4	1
2,4,5-Trichlorophenol	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	6.8	1
2,4,6-Trichlorophenol	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	7.2	1
2,4-Dinitrotoluene	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	5.6	1
2-Methylphenol (o-Cresol)	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	5.2	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Kevin Sanders
CH2M Hill

WORK ORDER: 2409211

PROJECT ID: VIEQUES - IDW / 180357.FI.22

PEL Lab# : 240921101

Client ID : WEST IDW I&E W

Matrix : GW

Collection Information:

Sample Date: 10/21/2004 9:00:00 AM

ND = Less than RL

Parameter	Method	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
4-Methylphenol	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	12.2	1
Hexachlorobenzene	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	5.2	1
Hexachlorobutadiene	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	5	1
Hexachloroethane	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	5.2	1
Nitrobenzene	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	5.6	1
Pentachlorophenol	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	5.2	1
Pyridine	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	4.2	1
2,4,6-Tribromophenol(SURR)	8270 TCLP	4.2 J1	10/29/2004 0:00	10/28/2004	%	(10 - 122)	1
2-Fluorobiphenyl(SURR)	8270 TCLP	86	10/29/2004 0:00	10/28/2004	%	(43 - 116)	1
2-Fluorophenol(SURR)	8270 TCLP	4.8 J1	10/29/2004 0:00	10/28/2004	%	(21 - 120)	1
Nitrobenzene-d5(SURR)	8270 TCLP	80	10/29/2004 0:00	10/28/2004	%	(35 - 114)	1
Phenol-d5(SURR)	8270 TCLP	14.4	10/29/2004 0:00	10/28/2004	%	(10 - 94)	1
p-Terphenyl-d14(SURR)	8270 TCLP	94	10/29/2004 0:00	10/28/2004	%	(33 - 141)	1
Cyanide	9012	ND	10/27/2004 13:06	10/26/2004	ug/L	9.9	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Kevin Sanders
CH2M Hill

WORK ORDER: 2409211

PROJECT ID: VIEQUES - IDW / 180357.FI.22

PEL Lab# : 240921102

Client ID : WEST IDW I&E S

Matrix : SO

Collection Information:

Sample Date: 10/21/2004 9:00:00 AM

ND = Less than RL

Parameter	Method	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
Flash Point	1010	ND	10/27/2004 10:03		Fahrenheit		1
Sulfide	376.1	55.2	10/26/2004 11:35	10/26/2004	mg/Kg	11	1
Arsenic	6010 TCLP	0.131	10/27/2004 20:03	10/27/2004	mg/L	0.018	1
Barium	6010 TCLP	0.287	10/27/2004 20:03	10/27/2004	mg/L	0.00491	1
Cadmium	6010 TCLP	ND	10/27/2004 20:03	10/27/2004	mg/L	0.00356	1
Chromium	6010 TCLP	ND	10/27/2004 20:03	10/27/2004	mg/L	0.013	1
Lead	6010 TCLP	ND	10/27/2004 20:03	10/27/2004	mg/L	0.022	1
Selenium	6010 TCLP	ND	10/27/2004 20:03	10/27/2004	mg/L	0.026	1
Silver	6010 TCLP	0.0158	10/27/2004 20:03	10/27/2004	mg/L	0.0065	1
Mercury	7470 TCLP	ND	10/28/2004 16:14	10/27/2004	mg/L	0.000162	1
Chlordane	8081 TCLP	ND	10/28/2004 20:20	10/28/2004	ug/L	0.1	1
Endrin	8081 TCLP	ND	10/28/2004 20:20	10/28/2004	ug/L	0.0036	1
gamma-BHC (Lindane)	8081 TCLP	ND	10/28/2004 20:20	10/28/2004	ug/L	0.0048	1
Heptachlor	8081 TCLP	ND	10/28/2004 20:20	10/28/2004	ug/L	0.0028	1
Heptachlor epoxide	8081 TCLP	ND	10/28/2004 20:20	10/28/2004	ug/L	0.0028	1
Methoxychlor	8081 TCLP	ND	10/28/2004 20:20	10/28/2004	ug/L	0.0036	1
Toxaphene	8081 TCLP	ND	10/28/2004 20:20	10/28/2004	ug/L	0.36	1
2,4,5,6-tetrachloro-m-xylene(SUR	8081 TCLP	70	10/28/2004 20:20	10/28/2004	%	(45 - 125)	1
Decachlorobiphenyl(SURR)	8081 TCLP	75	10/28/2004 20:20	10/28/2004	%	(34 - 133)	1
2,4,5-TP (Silvex)	8151 TCLP	ND	10/30/2004 17:41	10/28/2004	ug/L	0.076	1
2,4,5-TP (Silvex)	8151 TCLP	ND	10/29/2004 11:48	10/28/2004	ug/L	0.076	1
2,4'-D	8151 TCLP	ND	10/29/2004 11:48	10/28/2004	ug/L	0.3	1
2,4'-D	8151 TCLP	ND	10/30/2004 17:41	10/28/2004	ug/L	0.3	1
DCAA(SURR)	8151 TCLP	87.9	10/30/2004 17:41	10/28/2004	%	(60 - 130)	1
DCAA(SURR)	8151 TCLP	52 J3	10/29/2004 11:48	10/28/2004	%	(60 - 130)	1
1,1-Dichloroethene	8260 TCLP	ND	10/28/2004 20:18		ug/l	9	1
1,2-Dichloroethane	8260 TCLP	ND	10/28/2004 20:18		ug/l	2.9	1
2-Butanone	8260 TCLP	ND	10/28/2004 20:18		ug/l	8.5	1
Benzene	8260 TCLP	ND	10/28/2004 20:18		ug/l	1.5	1
Carbon tetrachloride	8260 TCLP	ND	10/28/2004 20:18		ug/l	3.7	1
Chlorobenzene	8260 TCLP	ND	10/28/2004 20:18		ug/l	3.2	1
Chloroform	8260 TCLP	ND	10/28/2004 20:18		ug/l	2.5	1
Tetrachloroethene	8260 TCLP	ND	10/28/2004 20:18		ug/l	5	1
Trichloroethene	8260 TCLP	ND	10/28/2004 20:18		ug/l	2.7	1
Vinyl chloride	8260 TCLP	ND	10/28/2004 20:18		ug/l	4	1
1,2-Dichloroethane-d4(SURR)	8260 TCLP	104	10/28/2004 20:18		%	(80 - 120)	1
4-Bromofluorobenzene(SURR)	8260 TCLP	97.8	10/28/2004 20:18		%	(86 - 115)	1
Dibromofluoromethane(SURR)	8260 TCLP	103	10/28/2004 20:18		%	(86 - 118)	1
Toluene d8(SURR)	8260 TCLP	102	10/28/2004 20:18		%	(88 - 110)	1
1,4-Dichlorobenzene	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	5.4	1
2,4,5-Trichlorophenol	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	6.8	1
2,4,6-Trichlorophenol	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	7.2	1
2,4-Dinitrotoluene	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	5.6	1
2-Methylphenol (o-Cresol)	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	5.2	1
4-Methylphenol	8270 TCLP	ND	10/29/2004 0:00	10/28/2004	ug/l	12.2	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Kevin Sanders
CH2M Hill

WORK ORDER: 2409211

PROJECT ID: VIEQUES - IDW / 180357.FI.22

PEL Lab# : 240921102

Client ID : WEST IDW I&E S

Matrix : SO

Collection Information:

Sample Date: 10/21/2004 9:00:00 AM

ND = Less than RL

Parameter	Method	Results		Analysis Date	Prep Date	Units	RL	Dilution Factor
Hexachlorobenzene	8270 TCLP	ND		10/29/2004 0:00	10/28/2004	ug/l	5.2	1
Hexachlorobutadiene	8270 TCLP	ND		10/29/2004 0:00	10/28/2004	ug/l	5	1
Hexachloroethane	8270 TCLP	ND		10/29/2004 0:00	10/28/2004	ug/l	5.2	1
Nitrobenzene	8270 TCLP	ND		10/29/2004 0:00	10/28/2004	ug/l	5.6	1
Pentachlorophenol	8270 TCLP	ND		10/29/2004 0:00	10/28/2004	ug/l	5.2	1
Pyridine	8270 TCLP	ND		10/29/2004 0:00	10/28/2004	ug/l	4.2	1
2,4,6-Tribromophenol(SURR)	8270 TCLP	74.5		10/29/2004 0:00	10/28/2004	%	(10 - 122)	1
2-Fluorobiphenyl(SURR)	8270 TCLP	76.5		10/29/2004 0:00	10/28/2004	%	(43 - 116)	1
2-Fluorophenol(SURR)	8270 TCLP	66		10/29/2004 0:00	10/28/2004	%	(21 - 120)	1
Nitrobenzene-d5(SURR)	8270 TCLP	76		10/29/2004 0:00	10/28/2004	%	(35 - 114)	1
Phenol-d5(SURR)	8270 TCLP	54.8		10/29/2004 0:00	10/28/2004	%	(10 - 94)	1
p-Terphenyl-d14(SURR)	8270 TCLP	79.5		10/29/2004 0:00	10/28/2004	%	(33 - 141)	1
Cyanide	9012	ND		10/27/2004 14:06	10/27/2004	mg/Kg	0.186	1
pH	9045	9.67	(†)	10/25/2004 10:02		pH		1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Kevin Sanders
CH2M Hill

WORK ORDER: 2409211
PROJECT ID: VIEQUES - IDW / 180357.FI.22

QC SUMMARY

METHOD: 376.1

Method Blank 161610 **Matrix :** SQ

Associated Lab Samples : 161610 161611 161612 161613 161614 240921102

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
Sulfide	ND	10/26/2004	10/26/2004	mg/Kg	7.99	1

Method Blank 161618 **Matrix :** WQ

Associated Lab Samples : 161618 161619 161620 161621 161622 240921101

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
Sulfide	ND	10/26/2004		mg/L	0.08	1

LABORATORY CONTROL SAMPLE 161611 **Matrix :** SQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS
Sulfide	mg/Kg	498	509	102.2	(80-120)

LABORATORY CONTROL SAMPLE 161619 **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS
Sulfide	mg/L	5	5.12	102.4	(80-120)

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Kevin Sanders
CH2M Hill

WORK ORDER: 2409211
PROJECT ID: VIEQUES - IDW / 180357.FI.22
METHOD: 6010 TCLP

Method Blank 161429 **Matrix :** WQ

Associated Lab Samples : 161429 161430 161431 161432 161433 161437 161438 161439 161440 161441 240920201 240921101 24092110

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
Arsenic	ND	10/27/2004	10/27/2004	mg/L	0.018	1
Barium	ND	10/27/2004	10/27/2004	mg/L	0.00491	1
Cadmium	ND	10/27/2004	10/27/2004	mg/L	0.00356	1
Chromium	ND	10/27/2004	10/27/2004	mg/L	0.013	1
Lead	0.0326	10/27/2004	10/27/2004	mg/L	0.022	1
Selenium	0.0639	10/27/2004	10/27/2004	mg/L	0.026	1
Silver	0.00924	10/27/2004	10/27/2004	mg/L	0.0065	1

Method Blank 161437 **Matrix :** WQ

Associated Lab Samples : 161429 161430 161431 161432 161433 161437 161438 161439 161440 161441 240920201 240921101 24092110

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
Arsenic	ND	10/27/2004	10/27/2004	mg/L	0.018	1
Barium	ND	10/27/2004	10/27/2004	mg/L	0.00491	1
Cadmium	ND	10/27/2004	10/27/2004	mg/L	0.00356	1
Chromium	ND	10/27/2004	10/27/2004	mg/L	0.013	1
Lead	0.0313	10/27/2004	10/27/2004	mg/L	0.022	1
Selenium	0.0618	10/27/2004	10/27/2004	mg/L	0.026	1
Silver	0.0129	10/27/2004	10/27/2004	mg/L	0.0065	1

LABORATORY CONTROL SAMPLE 161430 **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS
Arsenic	mg/L	5	4.93	98.6	(80-120)
Barium	mg/L	5	4.88	97.6	(80-120)
Cadmium	mg/L	5	5.03	100.6	(80-120)
Chromium	mg/L	5	4.95	99	(80-120)
Lead	mg/L	5	4.92	98.4	(80-120)
Selenium	mg/L	5	4.93	98.6	(80-120)
Silver	mg/L	5	4.56	91.2	(80-120)

LABORATORY CONTROL SAMPLE 161438 **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS
Arsenic	mg/L	5	4.91	98.2	(80-120)
Barium	mg/L	5	4.93	98.6	(80-120)

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Kevin Sanders
CH2M Hill

WORK ORDER: 2409211

PROJECT ID: VIEQUES - IDW / 180357.FI.22

METHOD: 6010 TCLP

LABORATORY CONTROL SAMPLE 161438 **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS
Cadmium	mg/L	5	5.07	101.4	(80-120)
Chromium	mg/L	5	4.98	99.6	(80-120)
Lead	mg/L	5	4.94	98.8	(80-120)
Selenium	mg/L	5	4.95	99	(80-120)
Silver	mg/L	5	4.58	91.6	(80-120)

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Kevin Sanders
CH2M Hill

WORK ORDER: 2409211
PROJECT ID: VIEQUES - IDW / 180357.FI.22
METHOD: 7470 TCLP

Method Blank 161442 **Matrix :** WQ

Associated Lab Samples : 161442 161443 161444 161445 161446 240920201 240921102

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
Mercury	ND	10/28/2004	10/27/2004	mg/L	0.000162	1

Method Blank 161447 **Matrix :** WQ

Associated Lab Samples : 161447 161448 161449 161450 161451 240921101

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
Mercury	ND	10/28/2004	10/27/2004	mg/L	0.000162	1

LABORATORY CONTROL SAMPLE 161443 **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS
Mercury	mg/L	0.03	0.0294	98	(80-120)

LABORATORY CONTROL SAMPLE 161448 **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS
Mercury	mg/L	0.03	0.0295	98.3	(80-120)

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Kevin Sanders
CH2M Hill

WORK ORDER: 2409211
PROJECT ID: VIEQUES - IDW / 180357.FI.22
METHOD: 8081 TCLP

Method Blank 161599 **Matrix :** WQ

Associated Lab Samples : 161599 161600 240921101 240921101MS 240921102

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
Chlordane	ND	10/28/2004	10/28/2004	ug/L	0.1	1
Endrin	ND	10/28/2004	10/28/2004	ug/L	0.0036	1
gamma-BHC (Lindane)	ND	10/28/2004	10/28/2004	ug/L	0.0048	1
Heptachlor	ND	10/28/2004	10/28/2004	ug/L	0.0028	1
Heptachlor epoxide	ND	10/28/2004	10/28/2004	ug/L	0.0028	1
Methoxychlor	ND	10/28/2004	10/28/2004	ug/L	0.0036	1
Toxaphene	ND	10/28/2004	10/28/2004	ug/L	0.36	1
2,4,5,6-tetrachloro-m-xylene(SUR	70	10/28/2004	10/28/2004	%	(45 - 125)	1
Decachlorobiphenyl(SURR) (S)	75	10/28/2004	10/28/2004	%	(34 - 133)	1

LABORATORY CONTROL SAMPLE 161600 **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS
Endrin	ug/L	1	0.89	89	(43-128)
gamma-BHC (Lindane)	ug/L	1	0.84	84	(25-139)
Heptachlor	ug/L	1	0.83	83	(36-121)
Heptachlor epoxide	ug/L	1	0.85	85	(43-125)
Methoxychlor	ug/L	1	0.88	88	(48-131)
2,4,5,6-tetrachloro-m-xylene(SUR	ug/L	2	1.5	75	(45-125)
Decachlorobiphenyl(SURR) (S)	ug/L	2	1.6	80	(34-133)

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Kevin Sanders
CH2M Hill

WORK ORDER: 2409211
PROJECT ID: VIEQUES - IDW / 180357.FI.22
METHOD: 8151 TCLP

Method Blank 161602 **Matrix :** WQ

Associated Lab Samples : 161602 161603 240921101 240921101MS 240921102

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
2,4,5-TP (Silvex)	ND	10/29/2004	10/28/2004	ug/L	0.076	1
2,4'-D	ND	10/29/2004	10/28/2004	ug/L	0.3	1
DCAA(SURR) (S)	58 J3	10/29/2004	10/28/2004	%	(60 - 130)	1

Method Blank 161760 **Matrix :** WQ

Associated Lab Samples : 161760 161761 240921102RE1MS

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
2,4,5-TP (Silvex)	ND	10/30/2004	10/30/2004	ug/L	0.076	1
2,4'-D	ND	10/30/2004	10/30/2004	ug/L	0.3	1
DCAA(SURR) (S)	93.9	10/30/2004	10/30/2004	%	(60 - 130)	1

LABORATORY CONTROL SAMPLE 161603 **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS
2,4,5-TP (Silvex)	ug/L	2	1.4	70	(54-150)
2,4'-D	ug/L	2	1	50	(43-161)
DCAA(SURR) (S)	ug/L	5	3	60	(60-130)

LABORATORY CONTROL SAMPLE 161761 **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS
2,4,5-TP (Silvex)	ug/L	2	1.3	65	(54-150)
2,4'-D	ug/L	2	1.1	55	(43-161)
DCAA(SURR) (S)	ug/L	3.3	3	90.9	(60-130)

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Kevin Sanders
CH2M Hill

WORK ORDER: 2409211
PROJECT ID: VIEQUES - IDW / 180357.FI.22
METHOD: 8260 TCLP

Method Blank 102804TBLKA33 **Matrix :** WQ

Associated Lab Samples : 102804TBLKA33 102804TLCSA34 240921102 240921102MS 240921102MSD

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
1,1-Dichloroethene	ND	10/28/2004		ug/l	9	1
1,2-Dichloroethane	ND	10/28/2004		ug/l	2.9	1
2-Butanone	ND	10/28/2004		ug/l	8.5	1
Benzene	ND	10/28/2004		ug/l	1.5	1
Carbon tetrachloride	ND	10/28/2004		ug/l	3.7	1
Chlorobenzene	ND	10/28/2004		ug/l	3.2	1
Chloroform	ND	10/28/2004		ug/l	2.5	1
Tetrachloroethene	ND	10/28/2004		ug/l	5	1
Trichloroethene	ND	10/28/2004		ug/l	2.7	1
Vinyl chloride	ND	10/28/2004		ug/l	4	1
1,2-Dichloroethane-d4(SURR) (S)	109	10/28/2004		%	(80 - 120)	1
4-Bromofluorobenzene(SURR) (S	100	10/28/2004		%	(86 - 115)	1
Dibromofluoromethane(SURR) (S	106	10/28/2004		%	(86 - 118)	1
Toluene d8(SURR) (S)	103	10/28/2004		%	(88 - 110)	1

Method Blank 102904TBLKA32 **Matrix :** WQ

Associated Lab Samples : 102904TBLKA32 102904TLCSA32 240921101

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
1,1-Dichloroethene	ND	10/29/2004		ug/l	9	1
1,2-Dichloroethane	ND	10/29/2004		ug/l	2.9	1
2-Butanone	ND	10/29/2004		ug/l	8.5	1
Benzene	ND	10/29/2004		ug/l	1.5	1
Carbon tetrachloride	ND	10/29/2004		ug/l	3.7	1
Chlorobenzene	ND	10/29/2004		ug/l	3.2	1
Chloroform	ND	10/29/2004		ug/l	2.5	1
Tetrachloroethene	ND	10/29/2004		ug/l	5	1
Trichloroethene	ND	10/29/2004		ug/l	2.7	1
Vinyl chloride	ND	10/29/2004		ug/l	4	1
1,2-Dichloroethane-d4(SURR) (S)	105	10/29/2004		%	(80 - 120)	1
4-Bromofluorobenzene(SURR) (S	104	10/29/2004		%	(86 - 115)	1
Dibromofluoromethane(SURR) (S	102	10/29/2004		%	(86 - 118)	1
Toluene d8(SURR) (S)	101	10/29/2004		%	(88 - 110)	1

LABORATORY CONTROL SAMPLE 102804TLCSA3 **Matrix :** WQ

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Kevin Sanders
CH2M Hill

WORK ORDER: 2409211

PROJECT ID: VIEQUES - IDW / 180357.FI.22

METHOD: 8260 TCLP

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS
1,1-Dichloroethene	ug/l	200	204	102	(75-150)
1,2-Dichloroethane	ug/l	200	214	107	(86-120)
2-Butanone	ug/l	600	585	97.5	(83-127)
Benzene	ug/l	200	214	107	(82-129)
Carbon tetrachloride	ug/l	200	215	108	(74-140)
Chlorobenzene	ug/l	200	208	104	(87-117)
Chloroform	ug/l	200	214	107	(83-127)
Tetrachloroethene	ug/l	200	218	109	(87-124)
Trichloroethene	ug/l	200	210	105	(82-127)
Vinyl chloride	ug/l	200	170	85	(66-128)
1,2-Dichloroethane-d4(SURR) (S)	ug/l	50	53.4	107	(80-120)
4-Bromofluorobenzene(SURR) (S	ug/l	50	49.8	99.6	(86-115)
Dibromofluoromethane(SURR) (S	ug/l	50	53	106	(86-118)
Toluene d8(SURR) (S)	ug/l	50	51.4	103	(88-110)

LABORATORY CONTROL SAMPLE 102904TLCSA3 **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS
1,1-Dichloroethene	ug/l	200	188	94	(75-150)
1,2-Dichloroethane	ug/l	200	200	100	(86-120)
2-Butanone	ug/l	600	647	108	(83-127)
Benzene	ug/l	200	194	97	(82-129)
Carbon tetrachloride	ug/l	200	203	102	(74-140)
Chlorobenzene	ug/l	200	207	104	(87-117)
Chloroform	ug/l	200	198	99	(83-127)
Tetrachloroethene	ug/l	200	209	104	(87-124)
Trichloroethene	ug/l	200	200	100	(82-127)
Vinyl chloride	ug/l	200	179	89.5	(66-128)
1,2-Dichloroethane-d4(SURR) (S)	ug/l	50	50.2	100	(80-120)
4-Bromofluorobenzene(SURR) (S	ug/l	50	50.4	101	(86-115)
Dibromofluoromethane(SURR) (S	ug/l	50	49.3	98.6	(86-118)
Toluene d8(SURR) (S)	ug/l	50	48.1	96.2	(88-110)

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Kevin Sanders
CH2M Hill

WORK ORDER: 2409211
PROJECT ID: VIEQUES - IDW / 180357.FI.22
METHOD: 8270 TCLP

Method Blank 161605 **Matrix :** WQ

Associated Lab Samples : 161605 161606 161607 240921101 240921102

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
1,4-Dichlorobenzene	ND	10/29/2004	10/28/2004	ug/l	5.4	1
2,4,5-Trichlorophenol	ND	10/29/2004	10/28/2004	ug/l	6.8	1
2,4,6-Trichlorophenol	ND	10/29/2004	10/28/2004	ug/l	7.2	1
2,4-Dinitrotoluene	ND	10/29/2004	10/28/2004	ug/l	5.6	1
2-Methylphenol (o-Cresol)	ND	10/29/2004	10/28/2004	ug/l	5.2	1
4-Methylphenol	ND	10/29/2004	10/28/2004	ug/l	12.2	1
Hexachlorobenzene	ND	10/29/2004	10/28/2004	ug/l	5.2	1
Hexachlorobutadiene	ND	10/29/2004	10/28/2004	ug/l	5	1
Hexachloroethane	ND	10/29/2004	10/28/2004	ug/l	5.2	1
Nitrobenzene	ND	10/29/2004	10/28/2004	ug/l	5.6	1
Pentachlorophenol	ND	10/29/2004	10/28/2004	ug/l	5.2	1
Pyridine	ND	10/29/2004	10/28/2004	ug/l	4.2	1
2,4,6-Tribromophenol(SURR) (S)	80.5	10/29/2004	10/28/2004	%	(10 - 122)	1
2-Fluorobiphenyl(SURR) (S)	80.5	10/29/2004	10/28/2004	%	(43 - 116)	1
2-Fluorophenol(SURR) (S)	75	10/29/2004	10/28/2004	%	(21 - 120)	1
Nitrobenzene-d5(SURR) (S)	78	10/29/2004	10/28/2004	%	(35 - 114)	1
Phenol-d5(SURR) (S)	63.5	10/29/2004	10/28/2004	%	(10 - 94)	1
p-Terphenyl-d14(SURR) (S)	83	10/29/2004	10/28/2004	%	(33 - 141)	1

LABORATORY CONTROL SAMPLE 161606 **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC		% REC LIMITS
1,4-Dichlorobenzene	ug/l	80	61.4	76.8		(26-101)
2,4,5-Trichlorophenol	ug/l	80	64.7	80.9		(9-131)
2,4,6-Trichlorophenol	ug/l	80	61.7	77.1		(8-130)
2,4-Dinitrotoluene	ug/l	80	65.3	81.6		(39-144)
2-Methylphenol (o-Cresol)	ug/l	80	68.4	85.5		(6-114)
4-Methylphenol	ug/l	80	65.7	82.1		(6-104)
Hexachlorobenzene	ug/l	80	60.1	75.1		(35-135)
Hexachlorobutadiene	ug/l	80	67.9	84.9		(48-92)
Hexachloroethane	ug/l	80	62.4	78		(22-96)
Nitrobenzene	ug/l	80	62.2	77.8		(37-136)
Pentachlorophenol	ug/l	80	55.2	69		(17-131)
Pyridine	ug/l	80	57.2	71.5	*	(22-70)
2,4,6-Tribromophenol(SURR) (S)	ug/l	400	347	86.8		(10-122)
2-Fluorobiphenyl(SURR) (S)	ug/l	200	163	81.5		(43-116)
2-Fluorophenol(SURR) (S)	ug/l	400	308	77		(21-120)
Nitrobenzene-d5(SURR) (S)	ug/l	200	157	78.5		(35-114)
Phenol-d5(SURR) (S)	ug/l	400	279	69.8		(10-94)
p-Terphenyl-d14(SURR) (S)	ug/l	200	167	83.5		(33-141)

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Kevin Sanders
CH2M Hill

WORK ORDER: 2409211

PROJECT ID: VIEQUES - IDW / 180357.FI.22

METHOD: 8270 TCLP

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Kevin Sanders
CH2M Hill

WORK ORDER: 2409211
PROJECT ID: VIEQUES - IDW / 180357.FI.22
METHOD: 9012

Method Blank 161457 **Matrix :** WQ

Associated Lab Samples : 161457 161458 161459 161460 161461 240921101

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
Cyanide	ND	10/27/2004	10/26/2004	ug/L	9.9	1

Method Blank 161466 **Matrix :** SQ

Associated Lab Samples : 161466 161467 161468 161469 161470 240921102

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
Cyanide	ND	10/27/2004	10/27/2004	mg/Kg	0.136	1

LABORATORY CONTROL SAMPLE 161458 **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS
Cyanide	ug/L	250	242	96.8	(74-108)

LABORATORY CONTROL SAMPLE 161467 **Matrix :** SQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS
Cyanide	mg/Kg	12.5	12.1	96.8	(75-106)

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Kevin Sanders
CH2M Hill

WORK ORDER: 2409211

PROJECT ID: VIEQUES - IDW / 180357.FI.22

Brian C. Spann

Digitally signed by Brian C. Spann
DN: CN = Brian C. Spann, C = US
Date: 2004.11.01 15:09:39 -05'00'

Brian C. Spann	Laboratory Manager
David Cantillo	Quality Assurance
Mark Gudnason	Senior Project Manager
Lisa Pelo	Volatiles Team Leader
Thomas Scott	Semi-Volatiles Team Leader

Chain of Custody Record
Record/Work Request

PEL Laboratories, Inc.
4420 Pendola Point Road
Tampa, Florida 33619
(813) 247-2805 • Fax: (813) 248-1537
E-Mail: login@Pelab.com

2409-211 ou

Company: CH2M HILL	Project Name/Number: VIEQUES - IDW / 180357. FI. 22
Address: 4350 WEST CYPRESS	Project Manager: BRETT DOERR
Phone: 813-874-0777 Fax: 813-874-3056	Purchase Order:
Print Names(s) / Affiliation: JOHN SWENFURTH / CH2M HILL	
Sampler(s) Signature(s):	

Page of

DEP Form #: 62-770.900(2)
Form Title: Chain of Custody Record
Effective Date: September 23, 1997
FDEP Facility No.
Project Name:
Sampling CompQAP No:
Approval Date:
REQUESTED DUE DATE
/ STD /

Item No.	Field ID No.	Sampled Date	Sampled Time	Grab or Composite	Matrix (see codes)	Number of Containers	Preservatives (see codes)	Analyses Requested	Remarks	Lab. No.
1.	WEST IDW I & E	10-21-04	0900	COMP	GW	2	RCI ✓	HTRW List	500 ML PLASTIC - NaOH 500 ML PLASTIC-NaOH-Zn	01
2	WEST IDW I & E	"	"	"	"	1	✓		1 - 1 LITER AMBER	01
3.	WEST IDW I & E	"	"	"	"	3		✓	3 - 1 LITER AMBERS	01
4.	" " " 5	"	0930	"	SO	2	✓		2 - 4 oz. jars	02
5	" " " 5	"	0930	"	SO	2		✓	2 - 8 oz jars	02

Shipment Method

← Total Number of Containers

Out: / /	Via: FED EX	Item Nos.	Relinquished by / Affiliations	Date	Time	Accepted by / Affiliation	Date	Time
Returned: / /	Via.		JOHN SWENFURTH	10-31-04	1000	[signature] / PEL	10/22/04	17:00
Additional Comments:								
RECD @ 3.7C								
pH > 9 (376.1)								
pH > 12 (9012)								

Cooler No. (s) / Temperature(s) (C)	Sampling Kit No.	Equipment ID No.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) O = Other (specify)

PRESERVATION CODES: H-Hydrochloric acid + ice I = Ice only N = Nitric acid + ice S = Sulfuric acid + ice O = Other (specify)

A&V GROUP
ENVIRONMENTAL SUPPORT

DATA VALIDATION REPORT

To: Mr. Brian C. Spann
Laboratory Manager
PEL Laboratories, Inc.
Tampa, FL

From: Rafael Infante, A&V Environmental Support

Date: November 5, 2004

Re: **Data set from CH2M-Hill- Vieques IDW PR License Chemist Certification of Samples Analyzed for RCRA Characteristics for Disposal**

The enclosed analysis report is based on data generated by PEL Laboratories, Inc. of Tampa, Florida for soil and aqueous samples collected on October 21, 2004. The analytical data was obtained directly from PEL and reviewed in accordance with the quality control requirements of the methods performed. The analyses were performed in accordance with the EPA SW-846 Methods.

This report applies to the following samples:

SAMPLE ID
WEST-IDW I & EW (ground water)
WEST-IDW I & ES (SOIL)

TCLP Volatiles Data.

There were one (1) liquid sample and one (1) soil sample. No trip blanks or duplicates were taken. Samples were analyzed for TCLP volatiles following method SW-846 8260B (purge-and-trap gas chromatography with Mass Spectrometry detection). This report is based on a review of holding times, initial and continuing calibration data, blank analysis results, surrogate and matrix spike recoveries, quantitation of positive results, and sample result verification.

The data package obtained for TCLP volatiles is complete.

Holding times. All samples were analyzed within the required holding time of fourteen (14) days for TCLP extraction and fourteen days for analysis- 28 days total.

BFB tuning There is no indication that the frequency and abundance of BFB tune was outsidethe QC acceptance criteria.

Calibration. Internal standard calibration was employed; calibration extended the concentration range found in the samples. There are no indications that initial and continuing calibration were not in compliance with the method. Surrogate recoveries were within established limits.

Blanks. No contamination was found in the method blank. Field, trip and equipment blanks were not submitted for analysis.

Matrix spikes (MS)/Matrix spike duplicate (MSD). Laboratory control samples were within acceptance limit for the samples analyzed .

Laboratory duplicates. No information on laboratory duplicates was provided with the data package.

Surrogate recovery. Recoveries of surrogate standards were within control limits.

Sample result calculation. Calculation was based on the area for characteristics peaks for analyte and internal standard, sample volume, dilution factor, and calibration factor. Sample PEL-240921101 required a 10 dilution due to excessive foaming on the purge step.

Detection limits are set to meet EPA's CLP OLMO1.0 standards.

Overall assessment. Sample data meet the necessary quality control requirements for the method.

TCLP Metals by ICAP (SW-846 6010) Data.
Trace metals (As, Ba, Cd, Cr, Pb, Se, and Ag)

The following samples were analyzed for trace metals following SW-846 6010-induced coupled Argon plasma:

One (3) liquid sample and one (1) soil sample were analyzed.

The data package obtained for the trace metals is complete.

Holding times. Analytes analyzed within method holding times (180 days).

Calibration. Initial demonstration of instrument calibration- there are no indication that the calibration did not meet minimum performance criteria specific for the method. Quantification was performed by comparing emission intensity of standards with that of the sample for the wavelength characteristic for each element. Interelement correction factors were employed.

Blanks. No target analytes were detected in the initial and continuing calibration blanks except for the following:
Sample: 240921101

Analyte	Concentration, ug/L
Lead	0.0326
Selenium	0.0639
Silver	0.00924

Laboratory duplicates. Duplicates (laboratory and field) data was not provided. There are no indication on the report that duplicates were outside the established limits.

Laboratory control standards. Within the laboratory control limit.

Sample result calculation. Calculation was based on emission of the corresponding element line, sample volume, and dilution factor.

Detection limit are set to meet EPA's CLP OLMO1.0

Overall assessment. Sample data meets the necessary quality control requirements for the method.

TCLP Metals by Flameless Atomic Absorption (SW-846 7470) Data.
Mercury (Hg) by atomic absorption.

The following samples were analyzed for TCLP Hg by atomic absorption following SW-846 7470:

One (1) liquid sample and one (1) soil sample.

The data package obtained for mercury metals is complete.

Holding times. Analytes analyzed within method holding times (28 days for Hg).

Calibration. Initial demonstration of instrument calibration- there are no indication that the calibration did not meet minimum performance criteria specific for the method. Quantification was performed by using a Beer law plot (absorbance vs. concentration) for each element.

Blanks. Preparation blank contained less than the minimum detectable quantity for mercury.

Laboratory control standards. Within the laboratory control limit.

Sample result calculation. Calculation was based on absorbance measurement and the Beer's law plot for the corresponding element, sample volume, and dilution factor.

Detection limit are set to meet EPA's CLP OLMO1.0.

Overall assessment. Sample data meets the necessary quality control requirements for the method.

TCLP Pesticides/Herbicides by (SW-846 8081A/8150) Data.

The following samples were analyzed for TCLP pesticides/herbicides by gas chromatography with electron capture detection following SW-846 8081A/81500:

One (1) liquid sample and one (1) soil sample.

The data package obtained for pesticides and herbicides is complete.

Holding times. Analytes analyzed within method holding times. Samples 240921101 and 240921102 has surrogate recoveries below the laboratory criteria for method 8150, the sample was re-extracted and re-analyzed out of holding time. Both data are reported.

Calibration. Initial demonstration of instrument calibration-there are no indication that the calibration did not meet minimum performance criteria specific for the method. In all cases, quantification was performed using a five points calibration.

Blanks. Method blank contained less than the minimum detectable quantity of the target analytes.

Surrogate recoveries. Were within established limits except for samples 240921101 and 240921102 for method 8051 and sample 240921101 for method 8081A.

Laboratory control standards. Within the laboratory control limits.

Sample result calculation. Calculation for TCLP pesticides and herbicides was based on the peak area, response factor, sample volume, dilution factor, and calibration curve response.

Detection limit are set to meet EPA's CLP OLMO1.0

Overall assessment. Sample data meets the necessary quality control requirements for the method.

TCLP Semivolatiles by (SW-846 8270C) Data.

One (1) liquid sample and one (1) soil sample were analyzed for TCLP semivolatile organics (acids/base neutrals).

The data package obtained is complete.

Holding times. Analytes analyzed within method holding times.

Calibration. Initial demonstration of instrument calibration-there are no indication that the initial and continuing calibration did not meet minimum performance criteria specific for the method.

Blanks. Method blank contained less than the minimum detectable quantity of the target analytes.

Surrogate recoveries. Were within established limits except for the following:
Sample 240921101- 2,4,6-Tribromophenol; 2-Fluorophenol

Laboratory control standards. Within the laboratory control limits.

Sample result calculation. Calculation for TCLP semivolatile organic analytes was based on the peak area, response factor, sample volume, dilution factor, and calibration curve response.

Detection limit are set to meet EPA's CLP OLMO1.0

Overall assessment. Sample data meets the necessary quality control requirements for the method.

Hazardous Characteristics Data:

Reactive cyanide by (SW-846 9012)
Reactive sulfide by (SW-846 9030-solid samples/376.1-liquid sample)
Corrosivity by (SW-846 9045-solid samples/150.1-liquid samples), and
Ignigtability by (SW-846 1010)

One (1) liquid sample and one (1) liquid sample were analyzed by the methods described above.

The data package obtained for the hazardous characteristics is complete.

Holding times. Samples analyzed within method holding times.

Calibration. Initial demonstration of instrument calibration- there are no indications that calibration did not meet minimum performance criteria specific for the method. Continuing calibration were perform as per the method described frequency.

Blanks. Blanks did not have any positive results for target analytes.

Sample result calculation. Calculations were based on analyte response, sample volume, and dilution factor.

Detection limit are set to meet EPA's CLP OLMO1.0

Overall assessment. Sample data meets the necessary quality control requirements for the method.

The samples did neither exceeded the toxicity characteristic leaching procedure criteria for target analytes, nor the hazardous characteristics. Waste samples can be classified as non-hazardous.

Certification

The following samples 240921101 and 240921102 were analyzed following standard procedures accepted by regulatory agencies. The quality control requirements met the methods criteria except in the occasions described in this document. The results are valid.

Rafael Infante
Chemist License 1888

ESTADO LIBRE ASOCIADO DE PUERTO RICO
QUIMICO LICENCIADO
Rafael Infante Méndez
LIC. #1888
978118

ALLIED WAS TE

GENERATOR WASTE PROFILE SHEET

Requested Disposal Facility: BFI Ponce

an Allied Waste Company

Waste Profile #
AWI Sales Rep:
Date: Nov 23, 2004

I. Generator Information

Generator Name: US NAVY NAVFAC ATLANTIC			
Generator Site Address: VIEQUES ISLAND, PUERTO RICO			
City: VIEQUES	County:	State: PR	Zip:
State ID/Reg No:	State Approval/Waste Code: (if applicable)		SIC Code:
Generator Mailing Address (if different): NAVFAC ATLANTIC 6506 HAMPTOM Blvd.			
City: Norfolk	County: USA	State: VA	Zip: 23508
Generator Contact Name: Jeffrey Harlow			
Phone Number: (757) 322-4787		Fax Number: (757) 322-4805	

IIa. Transporter Information

Transporter Name: CHED		Contact Name: Ricardo Arrufat	
Transporter Address: PO BOX 790			
City: Peñuelas	County:	State: PR	Zip: 00624-0790
Phone Number: 787-836-1110	Fax Number: 787-836-0577	State Transportation Number:	

IIb. Billing Information

Bill To: CHED		Contact Name: Ricardo Arrufat	
Billing Address: PO BOX 790			
City: Peñuelas	State: PR	Zip: 00624-0790	Phone Number: (787) 836-1110

III. Waste Stream Information

Name of Waste: Soil From Environmental Sampling
Process Generating Waste: Drilling and sampling Monitoring Wells
Type of Waste ☐ INDUSTRIAL PROCESS WASTE or ☒ POLLUTION CONTROL WASTE
Physical State: ☒ SOLID ☐ SEMI-SOLID ☐ POWDER ☐ LIQUID ☐ OTHER: _____:
Method of Shipment: ☐ BULK ☒ DRUM ☐ BAGGED ☐ OTHER:
Estimated Annual Volume: ☐ CUBIC YARDS: _____ ☐ TONS: _____ ☐ GALLONS _____ ☐ OTHER:
Frequency: ☒ ONE TIME ☐ DAILY ☐ WEEKLY ☐ MONTHLY ☐ OTHER:
Special Handling Instructions: Drum Handler

IV. Representative Sample Certification

☐ NO SAMPLE TAKEN

Is the representative sample collected to prepare this profile and laboratory analysis, collected in accordance with U.S. EPA 40 CFR 261.20(c) guidelines or equivalent rules?	☒ YES or ☐ NO
Sample Date: 10-21-2004	Type of Sample: ☒ COMPOSITE SAMPLE ☐ GRAB SAMPLE
Laboratory: Progress Environ Labs	Sample ID Numbers: WEST IDW I&E S
Sampler's Employer: CH2MHill	
Sampler's Name (printed): John W. Swenfurth	Signature:

ALLIED WASTE

GENERATOR WASTE PROFILE SHEET (continued)

Waste Profile #

V. Physical Characteristics of Waste

Characteristic Components					% by Weight (range)	
1. Non-Hazardous Soil						
2.						
3.						
4.						
5.						
Color	Odor (describe)	Free Liquids ☐ YES or ☒ NO	% Solids	pH:	Flash Point	Phenol
Tan	None	Content ____%	100		≥160 ☐F	0ppm

Attach Laboratory Analytical Report (and/or Material Safety Data Sheet) Including Required Parameters Provided for this Profile

Does this waste or generating process contain regulated concentrations of the following Pesticides and/or Herbicides: Chlordane, Endrin, Heptachlor (and it epoxides), Lindane, Methoxychlor, Toxaphene, 2,4-D, or 2,4,5-TP Silvex as defined in 40 CFR 261.33?	☐ Yes or ☒ No
Does this waste or generating process cause it to exceed OSHA exposure limits from high levels of Hydrogen Sulfide or Hydrogen Cyanide as defined in 40 CFR 261.23?	☐ Yes or ☒ No
Does this waste contain regulated concentrations of Polychlorinated Biphenyls (PCBs) as defined in 40 CFR Part 761?	☐ Yes or ☒ No
Does this waste contain regulated concentrations of listed hazardous wastes defined in 40 CFR 261.31, 261.32, 261.33, including RCRA F-Listed Solvents?	☐ Yes or ☒ No
Does this waste contain regulated concentrations of 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCCD), or any other dioxin as defined in 40 CFR 261.31?	☐ Yes or ☒ No
Is this a regulated Toxic Material as defined by Federal and/or State regulations?	☐ Yes or ☒ No
Is this a regulated Radioactive Waste as defined by Federal and/or State regulations?	☐ Yes or ☒ No
Is this a regulated Medical or Infectious Waste as defined by Federal and/or State regulations?	☐ Yes or ☒ No
Is this waste generated at a Federal Superfund Clean Up Site?	☐ Yes or ☒ No

VI. Generator Certification

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true, complete and accurate description of the waste material being offered for disposal and all known or suspected hazards have been disclosed. All Analytical Results/Material Safety Data Sheets submitted are truthful and complete and are representative of the waste. I further certify that by utilizing this profile, neither myself nor any other employee of the company will deliver for disposal or attempt to deliver for disposal any waste which is classified as toxic waste, hazardous waste or infectious waste, or any other waste material this facility is prohibited from accepting by law. I shall immediately give written notice of any change or condition pertaining to the waste not provided herein. Our company hereby agrees to fully indemnify this disposal facility against any damages resulting from this certification being inaccurate or untrue. I further certify that the company has not altered the form or content of this profile sheet as provided by Allied Waste.

Pedro J. Ruiz / UST Manager
Authorized Representative Name And Title (Printed)

Naval Activity Puerto Rico
Company Name

Authorized Representative Signature

Date

VII. Allied Waste Decision

☐ Approved ☐ Rejected Expiration: _____

Conditions:

Name, Title

Signature

Date

BFI Waste Systems™

BROWNING-FERRIS INDUSTRIES

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No.	Manifest Document No. 128818	2. Page 1 of	Pass Code:

GENERATOR

3. Generator's Name and Mailing Address: U.S. NAVY, Comandancia Base Roosevelt Roads P.R. 00765

4. Generator's Phone (787) 865-4045

Generating Location: US NAVY AFHTF, Comandancia Naval, Vieques, P.R. 00765

5. Transporter 1 Company Name	6. EQB Permit #	A. Transporter's Phone
Caribe Hydrocarbons Corp.	SR-ST-0007	787-834-1110
7. Transporter 2 Company Name	8. EQB Permit #	B. Transporter's Phone

9. Designated Facility Name and Site Address	10. EQB Permit #	C. Facility's Phone
PONCE SANITARY LANDFILL PO BOX 7104 / RD 500 BARAMAYA FINAL AVENUE PONCE, PR 00731	RSM-0058	787-841-7775

	11. Waste Shipping Name and Description	Handling Code	12. Containers No	Type	13. Total Quantity	14. Unit Wt/Vol
a.	Water Contaminated with Diesel	GS(33) L29/43243	17			V
b.	Soil Contaminated with Diesel	GS(33) L29/432430	13			C
c.						
d.						

D. Additional Descriptions for Materials Listed Above

15. Special Handling Instructions and Additional Information: As per OSHA and NIOSH Guidelines

16. GENERATOR'S CERTIFICATION: I certify the materials above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed / Typed Name	Signature	Month	Day	Year
Pedro J. Ruiz		02	03	05

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed / Typed Name	Signature	Month	Day	Year
Omar Cepeda		02	04	05

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed / Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 19:

Printed / Typed Name	Signature	Month	Day	Year
		2	8	05

GENERATOR-2ND COPY

Appendix I
2006 IDW Disposal Information

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 8926
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS: WAR-IDW-3

The one water sample listed above was scheduled for the requested analysis of the Herbicide fraction. The requested SW-846, 3rd Edition, Update 3, the Toxicity Characteristic Leaching Procedure (TCLP) (Method 1311), Separatory Funnel extraction (Method 3550B), and Method 8151A were used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section and all pertinent Laboratory notices for SDG #8926 are included in the sample data sections.

Herbicides

Extraction and analysis holding time requirements were met for the samples.

No target analytes confirmed above the reporting limits in the sample.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

All surrogate recoveries were with the method specified limits.

The method blank associated with the samples met all quality control criteria.

The Laboratory Control Sample (LCS) prepared and analyzed with the samples met all recovery and precision criteria for all spike analytes.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

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

Katrina L. Travis
Director, Laboratory Operations
January 30, 2006

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG #8926
PROTOCOL: SW-846 8270C

SAMPLE IDENTIFICATIONS: WAR-IDW-3

The one liquid sample listed above was scheduled for the requested analyses of the GC/MS Semivolatiles fraction. SW-846, 3rd Edition, Update 3, Method 1311, Separatory funnel extraction (Method 3510C) and Method 8270C were used to prepare and analyze this sample, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section and all pertinent Laboratory notices for SDG #8926 are included in the sample data section.

TCLP GC/MS Semivolatiles

Analysis holding time requirements were met for the sample.

There were no target analytes identified above the Quantitation Limit (QL) in the sample.

Manual quantitations were performed on one or more of the process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

All decafluorotriphenylphosphine (DFTPP) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration verification standards (CCVs) associated to this SDG. There is no Form VII in the deliverables package for the batch analyzed on instrument 5972hp64 on 01/26/06, associated with the DFTPP tune analyzed at 1441. This batch included an initial calibration and the relevant relative response factors are all displayed on the appropriate Form VIs. The initial calibration met all acceptance criteria and therefore samples could be analyzed without having to inject a continuing calibration verification standard.

All of the surrogates met recovery criteria in the analyses of the sample. All of the internal standards met response and retention time criteria in the analyses of the sample.

The associated method blank met all quality control criteria.

There were no duplicate matrix spikes (MS/MSD) associated with this SDG.

The associated Laboratory Control Sample (LCS) met all recovery criteria.

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. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Kerry S. Hinshaw

Kerry S. Hinshaw
Semivolatiles Manager
January 31, 2006

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WAR-IDW-3

Lab Name: COMPUCHEM Method: 8270C

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8926

Matrix: (soil/water) WATER Lab Sample ID: 892601

Sample wt/vol: 100 (g/mL) ML Lab File ID: 892601A64

Level: (low/med) LOW Date Received: 01/19/06

% Moisture: _____ decanted: (Y/N)___ Date Extracted:01/24/06

Concentrated Extract Volume: 500(uL) Date Analyzed: 01/26/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
110-86-1	Pyridine	50	U
106-46-7	1,4-Dichlorobenzene	50	U
95-48-7	2-Methylphenol	50	U
108-39-4	3-Methylphenol	100	U
106-44-5	4-Methylphenol	100	U
67-72-1	Hexachloroethane	50	U
98-95-3	Nitrobenzene	50	U
87-68-3	Hexachlorobutadiene	50	U
88-06-2	2,4,6-Trichlorophenol	50	U
95-95-4	2,4,5-Trichlorophenol	50	U
121-14-2	2,4-Dinitrotoluene	50	U
118-74-1	Hexachlorobenzene	50	U
87-86-5	Pentachlorophenol	100	U

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 8925
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS:
WAR-IDW-4

The one water sample listed above was received intact, properly refrigerated with proper documentation, in sealed shipping containers, on January 19, 2006. The sample was scheduled for the requested analyses of the pesticide-TCLP fraction. SW-846, 3rd Edition, Update 3, the Toxicity Characteristic Leaching Procedure (TCLP) (Method 1311), Separatory Funnel extraction (Method 3550B), and Method 8081A were used to prepare and analyze this sample, with the exceptions and/or additions requested by the client. This portion of the SDG narrative deals with the pesticide-TCLP fraction only.

Pesticides TCLP

Extraction and analysis holding time requirements were met for this sample.

There were no pesticide-TCLP analytes confirmed by dual column analysis above the Quantitation Limit (QL) in this sample.

Manual quantitations were performed on one or more of the process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

All of the surrogates met recovery and retention time criteria in the analyses of this sample.

The associated method blank met all quality control criteria.

There is no associated duplicate matrix spikes for this SDG.

The associated Laboratory Control Sample prepared and analyzed along with this sample (LCS) met all accuracy criteria.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

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. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Elsie S. Byrd

Elsie S. Byrd
Senior Scientist I
January 26, 2006

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WAR-IDW-4

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 892501

Sample wt/vol: 100.0 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 01/19/06

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(uL) Date Analyzed: 01/24/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
58-89-9	gamma-BHC (Lindane)	0.13	U
72-20-8	Endrin	0.50	U
76-44-8	Heptachlor	0.13	U
1024-57-3	Heptachlor Epoxide	0.13	U
72-43-5	Methoxychlor	1.3	U
8001-35-2	Toxaphene	25	U
57-74-09	Technical Chlordane	8.0	U

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Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 8926
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS:
WAR-IDW-3

The one water sample listed above was received intact, properly refrigerated with proper documentation, in sealed shipping containers, on January 19, 2006. The sample was scheduled for the requested analyses of the pesticide-TCLP fraction. SW-846, 3rd Edition, Update 3, the Toxicity Characteristic Leaching Procedure (TCLP) (Method 1311), Separatory Funnel extraction (Method 3550B), and Method 8081A were used to prepare and analyze this sample, with the exceptions and/or additions requested by the client. This portion of the SDG narrative deals with the pesticide-TCLP fraction only.

Pesticides TCLP

Extraction and analysis holding time requirements were met for this sample.

There were no pesticide-TCLP analytes confirmed by dual column analysis above the Quantitation Limit (QL) in this sample.

Manual quantitations were performed on one or more of the process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

All of the surrogates met recovery and retention time criteria in the analyses of this sample.

The associated method blank met all quality control criteria.

There is no associated duplicate matrix spikes for this SDG.

The associated Laboratory Control Sample prepared and analyzed along with this sample (LCS) met all accuracy criteria.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

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. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Elsie S. Byrd
Senior Scientist I
January 26, 2006

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WAR-IDW-3

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8926

Matrix: (soil/water) WATER Lab Sample ID: 892601

Sample wt/vol: 100.0 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 01/19/06

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(uL) Date Analyzed: 01/24/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
58-89-9	gamma-BHC (Lindane)	0.13	U
72-20-8	Endrin	0.50	U
76-44-8	Heptachlor	0.13	U
1024-57-3	Heptachlor Epoxide	0.13	U
72-43-5	Methoxychlor	1.3	U
8001-35-2	Toxaphene	25	U
57-74-09	Technical Chlordane	8.0	U

FORM I PEST

CompuChem
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501 Madison Avenue Cary, NC 27513

SDG NARRATIVE
SDG # 8926

The indicated Sample Delivery Group (SDG) consisting of one (1) liquid sample was received into the laboratory information management system (LIMS) on January 19, 2006 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the sample was 4.6°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The sample was prepared following the TCLP leaching procedure and analyzed in accordance with SW846 methodology for TCLP metals.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV), blanks (ICB, & CCB), and interference check samples (ICSA & ICSAB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verifications (LCSW, & PBW) were found to be within acceptable ranges and the sample was prepared and analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

No matrix spikes or duplicates were requested with this case.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

Susan W Bass

Susan W. Bass
Senior Chemist
January 28, 2006

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
WAR-IDW-3

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8926

Matrix (soil/water): WATER Lab Sample ID: 892601

Level (low/med): LOW Date Received: 1/19/2006

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.4	U		P
7440-39-3	Barium	24.4	B		P
7440-43-9	Cadmium	0.20	U		P
7440-47-3	Chromium	0.40	U		P
7439-92-1	Lead	1.0	U		P
7439-97-6	Mercury	0.10	U		CV
7782-49-2	Selenium	3.3	U		P
7440-22-4	Silver	0.50	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

CompuChem

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501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 8925
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS:
WAR-IDW-4

The one water sample listed above was received intact, properly refrigerated, with proper documentation, in sealed shipping containers, on January 19, 2006. The sample was scheduled for the requested analyses of the herbicide fraction. SW-846, 3rd Edition, Update 3, the Toxicity Characteristic Leaching Procedure (TCLP) (Method 1311), Separatory Funnel extraction and Method 8151A were used to prepare and analyze these samples, with the exceptions and/or additions requested by the client. This portion of the SDG narrative deals with the herbicide fraction only.

Herbicide-TCLP

Extraction and analysis holding time requirements were met for this sample.

There were no herbicide project analytes confirmed by dual column analysis above the Quantitation Limit (QL) in this sample.

Manual quantitations were performed on one or more of the process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

The surrogate met recovery and retention time criteria in the analyses of this sample.

The associated method blank met all quality control criteria.

There is no associated duplicate matrix spikes for this SDG.

The associated Laboratory Control Sample (LCS) prepared and analyzed along with this sample met all accuracy criteria.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

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. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Elsie S. Byrd
Senior Scientist I
January 27, 2006

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WAR-IDW-4

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 892501

Sample wt/vol: 100.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 01/19/06

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(ul) Date Analyzed: 01/25/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	25	U
93-72-1	silvex	5.0	U

FORM I PEST

CompuChem

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501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 8926
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS: WAR-IDW-3

The one water sample listed above was scheduled for the requested analysis of the Herbicide fraction. The requested SW-846, 3rd Edition, Update 3, the Toxicity Characteristic Leaching Procedure (TCLP) (Method 1311), Separatory Funnel extraction (Method 3550B), and Method 8151A were used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section and all pertinent Laboratory notices for SDG #8926 are included in the sample data sections.

Herbicides

Extraction and analysis holding time requirements were met for the samples.

No target analytes confirmed above the reporting limits in the sample.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

All surrogate recoveries were with the method specified limits.

The method blank associated with the samples met all quality control criteria.

The Laboratory Control Sample (LCS) prepared and analyzed with the samples met all recovery and precision criteria for all spike analytes.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

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

Katrina L. Travis
Director, Laboratory Operations
January 30, 2006

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WAR-IDW-3

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8926

Matrix: (soil/water) WATER Lab Sample ID: 892601

Sample wt/vol: 100.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 01/19/06

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(ul) Date Analyzed: 01/25/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	25	U
93-72-1	silvex	5.0	U

FORM I PEST

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Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE

SDG # 8926
CONTRACT # SW-846 8260B

SAMPLE IDENTIFICATIONS:WAR-IDW-3

The one (1) water sample listed above was received intact, properly refrigerated at 4.6°C, with proper documentation, on January 19, 2006. The sample was scheduled for the requested ZHE extraction procedure followed by an 8260B volatile analysis for the ZHE compound list.

Analysis holding time requirements were met for the sample.

The sample contained no compounds above the Contract Required Quantitation Limit (CRQL).

All bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for the initial calibration and continuing calibration standard associated to this SDG.

All of the system monitoring compounds met recovery criteria in the analysis of this sample. All of the internal standards met response and retention time criteria in the analysis of this sample. The associated method blank met all quality control criteria.

A laboratory control sample was analyzed with this SDG and passed all QC criteria.

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. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Susan W Bass

Susan W. Bass
Senior Chemist
January 31, 2006

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WAR-IDW-3

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8926

Matrix: (soil/water) WATER Lab Sample ID: 892601

Sample wt/vol: 5 (g/ml) ML Lab File ID: 892601A59

Level: (low/med) LOW Date Received: 01/19/06

% Moisture: not dec. _____ Date Analyzed: 01/24/06

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-01-4	Vinyl Chloride	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
127-18-4	Tetrachloroethene	5.0	U
108-90-7	Chlorobenzene	5.0	U

CompuChem
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501 Madison Avenue Cary, NC 27513

SDG NARRATIVE
SDG # 8925

The indicated Sample Delivery Group (SDG) consisting of one (1) solid sample was received into the laboratory information management system (LIMS) on January 19, 2006 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the sample was 4.6°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The sample was prepared following the TCLP leaching procedure and analyzed in accordance with SW846 methodology for TCLP metals.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV), blanks (ICB, & CCB), and interference check samples (ICSA & ICSAB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verifications (LCSW, & PBW) were found to be within acceptable ranges and the sample was prepared and analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

No matrix spikes or duplicates were requested with this case.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

Susan W Bass

Susan W. Bass
Senior Chemist
January 28, 2006

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
WAR-IDW-4

ab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix (soil/water): WATER Lab Sample ID: 892501

Level (low/med): LOW Date Received: 1/19/2006

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.2	B		P
7440-39-3	Barium	1120	B		P
7440-43-9	Cadmium	3.2	B		P
7440-47-3	Chromium	26.6	B		P
7439-92-1	Lead	2.3	B		P
7439-97-6	Mercury	0.11	B		CV
7782-49-2	Selenium	18.4	B		P
7440-22-4	Silver	0.50	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

CompuChem
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501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE

SDG # 8925
CONTRACT # SW-846 8260B

SAMPLE IDENTIFICATIONS: WAR-IDW-4

The one (1) solid sample listed above was received intact, properly refrigerated at 4.6°C, with proper documentation, on January 19, 2006. The sample was scheduled for the requested ZHE extraction procedure followed by an 8260B volatile analysis for the ZHE compound list.

Analysis holding time requirements were met for the sample.

The sample contained no compounds above the Contract Required Quantitation Limit (CRQL).

All bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for the initial calibration and continuing calibration standard associated to this SDG.

All of the system monitoring compounds met recovery criteria in the analysis of this sample. All of the internal standards met response and retention time criteria in the analysis of this sample. The associated method blank met all quality control criteria.

A laboratory control sample was analyzed with this SDG and passed all QC criteria.

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. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Susan W Bass

Susan W. Bass
Senior Chemist
January 31, 2006

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WAR-IDW-4

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 892501

Sample wt/vol: 5 (g/ml) ML Lab File ID: 892501A59

Level: (low/med) LOW Date Received: 01/19/06

% Moisture: not dec. _____ Date Analyzed: 01/27/06

GC Column: ZB-624 ID: 0.32 (mm) Dilution Factor: 5.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-01-4	Vinyl Chloride	25	U
75-35-4	1,1-Dichloroethene	25	U
78-93-3	2-butanone	63	U
67-66-3	Chloroform	25	U
56-23-5	Carbon Tetrachloride	25	U
71-43-2	Benzene	25	U
107-06-2	1,2-Dichloroethane	25	U
79-01-6	Trichloroethene	25	U
127-18-4	Tetrachloroethene	25	U
108-90-7	Chlorobenzene	25	U

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Cary, N.C. 27513
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SDG NARRATIVE
SDG #8925
PROTOCOL: SW-846 8270C

SAMPLE IDENTIFICATIONS: WAR-IDW-4

The one soil sample listed above was scheduled for the requested analyses of the GC/MS Semivolatiles fraction. SW-846, 3rd Edition, Update 3, Method 1311, Separatory funnel extraction (Method 3510C) and Method 8270C were used to prepare and analyze this sample, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section and all pertinent Laboratory notices for SDG #8925 are included in the sample data section.

TCLP GC/MS Semivolatiles

Analysis holding time requirements were met for the sample.

There were no target analytes identified above the Quantitation Limit (QL) in the sample.

Manual quantitations were performed on one or more of the process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

All decafluorotriphenylphosphine (DFTPP) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration verification standards (CCVs) associated to this SDG. There is no Form VII in the deliverables package for the batch analyzed on instrument 5972hp64 on 01/26/06, associated with the DFTPP tune analyzed at 1441. This batch included an initial calibration and the relevant relative response factors are all displayed on the appropriate Form VIs. The initial calibration met all acceptance criteria and therefore samples could be analyzed without having to inject a continuing calibration verification standard.

All of the surrogates met recovery criteria in the analyses of the sample. All of the internal standards met response and retention time criteria in the analyses of the sample.

The associated method blank met all quality control criteria.

There were no duplicate matrix spikes (MS/MSD) associated with this SDG.

The associated Laboratory Control Sample (LCS) met all recovery criteria.

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. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Kerry S. Hinshaw

Kerry S. Hinshaw
Semivolatiles Manager
January 31, 2006

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WAR-IDW-4

Lab Name: COMPUCHEM Method: 8270C

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 892501

Sample wt/vol: 100 (g/mL) ML Lab File ID: 892501A64

Level: (low/med) LOW Date Received: 01/19/06

% Moisture: _____ decanted: (Y/N)___ Date Extracted:01/24/06

Concentrated Extract Volume: 500(uL) Date Analyzed: 01/26/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
110-86-1	Pyridine	50	U
106-46-7	1,4-Dichlorobenzene	50	U
95-48-7	2-Methylphenol	50	U
108-39-4	3-Methylphenol	100	U
106-44-5	4-Methylphenol	100	U
67-72-1	Hexachloroethane	50	U
98-95-3	Nitrobenzene	50	U
87-68-3	Hexachlorobutadiene	50	U
88-06-2	2,4,6-Trichlorophenol	50	U
95-95-4	2,4,5-Trichlorophenol	50	U
121-14-2	2,4-Dinitrotoluene	50	U
118-74-1	Hexachlorobenzene	50	U
87-86-5	Pentachlorophenol	100	U

CompuChem
a division of Liberty Analytical Corp.

CompuChem a Division of Liberty Analytical Corp.
Remit to: P.O. Box 4603
Cary, NC 27519-4603
Phone: (919) 379-4100
Fax: (919) 379-4050

Tuesday, January 31, 2006

MARK STINNETT
CH2M HILL, INC.
3011 SW WILLISTON ROAD
GAINESVILLE, FL 32608

RE: Project: 8925
Project ID: CTO-007/180357.FI.FK.AR/N62470

Dear MARK STINNETT:

Enclosed are the analytical results for sample(s) received by the laboratory on Thursday, January 19, 2006. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. If you have any questions concerning this report, please feel free to contact your project manger.

Sincerely,

Paul E. Cvetich for
Catherine S. Dover
cdover@compuchemlabs.com

YES

Enclosures

CompuChem
a division of Liberty Analytical Corp.

CompuChem a Division of Liberty Analytical Corp.
Remit to: P.O. Box 4603
Cary, NC 27519-4603
Phone: (919) 379-4100
Fax: (919) 379-4050

ANALYTICAL RESULTS

Project: 8925
Project ID: CTO-007/180357.FI.FK.AR/N62470
Solid results are reported on a dry weight basis.

Lab ID: **892501** Date Collected: 1/17/2006 11:40 Matrix: Leachate Soil
Sample ID: **WAR-IDW-4** Date Received: 1/19/2006 17:04

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
IGNITABILITY 1010 SOIL		Analytical Method: EPA 1010									
Ignitability	>140	Degrees F	NA	1			1/31/2006	2152			
REACTIVE CYANIDE 9014 SOIL		Analytical Method: SW846 9014									
Reactive Cyanide	125U	mg/kg	125	1			1/31/2006	2477			
REACTIVE SULFIDE 9034 SOIL		Analytical Method: SW846 9034									
Reactive Sulfide	62.5U	mg/kg	62.5	1			1/31/2006	2477			
CORROSIVITY 9040B SOIL		Analytical Method: SW846 9040B									
Corrosivity	9.18	PH UNITS	NA	1			1/31/2006	2477			

COMPUCHEM
a division of Liberty Analytical Corp.

CompuChem a Division of Liberty Analytical Corp.
Remit to: P.O. Box 4603
Cary, NC 27519-4603
Phone: (919) 379-4100
Fax: (919) 379-4050

Tuesday, January 31, 2006

MARK STINNETT
CH2M HILL, INC.
3011 SW WILLISTON ROAD
GAINESVILLE, FL 32608

RE: Project: 8926
Project ID: CTO-007/180357.FI.FK.AR/N62470

Dear MARK STINNETT:

Enclosed are the analytical results for sample(s) received by the laboratory on Thursday, January 19, 2006. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. If you have any questions concerning this report, please feel free to contact your project manager.

Sincerely,

Paul E. Cvetich for
Catherine S. Dover
cdover@compuchemlabs.com

YES

Enclosures

CompuChem
a division of Liberty Analytical Corp.

CompuChem a Division of Liberty Analytical Corp.
Remit to: P.O. Box 4603
Cary, NC 27519-4603
Phone: (919) 379-4100
Fax: (919) 379-4050

ANALYTICAL RESULTS

Project: 8926
Project ID: CTO-007/180357.FI.FK.AR/N62470
Solid results are reported on a dry weight basis.

Lab ID: **892601** Date Collected: 1/17/2006 10:40 Matrix: Leachate Soil
Sample ID: **WAR-IDW-3** Date Received: 1/19/2006 17:04

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
IGNITABILITY 1010 WATER		Analytical Method: EPA 1010									
Ignitability	>140	Degrees F	NA	1			1/31/2006	2152			
REACTIVE CYANIDE 9014 WATER		Analytical Method: SW846 9014									
Reactive Cyanide	125U	mg/kg	125	1			1/31/2006	2477			
REACTIVE SULFIDE 9034 WATER		Analytical Method: SW846 9034									
Reactive Sulfide	62.5U	mg/kg	62.5	1			1/31/2006	2477			
CORROSIVITY 9040B WATER		Analytical Method: SW846 9040B									
Corrosivity	7.62	PH UNITS	NA	1			1/31/2006	2477			

CompuChem
a division of Liberty Analytical Corp.

HC (summary only) + full + EDD CD

31-Jan-06

ADRIENNE JONES
CH2M HILL, INC.
5700 CLEVELAND STREET
SUITE 101
VIRGINIA BEACH, VA 23462

Subject:
Report of Data-Project: CTO-007 (AR) Workorder: 8925

Attn.: ADRIENNE JONES

Enclosed are the results of analytical work performed in accordance with the referenced account number.

This report covers sample(s) appearing on the attached listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097.

Sincerely,

CompuChem
A Division of Liberty Analytical

Attachment

TOTAL NUMBER
OF PAGES____

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem
a division of Liberty Analytical Corp.

HC (summary only) + full + CD

31-Jan-06

MARK STINNETT
CH2M HILL, INC.
3011 SW WILLISTON ROAD

GAINESVILLE, FL 32608

Subject:
Report of Data-Project: CTO-007 (AR) Workorder: 8925

Attn.: MARK STINNETT

Enclosed are the results of analytical work performed in accordance with the referenced account number.

This report covers sample(s) appearing on the attached listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097.

Sincerely,

CompuChem
A Division of Liberty Analytical

Attachment

TOTAL NUMBER
OF PAGES_____

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem

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full HC (hole punched)

31-Jan-06

SHAWNE RODGERS
ENVIRONMENTAL DATA QUALITY, INC.
967 EAST SWEDESFORD ROAD
SUITE 404
Exton, PA 19341

Subject:
Report of Data-Project: CTO-007 (AR) Workorder: 8925

Attn.: SHAWNE RODGERS

Enclosed are the results of analytical work performed in accordance with the referenced account number.

This report covers sample(s) appearing on the attached listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097.

Sincerely,

CompuChem
A Division of Liberty Analytical

Attachment

TOTAL NUMBER
OF PAGES_____

CompuChem, a division of Liberty Analytical

Hsn	Client ID	Wordorder	Matrix	Account	Project	Report
892501	WAR-IDW-4	8925	L	CH2MHILL	CTO-007 (AR)	

CompuChem, a Division of Liberty Analytical Corporation

I. SAMPLE DATA SUMMARY PACKAGE

GC by SW-846

The sample data summary package shall contain data for all samples in one Sample Delivery Group (SDG) of the Case, as follows:

A. SDG Narrative

B. Tabulated target compound results (Form I)

C. Surrogate spike analysis results (Form II)
By matrix (Water or Soil), and
by concentration (Low, or Medium)

D. Spike results MS / MSD / LCS (Form III)

E. Blank data (Form IV)
Tabulated blank results (Form I)

LAB CODE : COMPU

METHOD: 8081B TCLP

SDG # : 3925

A. SDG Narrative

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 8925
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS:
WAR-IDW-4

The one water sample listed above was received intact, properly refrigerated with proper documentation, in sealed shipping containers, on January 19, 2006. The sample was scheduled for the requested analyses of the pesticide-TCLP fraction. SW-846, 3rd Edition, Update 3, the Toxicity Characteristic Leaching Procedure (TCLP) (Method 1311), Separatory Funnel extraction (Method 3550B), and Method 8081A were used to prepare and analyze this sample, with the exceptions and/or additions requested by the client. This portion of the SDG narrative deals with the pesticide-TCLP fraction only.

Pesticides TCLP

Extraction and analysis holding time requirements were met for this sample.

There were no pesticide-TCLP analytes confirmed by dual column analysis above the Quantitation Limit (QL) in this sample.

Manual quantitations were performed on one or more of the process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

All of the surrogates met recovery and retention time criteria in the analyses of this sample.

The associated method blank met all quality control criteria.

There is no associated duplicate matrix spikes for this SDG.

The associated Laboratory Control Sample prepared and analyzed along with this sample (LCS) met all accuracy criteria.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

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. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Elsie S. Byrd

Elsie S. Byrd
Senior Scientist I
January 26, 2006

GC and GC/MS Column and Trap Specifications Table

SDG #:	8925

COLUMNS

Columns Utilized	Brand Name	Coating Material	ID (mm)	Film Thickness (um)	Length (m)
	GC Laboratory				
	Restek	RTX-5	0.53	1.0	30
	Restek	RTX-SMS	0.53	1.0	30
✓	Restek	CLPesticides	0.53	0.5	30
✓	Restek	CLPesticides II	0.53	0.42	30
	J&W	DB-210	0.53	1.0	30
	J&W	GS-GASPRO	0.32		30
	GC Volatiles Laboratory				
	Restek	RTX-Volatiles	0.53	2.0	30
	GC/MS Volatiles Laboratory				
	Restek	RTX-624	0.32	1.8	60
	Restek	RTX-VMS*	0.18	1.0	20
	Phenomonex	ZB-624	0.32	1.8	60
	Supelco	SPB-624	0.32	3	75
	GC/MS Semivolatiles Laboratory				
	Restek	RTX-5MS	0.25	0.3	30
	Restek	RTX-5MS	0.32	0.3	30
	HPLC Laboratory				
	Supelco	Supelcosil LC-PAH	4.6	5.0	15 cm
	Supelco	Discovery RP Amide C16	4.6	5.0	25 cm
	Restek	Pinnacle Cyano	4.6	5	25 cm
	Restek	Allure C18	4.6	5	25 cm

TRAPS

	GC and GC/MS Volatiles Laboratory	
	Tekmar 3	* 8 cm of 2,6-diphenylene oxide polymer (Tenax)
		* 8 cm of silica gel
		* 7 cm of coconut charcoal
		* 0.5 cm of silanized glass wool at each end
	Tekmar 5	* 1 cm of methyl silicone packing (OV-1 coating)
		* 8 cm of 2,6-diphenylene oxide polymer (Tenax)
		* 8 cm of silica gel
		* 7 cm of coconut charcoal
		* 0.5 cm of silanized glass wool at each end
	Supelco K (Vocarb3000)	* 10 cm of Carbopack B (Graphitized Carbons)
		* 6 cm of Carboxen 1000 (Carbon molecular sieves)
		* 1 cm of Carboxen 1001 (Carbon molecular sieves)

Rev. 18

CompuChem

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CompuChem's Pagination Convention

As required by the EPA CLP Statement of Work (SOW) documents, data to be delivered must be paginated (by machine or hand). In the event that the initial numbering is incorrect (a page numbered twice or a page skipped, for example), it is CompuChem's policy to add an alphabetic suffix to a page number when necessary (e.g., 100A, 100B, etc.).

Notification Regarding Manual Editing/Integration Flags

In some instances, manual adjustments to the software output are necessary to provide accurate data. These manual integrations are performed by the data reviewers, GC/MS operators, or GC chemists. An Extracted Ion Current Profile (EICP) or a GC chromatographic peak has been provided for the manual integration performed on each compound to demonstrate the accuracy of that process. The manual integrations are flagged on the quantitation report in the far right column beyond the FINAL concentration for GC/MS analysis, and in the "Flags" column for GC analysis. The manual editing/integration flags are:

M - Denotes that a manual integration has been performed for this compound. The manual integration was performed in order to provide the most accurate area count possible for the peak.

H - Denotes that the data reviewer, GC/MS operator, or GC Chemist has chosen an alternate peak within the retention time window from that chosen by the software for that compound. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

MH - Denotes that an alternate peak has been chosen within the retention time window from that chosen by the software for that compound and also a manual integration of the chosen peak has been performed. The manual integration was performed in order to provide the most accurate area count possible for the peak.

L - Denotes that a data reviewer or GC/MS operator has selected an alternate library search. This is typically done when an additional tentatively identified compound (TIC) has been added to the number of peaks searched. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

ML - Denotes that an alternate library search has been selected and a manual integration has also been performed. This is typically done when an additional TIC has been added and the TIC peak also required a manual integration.

The EPA CLP SOW documents require additional explanations for manual editing/integration. In the accompanying raw data packages, additional codes have been applied to the "M" flag and carry the following meanings;

M1 - The compound was not found by the automatic integration routine.

M2 - The compound was incorrectly integrated by the automatic integration routine.

M3 - The co-eluting compounds were incorrectly integrated by the automatic integration routine.

These codes will appear in the GC/MS and GC raw data.

DATA REPORTING QUALIFIERS

On the Form I, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on Form I for each compound. The qualifiers used are:

U : This flag indicates the compound was analyzed for but not detected. The Contract Required Quantitation Limit (CRQL), or reporting limit, will be adjusted to reflect any dilution and, for soils, the percent moisture.

J : This flag indicates an estimated value. The flag is used as detailed below:

1. When estimating a concentration for tentatively identified compounds (TICs) where a response factor of 1.0 is assumed for the TIC analyte,

2. When the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the CRQL (or Reporting Limit) but greater than zero, and

3. When the retention time data indicate the presence of a compound that meets the pesticide/Aroclor or other GC or HPLC identification criteria, and the result is less than the CRQL (or Reporting Limit) but greater than zero. For example, if the CRQL (or Reporting Limit) is 10 µg/L, but a concentration of 3 µg/L is calculated, it is reported as 3J.

N : This flag indicates presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search. For generic characterization of a TIC such as 'chlorinated hydrocarbon', the N flag is not used.

P : In the EPA's Contract Laboratory Program (CLP), this flag is used for a pesticide/Aroclor target analyte, when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form I and flagged with a P.
For SW-846 GC and HPLC analyses, when the Relative Percent Difference (RPD) is greater than 40% and there is no evidence of chromatographic anomalies or interferences, then the higher of the two values is reported and flagged with a P. When the RPD is equal to or less than 40%, our policy is to also report the higher of the two values, although the choice could be a project specific issue. For certain HPLC analyses, if one of the HPLC columns displays co-elution of target analytes, all results are reported from a primary column displaying no co-elution. Results are still flagged with a P if the RPD between columns is greater than 40%.

DATA REPORTING QUALIFIERS (continued)

C : This flag applies to GC or HPLC results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, this flag is not applied; a laboratory-defined flag is used instead (see the X/Y/Z qualifier.)

B : This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified target compound. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

E : This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis. If one or more compounds have a response greater than the upper level of the calibration range, the sample or extract will be diluted and reanalyzed. All such compounds with a response greater than the upper level of the calibration range will have the concentration flagged with an E on Form I for the original analysis.

D : If a sample or extract is reanalyzed at a higher dilution factor, for example when the concentration of an analyte exceeds the upper calibration range, the DL suffix is appended to the sample number on Form I for the more diluted sample, and **all** reported concentrations on that Form I are flagged with the D flag. This flag alerts data users that any discrepancies between the reported concentrations may be due to dilution of the sample or extract.

NOTE 1: The D flag is not applied to compounds which are not detected in the sample analysis i.e. compounds reported with the CRQL (or Reporting Limit) and the U flag.

NOTE 2: Separate Form Is are used for reporting the original analysis (Client Sample No. XXXXX) and the more diluted sample analysis (Client Sample No. XXXXXDL) i.e. the results from both analyses <u>are not combined</u> on a single Form I.

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

S: In the SOM01.1 SOW, this flag is used to indicate an estimated value for Aroclor target compounds where a valid 5-point initial calibration was not performed prior to the analytes detection in a sample. If an "S" flag is used for a specific Aroclor, then a reanalysis of the sample is required after a valid 5-point calibration is performed for the detected Aroclor.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y and Z.

B. Form I

Organic Analysis Data Sheet (OADS)
- All samples in alphanumeric order
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Control Sample(s)

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WAR-IDW-4

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 892501

Sample wt/vol: 100.0 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 01/19/06

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(uL) Date Analyzed: 01/24/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
58-89-9	gamma-BHC (Lindane)	0.13	U
72-20-8	Endrin	0.50	U
76-44-8	Heptachlor	0.13	U
1024-57-3	Heptachlor Epoxide	0.13	U
72-43-5	Methoxychlor	1.3	U
8001-35-2	Toxaphene	25	U
57-74-09	Technical Chlordane	8.0	U

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PGNLCS

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 91896

Sample wt/vol: 100.0 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(uL) Date Analyzed: 01/24/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
58-89-9	gamma-BHC (Lindane)	1.4	
72-20-8	Endrin	0.50	U
76-44-8	Heptachlor	1.4	
1024-57-3	Heptachlor Epoxide	1.2	
72-43-5	Methoxychlor	1.3	U
8001-35-2	Toxaphene	47	
57-74-09	Technical Chlordane	8.0	U

C. Form II

Surrogate spike analysis

- By level (low, medium) -

2E
WATER PESTICIDE SURROGATE RECOVERY

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

GC Column(1): CLPEST ID: 0.53 (mm) GC Column(2): CLPEST2 ID: 0.53 (mm)

	EPA SAMPLE NO.	DCB 1 %REC #	DCB 2 %REC #	TCX 1 %REC #	TCX 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLKGN	97	92	100	104			0
02	PGNLCS	94	92	110	103			0
03	TCLPBLKGW	98	93	100	104			0
04	WAR-IDW-4	93	89	110	107			0
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
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27								
28								
29								
30								

ADVISORY
QC LIMITS

S1 (DCB) = Decachlorobiphenyl (43-144)
S2 (TCX) = Tetrachloro-m-Xylene (43-135)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

D. Form III

Matrix Spike/Matrix Spike Duplicate results

- By level (low, medium) -

Laboratory Control Sample(s)

3E
WATER PESTICIDE LAB CONTROL SAMPLE

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

LCS ID: PGNLCS

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
gamma-BHC (Lindane)	1.5	1.4	93	32-127
Heptachlor	1.5	1.4	93	34-111
Heptachlor Epoxide	1.5	1.2	80	37-142
Toxaphene	50	47	94	41-126

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

* Values outside of QC limits

Spike Recovery: 0 out of 4 outside limits

COMMENTS: _____

_____

FORM III PEST-1

E. Form IV

Method Blank Results
Form IV, Form I

Method blank summary, OADS
- In chronological order of analysis

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLKGN

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Lab Sample ID: 91895 Lab File ID: 342I91895

Matrix (soil/water) WATER Extraction:(SepF/Cont/Sonc) SEPF

Sulfur Cleanup (Y/N) N Date Extracted: 01/24/06

Date Analyzed (1): 01/24/06 Date Analyzed (2): 01/24/06

Time Analyzed (1): 2032 Time Analyzed (2): 2032

Instrument ID (1): TRACEGC82 Instrument ID (2): TRACEGC83

GC Column (1): CLPEST ID: 0.53(mm) GC Column (2): CLPEST2 ID: 0.53(mm)

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

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	PGNLCS	91896	01/24/06	01/24/06
02	TCLPBLKGW	91765	01/24/06	01/24/06
03	WAR-IDW-4	892501	01/24/06	01/24/06
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: _____

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKGN

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 91895

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(uL) Date Analyzed: 01/24/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
58-89-9	gamma-BHC (Lindane)	0.025	U
72-20-8	Endrin	0.10	U
76-44-8	Heptachlor	0.025	U
1024-57-3	Heptachlor Epoxide	0.025	U
72-43-5	Methoxychlor	0.25	U
8001-35-2	Toxaphene	5.0	U
57-74-09	Technical Chlordane	1.6	U

CompuChem, a Division of Liberty Analytical Corporation

I. SAMPLE DATA PACKAGE

GC by SW-846

The sample data package shall include data for all analyses of all samples in one Sample Delivery Group (SDG), including field samples, dilutions, reanalyses, blanks, matrix spikes, matrix spike duplicates, and laboratory control samples. The sample data package consists of the following:

A. SDG Narrative

B. Chain-of-Custody Documentation

C. SDG Data

LAB CODE : COMPU

METHOD: 8081A TCLP

CASE # : _____

SDG # : 8925

A. SDG Narrative

CompuChem
a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 8925
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS:
WAR-IDW-4

The one water sample listed above was received intact, properly refrigerated with proper documentation, in sealed shipping containers, on January 19, 2006. The sample was scheduled for the requested analyses of the pesticide-TCLP fraction. SW-846, 3rd Edition, Update 3, the Toxicity Characteristic Leaching Procedure (TCLP) (Method 1311), Separatory Funnel extraction (Method 3550B), and Method 8081A were used to prepare and analyze this sample, with the exceptions and/or additions requested by the client. This portion of the SDG narrative deals with the pesticide-TCLP fraction only.

Pesticides TCLP

Extraction and analysis holding time requirements were met for this sample.

There were no pesticide-TCLP analytes confirmed by dual column analysis above the Quantitation Limit (QL) in this sample.

Manual quantitations were performed on one or more of the process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

All of the surrogates met recovery and retention time criteria in the analyses of this sample.

The associated method blank met all quality control criteria.

There is no associated duplicate matrix spikes for this SDG.

The associated Laboratory Control Sample prepared and analyzed along with this sample (LCS) met all accuracy criteria.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

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. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Elsie S. Byrd
Senior Scientist I
January 26, 2006

GC and GC/MS Column and Trap Specifications Table

SDG #:	8925

COLUMNS

Columns Utilized	Brand Name	Coating Material	ID (mm)	Film Thickness (um)	Length (m)
	GC Laboratory				
	Restek	RTX-5	0.53	1.0	30
	Restek	RTX-SMS	0.53	1.0	30
✓	Restek	CLPesticides	0.53	0.5	30
✓	Restek	CLPesticides II	0.53	0.42	30
	J&W	DB-210	0.53	1.0	30
	J&W	GS-GASPRO	0.32		30
	GC Volatiles Laboratory				
	Restek	RTX-Volatiles	0.53	2.0	30
	GC/MS Volatiles Laboratory				
	Restek	RTX-624	0.32	1.8	60
	Restek	RTX-VMS*	0.18	1.0	20
	Phenomonex	ZB-624	0.32	1.8	60
	Supelco	SPB-624	0.32	3	75
	GC/MS Semivolatiles Laboratory				
	Restek	RTX-5MS	0.25	0.3	30
	Restek	RTX-5MS	0.32	0.3	30
	HPLC Laboratory				
	Supelco	Supelcosil LC-PAH	4.6	5.0	15 cm
	Supelco	Discovery RP Amide C16	4.6	5.0	25 cm
	Restek	Pinnacle Cyano	4.6	5	25 cm
	Restek	Allure C18	4.6	5	25 cm

TRAPS

	GC and GC/MS Volatiles Laboratory	
	Tekmar 3	* 8 cm of 2,6-diphenylene oxide polymer (Tenax)
		* 8 cm of silica gel
		* 7 cm of coconut charcoal
		* 0.5 cm of silanized glass wool at each end
	Tekmar 5	* 1 cm of methyl silicone packing (OV-1 coating)
		* 8 cm of 2,6-diphenylene oxide polymer (Tenax)
		* 8 cm of silica gel
		* 7 cm of coconut charcoal
		* 0.5 cm of silanized glass wool at each end
	Supelco K (Vocarb3000)	* 10 cm of Carbopack B (Graphitized Carbons)
		* 6 cm of Carboxen 1000 (Carbon molecular sieves)
		* 1 cm of Carboxen 1001 (Carbon molecular sieves)

Rev. 18

CompuChem

a division of Liberty Analytical Corporation

CompuChem's Pagination Convention

As required by the EPA CLP Statement of Work (SOW) documents, data to be delivered must be paginated (by machine or hand). In the event that the initial numbering is incorrect (a page numbered twice or a page skipped, for example), it is CompuChem's policy to add an alphabetic suffix to a page number when necessary (e.g., 100A, 100B, etc.).

Notification Regarding Manual Editing/Integration Flags

In some instances, manual adjustments to the software output are necessary to provide accurate data. These manual integrations are performed by the data reviewers, GC/MS operators, or GC chemists. An Extracted Ion Current Profile (EICP) or a GC chromatographic peak has been provided for the manual integration performed on each compound to demonstrate the accuracy of that process. The manual integrations are flagged on the quantitation report in the far right column beyond the FINAL concentration for GC/MS analysis, and in the "Flags" column for GC analysis. The manual editing/integration flags are:

M - Denotes that a manual integration has been performed for this compound. The manual integration was performed in order to provide the most accurate area count possible for the peak.

H - Denotes that the data reviewer, GC/MS operator, or GC Chemist has chosen an alternate peak within the retention time window from that chosen by the software for that compound. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

MH - Denotes that an alternate peak has been chosen within the retention time window from that chosen by the software for that compound and also a manual integration of the chosen peak has been performed. The manual integration was performed in order to provide the most accurate area count possible for the peak.

L - Denotes that a data reviewer or GC/MS operator has selected an alternate library search. This is typically done when an additional tentatively identified compound (TIC) has been added to the number of peaks searched. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

ML - Denotes that an alternate library search has been selected and a manual integration has also been performed. This is typically done when an additional TIC has been added and the TIC peak also required a manual integration.

The EPA CLP SOW documents require additional explanations for manual editing/integration. In the accompanying raw data packages, additional codes have been applied to the "M" flag and carry the following meanings;

M1 - The compound was not found by the automatic integration routine.

M2 - The compound was incorrectly integrated by the automatic integration routine.

M3 - The co-eluting compounds were incorrectly integrated by the automatic integration routine.

These codes will appear in the GC/MS and GC raw data.

DATA REPORTING QUALIFIERS

On the Form I, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on Form I for each compound. The qualifiers used are:

U : This flag indicates the compound was analyzed for but not detected. The Contract Required Quantitation Limit (CRQL), or reporting limit, will be adjusted to reflect any dilution and, for soils, the percent moisture.

J : This flag indicates an estimated value. The flag is used as detailed below:

1. When estimating a concentration for tentatively identified compounds (TICs) where a response factor of 1.0 is assumed for the TIC analyte,

2. When the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the CRQL (or Reporting Limit) but greater than zero, and

3. When the retention time data indicate the presence of a compound that meets the pesticide/Aroclor or other GC or HPLC identification criteria, and the result is less than the CRQL (or Reporting Limit) but greater than zero. For example, if the CRQL (or Reporting Limit) is 10 µg/L, but a concentration of 3 µg/L is calculated, it is reported as 3J.

N : This flag indicates presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search. For generic characterization of a TIC such as 'chlorinated hydrocarbon', the N flag is not used.

P : In the EPA's Contract Laboratory Program (CLP), this flag is used for a pesticide/Aroclor target analyte, when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form I and flagged with a P.
For SW-846 GC and HPLC analyses, when the Relative Percent Difference (RPD) is greater than 40% and there is no evidence of chromatographic anomalies or interferences, then the higher of the two values is reported and flagged with a P. When the RPD is equal to or less than 40%, our policy is to also report the higher of the two values, although the choice could be a project specific issue. For certain HPLC analyses, if one of the HPLC columns displays co-elution of target analytes, all results are reported from a primary column displaying no co-elution. Results are still flagged with a P if the RPD between columns is greater than 40%.

DATA REPORTING QUALIFIERS (continued)

C : This flag applies to GC or HPLC results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, this flag is not applied; a laboratory-defined flag is used instead (see the X/Y/Z qualifier.)

B : This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified target compound. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

E : This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis. If one or more compounds have a response greater than the upper level of the calibration range, the sample or extract will be diluted and reanalyzed. All such compounds with a response greater than the upper level of the calibration range will have the concentration flagged with an E on Form I for the original analysis.

D : If a sample or extract is reanalyzed at a higher dilution factor, for example when the concentration of an analyte exceeds the upper calibration range, the DL suffix is appended to the sample number on Form I for the more diluted sample, and **all** reported concentrations on that Form I are flagged with the D flag. This flag alerts data users that any discrepancies between the reported concentrations may be due to dilution of the sample or extract.

NOTE 1: The D flag is not applied to compounds which are not detected in the sample analysis i.e. compounds reported with the CRQL (or Reporting Limit) and the U flag.

NOTE 2: Separate Form Is are used for reporting the original analysis (Client Sample No. XXXXX) and the more diluted sample analysis (Client Sample No. XXXXXDL) i.e. the results from both analyses <u>are not combined</u> on a single Form I.

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

S: In the SOM01.1 SOW, this flag is used to indicate an estimated value for Aroclor target compounds where a valid 5-point initial calibration was not performed prior to the analytes detection in a sample. If an "S" flag is used for a specific Aroclor, then a reanalysis of the sample is required after a valid 5-point calibration is performed for the detected Aroclor.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y and Z.

B. Chains-of-Custody

The laboratory shall include a copy of the Chain-of-Custody (CoC) documentation for all of the samples in the SDG. The CoC documents shall be arranged in increasing Client Sample ID number order, considering both letters and numbers.

Vieques ERP
CH2M HILL
Chain of Custody Form

Project Site	AOC R				Number of Containers	Analysis Requested											Project No. 180357.FI.FK.AR
Project Manager	Brett Doerr																
Contact Tel No.	757-289-9246 (Adrienne Jones)																Lab Batch/SDG ID
Contact Address	4350 W. Cypress Street, Suite 600, Tampa, FL 33607																
Lab Name	CompuChem Labs																Lab Tel No./Fax No.
Lab Contact	Cathy Dover																919-379-4089/919-379-4040
Lab Address	501 Madison Ave. Cary, NC 27513																
Item	Sample ID	Station ID	Matrix	Date & Time Collected		CORR_IGNIT_SO 8oz	REACTIVITY_SO	TCLP_VOC_SO 4oz	TCLP_SO 8oz		CORR_IGNIT_W 2AL	REACTIVITY_W	TCLP_VOC_W 3-40ml	TCLP_W 5AL			Comments
1	WAR-IDW-4	IDW	WW	01/17/2006 1140	3	X	X	X	X								892501
2	WAR-IDW-3	IDW	WW	01/17/2006 1040	10						X	X	X	X			892601
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	

Sampled By: Kenji Butler | Date/Time: 1-18-06 0800 | Custody Seal: (Y) / N | Relinquished By: [signature] | Date/Time: 1/18/06 0830

Shipped Via: UPS (FedEx) Hand Other (Please specify):

Samples Temperature and Condition Upon Receipt (for lab's use):

Received By: [signature]	Date/Time:	Custody Seal: Y / N	Relinquished By:	Date/Time:
Received By: [signature]	Date/Time: 1-19-06 9:15	Custody Seal: (N) / N	Relinquished By:	Date/Time:

Remarks: 01/18/2006 AOC-R COC # 10

Cooler # 1

Temp @ 4.6 °C

CompuChem

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WORKORDER SUMMARY REPORT

Workorder: 8925 **Account:** CH2MHILL **Project:** CTO-007 (AR)
SDG-Case: CTO-007/18035 **Status:** CLOSED **QC Type:** CLIENT SPECIFIC MS/MSD
Report Style: COMPUCHEM STYLE 9 INTEGRATED W/EDD&CD

SAMPLE ID	CLIENT ID	COLLECT DATE	RECEIVE DATE	DUE DATE	COMMENTS
892501	WAR-IDW-4	1/17/2006	1/19/2006	2/13/2006	LCS ONLY*TCLP VOC, SVOC, PEST, HERB & METALS*RIC
L	GS8081TCLP	TCLP PST ONLY 8081A SOIL			
L	GS8151TCLP	TCLP HERBICIDE 8151 SOIL			
L	MS6010TCLP	TCLP METAL 6010B SOIL			
L	MS74HGTCLP	TCLP MERCURY ONLY 7471A SOIL			
L	SS8270TCLP	TCLP SVOC 8270C SOIL			
L	VS8260ZHE	ZHE VOC 8260B SOIL			
L	WS1010IGNT	IGNITABILITY 1010 SOIL			
L	WS9014RCCN	REACTIVE CYANIDE 9014 SOIL			
L	WS9034RCSF	REACTIVE SULFIDE 9034 SOIL			
L	WS9040COR	CORROSIVITY 9040B SOIL			

CompuChem, a Division of Liberty Analytical

Extract Chain of Custody

Batch: 8894 Date: 1/24/2006

Department: Organic Extractions

Sample ID	Client ID	Product	Matrix	Hold Date
892501	WAR-IDW-4	GW8081TCLX	L	2/1/2006
892601	WAR-IDW-3	GW8081TCLX	L	2/1/2006
91765	PLCHBK for	GW8081TCLX	W	2/1/2006
91770	PLCHBK for	GW8081TCLX	W	2/1/2006
91895	PBLKGN	GW8081TCLX	W	2/1/2006
91896	PGNLCS	GW8081TCLX	W	2/1/2006

1-24-5

Relinquished By:	Received By:	Date/Time
GC #3	GC #3	1-24-06/1430
KP	KP	1-24-06 5:05pm
	GC #4	1-24-06 5:10pm

C. SDG Data

1. QC Summary
2. Sample Data
3. Standards Data
4. Raw QC Data

LAB CODE : COMPU

METHOD: 8081A TCLP

CASE # : _____

SDG # : 8928

1. Q C Summary

a. Surrogate Percent Recovery Summary (Form II)

b. Matrix Spike/Matrix Spike Duplicate/
Laboratory Control Sample Summary
(Form III)

c. Method Blank Summary (Form IV)

a. Surrogate Percent Recovery Summary

(Form II)

2E

WATER PESTICIDE SURROGATE RECOVERY

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

GC Column(1): CLPEST ID: 0.53 (mm) GC Column(2): CLPEST2 ID: 0.53 (mm)

	EPA SAMPLE NO.	DCB 1 %REC #	DCB 2 %REC #	TCX 1 %REC #	TCX 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLKGN	97	92	100	104			0
02	PGNLCS	94	92	110	103			0
03	TCLPBLKGW	98	93	100	104			0
04	WAR-IDW-4	93	89	110	107			0
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

ADVISORY QC LIMITS

S1 (DCB) = Decachlorobiphenyl (43-144)
S2 (TCX) = Tetrachloro-m-Xylene (43-135)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

b. Matrix Spike/Matrix Spike Duplicate/ Laboratory Control Sample Summary

(Form III)

3E
WATER PESTICIDE LAB CONTROL SAMPLE

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

LCS ID: PGNLCS

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
gamma-BHC (Lindane)	1.5	1.4	93	32-127
Heptachlor	1.5	1.4	93	34-111
Heptachlor Epoxide	1.5	1.2	80	37-142
Toxaphene	50	47	94	41-126

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

* Values outside of QC limits

Spike Recovery: 0 out of 4 outside limits

COMMENTS: _____

_____

FORM III PEST-1

c. Method Blank Summary (Form IV)

If more than a single form is necessary, forms shall be arranged in chronological order by date of analysis of the blanks, by instrument.

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLKGN

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Lab Sample ID: 91895 Lab File ID: 342I91895

Matrix (soil/water) WATER Extraction:(SepF/Cont/Sonc) SEPF

Sulfur Cleanup (Y/N) N Date Extracted: 01/24/06

Date Analyzed (1): 01/24/06 Date Analyzed (2): 01/24/06

Time Analyzed (1): 2032 Time Analyzed (2): 2032

Instrument ID (1): TRACEGC82 Instrument ID (2): TRACEGC83

GC Column (1): CLPEST ID: 0.53(mm) GC Column (2): CLPEST2 ID: 0.53(mm)

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

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	PGNLCS	91896	01/24/06	01/24/06
02	TCLPBLKGW	91765	01/24/06	01/24/06
03	WAR-IDW-4	892501	01/24/06	01/24/06
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: _____

2. Sample Data

Sample data shall be arranged in packets with the Organic Analysis Data Sheet (Form I), followed by the raw data for samples. These sample packets shall be placed in increasing Client Sample ID number order, considering both letters and numbers.

a. Target Analyte Results (Form I)

Tabulated results (identification and quantitation) shall be included.

b. Copies of Chromatograms

Positively identified compounds shall be labeled with the names of compounds, either directly out from the peak on the chromatogram, or on a printout of retention times on the data system printout if retention times are printed over the peak on the chromatogram. Include for each sample or sample extract, including dilutions and reanalyses. The chromatogram shall contain the following header information: Client Sample ID number, volume injected (µL), date and time of injection, GC column ID, and GC instrument ID.

c. Copies of Chromatograms from the Second Column (if necessary)

d. Data System Printout

A printout of retention time and corresponding peak height or peak area shall accompany each chromatogram. Where edits have been made, initialing, dating and integration time range are required.

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WAR-IDW-4

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 892501

Sample wt/vol: 100.0 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 01/19/06

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(uL) Date Analyzed: 01/24/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
58-89-9	gamma-BHC (Lindane)	0.13	U
72-20-8	Endrin	0.50	U
76-44-8	Heptachlor	0.13	U
1024-57-3	Heptachlor Epoxide	0.13	U
72-43-5	Methoxychlor	1.3	U
8001-35-2	Toxaphene	25	U
57-74-09	Technical Chlordane	8.0	U

Data File: /chem/tracegc82.i/i060110zb.b/346i892501.d

Date : 24-JAN-2006 22:14

Client ID: WAR-IDW-4

Instrument: tracegc82.i

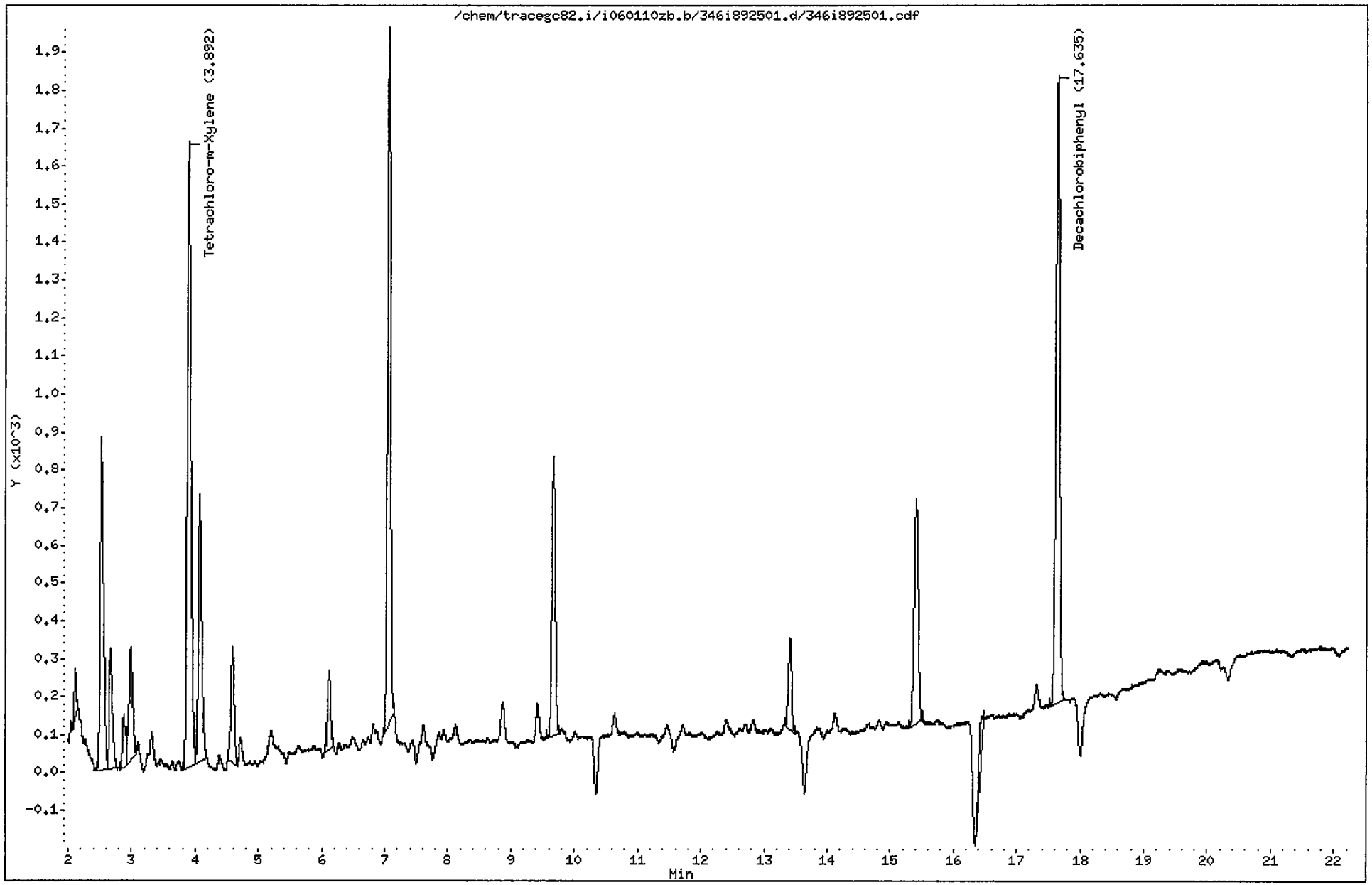
Sample Info: 892501

Volume Injected (uL): 1.0

Operator: 2564

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : 892501 Client Smp Id : WAR-IDW-4
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 24-JAN-2006 22:14 Inst ID : TRACEGC82
Operator : 2564
Method : /chem/tracegc82.i/i060110zb.b/8081A_clpestv4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
0.17			502								
0.94			7352								
1.04			13994								
1.19			14980								
1.66			876								
1.78			4008								
2.12			316								
2.52			3160								
2.66			1062								
2.88			471								
2.98			1243								
3.89	3.78	3.92	6588	306784	Tetrachloro-m-Xylene	0.021471	1.073555		107.4	43 - 135	
4.07			2681								
4.59			1097								
6.11			707								
7.06			6023								
9.67			2721								
13.41			895								
15.40			2663								
16.45			436								
17.64	17.53	17.67	6775	362764	Decachlorobiphenyl	0.018676	0.933803		93.4	43 - 144	

TAJ 1/25/06

Data File: /chem/tracegc83.i/i060110zb.b/346i892501.d

Date : 24-JAN-2006 22:14

Client ID: WAR-IDW-4

Instrument: tracegc83.i

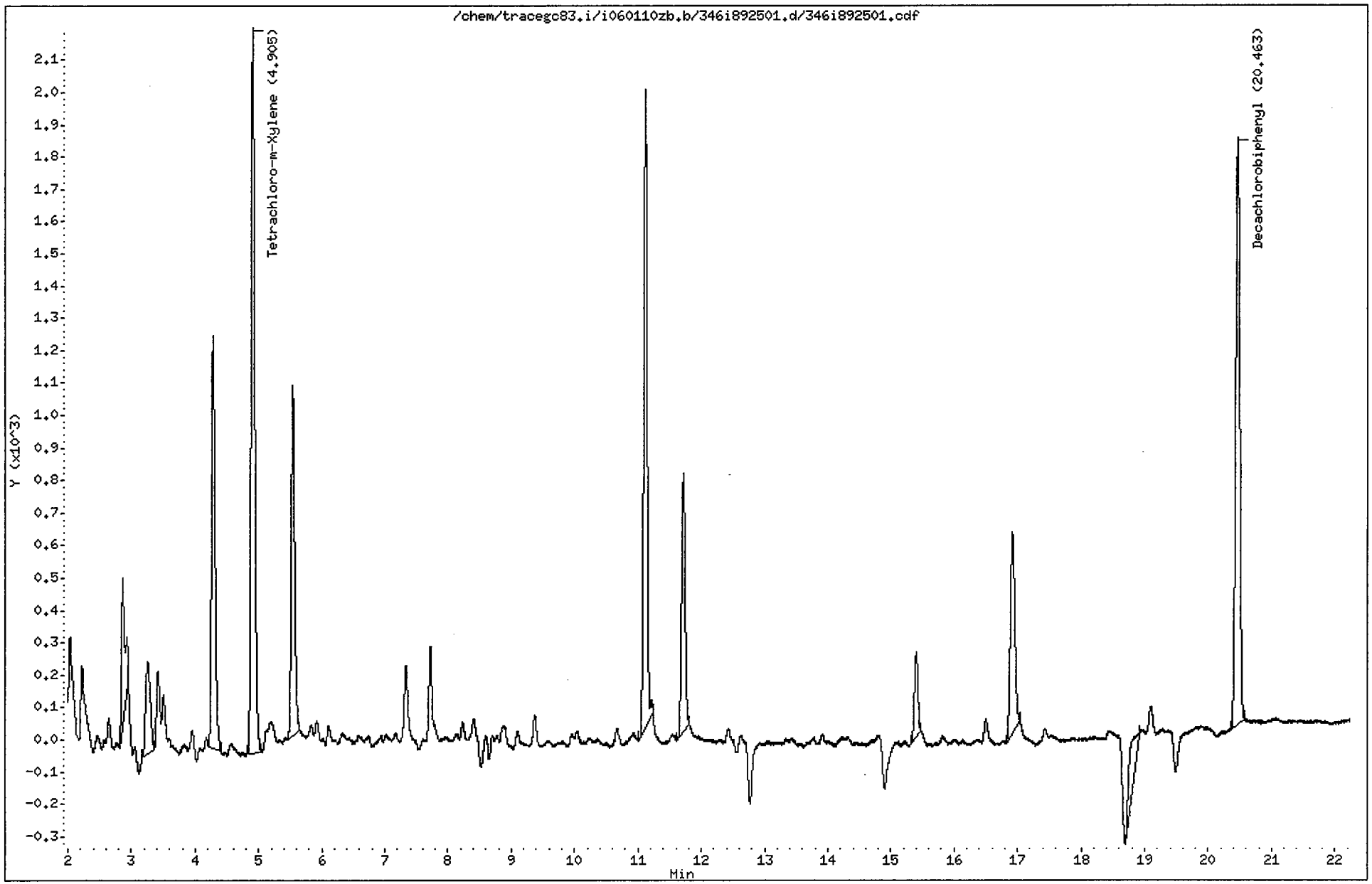
Sample Info: 892501

Volume Injected (uL): 1.0

Operator: 2564

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : 892501 Client Smp Id : WAR-IDW-4
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 24-JAN-2006 22:14 Inst ID : TRACEGC83
Operator : 2564
Method : /chem/tracegc83.i/i060110zb.b/8081A_clpest2v4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
0.94		4320								
1.02		5145								
1.07		4559								
1.13		7035								
1.23		20165								
1.83		2604								
2.86		1710								
3.26		1509								
4.28		4717								
4.90	4.79 4.93	8652	403926	Tetrachloro-m-Xylene	0.021417	1.070864		107.1	43 - 135	
5.54		3955								
11.12		7078								
11.71		3074								
15.40		998								
16.92		3042								
18.91		1325								
20.46	20.35 20.49	8170	459870	Decachlorobiphenyl	0.017766	0.888295		88.8	43 - 144	

TAJ 1/25/06

3. Standards Data

a. Initial Calibration Data (Form VI)

b. Calibration Verification Summary (Form VII)

c. Analytical Sequence (Form VIII)

d. Identification Summary for Single Component Analytes (Form X)

e. Identification Summary for Multicomponent Analytes (Form X) - if applicable

f. Chromatograms and Data System Printouts

a. Initial Calibration Data
(Form VI)

For all GC columns, all instruments, in chronological order by GC column and instrument.

FORM 6
PESTICIDE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: TRACEGC82 Calibration Date(s): 01/10/06 01/11/06

Column: CLPEST ID: 0.53 (mm) Calibration Time(s): 1616 2313

LAB FILE ID: RF0.0025: 005IINDBRF0.005: 007IINDB2RF0.01: 009IINDB39
RF0.02: 073ICHLORORF0.04: 013IINDB59

COMPOUND	RF0.0025	RF0.005	RF0.01	RF0.02	RF0.04
gamma-BHC (Lindane)	508400.00	507400.00	481200.00	477850.00	482875.00
Endrin	426900.00	392150.00	376025.00	382212.50	353918.75
Heptachlor	576000.00	539600.00	523200.00	501450.00	484100.00
Heptachlor Epoxide	541600.00	503200.00	487600.00	478700.00	434250.00
Methoxychlor	223640.00	212700.00	191030.00	174790.00	167205.00
Toxaphene				16063.750	
(2)				14262.750	
(3)				20141.000	
(4)				16035.500	
(5)				10148.500	
Technical Chlordane				28238.750	
(2)				20038.750	
(3)				45171.250	
(4)				69800.000	
(5)				17728.750	
Decachlorobiphenyl	412500.00	400000.00	358975.00	325543.75	316800.00
Tetrachloro-m-Xylene	330700.00	321725.00	299712.50	289281.25	292503.12

FORM 6
PESTICIDE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: TRACEGC82 Calibration Date(s): 01/10/06 01/11/06

Column: CLPEST ID: 0.53 (mm) Calibration Time(s): 1616 2313

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2	
gamma-BHC (Lindane)	AVRG	491545.000	3.1	
Endrin	AVRG	386241.250	6.9	
Heptachlor	AVRG	524870.000	6.8	
Heptachlor Epoxide	AVRG	489070.000	8.0	
Methoxychlor	AVRG	193873.000	12.4	
Toxaphene	AVRG	16063.7500	0.0	<-
(2)	AVRG	14262.7500	0.0	<-
(3)	AVRG	20141.0000	0.0	<-
(4)	AVRG	16035.5000	0.0	<-
(5)	AVRG	10148.5000	0.0	<-
Technical Chlordane	AVRG	28238.7500	0.0	<-
(2)	AVRG	20038.7500	0.0	<-
(3)	AVRG	45171.2500	0.0	<-
(4)	AVRG	69800.0000	0.0	<-
(5)	AVRG	17728.7500	0.0	<-
Decachlorobiphenyl	AVRG	362763.750	11.8	
Tetrachloro-m-Xylene	AVRG	306784.375	6.0	

FORM VI PEST

FORM 6
PESTICIDE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: TRACEGC82 Calibration Date(s): 01/10/06 01/11/06

Column: CLPEST ID: 0.53 (mm) Calibration Time(s): 1616 2313

LAB FILE ID: RT1: 005IINDB19P RT2: 007IINDB29P RT3: 009IINDB39P
RT4: 073ICHLORO49PRT5: 013IINDB59P

COMPOUND	RT1	RT2	RT3	RT4	RT5
gamma-BHC (Lindane)	5.830	5.830	5.830	5.830	5.830
Endrin	11.340	11.340	11.340	11.340	11.340
Heptachlor	6.950	6.950	6.950	6.950	6.950
Heptachlor Epoxide	9.220	9.220	9.230	9.230	9.230
Methoxychlor	13.900	13.900	13.900	13.910	13.900
Toxaphene				12.120	
(2)				12.750	
(3)				13.310	
(4)				13.840	
(5)				14.730	
Technical Chlordane				6.970	
(2)				8.110	
(3)				9.570	
(4)				9.900	
(5)				11.750	
Decachlorobiphenyl	17.590	17.600	17.600	17.590	17.590
Tetrachloro-m-Xylene	3.850	3.850	3.850	3.860	3.850

FORM 6
PESTICIDE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: TRACEGC82 Calibration Date(s): 01/10/06 01/11/06

Column: CLPEST ID: 0.53 (mm) Calibration Time(s): 1616 2313

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO	
gamma-BHC (Lindane)	5.830	5.758	5.898	
Endrin	11.340	11.272	11.412	
Heptachlor	6.950	6.878	7.018	
Heptachlor Epoxide	9.226	9.157	9.297	
Methoxychlor	13.902	13.833	13.973	
Toxaphene	12.120	12.050	12.190	<-
(2)	12.750	12.680	12.820	<-
(3)	13.310	13.242	13.382	<-
(4)	13.840	13.767	13.907	<-
(5)	14.730	14.660	14.800	<-
Technical Chlordane	6.970	6.903	7.043	<-
(2)	8.110	8.042	8.182	<-
(3)	9.570	9.497	9.637	<-
(4)	9.900	9.835	9.975	<-
(5)	11.750	11.682	11.822	<-
Decachlorobiphenyl	17.594	17.525	17.665	
Tetrachloro-m-Xylene	3.852	3.782	3.922	

FORM 6
PESTICIDE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: TRACEGC83 Calibration Date(s): 01/10/06 01/11/06

Column: CLPEST2 ID: 0.53 (mm) Calibration Time(s): 1616 2313

LAB FILE ID: RF0.0025: 005IINDBRF0.005: 007IINDB2RF0.01: 009IINDB39
RF0.02: 073ICHLORORF0.04: 013IINDB59

COMPOUND	RF0.0025	RF0.005	RF0.01	RF0.02	RF0.04
gamma-BHC (Lindane)	741600.00	723000.00	667000.00	652650.00	664100.00
Endrin	579500.00	518150.00	494100.00	505200.00	479381.25
Heptachlor	835200.00	786200.00	712800.00	674600.00	651925.00
Heptachlor Epoxide	747600.00	690600.00	652500.00	633250.00	577825.00
Methoxychlor	273640.00	260260.00	236750.00	219610.00	216435.00
Toxaphene				18028.750	
(2)				23239.000	
(3)				25353.750	
(4)				27277.000	
(5)				10463.750	
Technical Chlordane				37720.000	
(2)				24328.750	
(3)				58726.250	
(4)				50830.000	
(5)				20925.000	
Decachlorobiphenyl	504150.00	495350.00	451650.00	419737.50	428462.50
Tetrachloro-m-Xylene	431400.00	414200.00	382900.00	384668.75	406462.50

FORM 6
PESTICIDE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: TRACEGC83 Calibration Date(s): 01/10/06 01/11/06

Column: CLPEST2 ID: 0.53 (mm) Calibration Time(s): 1616 2313

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2	
gamma-BHC (Lindane)	AVRG	689670.000	5.8	
Endrin	AVRG	515266.250	7.5	
Heptachlor	AVRG	732145.000	10.5	
Heptachlor Epoxide	AVRG	660355.000	9.6	
Methoxychlor	AVRG	241339.000	10.4	
Toxaphene	AVRG	18028.7500	0.0	<-
(2)	AVRG	23239.0000	0.0	<-
(3)	AVRG	25353.7500	0.0	<-
(4)	AVRG	27277.0000	0.0	<-
(5)	AVRG	10463.7500	0.0	<-
Technical Chlordane	AVRG	37720.0000	0.0	<-
(2)	AVRG	24328.7500	0.0	<-
(3)	AVRG	58726.2500	0.0	<-
(4)	AVRG	50830.0000	0.0	<-
(5)	AVRG	20925.0000	0.0	<-
Decachlorobiphenyl	AVRG	459870.000	8.3	
Tetrachloro-m-Xylene	AVRG	403926.250	5.1	

FORM 6
PESTICIDE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: TRACEGC83 Calibration Date(s): 01/10/06 01/11/06

Column: CLPEST2 ID: 0.53 (mm) Calibration Time(s): 1616 2313

LAB FILE ID: RT1: 005IINDB19P RT2: 007IINDB29P RT3: 009IINDB39P
RT4: 073ICHLORO49PRT5: 013IINDB59P

COMPOUND	RT1	RT2	RT3	RT4	RT5
gamma-BHC (Lindane)	7.430	7.430	7.430	7.430	7.430
Endrin	13.450	13.450	13.450	13.460	13.460
Heptachlor	8.570	8.570	8.570	8.570	8.570
Heptachlor Epoxide	10.970	10.970	10.970	10.970	10.970
Methoxychlor	16.730	16.730	16.730	16.730	16.730
Toxaphene				13.380	
(2)				14.300	
(3)				15.000	
(4)				16.280	
(5)				17.300	
Technical Chlordane				8.600	
(2)				9.930	
(3)				11.500	
(4)				11.900	
(5)				14.160	
Decachlorobiphenyl	20.420	20.420	20.420	20.420	20.420
Tetrachloro-m-Xylene	4.860	4.860	4.870	4.870	4.860

FORM 6
PESTICIDE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: TRACEGC83 Calibration Date(s): 01/10/06 01/11/06

Column: CLPEST2 ID: 0.53 (mm) Calibration Time(s): 1616 2313

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO	
gamma-BHC (Lindane)	7.430	7.357	7.497	
Endrin	13.454	13.385	13.525	
Heptachlor	8.570	8.498	8.638	
Heptachlor Epoxide	10.970	10.900	11.040	
Methoxychlor	16.730	16.660	16.800	
Toxaphene	13.380	13.310	13.450	<-
(2)	14.300	14.235	14.375	<-
(3)	15.000	14.927	15.067	<-
(4)	16.280	16.210	16.350	<-
(5)	17.300	17.225	17.365	<-
Technical Chlordane	8.600	8.527	8.667	<-
(2)	9.930	9.855	9.995	<-
(3)	11.500	11.432	11.572	<-
(4)	11.900	11.828	11.968	<-
(5)	14.160	14.093	14.233	<-
Decachlorobiphenyl	20.420	20.353	20.493	
Tetrachloro-m-Xylene	4.864	4.792	4.932	

b. Calibration Verification Summary (Form VII)

For all performance evaluation mixtures (if applicable) and continuing calibration verification standards, on all GC columns and instruments, in chronological order by GC column and instrument.

FORM 7B
PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: TRACEGC82 Calibration Date: 01/24/06 Time: 1941

Lab File ID: 340IINDAMBF Init. Calib. Date(s): 01/10/06 01/12/06

Init. Calib. Times: 1616 0329

GC Column: CLPEST ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF0.0200 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE	
gamma-BHC (Lindane)	491545.00	478910.00	0.01	-2.57	15.00	AVRG	
Endrin	386241.25	362618.75	0.01	-6.12	15.00	AVRG	
Heptachlor	524870.00	504085.00	0.01	-3.96	15.00	AVRG	
Heptachlor Epoxide	489070.00	455905.00	0.01	-6.78	15.00	AVRG	
Methoxychlor	193873.00	166928.00	0.01	-13.90	15.00	AVRG	
Toxaphene	16063.750		0.01	-100.00	15.00	AVRG	<-
(2)	14262.750		0.01	-100.00	15.00	AVRG	<-
(3)	20141.000		0.01	-100.00	15.00	AVRG	<-
(4)	16035.500		0.01	-100.00	15.00	AVRG	<-
(5)	10148.500		0.01	-100.00	15.00	AVRG	<-
Technical Chlordane	28238.750		0.01	-100.00	15.00	AVRG	<-
(2)	20038.750		0.01	-100.00	15.00	AVRG	<-
(3)	45171.250		0.01	-100.00	15.00	AVRG	<-
(4)	69800.000		0.01	-100.00	15.00	AVRG	<-
(5)	17728.750		0.01	-100.00	15.00	AVRG	<-
Decachlorobiphenyl	362763.75	296382.50	0.01	-18.30	15.00	AVRG	<-
Tetrachloro-m-Xylene	306784.37	297565.31	0.01	-3.00	15.00	AVRG	

FORM 7B
PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: TRACEGC83 Calibration Date: 01/24/06 Time: 1941

Lab File ID: 340IINDAMBF Init. Calib. Date(s): 01/10/06 01/12/06

Init. Calib. Times: 1616 0329

GC Column: CLPEST2 ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF0.0200 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE	
gamma-BHC (Lindane)	689670.00	652310.00	0.01	-5.42	15.00	AVRG	
Endrin	515266.25	472613.12	0.01	-8.28	15.00	AVRG	
Heptachlor	732145.00	667395.00	0.01	-8.84	15.00	AVRG	
Heptachlor Epoxide	660355.00	592060.00	0.01	-10.34	15.00	AVRG	
Methoxychlor	241339.00	206211.25	0.01	-14.56	15.00	AVRG	
Toxaphene	18028.750		0.01	-100.00	15.00	AVRG	<-
(2)	23239.000		0.01	-100.00	15.00	AVRG	<-
(3)	25353.750		0.01	-100.00	15.00	AVRG	<-
(4)	27277.000		0.01	-100.00	15.00	AVRG	<-
(5)	10463.750		0.01	-100.00	15.00	AVRG	<-
Technical Chlordane	37720.000		0.01	-100.00	15.00	AVRG	<-
(2)	24328.750		0.01	-100.00	15.00	AVRG	<-
(3)	58726.250		0.01	-100.00	15.00	AVRG	<-
(4)	50830.000		0.01	-100.00	15.00	AVRG	<-
(5)	20925.000		0.01	-100.00	15.00	AVRG	<-
Decachlorobiphenyl	459870.00	372111.25	0.01	-19.08	15.00	AVRG	<-
Tetrachloro-m-Xylene	403926.25	397997.19	0.01	-1.47	15.00	AVRG	

FORM 7B
PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: TRACEGC82 Calibration Date: 01/25/06 Time: 0022

Lab File ID: 351IINDAMBH Init. Calib. Date(s): 01/10/06 01/12/06

Init. Calib. Times: 1616 0329

GC Column: CLPEST ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF0.0200 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE	
gamma-BHC (Lindane)	491545.00	501765.00	0.01	2.08	15.00	AVRG	
Endrin	386241.25	375069.38	0.01	-2.89	15.00	AVRG	
Heptachlor	524870.00	527317.50	0.01	0.47	15.00	AVRG	
Heptachlor Epoxide	489070.00	471970.00	0.01	-3.50	15.00	AVRG	
Methoxychlor	193873.00	185547.25	0.01	-4.29	15.00	AVRG	
Toxaphene	16063.750		0.01	-100.00	15.00	AVRG	<-
(2)	14262.750		0.01	-100.00	15.00	AVRG	<-
(3)	20141.000		0.01	-100.00	15.00	AVRG	<-
(4)	16035.500		0.01	-100.00	15.00	AVRG	<-
(5)	10148.500		0.01	-100.00	15.00	AVRG	<-
Technical Chlordane	28238.750		0.01	-100.00	15.00	AVRG	<-
(2)	20038.750		0.01	-100.00	15.00	AVRG	<-
(3)	45171.250		0.01	-100.00	15.00	AVRG	<-
(4)	69800.000		0.01	-100.00	15.00	AVRG	<-
(5)	17728.750		0.01	-100.00	15.00	AVRG	<-
Decachlorobiphenyl	362763.75	339655.62	0.01	-6.37	15.00	AVRG	
Tetrachloro-m-Xylene	306784.37	308055.62	0.01	0.41	15.00	AVRG	

FORM 7B
PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: TRACEGC83 Calibration Date: 01/25/06 Time: 0022

Lab File ID: 351IINDAMBH Init. Calib. Date(s): 01/10/06 01/12/06

Init. Calib. Times: 1616 0329

GC Column: CLPEST2 ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF0.0200 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE	
gamma-BHC (Lindane)	689670.00	680172.50	0.01	-1.38	15.00	AVRG	
Endrin	515266.25	489175.00	0.01	-5.06	15.00	AVRG	
Heptachlor	732145.00	697062.50	0.01	-4.79	15.00	AVRG	
Heptachlor Epoxide	660355.00	614917.50	0.01	-6.88	15.00	AVRG	
Methoxychlor	241339.00	230371.25	0.01	-4.54	15.00	AVRG	
Toxaphene	18028.750		0.01	-100.00	15.00	AVRG	<-
(2)	23239.000		0.01	-100.00	15.00	AVRG	<-
(3)	25353.750		0.01	-100.00	15.00	AVRG	<-
(4)	27277.000		0.01	-100.00	15.00	AVRG	<-
(5)	10463.750		0.01	-100.00	15.00	AVRG	<-
Technical Chlordane	37720.000		0.01	-100.00	15.00	AVRG	<-
(2)	24328.750		0.01	-100.00	15.00	AVRG	<-
(3)	58726.250		0.01	-100.00	15.00	AVRG	<-
(4)	50830.000		0.01	-100.00	15.00	AVRG	<-
(5)	20925.000		0.01	-100.00	15.00	AVRG	<-
Decachlorobiphenyl	459870.00	430545.31	0.01	-6.38	15.00	AVRG	
Tetrachloro-m-Xylene	403926.25	413768.12	0.01	2.44	15.00	AVRG	

7F

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

GC Column: CLPEST ID: 0.53 (mm) Init. Calib. Date(s): 01/10/06 01/10/06

EPA Sample No.(PIBLK): _____ Date Analyzed :_____

Lab Sample ID (PIBLK): _____ Time Analyzed :_____

EPA Sample No.(PEM): PEM9P Date Analyzed :01/10/06

Lab Sample ID (PEM): PEM9P Time Analyzed :1551

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	AREA
4,4'-DDD	11.79	11.72	11.86	19
4,4'-DDE	10.27	10.20	10.34	61
4,4'-DDT	12.49	12.41	12.55	11147
Endrin	11.34	11.27	11.41	7991
Endrin Aldehyde	13.06	12.96	13.10	27
Endrin Ketone	14.77	14.70	14.84	40

4,4'-DDT % breakdown (1): 0.712 Endrin % breakdown (1): 0.831

QC LIMITS:

4,4'-DDT breakdown must be less than or equal to 15.0%

Endrin breakdown must be less than or equal to 15.0%

FORM VII PEST-1

7F

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

GC Column: CLPEST2 ID: 0.53 (mm) Init. Calib. Date(s): 01/10/06 01/10/06

EPA Sample No.(PIBLK): _____ Date Analyzed :_____

Lab Sample ID (PIBLK): _____ Time Analyzed :_____

EPA Sample No.(PEM): PEM9P Date Analyzed :01/10/06

Lab Sample ID (PEM): PEM9P Time Analyzed :1551

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	AREA
4,4'-DDD	14.01	13.94	14.08	18
4,4'-DDE	12.49	12.42	12.56	51
4,4'-DDT	14.80	14.73	14.88	14497
Endrin	13.45	13.38	13.53	10594
Endrin Aldehyde				
Endrin Ketone	16.98	16.92	17.06	52

4,4'-DDT % breakdown (1): 0.474 Endrin % breakdown (1): 0.488

QC LIMITS:

4,4'-DDT breakdown must be less than or equal to 15.0%

Endrin breakdown must be less than or equal to 15.0%

FORM VII PEST-1

7F

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

GC Column: CLPEST ID: 0.53 (mm) Init. Calib. Date(s): 01/10/06 01/12/06

EPA Sample No.(PIBLK): PIBLKBG Date Analyzed :01/24/06

Lab Sample ID (PIBLK): PIBLKBG Time Analyzed :2331

EPA Sample No.(PEM): PEMBH Date Analyzed :01/25/06

Lab Sample ID (PEM): PEMBH Time Analyzed :0113

PEM COMPOUND	RT	RT WINDOW FROM	TO	AREA
4,4'-DDD	11.83	11.72	11.86	228
4,4'-DDE	10.31	10.20	10.34	109
4,4'-DDT	12.53	12.41	12.55	11155
Endrin	11.39	11.27	11.41	8359
Endrin Aldehyde	13.09	12.96	13.10	78
Endrin Ketone	14.81	14.70	14.84	191

4,4'-DDT % breakdown (1): 2.93 Endrin % breakdown (1): 3.12

QC LIMITS:

4,4'-DDT breakdown must be less than or equal to 15.0%

Endrin breakdown must be less than or equal to 15.0%

FORM VII PEST-1

7F

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

GC Column: CLPEST2 ID: 0.53 (mm) Init. Calib. Date(s): 01/10/06 01/12/06

EPA Sample No.(PIBLK): PIBLKBH Date Analyzed :01/24/06

Lab Sample ID (PIBLK): PIBLKBH Time Analyzed :2331

EPA Sample No.(PEM): PEMBH Date Analyzed :01/25/06

Lab Sample ID (PEM): PEMBH Time Analyzed :0113

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	AREA
4,4'-DDD	14.05	13.94	14.08	289
4,4'-DDE	12.53	12.42	12.56	83
4,4'-DDT	14.85	14.73	14.88	13641
Endrin	13.50	13.38	13.53	11101
Endrin Aldehyde	15.01	14.89	15.03	80
Endrin Ketone	17.02	16.92	17.06	161

4,4'-DDT % breakdown (1): 2.65 Endrin % breakdown (1): 2.12

QC LIMITS:

4,4'-DDT breakdown must be less than or equal to 15.0%

Endrin breakdown must be less than or equal to 15.0%

FORM VII PEST-1

c. Analytical Sequence (Form VIII)

For all GC columns, all instruments, in chronological order by GC column and instrument.

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

GC Column: CLPEST ID: 0.53 (mm) Init. Calib. Date(s): 01/10/06 01/11/06

Instrument ID: TRACEGC82

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
DCB: 17.59 TCX: 3.85

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	DCB RT #	TCX RT #
01	PEM9P	PEM9P	01/10/06	1551	17.59	3.85
02	INDA19P	INDA19P	01/10/06	1616	17.59	3.85
03	INDB19P	INDB19P	01/10/06	1642	17.59	3.85
04	INDA29P	INDA29P	01/10/06	1708	17.60	3.85
05	INDB29P	INDB29P	01/10/06	1733	17.59	3.85
06	INDA39P	INDA39P	01/10/06	1759	17.60	3.85
07	INDB39P	INDB39P	01/10/06	1824	17.59	3.85
08	INDA49P	INDA49P	01/10/06	1850	17.59	3.86
09	INDB49P	INDB49P	01/10/06	1915	17.60	3.85
10	INDA59P	INDA59P	01/10/06	1941	17.59	3.85
11	INDB59P	INDB59P	01/10/06	2007	17.59	3.86
12	CLPAMP	CLPAMP	01/10/06	2032	17.59	3.85
13	CLPBM9P	CLPBM9P	01/10/06	2058	17.60	3.86
14	TOXAPH49P	TOXAPH49P	01/11/06	2248	17.62	3.87
15	CHLORO49P	CHLORO49P	01/11/06	2313	17.62	3.88
16	PIBLKBE	PIBLKBE	01/24/06	1850	17.64	3.89
17	INDAMBF	INDAMBF	01/24/06	1941	17.64	3.90
18	INDBMBF	INDBMBF	01/24/06	2006	17.64	3.90
19	PBLKGN	91895	01/24/06	2032	17.64	3.89
20	PGNLCS	91896	01/24/06	2058	17.64	3.90
21	TCLPBLKGW	91765	01/24/06	2123	17.64	3.90
22	WAR-IDW-4	892501	01/24/06	2214	17.64	3.89
23	PIBLKBG	PIBLKBG	01/24/06	2331	17.64	3.89
24	INDAMBH	INDAMBH	01/25/06	0022	17.64	3.89
25	INDBMBH	INDBMBH	01/25/06	0048	17.64	3.89
26	PEMBH	PEMBH	01/25/06	0113	17.64	3.89
27						
28						
29						
30						
31						
32						

QC LIMITS

DCB = Decachlorobiphenyl (+/- 0.07 MINUTES)
TCX = Tetrachloro-m-Xylene (+/- 0.07 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PEST

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

GC Column: CLPEST2 ID: 0.53 (mm) Init. Calib. Date(s): 01/10/06 01/11/06

Instrument ID: TRACEGC83

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
DCB: 20.42 TCX: 4.86

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	DCB RT #	TCX RT #
01	PEM9P	PEM9P	01/10/06	1551	20.42	4.86
02	INDA19P	INDA19P	01/10/06	1616	20.42	4.86
03	INDB19P	INDB19P	01/10/06	1642	20.42	4.86
04	INDA29P	INDA29P	01/10/06	1708	20.42	4.86
05	INDB29P	INDB29P	01/10/06	1733	20.42	4.86
06	INDA39P	INDA39P	01/10/06	1759	20.42	4.87
07	INDB39P	INDB39P	01/10/06	1824	20.42	4.86
08	INDA49P	INDA49P	01/10/06	1850	20.42	4.87
09	INDB49P	INDB49P	01/10/06	1915	20.42	4.86
10	INDA59P	INDA59P	01/10/06	1941	20.42	4.86
11	INDB59P	INDB59P	01/10/06	2007	20.42	4.87
12	CLPAMP	CLPAMP	01/10/06	2032	20.42	4.86
13	CLPBM9P	CLPBM9P	01/10/06	2058	20.43	4.86
14	TOXAPH49P	TOXAPH49P	01/11/06	2248	20.45	4.88
15	CHLORO49P	CHLORO49P	01/11/06	2313	20.44	4.89
16	PIBLKBF	PIBLKBF	01/24/06	1850	20.47	4.90
17	INDAMBF	INDAMBF	01/24/06	1941	20.47	4.91
18	INDBMBF	INDBMBF	01/24/06	2006	20.47	4.91
19	PBLKGN	91895	01/24/06	2032	20.47	4.91
20	PGNLCS	91896	01/24/06	2058	20.47	4.91
21	TCLPBLKGW	91765	01/24/06	2123	20.46	4.91
22	WAR-IDW-4	892501	01/24/06	2214	20.46	4.91
23	PIBLKBH	PIBLKBH	01/24/06	2331	20.46	4.91
24	INDAMBH	INDAMBH	01/25/06	0022	20.47	4.91
25	INDBMBH	INDBMBH	01/25/06	0048	20.46	4.91
26	PEMBH	PEMBH	01/25/06	0113	20.46	4.91
27						
28						
29						
30						
31						
32						

QC LIMITS

DCB = Decachlorobiphenyl (+/- 0.07 MINUTES)
TCX = Tetrachloro-m-Xylene (+/- 0.07 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PEST

d. Identification Summary for Single Component Analytes (Form X)

For all samples with positively identified single component analytes, in order by increasing Client Sample ID number.

10A

PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.

PGNLCS

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Lab Sample ID: 91896 Date(s) Analyzed: 01/24/06 01/24/06

Instrument ID (1): TRACEGC82 Instrument ID (2): TRACEGC83

GC Column(1): CLPEST ID: 0.53(mm) GC Column(2): CLPEST2 ID: 0.53(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	RPD
gamma-BHC (Lindane)	1	5.88	5.76	5.90	1.4	
	2	7.48	7.36	7.50	1.4	0.0
Heptachlor	1	7.00	6.88	7.02	1.4	
	2	8.62	8.50	8.64	1.3	7.4
Heptachlor Epoxide	1	9.28	9.16	9.30	1.2	
	2	11.03	10.90	11.04	1.2	0.0
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM X PEST-1

e. Identification Summary for Multicomponent Analytes (Form X) - if applicable

For all samples with positively identified multicomponent analytes, in order by increasing Client Sample ID number.

10B

PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.

PGNLCS

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Lab Sample ID: 91896 Date(s) Analyzed: 01/24/06 01/24/06

Instrument ID (1): TRACEGC82 Instrument ID (2): TRACEGC83

GC Column(1): CLPEST ID: 0.53(mm) GC Column(2): CLPEST2 ID: 0.53(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	RPD
	1	12.14	12.05	12.19	36		
Toxaphene	2	12.77	12.68	12.82	27		
	3	13.34	13.24	13.38	50		
COLUMN 1	4	13.86	13.77	13.91	50		
	5	14.76	14.66	14.80	70	47	
	1	13.41	13.31	13.45	43		
	2	14.33	14.23	14.38	30		
	3	15.03	14.93	15.07	29		
COLUMN 2	4	16.31	16.21	16.35	49		
	5	17.32	17.23	17.36	84	47	0.0
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

FORM X PEST-2

f. Chromatograms and Data System Printouts

For all methods, standards packages shall include the following:

- Performance evaluation mixtures (8081 only)
- Initial Calibration Standards
- Second Source Initial Calibration Verifications (if required by client)
- Continuing Calibration Verification Standards
- The quantitation report must include the Client Sample ID number.
- The chromatograms shall include the following: Client Sample ID number for the standard, labeled standard peaks, volume injected, for each standard, date and time of injection GC column identifier, and GC instrument identifier.

Data File: /chem/tracegc82.i/i060110.b/003iPEM9P.d

Date : 10-JAN-2006 15:51

Client ID: PEM9P

Instrument: tracegc82.i

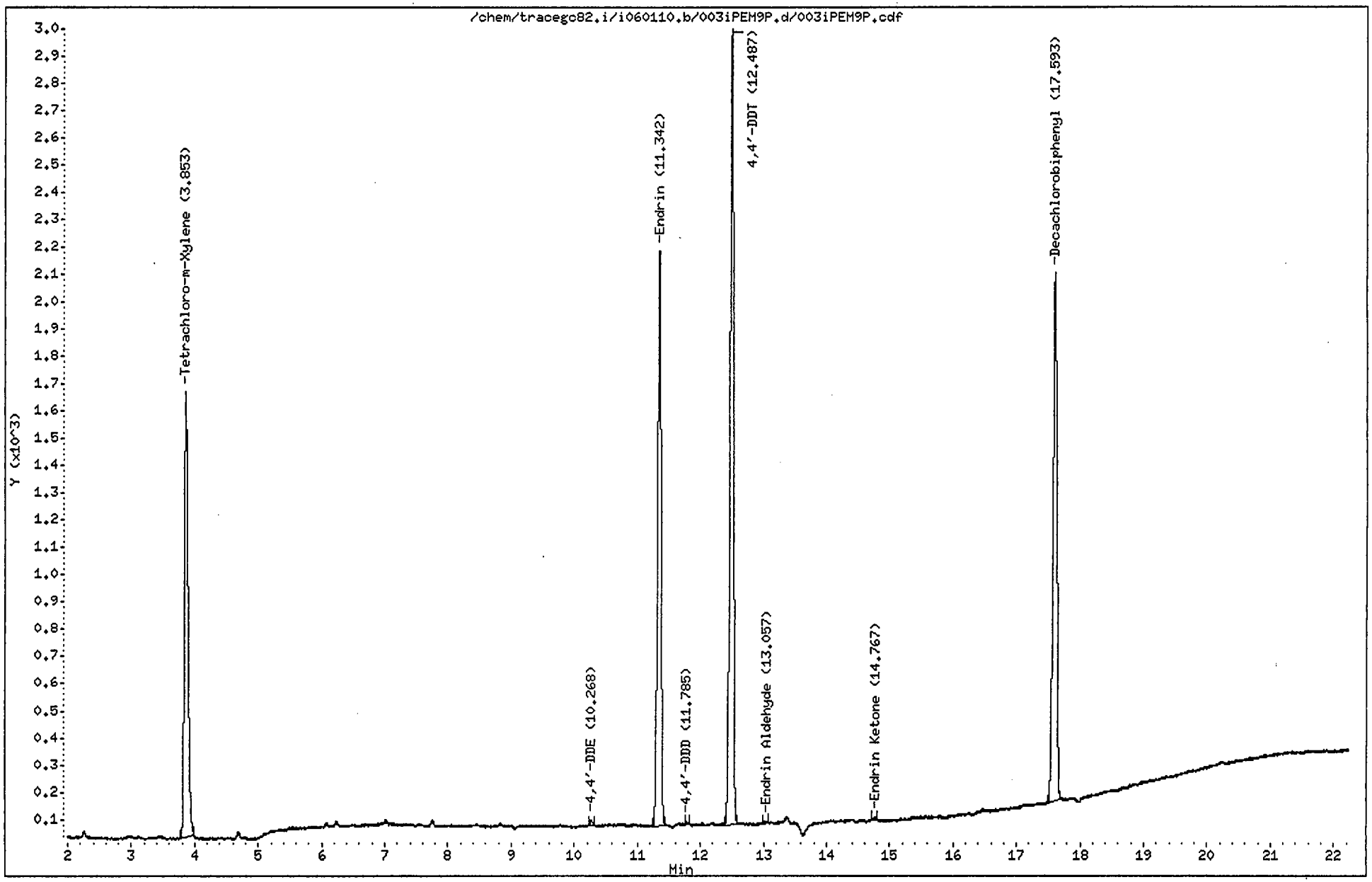
Sample Info: PEM9P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: olpest

Column diameter: 0.53



CompuChem

Lab Smp Id : PEM9P Client Smp Id : PEM9P
Sample Type : SAMPLE Sublist : PEM
Inj Date : 10-JAN-2006 15:51 Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110.b/8081A_clpestv4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Ws) * (100/(100-M))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Ws Sample Weight: 30.0(g) M Moisture: 0(%)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/Kg)	ADJUSTED PQL (ug/Kg)	% REC	RECOVERY LIMITS	FLAGS
0.17			714								
0.90			20514								
3.85	3.78	3.92	6437	306784	Tetrachloro-m-Xylene	0.020982	3.496917		52.5	43 - 135	
10.27	10.20	10.34	61	440000	4,4'-DDE	0.000140	0.023258	0.830000			JM 2
11.34	11.27	11.41	7991	386241	Endrin	0.020690	3.448275	1.670000			
11.78	11.72	11.86	19	279151	4,4'-DDD	0.000069	0.011583	1.670000			JM 2
12.49	12.41	12.55	11147	315540	4,4'-DDT	0.035327	5.887869	2.500000			
13.06	12.96	13.10	28	321174	Endrin Aldehyde	0.000086	0.014271	1.670000			JM 2
14.77	14.70	14.84	41	374160	Endrin Ketone	0.000109	0.018174	4.170000			JM 2
17.59	17.53	17.67	8117	362764	Decachlorobiphenyl	0.022375	3.729194		55.9	43 - 144	

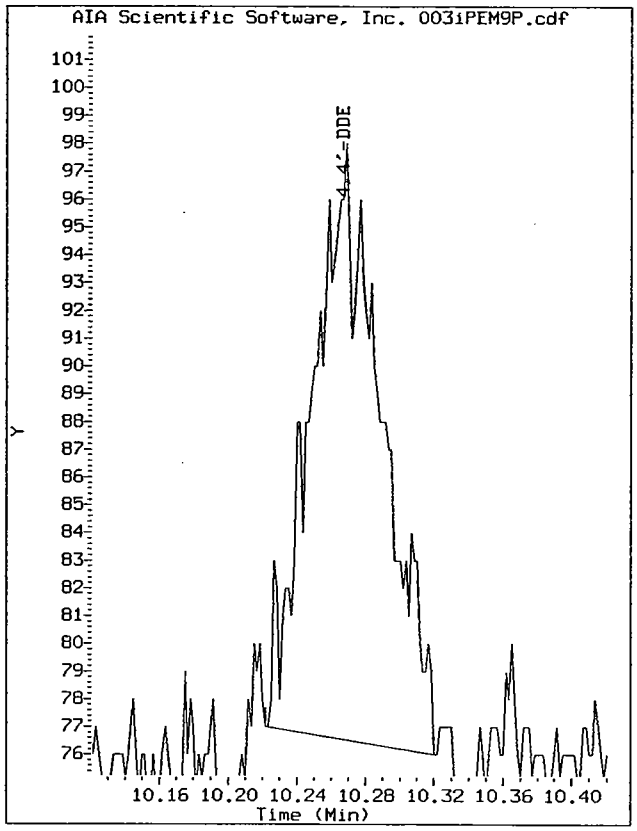
% Endrin Breakdown $\frac{28+41}{28+41+7991} * 100 = \frac{69}{8060} * 100 = 0.86\%$

% DDT Breakdown $\frac{19+61}{19+61+11147} * 100 = \frac{80}{11227} * 100 = 0.71\%$

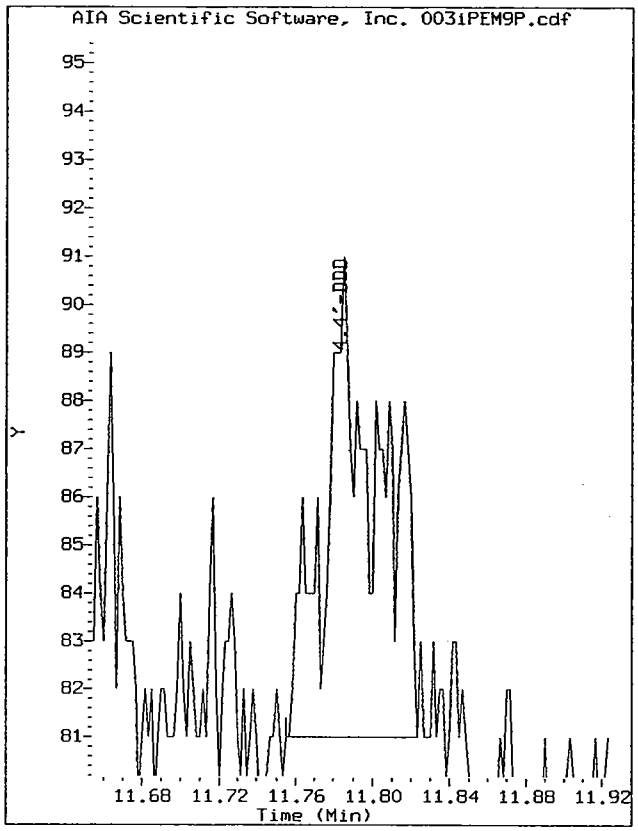
1/10/06

TAJ 1/11/06

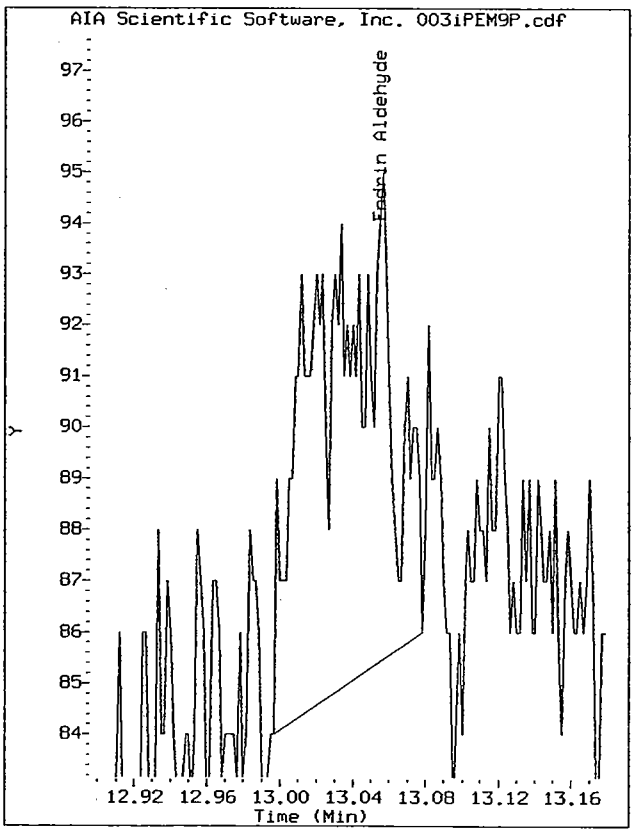
Manually Integrated Peaks



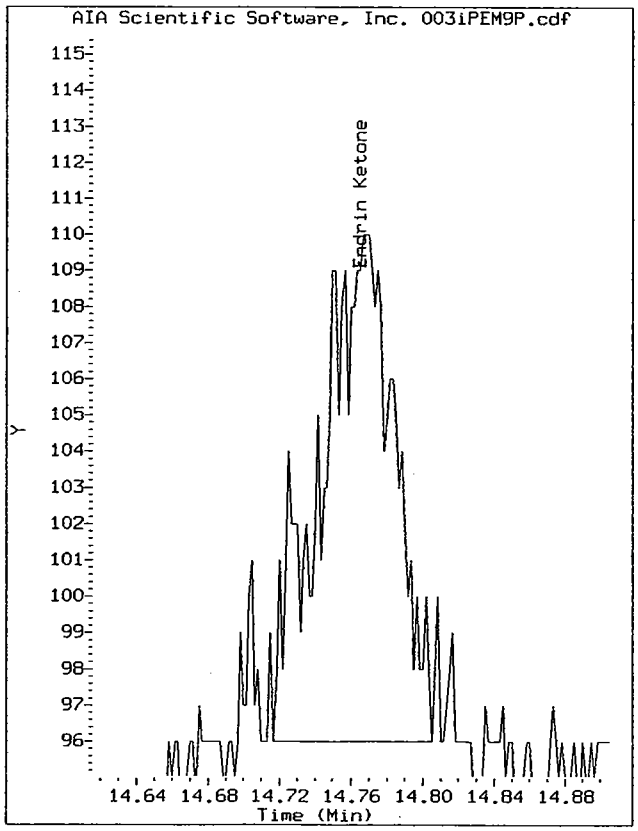
Start: 10.22 Stop: 10.32



Start: 11.76 Stop: 11.82



Start: 13.00 Stop: 13.08



Start: 14.72 Stop: 14.80

Data File: /chem/tracegc82.i/i060110.b/004iINDA19P.d

Date : 10-JAN-2006 16:16

Client ID: INDA19P

Sample Info: INDA19P

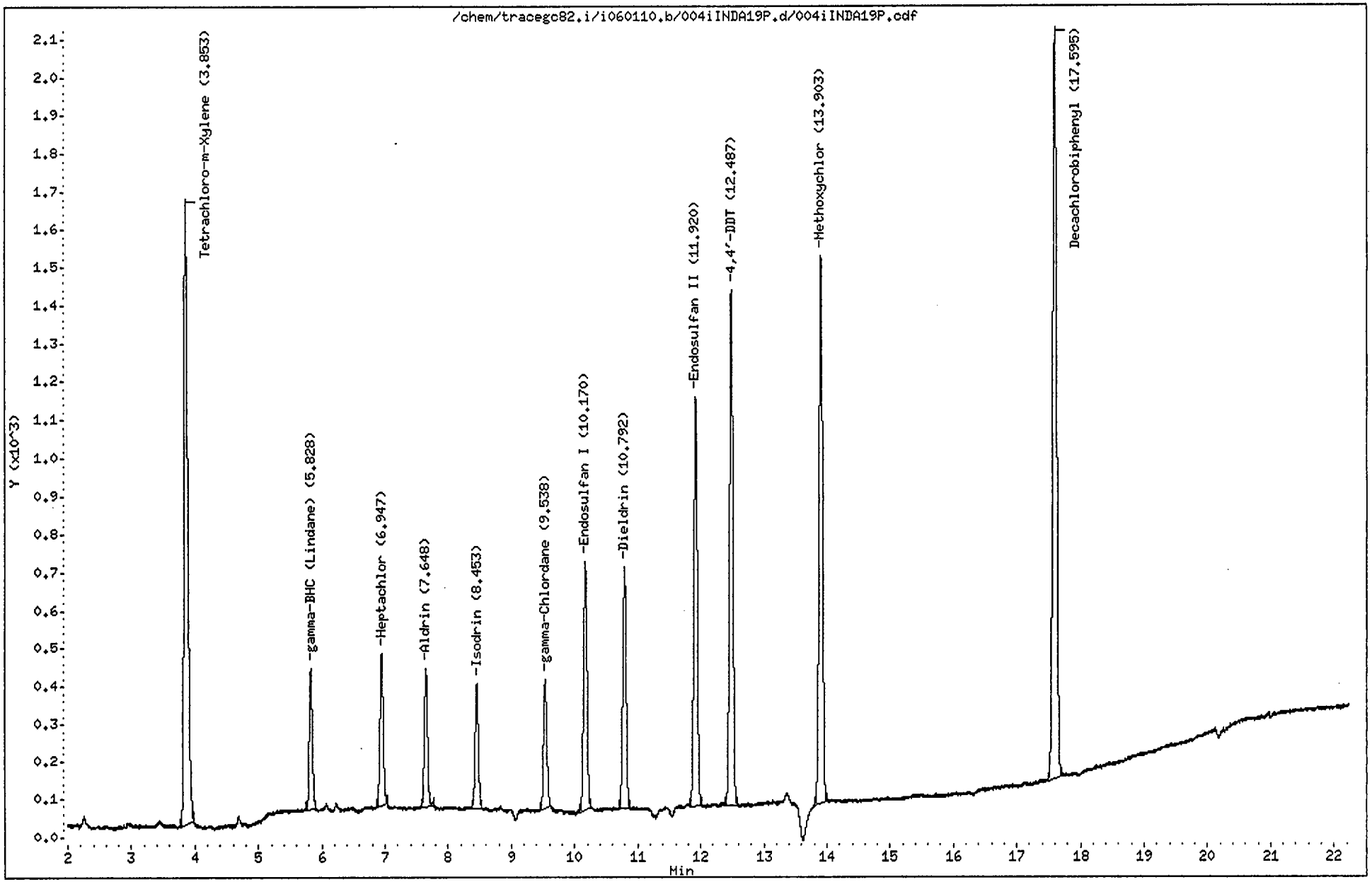
Volume Injected (uL): 1.0

Column phase: olpest

Instrument: tracegc82.i

Operator: 2512

Column diameter: 0.53



CompuChem

Lab Smp Id : INDA19P Client Smp Id : INDA19P
Sample Type : INITIAL CAL: Level 1 Sublist : INDA
Inj Date : 10-JAN-2006 16:16 Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110.b/8081A_clpestv4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.16			644					
0.90			3818					
3.85	3.78	3.92	6614	306784	Tetrachloro-m-Xylene	0.020000	330700	
5.83	5.76	5.90	1272	491545	gamma-BHC (Lindane)	0.002500	508400	
6.95	6.88	7.02	1440	524870	Heptachlor	0.002500	576000	
7.65	7.58	7.72	1337	482395	Aldrin	0.002500	534400	
8.45	8.39	8.53	1186	430775	Isodrin	0.002500	474400	
9.54	9.47	9.61	1246	465605	gamma-Chlordane	0.002500	498000	
10.17	10.10	10.24	2405	428652	Endosulfan I	0.005000	481000	
10.79	10.72	10.86	2345	426262	Dieldrin	0.005000	468800	
11.92	11.85	11.99	4036	362004	Endosulfan II	0.010000	403500	
12.49	12.42	12.56	5117	315540	4,4'-DDT	0.015000	341133	
13.90	13.83	13.97	5592	193873	Methoxychlor	0.025000	223640	
17.60	17.52	17.66	8251	362764	Decachlorobiphenyl	0.020000	412500	

1/10/06

Data File: /chem/tracegc82.i/i060110.b/005iINDB19P.d

Date : 10-JAN-2006 16:42

Client ID: INDB19P

Instrument: tracegc82.i

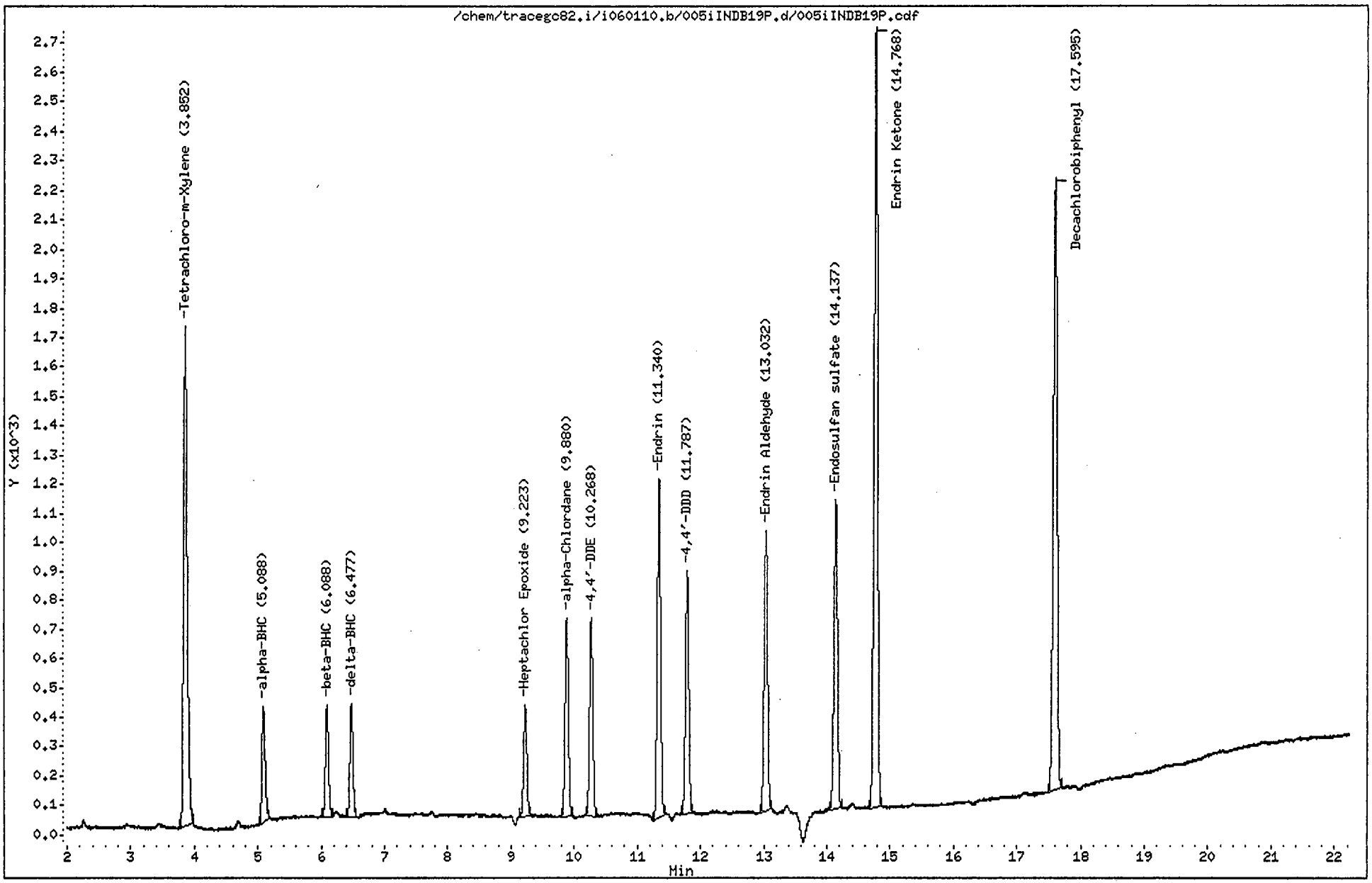
Sample Info: INDB19P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : INDB19P Client Smp Id : INDB19P
Sample Type : INITIAL CAL: Level 1 Sublist : INDB
Inj Date : 10-JAN-2006 16:42 Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110.b/8081A_clpestv4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.16			561					
0.90			2858					
3.85	3.78	3.92	6683	306784	Tetrachloro-m-Xylene	0.020000	330700	
5.09	5.02	5.16	1358	531661	alpha-BHC	0.002500	542800	
6.09	6.02	6.16	1288	232364	beta-BHC	0.005000	257600	
6.48	6.41	6.55	1297	495962	delta-BHC	0.002500	518400	
9.22	9.16	9.30	1354	489072	Heptachlor Epoxide	0.002500	541600	
9.88	9.81	9.95	2445	444440	alpha-Chlordane	0.005000	488800	
10.27	10.20	10.34	2472	440000	4,4'-DDE	0.005000	494200	
11.34	11.27	11.41	4270	386241	Endrin	0.010000	426900	
11.79	11.72	11.86	3033	279151	4,4'-DDD	0.010000	303200	
13.03	12.96	13.10	3644	321174	Endrin Aldehyde	0.010000	364300	
14.14	14.07	14.21	4067	353871	Endosulfan sulfate	0.010000	406700	
14.77	14.70	14.84	10210	374160	Endrin Ketone	0.025000	408360	
17.60	17.52	17.66	8775	362764	Decachlorobiphenyl	0.020000	412500	

1/10/06

Data File: /chem/tracegc82.i/i060110.b/006iINDA29P.d

Date : 10-JAN-2006 17:08

Client ID: INDA29P

Sample Info: INDA29P

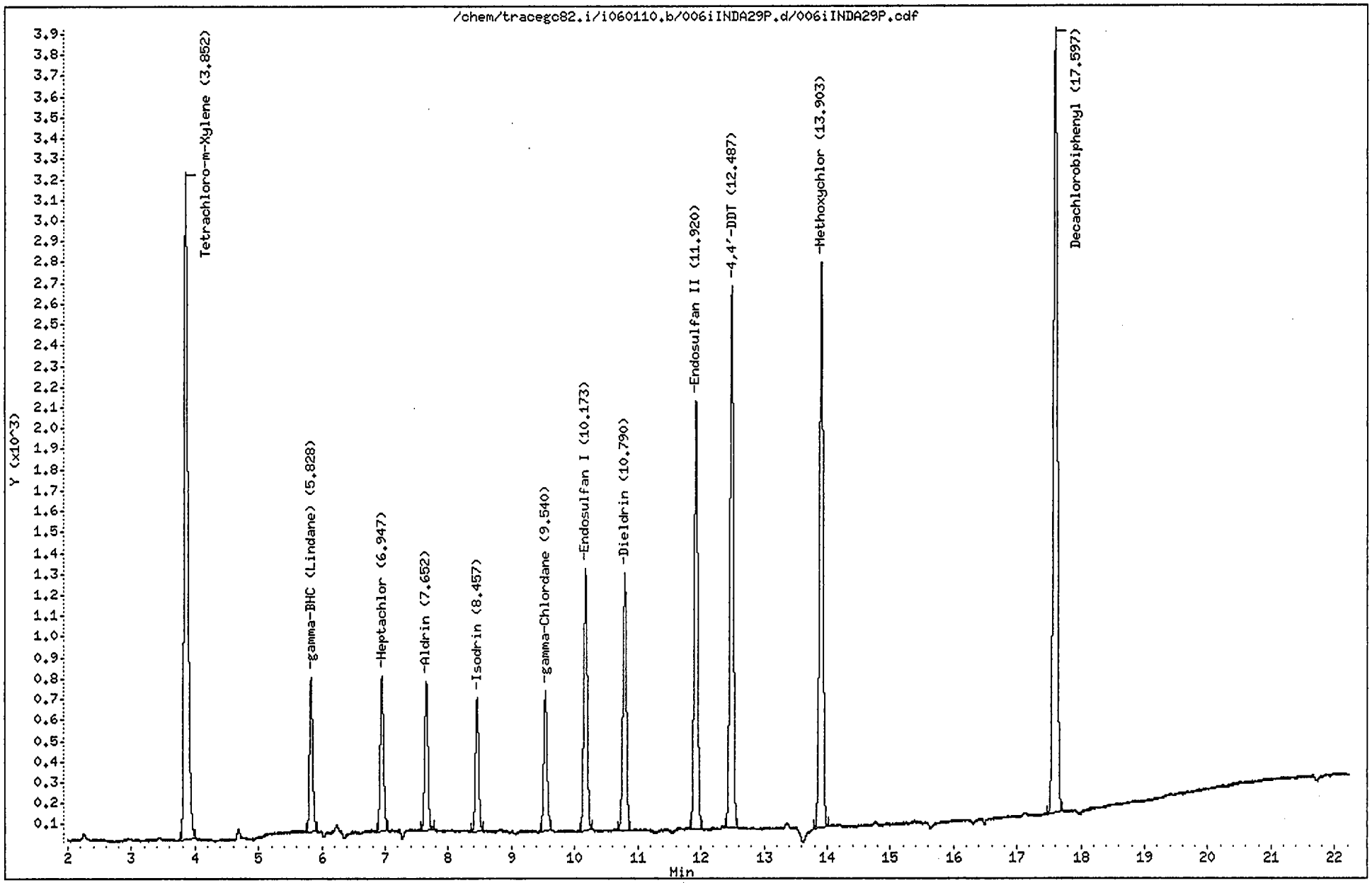
Volume Injected (uL): 1.0

Column phase: olpest

Instrument: tracegc82.i

Operator: 2512

Column diameter: 0.53



CompuChem

Lab Smp Id : INDA29P Client Smp Id : INDA29P
Sample Type : INITIAL CAL: Level 2 Sublist : INDA
Inj Date : 10-JAN-2006 17:08 Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110.b/8081A_clpestv4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.16			626					
0.90			4341					
3.85	3.78	3.92	12869	306784	Tetrachloro-m-Xylene	0.040000	321725	
5.83	5.76	5.90	2537	491545	gamma-BHC (Lindane)	0.005000	507400	
6.95	6.88	7.02	2698	524870	Heptachlor	0.005000	539600	
7.65	7.58	7.72	2590	482395	Aldrin	0.005000	517800	
8.46	8.39	8.53	2282	430775	Isodrin	0.005000	456400	
9.54	9.47	9.61	2468	465605	gamma-Chlordane	0.005000	493400	
10.17	10.10	10.24	4605	428652	Endosulfan I	0.010000	460500	
10.79	10.72	10.86	4640	426262	Dieldrin	0.010000	463900	
11.92	11.85	11.99	7724	362004	Endosulfan II	0.020000	386200	
12.49	12.42	12.56	9894	315540	4,4'-DDT	0.030000	329800	
13.90	13.83	13.97	10636	193873	Methoxychlor	0.050000	212700	
17.60	17.52	17.66	16000	362764	Decachlorobiphenyl	0.040000	400000	

1/10/06

Data File: /chem/tracegc82.i/i060110.b/007iINDB29P.d

Page 1

Date : 10-JAN-2006 17:33

Client ID: INDB29P

Instrument: tracegc82.i

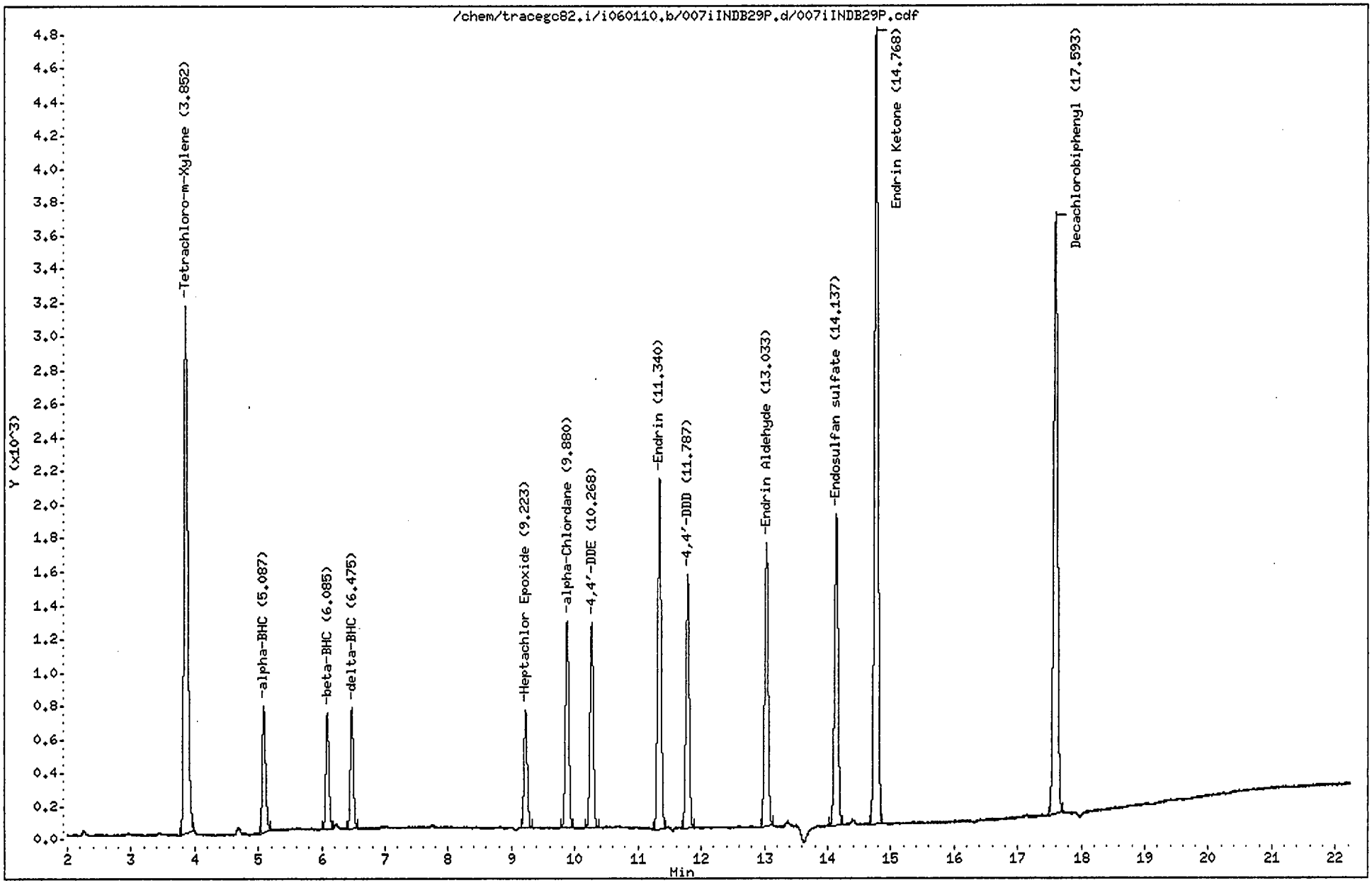
Sample Info: INDB29P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : INDB29P Client Smp Id : INDB29P
Sample Type : INITIAL CAL: Level 2 Sublist : INDB
Inj Date : 10-JAN-2006 17:33 Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110.b/8081A_clpestv4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.90			7369					
3.85	3.78	3.92	12735	306784	Tetrachloro-m-Xylene	0.040000	321725	
5.09	5.02	5.16	2643	531661	alpha-BHC	0.005000	528400	
6.08	6.02	6.16	2371	232364	beta-BHC	0.010000	237100	
6.48	6.41	6.55	2431	495962	delta-BHC	0.005000	486000	
9.22	9.16	9.30	2517	489072	Heptachlor Epoxide	0.005000	503200	
9.88	9.81	9.95	4572	444440	alpha-Chlordane	0.010000	457100	
10.27	10.20	10.34	4507	440000	4,4'-DDE	0.010000	450700	
11.34	11.27	11.41	7843	386241	Endrin	0.020000	392150	
11.79	11.72	11.86	5549	279151	4,4'-DDD	0.020000	277450	
13.03	12.96	13.10	6464	321174	Endrin Aldehyde	0.020000	323150	
14.14	14.07	14.21	7229	353871	Endosulfan sulfate	0.020000	361400	
14.77	14.70	14.84	18281	374160	Endrin Ketone	0.050000	365620	
17.59	17.52	17.66	15143	362764	Decachlorobiphenyl	0.040000	400000	

1/10/06

Data File: /chem/tracegc82.i/i060110.b/008iINDA39P.d

Date : 10-JAN-2006 17:59

Client ID: INDA39P

Instrument: tracegc82.i

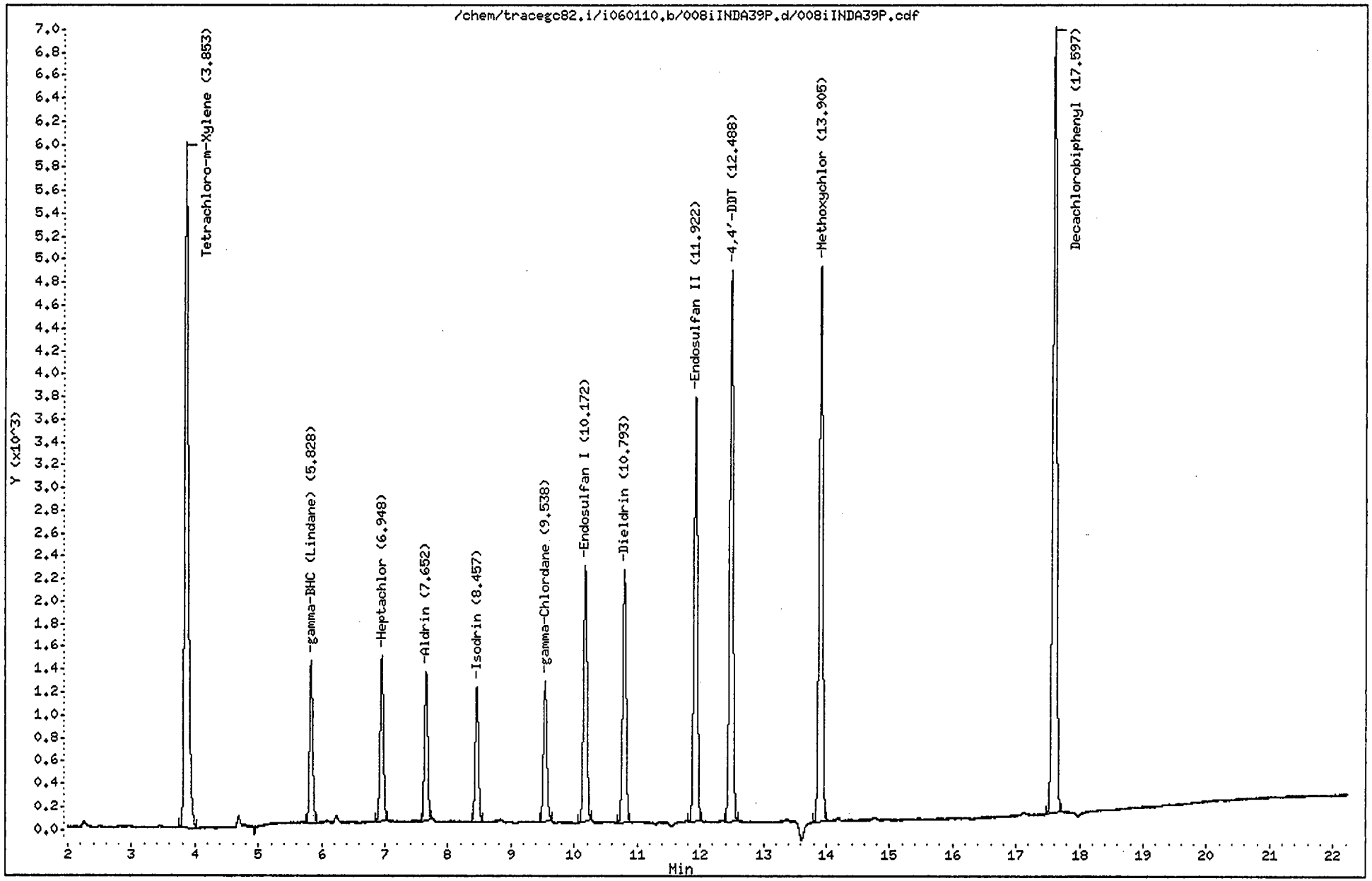
Sample Info: INDA39P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : INDA39P Client Smp Id : INDA39P
Sample Type : INITIAL CAL: Level 3 Sublist : INDA
Inj Date : 10-JAN-2006 17:59 Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110.b/8081A_clpestv4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.17			616					
0.90			6690					
3.85	3.78	3.92	23977	306784	Tetrachloro-m-Xylene	0.080000	299712	
5.83	5.76	5.90	4813	491545	gamma-BHC (Lindane)	0.010000	481200	
6.95	6.88	7.02	5232	524870	Heptachlor	0.010000	523200	
7.65	7.58	7.72	4654	482395	Aldrin	0.010000	465400	
8.46	8.39	8.53	4261	430775	Isodrin	0.010000	426000	
9.54	9.47	9.61	4623	465605	gamma-Chlordane	0.010000	462300	
10.17	10.10	10.24	8391	428652	Endosulfan I	0.020000	419550	
10.79	10.72	10.86	8321	426262	Dieldrin	0.020000	416050	
11.92	11.85	11.99	14146	362004	Endosulfan II	0.040000	353650	
12.49	12.42	12.56	18346	315540	4,4'-DDT	0.060000	305750	
13.90	13.83	13.97	19104	193873	Methoxychlor	0.100000	191030	
17.60	17.52	17.66	28718	362764	Decachlorobiphenyl	0.080000	358975	

1/10/06

Data File: /chem/tracegc82.i/i060110.b/009iINDB39P.d

Date : 10-JAN-2006 18:24

Client ID: INDB39P

Instrument: tracegc82.i

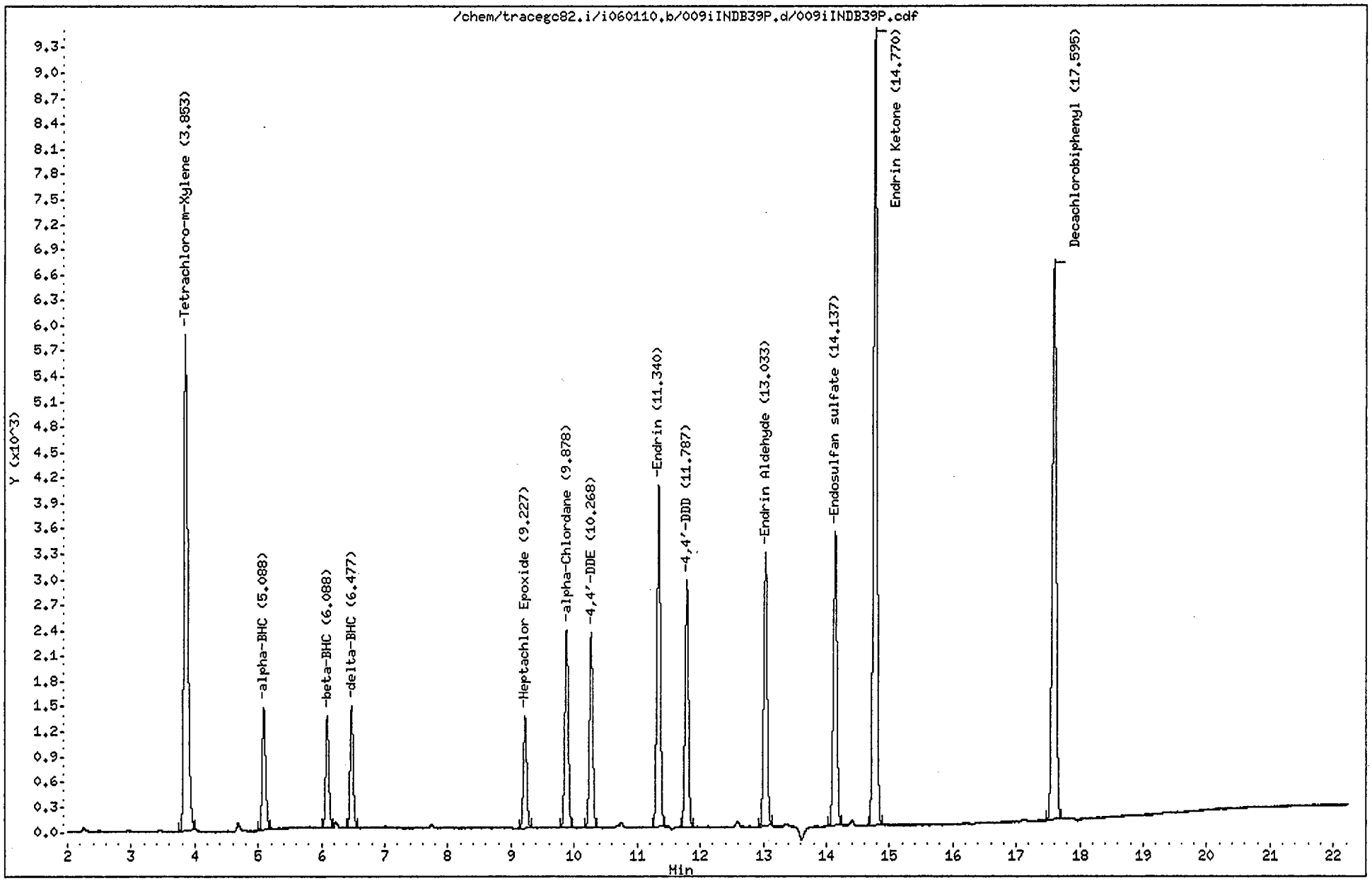
Sample Info: INDB39P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : INDB39P Client Smp Id : INDB39P
Sample Type : INITIAL CAL: Level 3 Sublist : INDB
Inj Date : 10-JAN-2006 18:24 Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110.b/8081A_clpestv4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.90			4377					
3.85	3.78	3.92	24360	306784	Tetrachloro-m-Xylene	0.080000	299712	
5.09	5.02	5.16	5280	531661	alpha-BHC	0.010000	528000	
6.09	6.02	6.16	4566	232364	beta-BHC	0.020000	228300	
6.48	6.41	6.55	4859	495962	delta-BHC	0.010000	485900	
9.23	9.16	9.30	4876	489072	Heptachlor Epoxide	0.010000	487600	
9.88	9.81	9.95	8765	444440	alpha-Chlordane	0.020000	438200	
10.27	10.20	10.34	8587	440000	4,4'-DDE	0.020000	429350	
11.34	11.27	11.41	15042	386241	Endrin	0.040000	376025	
11.79	11.72	11.86	10742	279151	4,4'-DDD	0.040000	268550	
13.03	12.96	13.10	12379	321174	Endrin Aldehyde	0.040000	309475	
14.14	14.07	14.21	13605	353871	Endosulfan sulfate	0.040000	340100	
14.77	14.70	14.84	35879	374160	Endrin Ketone	0.100000	358790	
17.60	17.52	17.66	27929	362764	Decachlorobiphenyl	0.080000	358975	

1/10/06

Data File: /chem/tracegc82.i/i060110.b/010iINDA49P.d

Page 1

Date : 10-JAN-2006 18:50

Client ID: INDA49P

Instrument: tracegc82.i

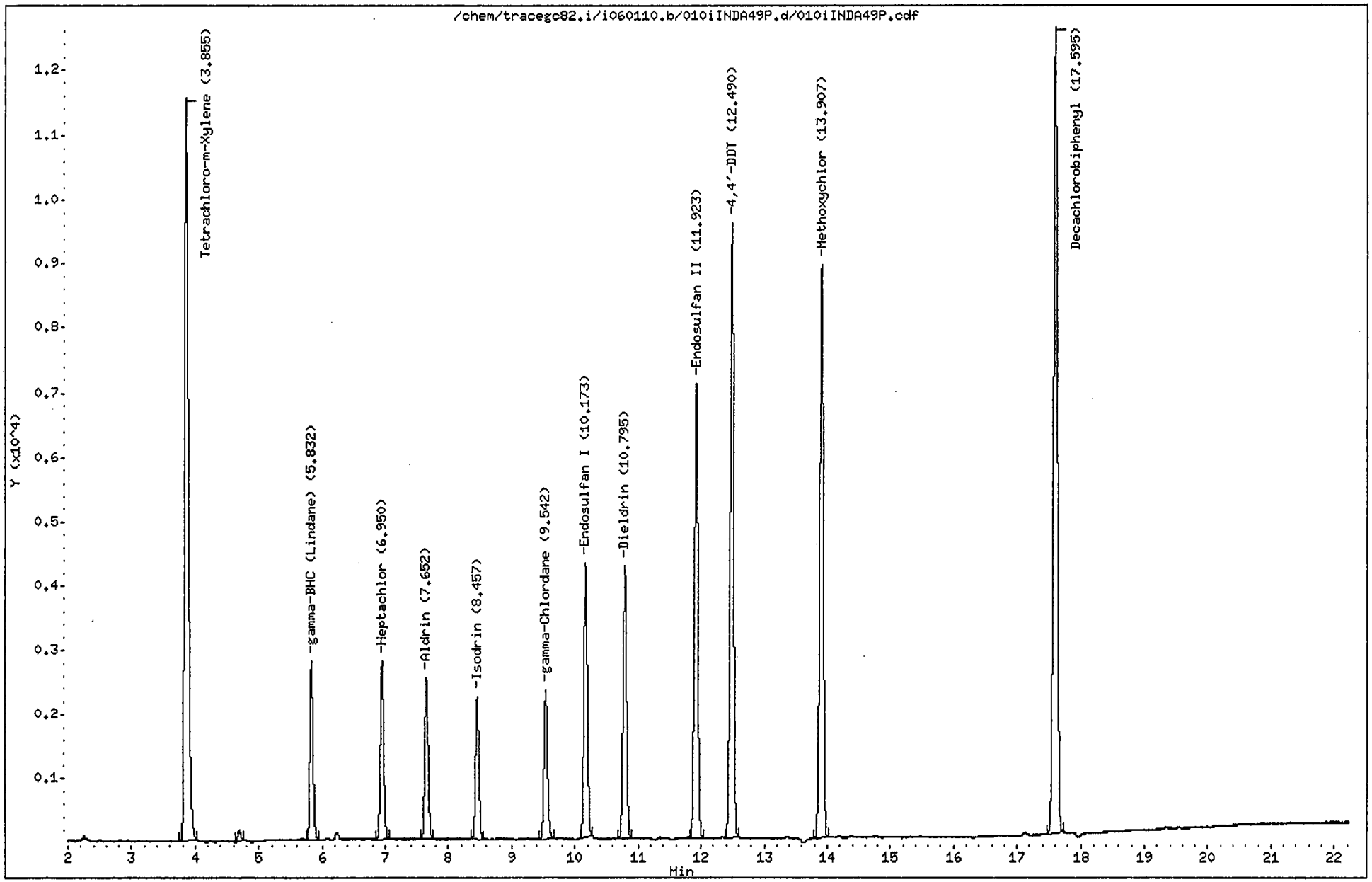
Sample Info: INDA49P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : INDA49P Client Smp Id : INDA49P
Sample Type : INITIAL CAL: Level 4 Sublist : INDA
Inj Date : 10-JAN-2006 18:50 Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110.b/8081A_clpestv4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.92			1302832					
0.94			4376973					
3.86	3.78	3.92	46285	306784	Tetrachloro-m-Xylene	0.160000	289281	
4.69			509					
5.83	5.76	5.90	9557	491545	gamma-BHC (Lindane)	0.020000	477850	
6.95	6.88	7.02	10029	524870	Heptachlor	0.020000	501450	
7.65	7.58	7.72	9090	482395	Aldrin	0.020000	454450	
8.46	8.39	8.53	8146	430775	Isodrin	0.020000	407250	
9.54	9.47	9.61	8951	465605	gamma-Chlordane	0.020000	447500	
10.17	10.10	10.24	15907	428652	Endosulfan I	0.040000	397650	
10.80	10.72	10.86	15868	426262	Dieldrin	0.040000	396700	
11.92	11.85	11.99	26700	362004	Endosulfan II	0.080000	333738	
12.49	12.42	12.56	35641	315540	4,4'-DDT	0:120000	297000	
13.91	13.83	13.97	34959	193873	Methoxychlor	0.200000	174790	
17.60	17.52	17.66	52087	362764	Decachlorobiphenyl	0.160000	325544	

1/10/06

Data File: /chem/tracegc82.i/i060110.b/011iINDB49P.d

Date : 10-JAN-2006 19:15

Client ID: INDB49P

Instrument: tracegc82.i

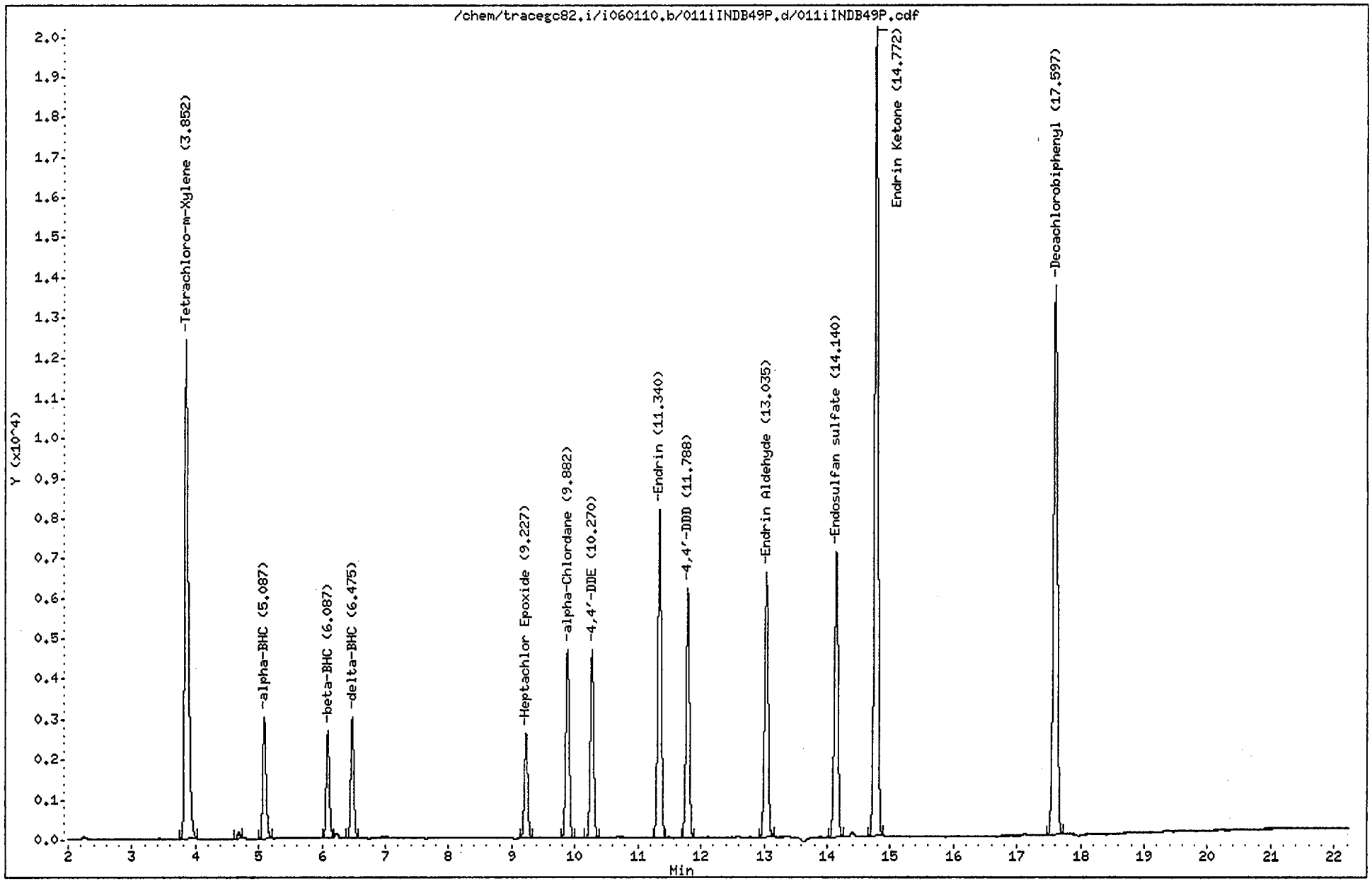
Sample Info: INDB49P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : INDB49P Client Smp Id : INDB49P
Sample Type : INITIAL CAL: Level 4 Sublist : INDB
Inj Date : 10-JAN-2006 19:15 Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110.b/8081A_clpestv4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.16			529					
0.94			4841057					
3.85	3.78	3.92	48601	306784	Tetrachloro-m-Xylene	0.160000	289281	
4.68			514					
5.09	5.02	5.16	10687	531661	alpha-BHC	0.020000	534300	
6.09	6.02	6.16	9044	232364	beta-BHC	0.040000	226075	
6.48	6.41	6.55	10025	495962	delta-BHC	0.020000	501200	
9.23	9.16	9.30	9575	489072	Heptachlor Epoxide	0.020000	478700	
9.88	9.81	9.95	17453	444440	alpha-Chlordane	0.040000	436325	
10.27	10.20	10.34	17265	440000	4,4'-DDE	0.040000	431600	
11.34	11.27	11.41	30578	386241	Endrin	0.080000	382212	
11.79	11.72	11.86	22425	279151	4,4'-DDD	0.080000	280300	
13.04	12.96	13.10	25461	321174	Endrin Aldehyde	0.080000	318250	
14.14	14.07	14.21	27660	353871	Endosulfan sulfate	0.080000	345738	
14.77	14.70	14.84	75934	374160	Endrin Ketone	0.200000	379670	
17.60	17.52	17.66	57189	362764	Decachlorobiphenyl	0.160000	325544	

1/10/06

Data File: /chem/tracegc82.i/i060110.b/012iINDA59P.d

Date : 10-JAN-2006 19:41

Client ID: INDA59P

Sample Info: INDA59P

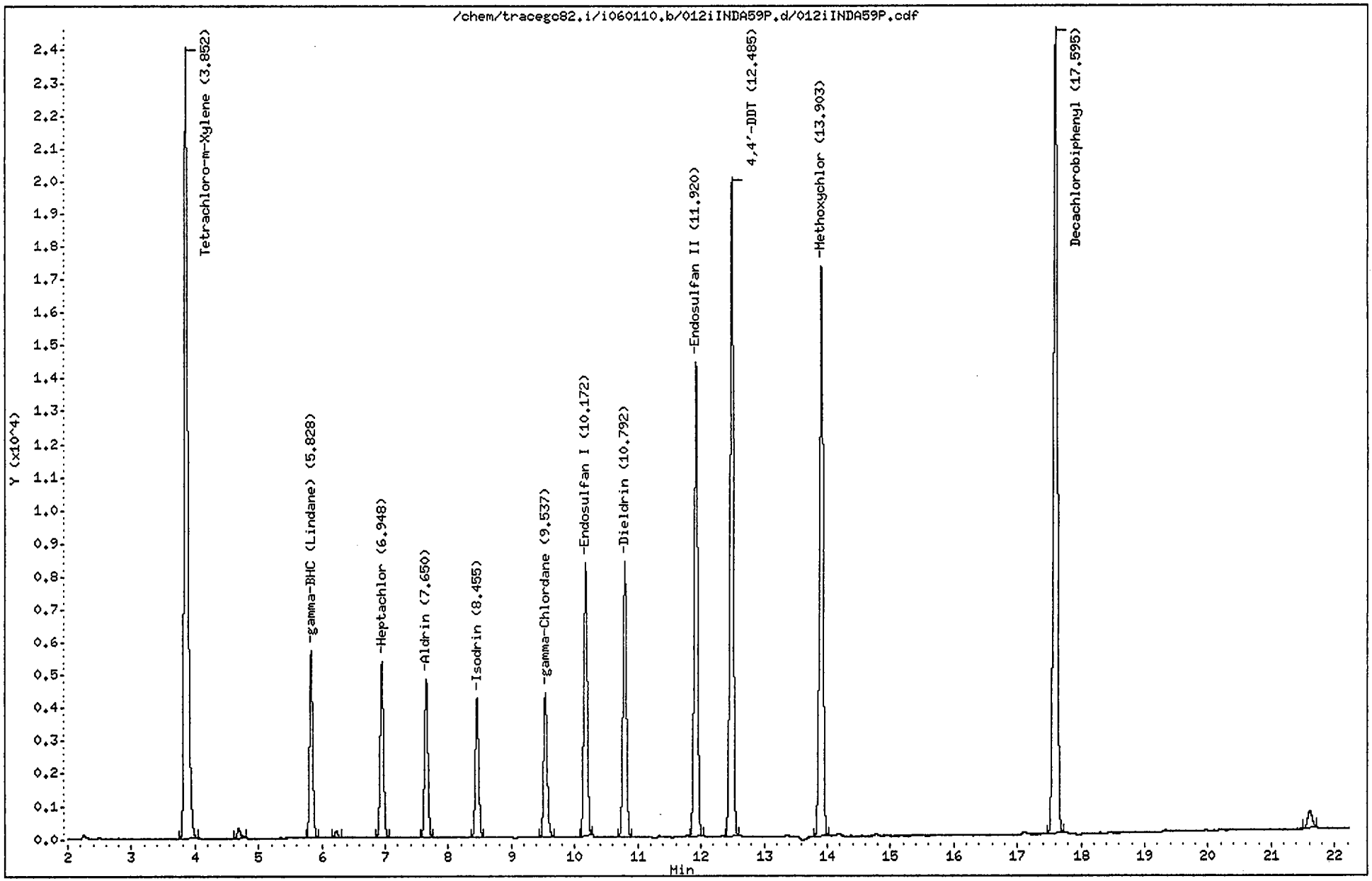
Volume Injected (uL): 1.0

Column phase: clpest

Instrument: tracegc82.i

Operator: 2512

Column diameter: 0.53



CompuChem

Lab Smp Id : INDA59P Client Smp Id : INDA59P
Sample Type : INITIAL CAL: Level 5 Sublist : INDA
Inj Date : 10-JAN-2006 19:41 Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110.b/8081A_clpestv4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.18			686					
0.90			4281					
3.85	3.78	3.92	93601	306784	Tetrachloro-m-Xylene	0.320000	292503	
4.68			1254					
5.83	5.76	5.90	19315	491545	gamma-BHC (Lindane)	0.040000	482875	
6.23			704					
6.95	6.88	7.02	19365	524870	Heptachlor	0.040000	484100	
7.65	7.58	7.72	17598	482395	Aldrin	0.040000	439925	
8.46	8.39	8.53	15594	430775	Isodrin	0.040000	389825	
9.54	9.47	9.61	17073	465605	gamma-Chlordane	0.040000	426825	
10.17	10.10	10.24	30766	428652	Endosulfan I	0.080000	384562	
10.79	10.72	10.86	30869	426262	Dieldrin	0.080000	385862	
11.92	11.85	11.99	53270	362004	Endosulfan II	0.160000	332931	
12.48	12.42	12.56	72964	315540	4,4'-DDT	0.240000	304017	
13.90	13.83	13.97	66883	193873	Methoxychlor	0.400000	167205	
17.60	17.52	17.66	101376	362764	Decachlorobiphenyl	0.320000	316800	
21.61			2671					

1/10/06

Data File: /chem/tracegc82.i/i060110.b/013iINDB59P.d

Date : 10-JAN-2006 20:07

Client ID: INDB59P

Sample Info: INDB59P

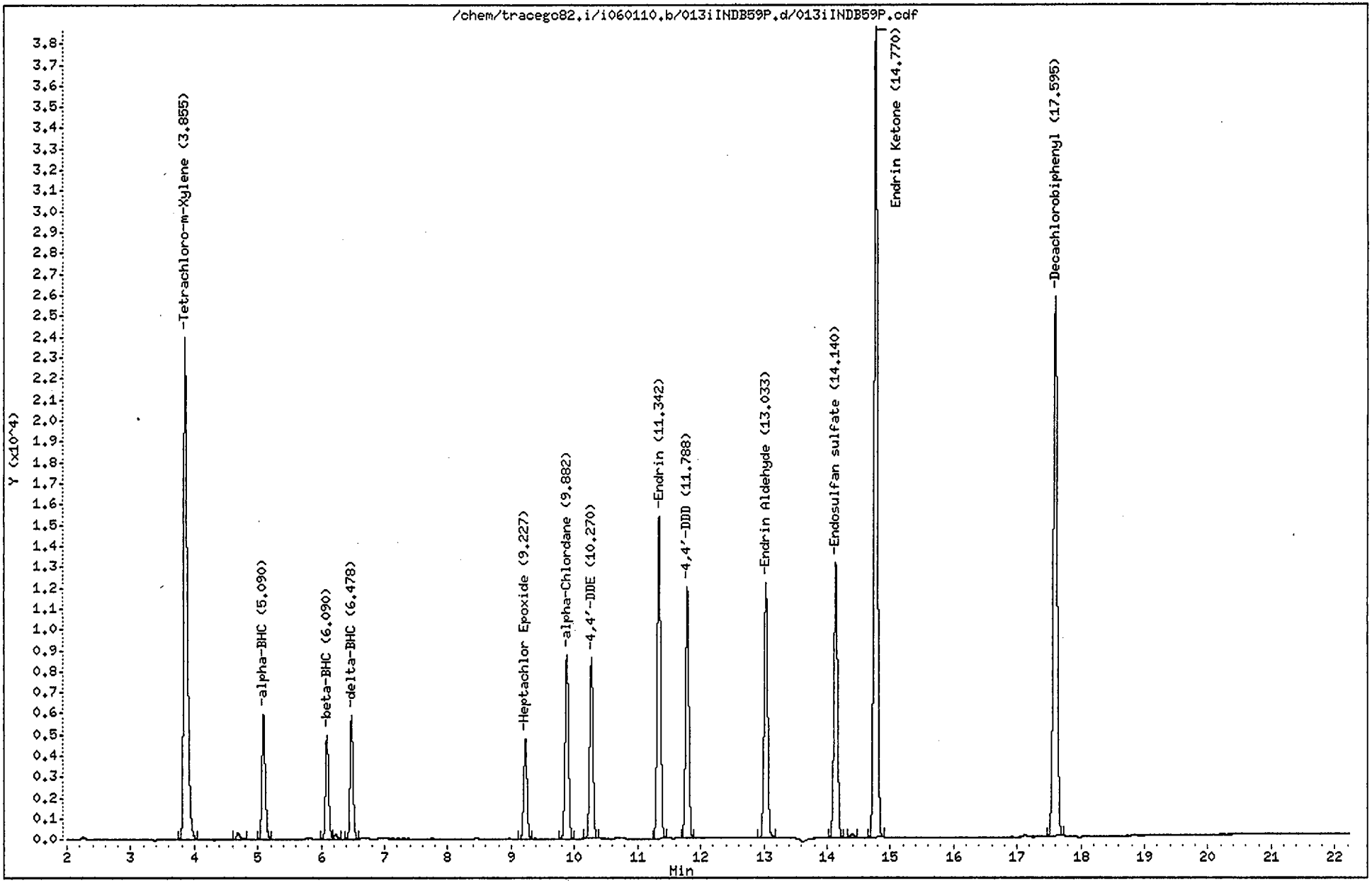
Volume Injected (uL): 1.0

Column phase: olpest

Instrument: tracegc82.i

Operator: 2512

Column diameter: 0.53



CompuChem

Lab Smp Id : INDB59P Client Smp Id : INDB59P
Sample Type : INITIAL CAL: Level 5 Sublist : INDB
Inj Date : 10-JAN-2006 20:07 Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110.b/8081A_clpestv4.m
Misc. Info : None

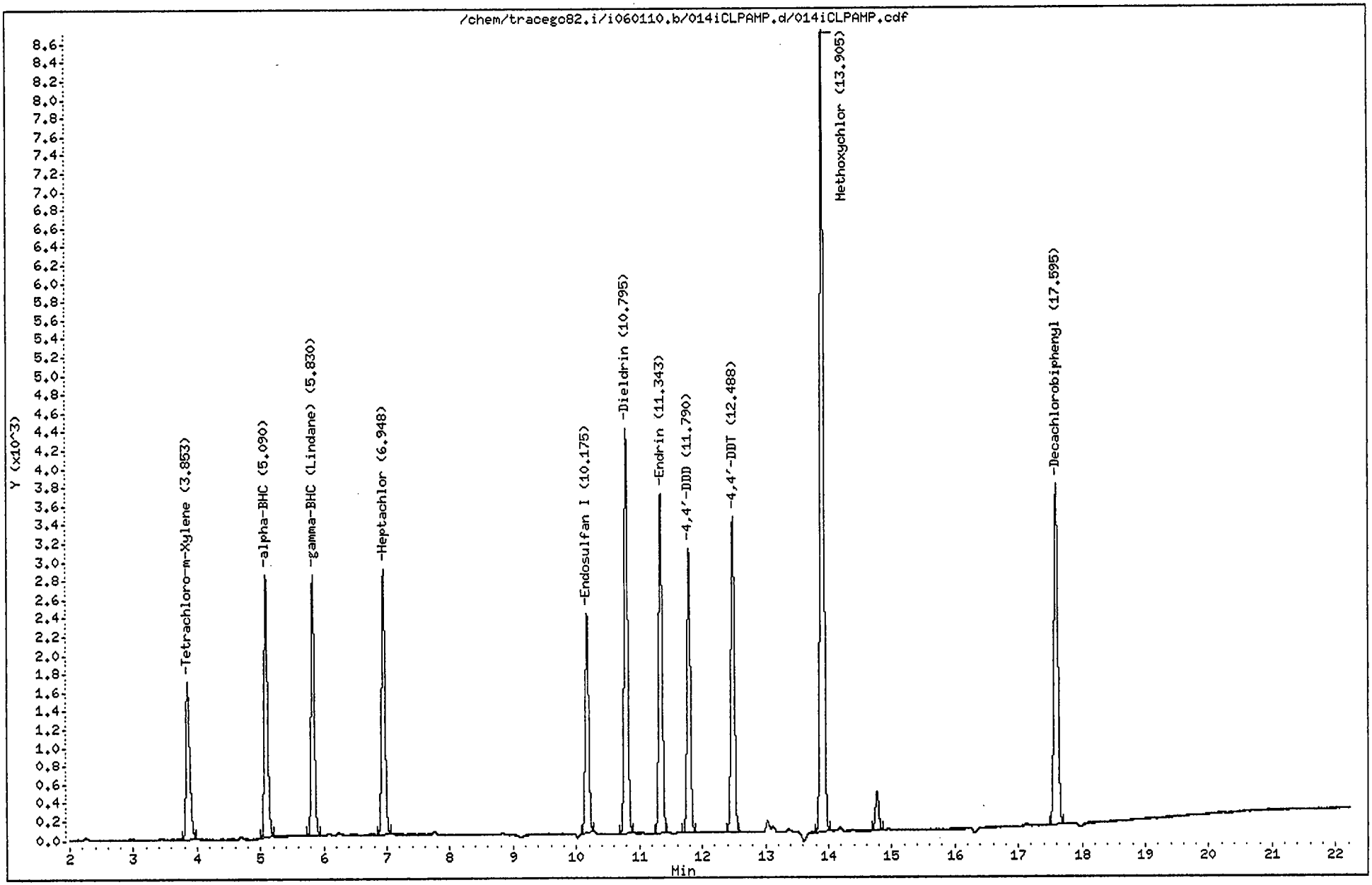
RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.15			527					
0.90			9045					
3.86	3.78	3.92	93636	306784	Tetrachloro-m-Xylene	0.320000	292503	
4.68			1309					
5.09	5.02	5.16	20992	531661	alpha-BHC	0.040000	524800	
6.09	6.02	6.16	17019	232364	beta-BHC	0.080000	212738	
6.23			772					
6.48	6.41	6.55	19532	495962	delta-BHC	0.040000	488300	
9.23	9.16	9.30	17370	489072	Heptachlor Epoxide	0.040000	434250	
9.88	9.81	9.95	32142	444440	alpha-Chlordane	0.080000	401762	
10.27	10.20	10.34	31532	440000	4,4'-DDE	0.080000	394150	
11.34	11.27	11.41	56627	386241	Endrin	0.160000	353919	
11.79	11.72	11.86	42600	279151	4,4'-DDD	0.160000	266250	
13.03	12.96	13.10	46511	321174	Endrin Aldehyde	0.160000	290694	
14.14	14.07	14.21	50467	353871	Endosulfan sulfate	0.160000	315412	
14.40			692					
14.77	14.70	14.84	143343	374160	Endrin Ketone	0.400000	358358	
17.60	17.52	17.66	104874	362764	Decachlorobiphenyl	0.320000	316800	

1/10/06

Data File: /chem/tracegc82.i/i060110.b/014iCLPAMP.d
Date : 10-JAN-2006 20:32
Client ID: CLPAMP
Sample Info: CLPAMP
Volume Injected (uL): 1.0
Column phase: clpest

Instrument: tracegc82.i

Operator: 2512
Column diameter: 0.53



CompuChem

Lab Smp Id	: CLPAMP	Client Smp Id	: CLPAMP
Sample Type	: QCCHECK	Sublist	: MDLA
Inj Date	: 10-JAN-2006 20:32	Inst ID	: TRACEGC82
Operator	: 2512	Spike Sublist	: INDAchek
Method	: /chem/tracegc82.i/i060110.b/8081A_clpestv4.m		
Misc. Info	: None		

RT	AREA
0.15	796
0.90	4345
0.93	8466
3.85	6852
5.09	10152
5.83	9680
6.95	10420
10.18	8739
10.80	16167
11.34	13788
11.79	11245
12.49	12990
13.90	33999
14.77	1574
17.59	15458

1/10/06

CompuChem

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: CLPAMP
Level: LOW
Data Type: GC MULTI COMP
SpikeList File: INDAchek.spk
Sublist File: MDLA.sub
Method File: /chem/tracegc82.i/i060110.b/8081A_clpestv4.m
Misc Info: None

Client SDG: i060110
Fraction: PEST
Client Smp ID: CLPAMP
Operator: 2512
SampleType: QCCHECK
Quant Type: ESTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
2 alpha-BHC	0.020	0.019	95.47	80-120
3 gamma-BHC (Lindane	0.020	0.020	98.47	80-120
4 Heptachlor	0.020	0.020	99.26	80-120
13 Endosulfan I	0.020	0.020	101.93	80-120
15 Dieldrin	0.040	0.038	94.82	80-120
16 Endrin	0.040	0.036	89.24	80-120
17 4,4'-DDD	0.040	0.040	100.70	80-120
19 4,4'-DDT	0.040	0.041	102.92	80-120
22 Methoxychlor	0.20	0.18	87.68	80-120

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tetrachloro-m-Xyle	0.020	0.022	111.68	43-135
$ 33 Decachlorobiphenyl	0.020	~~0.043~~ 0.0215	~~213.06*~~ 106.53	43-144

RP 1/10/06

Data File: /chem/tracegc82.i/i060110.b/015iCLPBM9P.d

Page 1

Date : 10-JAN-2006 20:58

Client ID: CLPBM9P

Instrument: tracegc82.i

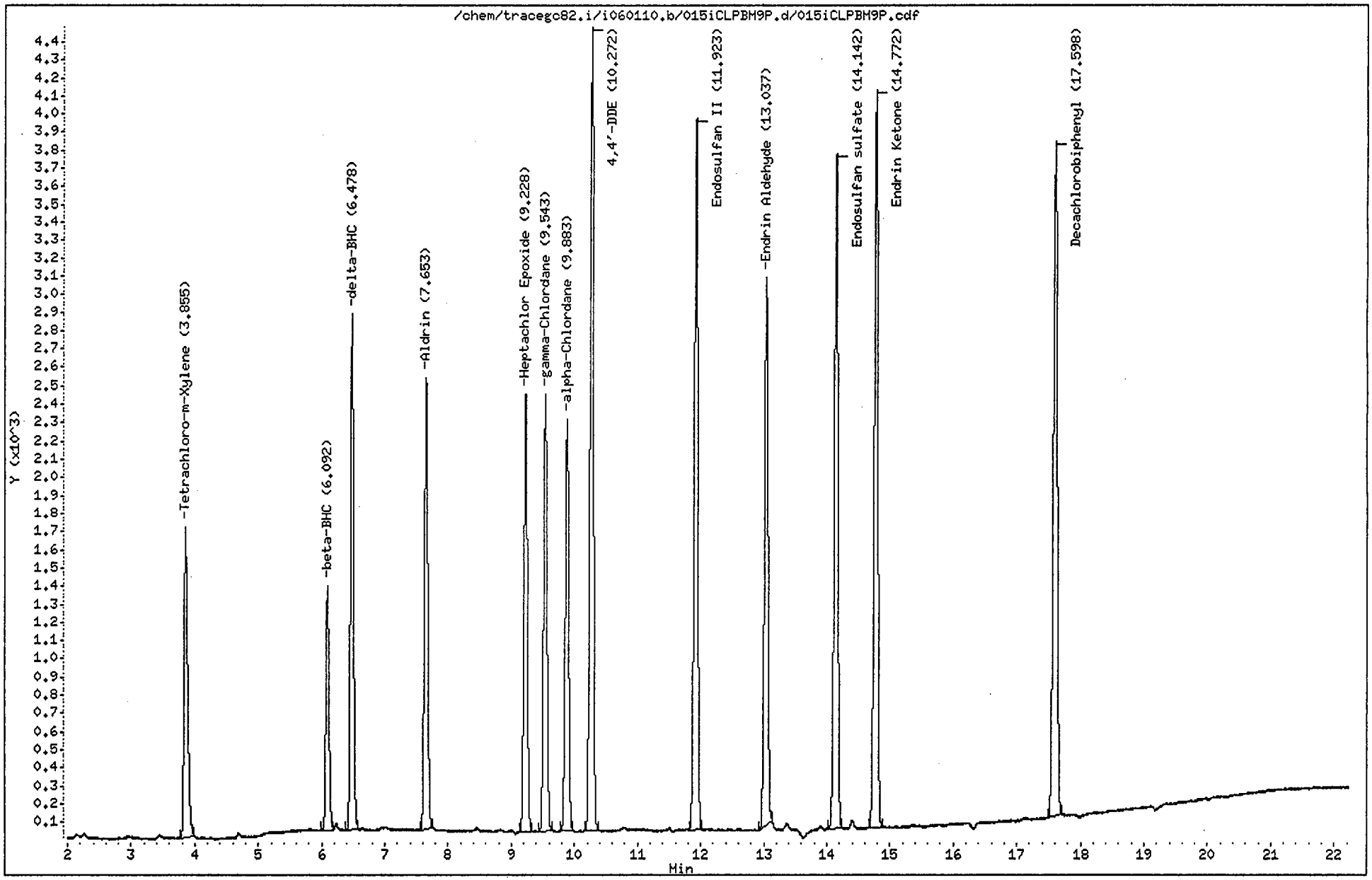
Sample Info: CLPBM9P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest

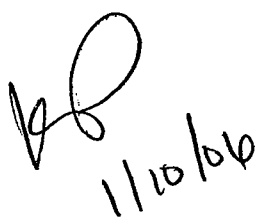
Column diameter: 0.53



CompuChem

Lab Smp Id	: CLPBM9P	Client Smp Id	: CLPBM9P
Sample Type	: QCCHECK	Sublist	: MDLB
Inj Date	: 10-JAN-2006 20:58	Inst ID	: TRACEGC82
Operator	: 2512	Spike Sublist	: INDBchek
Method	: /chem/tracegc82.i/i060110.b/8081A_clpestv4.m		
Misc. Info	: None		

RT	AREA
0.90	4340
3.86	6616
6.09	4598
6.48	9469
7.65	9035
9.23	8885
9.54	8985
9.88	8404
10.27	16369
11.92	14899
13.04	11558
14.14	14533
14.77	15595
17.60	15586



CompuChem

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: CLPBM9P
Level: LOW
Data Type: GC MULTI COMP
SpikeList File: INDBchek.spk
Sublist File: MDLB.sub
Method File: /chem/tracegc82.i/i060110.b/8081A_clpestv4.m
Misc Info: None

Client SDG: i060110
Fraction: PEST
Client Smp ID: CLPBM9P
Operator: 2512
SampleType: QCCHECK
Quant Type: ESTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
7 beta-BHC	0.020	0.020	98.93	80-120
8 delta-BHC	0.020	0.019	95.46	80-120
5 Aldrin	0.020	0.019	93.65	80-120
9 Heptachlor Epoxide	0.020	0.018	90.84	80-120
10 gamma-Chlordane	0.020	0.019	96.48	80-120
11 alpha-Chlordane	0.020	0.019	94.55	80-120
14 4,4'-DDE	0.040	0.037	93.01	80-120
18 Endosulfan II	0.040	0.041	102.89	80-120
20 Endrin Aldehyde	0.040	0.036	89.97	80-120
21 Endosulfan sulfate	0.040	0.041	102.67	80-120
23 Endrin Ketone	0.040	0.042	104.20	80-120

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tetrachloro-m-Xyle	0.020	0.022	107.83	43-135
$ 33 Decachlorobiphenyl	0.020	~~0.043~~ 0.0215	~~214.83*~~ 107.415	43-144

KP 1/10/06

Data File: /chem/tracegc83.i/i060110.b/003iPEM9P.d

Date : 10-JAN-2006 15:51

Client ID: PEM9P

Instrument: tracegc83.i

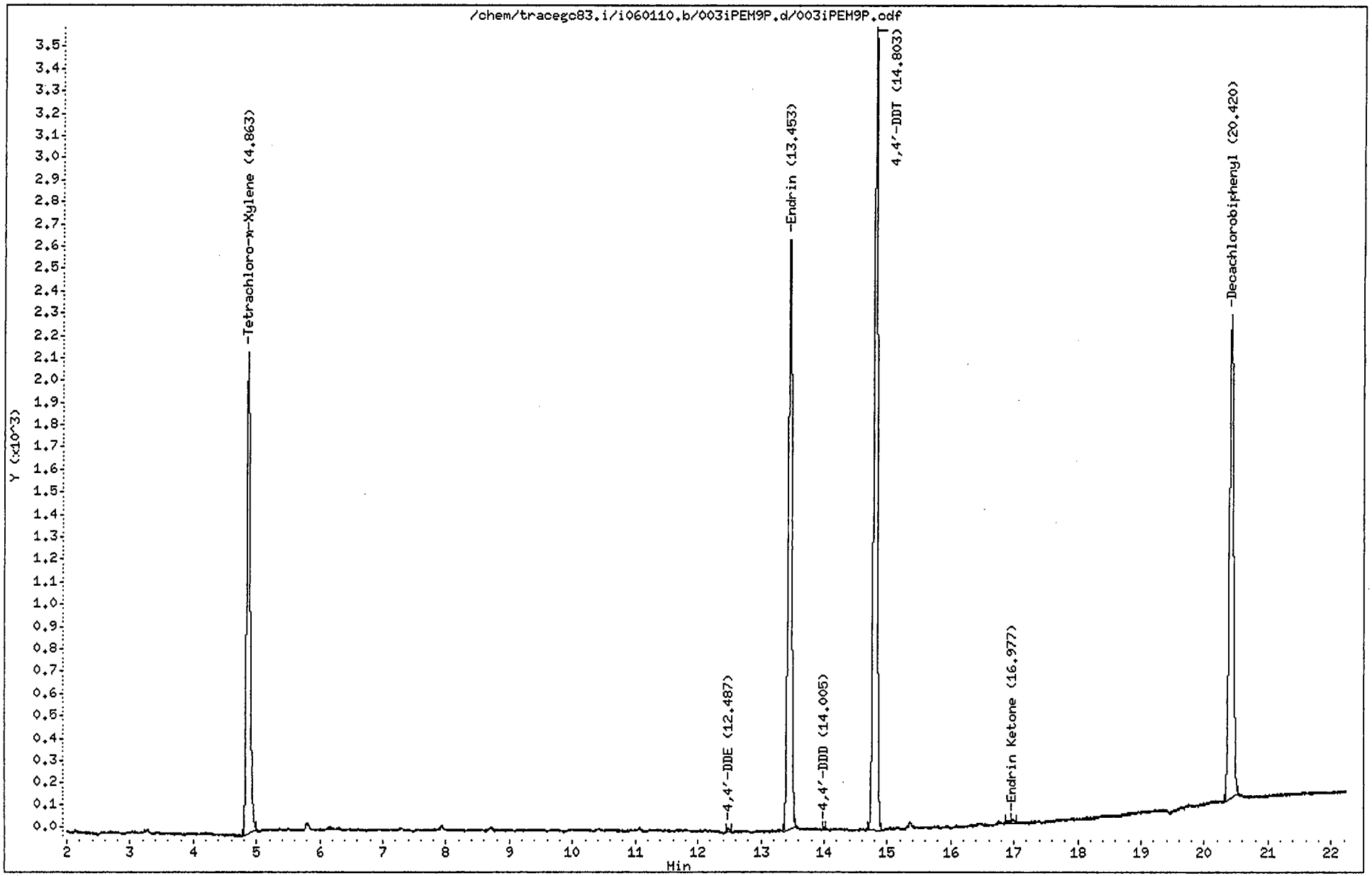
Sample Info: PEM9P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : PEM9P Client Smp Id : PEM9P
Sample Type : SAMPLE Sublist : PEM
Inj Date : 10-JAN-2006 15:51 Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110.b/8081A_clpest2v4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Ws) * (100/(100-M))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Ws Sample Weight: 10.0(g) M Moisture: 0(%)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/Kg)	ADJUSTED PQL (ug/Kg)	% REC	RECOVERY LIMITS	FLAGS
0.89			14041								
4.86	4.79	4.93	8413	403926	Tetrachloro-m-Xylene	0.020828	10.41384		52.1	43 - 135	
12.49	12.42	12.56	52	558335	4,4'-DDE	0.000092	0.046119	2.490000			JM 2
13.45	13.38	13.52	10594	515266	Endrin	0.020561	10.28041	5.010000			
14.00	13.94	14.08	18	367186	4,4'-DDD	0.000050	0.025055	5.010000			JM 2
14.80	14.73	14.87	14497	414793	4,4'-DDT	0.034951	17.47545	7.500000			
16.90			33								
16.98	16.92	17.06	52	497694	Endrin Ketone	0.000105	0.052392	12.51000			JM 2
20.42	20.35	20.49	9970	459870	Decachlorobiphenyl	0.021679	10.83969		54.2	43 - 144	

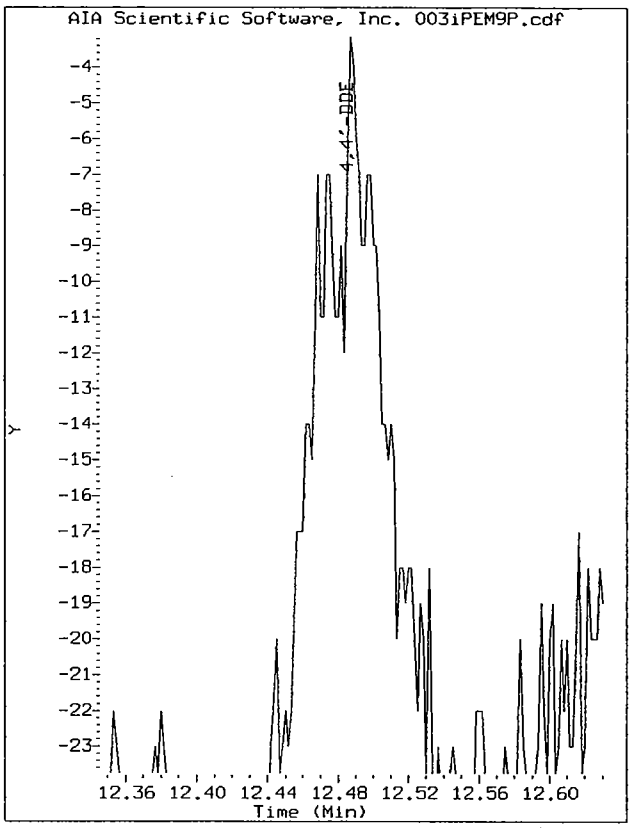
%DDT Breakdown $\frac{52+18}{52+18+14497} * 100 = \frac{70}{14567} * 100 = 0.48\%$

%Endrin Breakdown $\frac{52}{52+10594} * 100 = \frac{52}{10646} * 100 = 0.49\%$

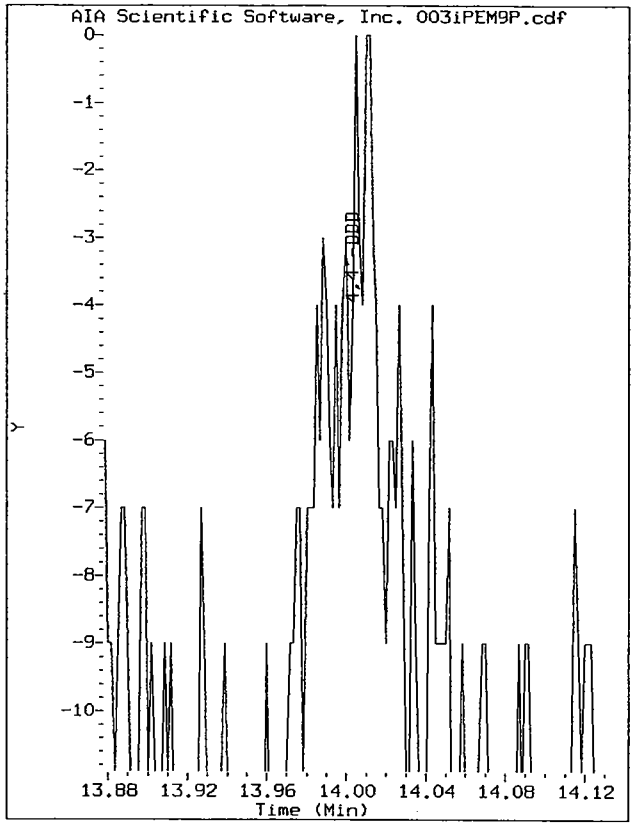
1/10/06

TAJ 1/11/06

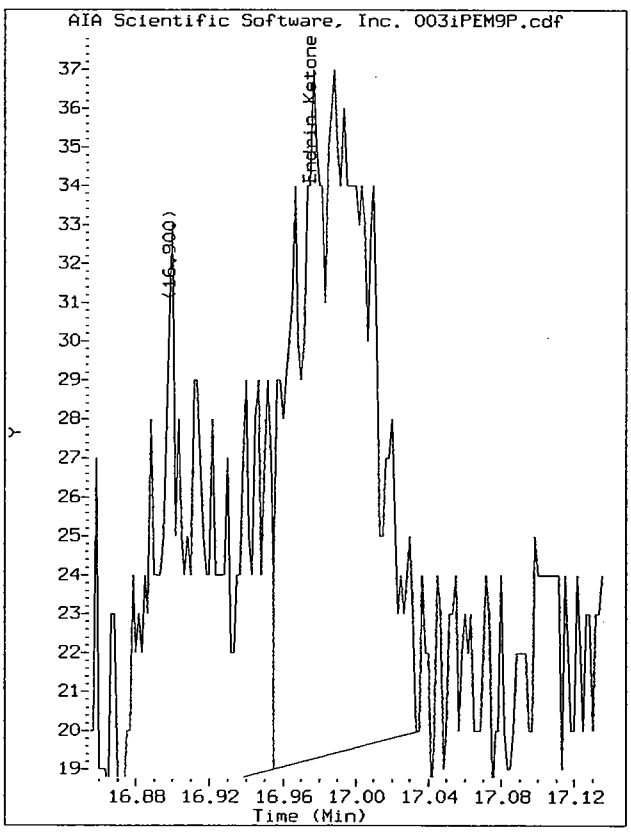
Manually Integrated Peaks



Start: 12.45 Stop: 12.53



Start: 13.98 Stop: 14.03



Start: 16.95 Stop: 17.04

Data File: /chem/tracegc83.i/i060110.b/004iINDA19P.d

Date : 10-JAN-2006 16:16

Client ID: INDA19P

Instrument: tracegc83.i

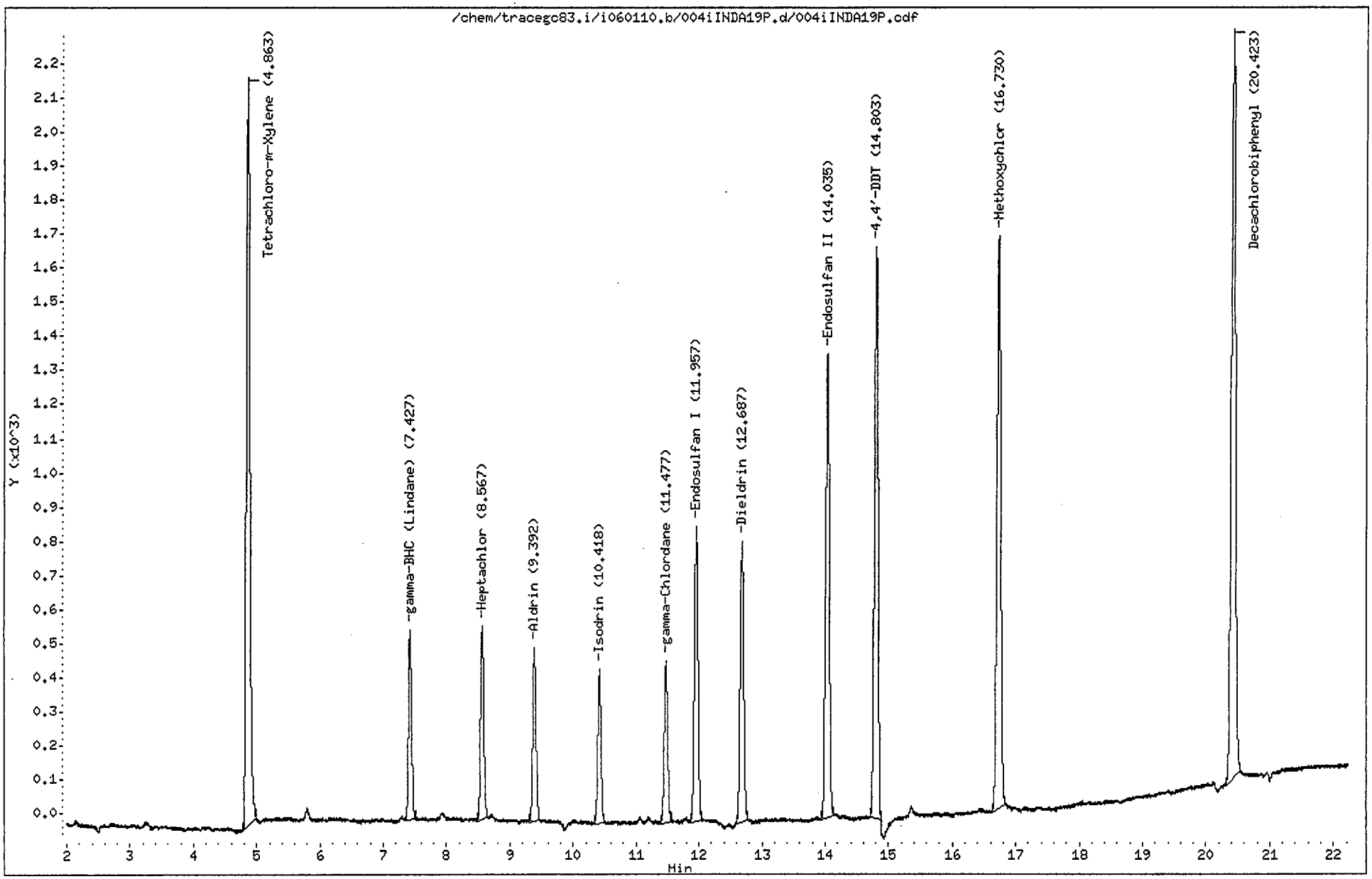
Sample Info: INDA19P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : INDA19P Client Smp Id : INDA19P
Sample Type : INITIAL CAL: Level 1 Sublist : INDA
Inj Date : 10-JAN-2006 16:16 Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.89			2115					
4.86	4.79	4.93	8628	403926	Tetrachloro-m-Xylene	0.020000	431400	
7.43	7.36	7.50	1854	689670	gamma-BHC (Lindane)	0.002500	741600	
8.57	8.50	8.64	2088	732145	Heptachlor	0.002500	835200	
9.39	9.32	9.46	1848	661560	Aldrin	0.002500	738800	
10.42	10.35	10.49	1642	589030	Isodrin	0.002500	656800	
11.48	11.41	11.55	1795	627645	gamma-Chlordane	0.002500	718000	
11.96	11.89	12.03	3322	581450	Endosulfan I	0.005000	664400	
12.69	12.62	12.76	3202	563772	Dieldrin	0.005000	640400	
14.04	13.97	14.11	5390	481879	Endosulfan II	0.010000	539000	
14.80	14.73	14.87	6590	414793	4,4'-DDT	0.015000	439333	M2
16.73	16.66	16.80	6842	241339	Methoxychlor	0.025000	273640	
20.42	20.35	20.49	10083	459870	Decachlorobiphenyl	0.020000	504150	

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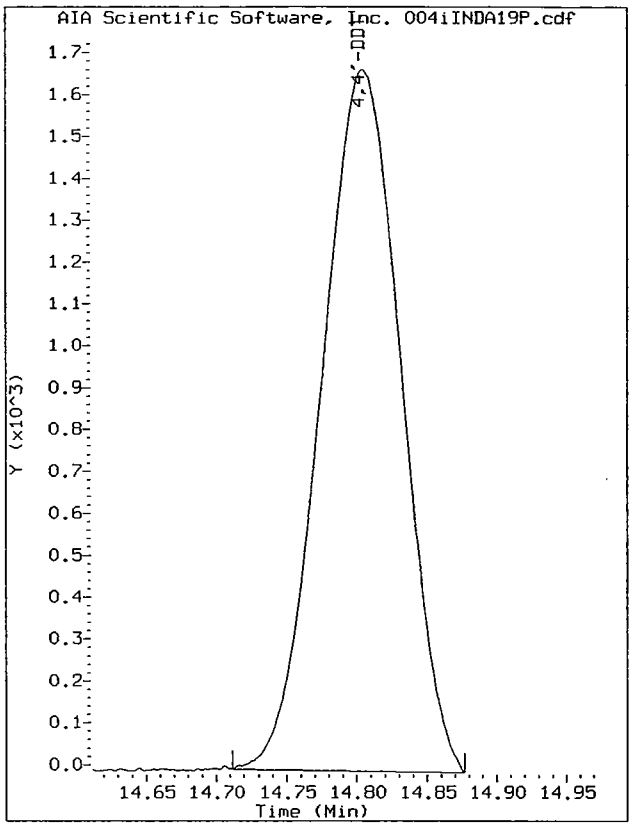
Manually Integrated Peaks



Start: 14.71 Stop: 14.88

Data File: /chem/tracegc83.i/i060110.b/005iINDB19P.d

Date : 10-JAN-2006 16:42

Client ID: INDB19P

Instrument: tracegc83.i

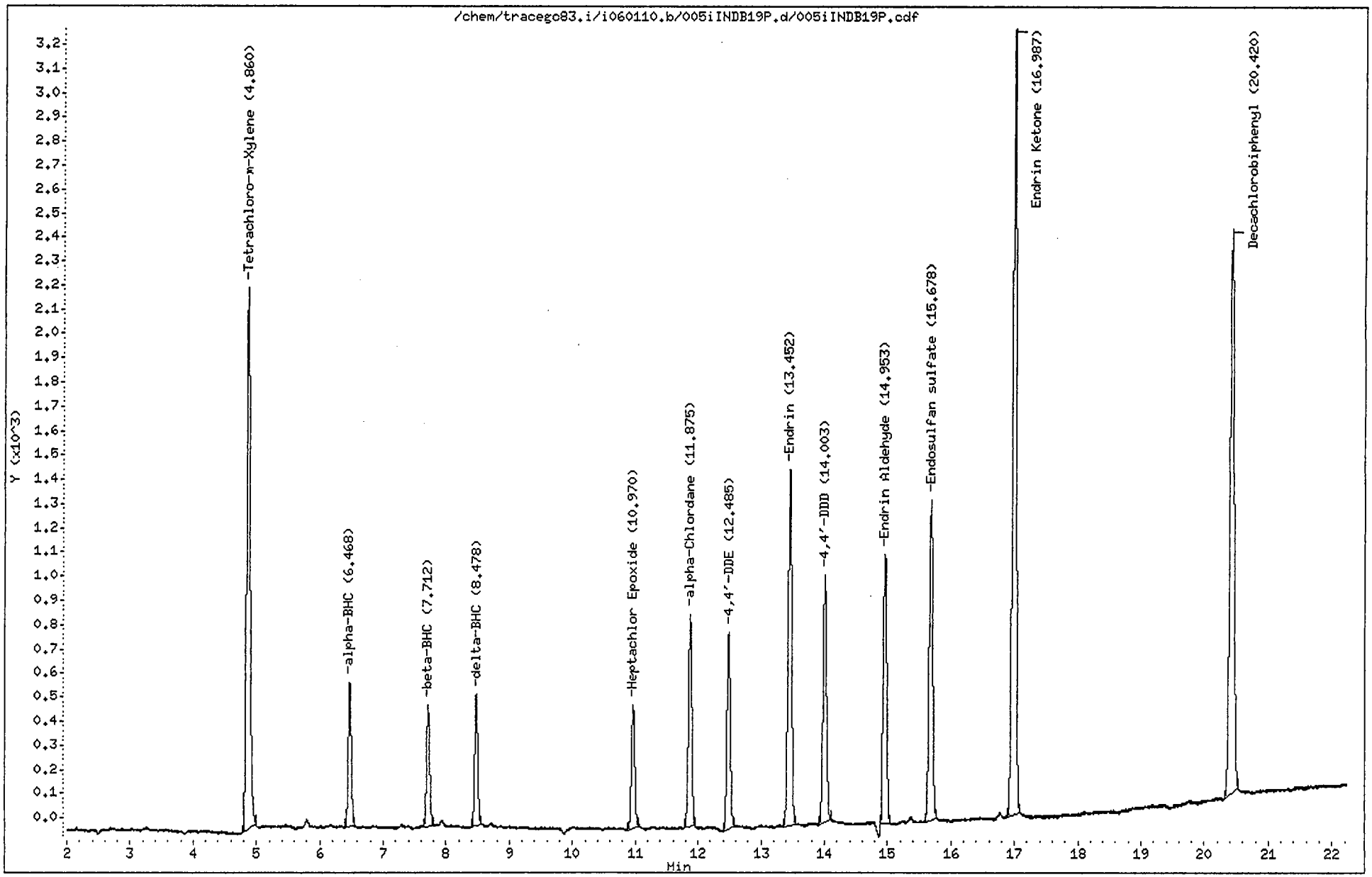
Sample Info: INDB19P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : INDB19P
Client Smp Id : INDB19P
Sample Type : INITIAL CAL: Level 1
Sublist : INDB
Inj Date : 10-JAN-2006 16:42
Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.89			1394					
4.86	4.79	4.93	8677	403926	Tetrachloro-m-Xylene	0.020000	431400	
6.47	6.40	6.54	2034	762580	alpha-BHC	0.002500	813600	
7.71	7.64	7.78	1693	311082	beta-BHC	0.005000	338400	
8.48	8.41	8.55	1828	687745	delta-BHC	0.002500	730800	
10.97	10.90	11.04	1869	660355	Heptachlor Epoxide	0.002500	747600	
11.88	11.81	11.95	3395	602048	alpha-Chlordane	0.005000	679000	
12.48	12.42	12.56	3104	558335	4,4'-DDE	0.005000	620800	
13.45	13.38	13.52	5796	515266	Endrin	0.010000	579500	
14.00	13.94	14.08	3987	367186	4,4'-DDD	0.010000	398700	
14.95	14.89	15.03	4192	394594	Endrin Aldehyde	0.010000	419100	M2
15.68	15.61	15.75	5331	464389	Endosulfan sulfate	0.010000	533100	
16.99	16.92	17.06	13061	497694	Endrin Ketone	0.025000	522400	
20.42	20.35	20.49	10723	459870	Decachlorobiphenyl	0.020000	504150	

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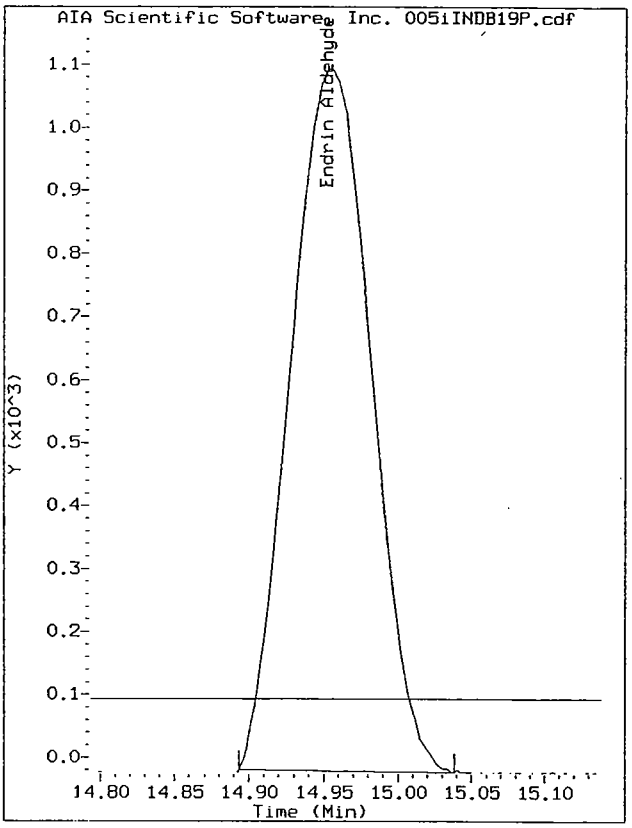
Manually Integrated Peaks



Start: 14.89 Stop: 15.04

Data File: /chem/tracegc83.i/i060110.b/006iINDA29P.d

Date : 10-JAN-2006 17:08

Client ID: INDA29P

Instrument: tracegc83.i

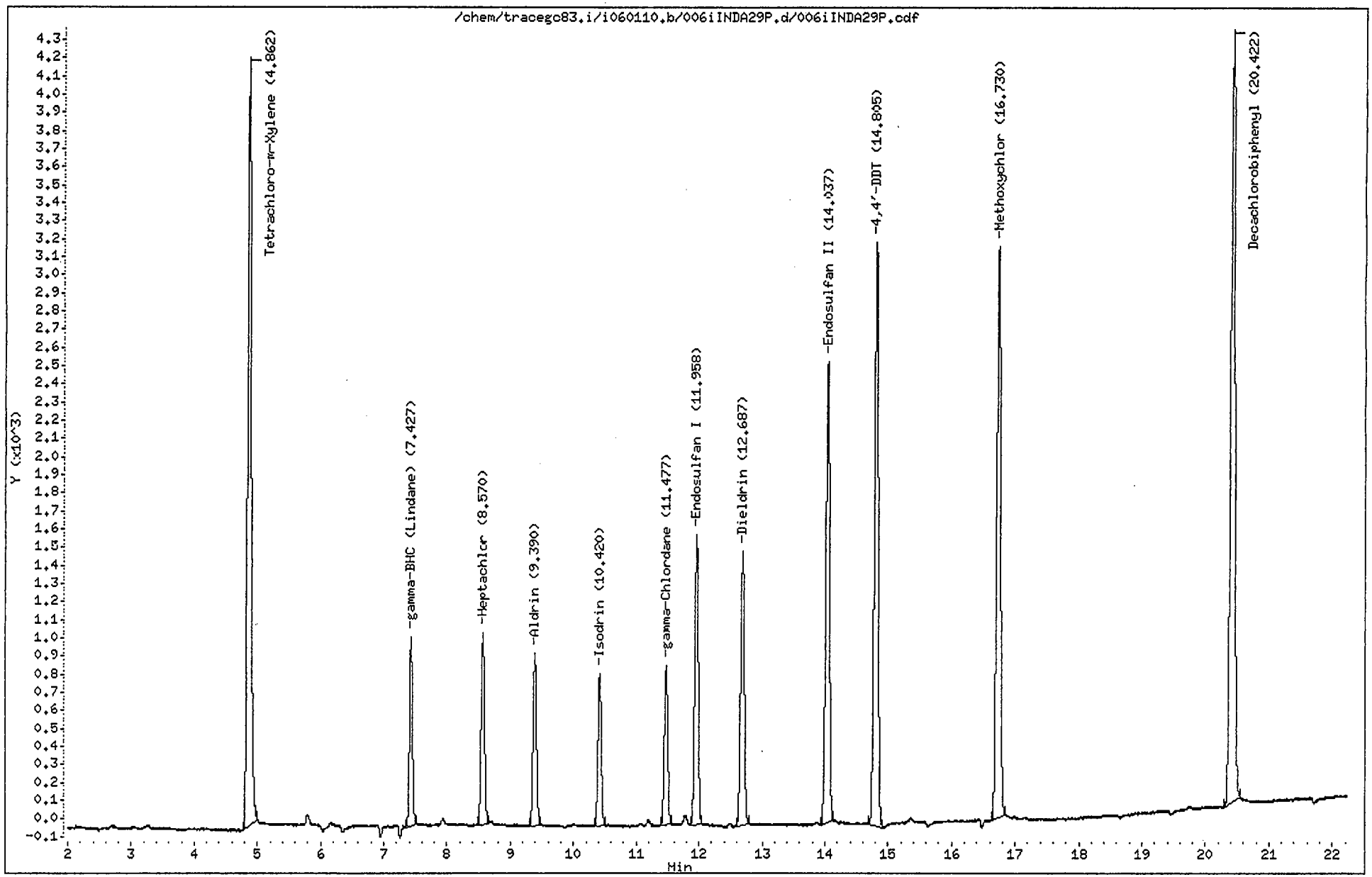
Sample Info: INDA29P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : INDA29P Client Smp Id : INDA29P
Sample Type : INITIAL CAL: Level 2 Sublist : INDA
Inj Date : 10-JAN-2006 17:08 Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.89			2146					
0.92			4514					
4.86	4.79	4.93	16569	403926	Tetrachloro-m-Xylene	0.040000	414200	
7.43	7.36	7.50	3615	689670	gamma-BHC (Lindane)	0.005000	723000	
8.57	8.50	8.64	3931	732145	Heptachlor	0.005000	786200	
9.39	9.32	9.46	3581	661560	Aldrin	0.005000	716000	
10.42	10.35	10.49	3196	589030	Isodrin	0.005000	639000	
11.48	11.41	11.55	3376	627645	gamma-Chlordane	0.005000	675000	
11.96	11.89	12.03	6248	581450	Endosulfan I	0.010000	624800	
12.69	12.62	12.76	6067	563772	Dieldrin	0.010000	606600	
14.04	13.97	14.11	10129	481879	Endosulfan II	0.020000	506450	
14.80	14.73	14.87	12943	414793	4,4'-DDT	0.030000	431433	
16.73	16.66	16.80	13014	241339	Methoxychlor	0.050000	260260	
20.42	20.35	20.49	19815	459870	Decachlorobiphenyl	0.040000	495350	

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Data File: /chem/tracegc83.i/i060110.b/007iINDB29P.d

Date : 10-JAN-2006 17:33

Client ID: INDB29P

Instrument: tracegc83.i

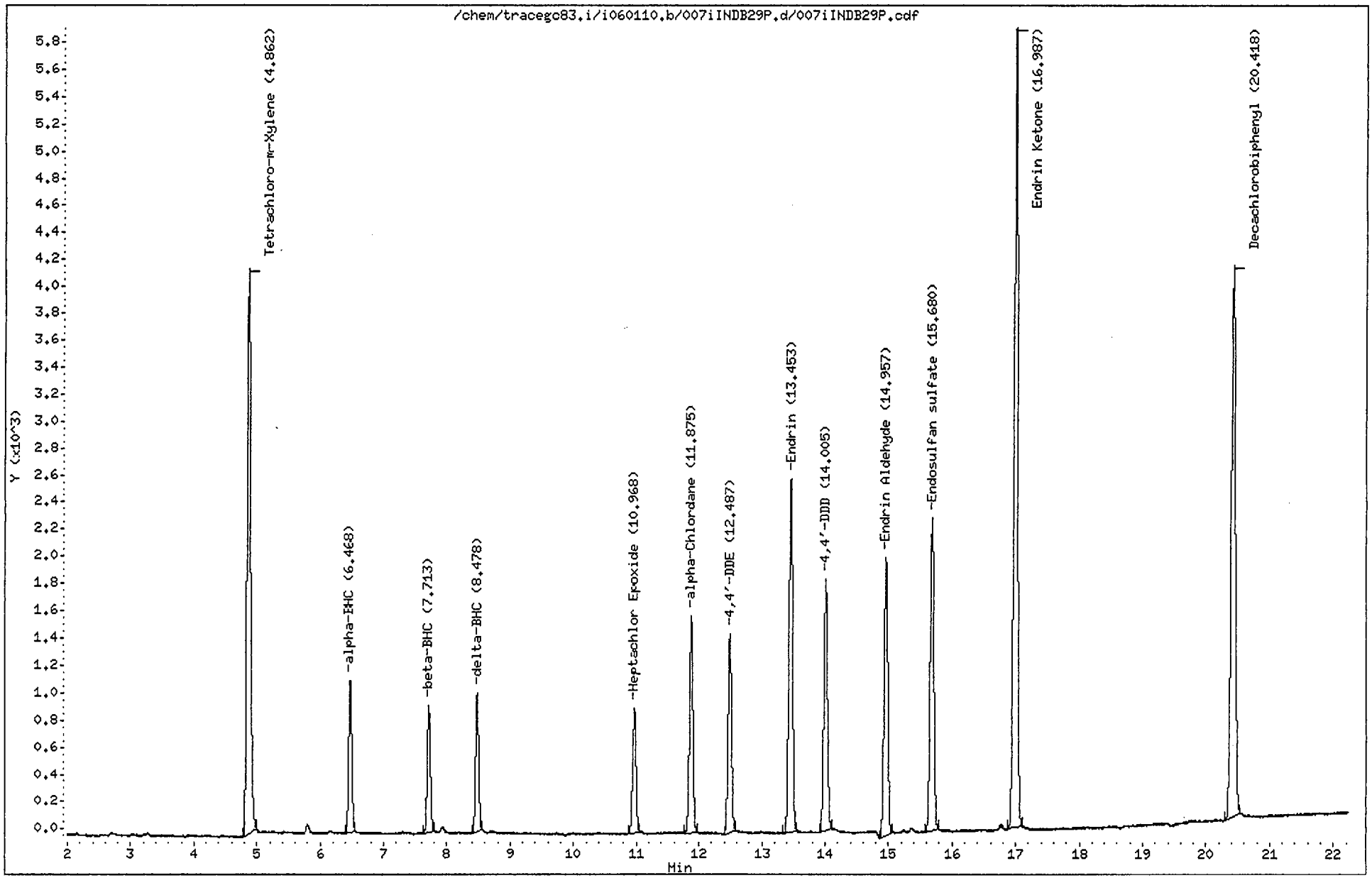
Sample Info: INDB29P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : INDB29P
Client Smp Id : INDB29P
Sample Type : INITIAL CAL: Level 2
Sublist : INDB
Inj Date : 10-JAN-2006 17:33
Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.89			3849					
0.92			8610					
4.86	4.79	4.93	16517	403926	Tetrachloro-m-Xylene	0.040000	414200	
6.47	6.40	6.54	3873	762580	alpha-BHC	0.005000	774400	
7.71	7.64	7.78	3151	311082	beta-BHC	0.010000	315100	
8.48	8.41	8.55	3415	687745	delta-BHC	0.005000	683000	
10.97	10.90	11.04	3454	660355	Heptachlor Epoxide	0.005000	690600	
11.88	11.81	11.95	6194	602048	alpha-Chlordane	0.010000	619400	
12.49	12.42	12.56	5663	558335	4,4'-DDE	0.010000	566300	
13.45	13.38	13.52	10364	515266	Endrin	0.020000	518150	
14.00	13.94	14.08	7247	367186	4,4'-DDD	0.020000	362350	
14.96	14.89	15.03	7939	394594	Endrin Aldehyde	0.020000	396950	
15.68	15.61	15.75	9338	464389	Endosulfan sulfate	0.020000	466850	
16.99	16.92	17.06	23580	497694	Endrin Ketone	0.050000	471600	
20.42	20.35	20.49	18736	459870	Decachlorobiphenyl	0.040000	495350	

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Data File: /chem/tracegc83.i/i060110.b/008iINDA39P.d

Date : 10-JAN-2006 17:59

Client ID: INDA39P

Instrument: tracegc83.i

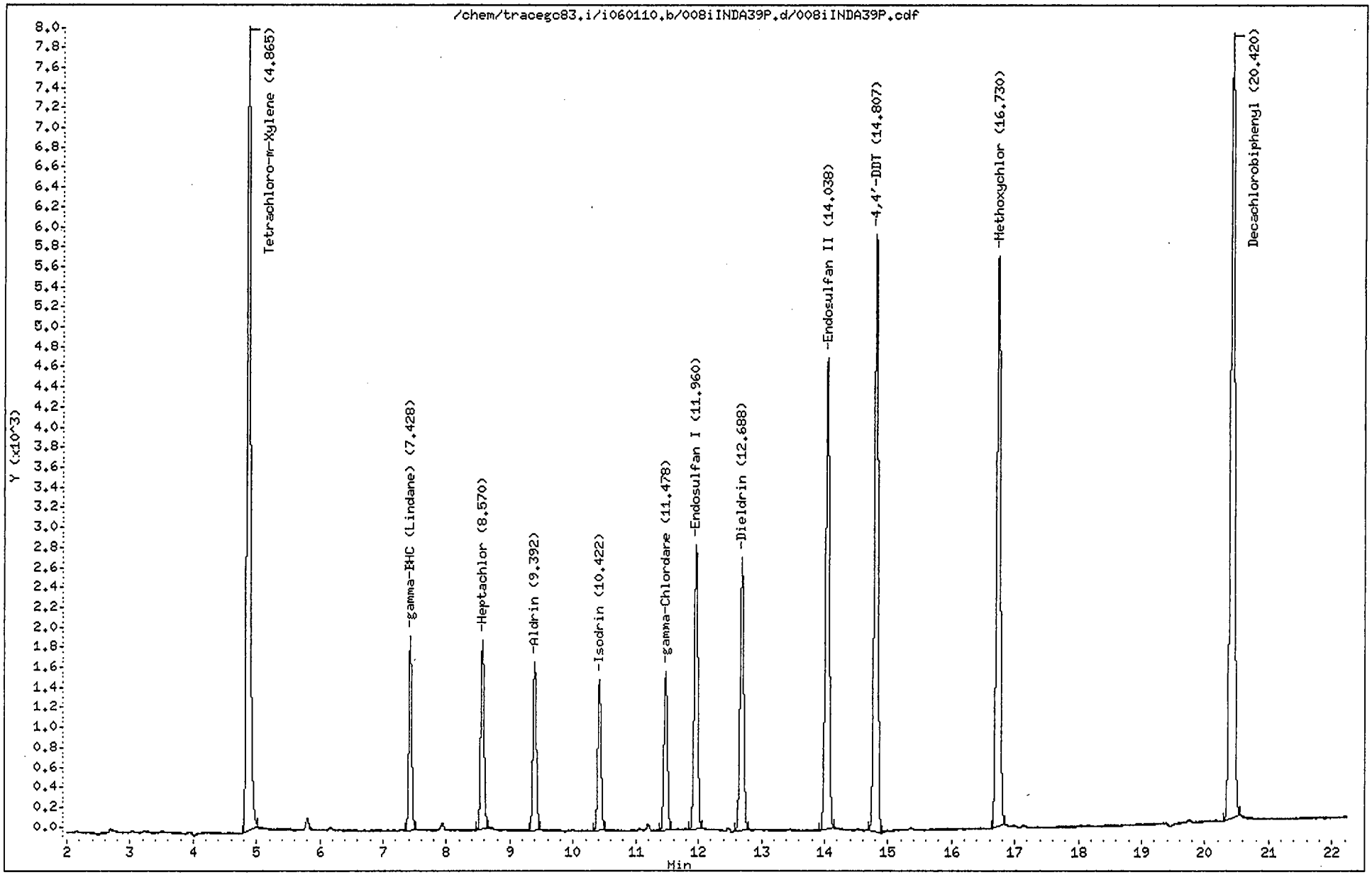
Sample Info: INDA39P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : INDA39P Client Smp Id : INDA39P
Sample Type : INITIAL CAL: Level 3 Sublist : INDA
Inj Date : 10-JAN-2006 17:59 Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.89			4518					
4.86	4.79	4.93	30632	403926	Tetrachloro-m-Xylene	0.080000	382900	
7.43	7.36	7.50	6671	689670	gamma-BHC (Lindane)	0.010000	667000	
8.57	8.50	8.64	7128	732145	Heptachlor	0.010000	712800	
9.39	9.32	9.46	6468	661560	Aldrin	0.010000	646800	
10.42	10.35	10.49	5820	589030	Isodrin	0.010000	581900	
11.48	11.41	11.55	6164	627645	gamma-Chlordane	0.010000	616300	
11.96	11.89	12.03	11279	581450	Endosulfan I	0.020000	563950	
12.69	12.62	12.76	10972	563772	Dieldrin	0.020000	548550	
14.04	13.97	14.11	18571	481879	Endosulfan II	0.040000	464250	
14.81	14.73	14.87	23461	414793	4,4'-DDT	0.060000	391000	
16.73	16.66	16.80	23676	241339	Methoxychlor	0.100000	236750	
20.42	20.35	20.49	36133	459870	Decachlorobiphenyl	0.080000	451650	

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Data File: /chem/tracegc83.i/i060110.b/009iINDB39P.d

Date : 10-JAN-2006 18:24

Client ID: INDB39P

Instrument: tracegc83.i

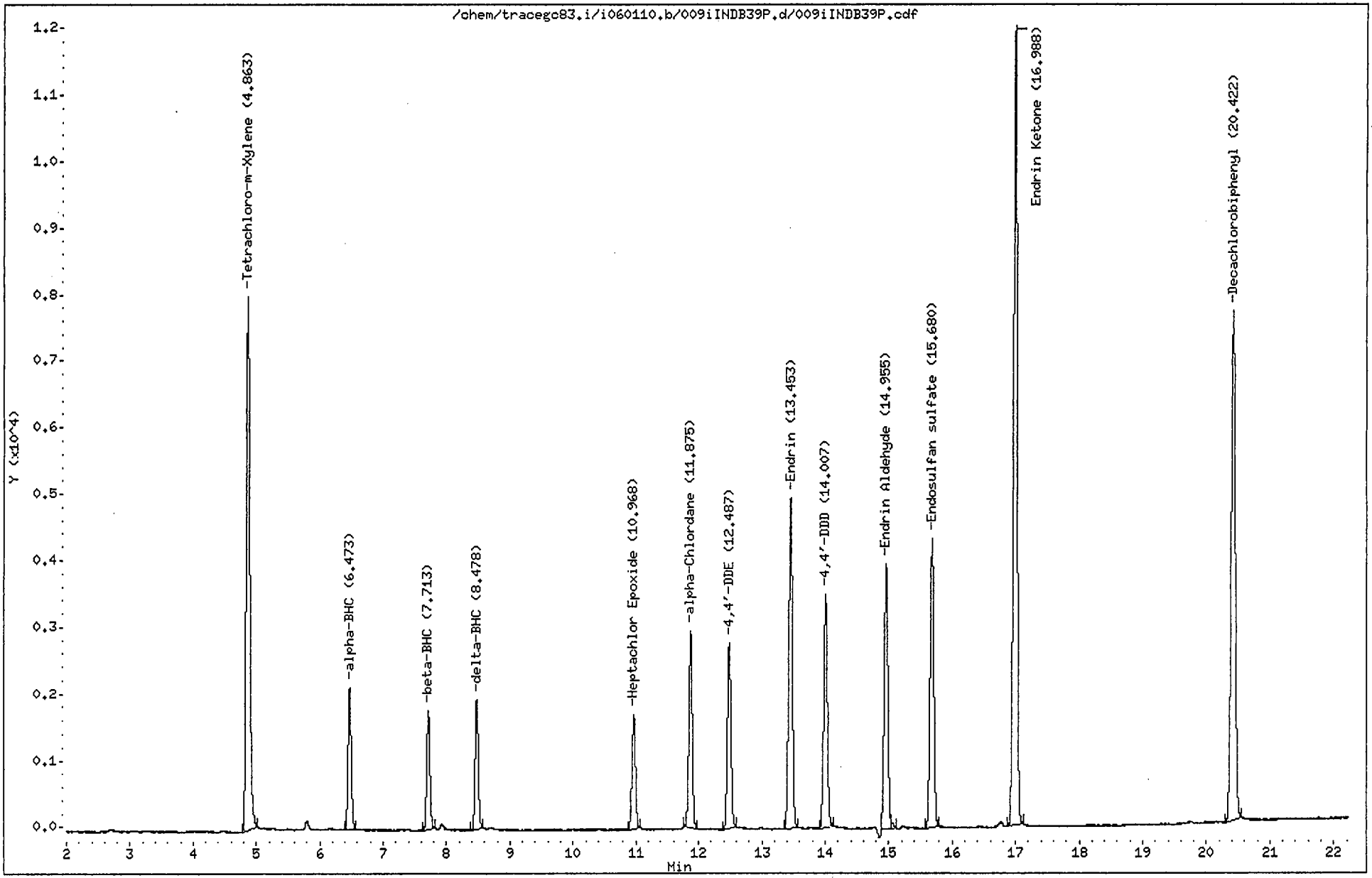
Sample Info: INDB39P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : INDB39P Client Smp Id : INDB39P
Sample Type : INITIAL CAL: Level 3 Sublist : INDB
Inj Date : 10-JAN-2006 18:24 Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.89			2180					
0.92			4606					
4.86	4.79	4.93	31845	403926	Tetrachloro-m-Xylene	0.080000	382900	
6.47	6.40	6.54	7454	762580	alpha-BHC	0.010000	745300	
7.71	7.64	7.78	6112	311082	beta-BHC	0.020000	305550	
8.48	8.41	8.55	6688	687745	delta-BHC	0.010000	668700	
10.97	10.90	11.04	6525	660355	Heptachlor Epoxide	0.010000	652500	
11.88	11.81	11.95	11573	602048	alpha-Chlordane	0.020000	578650	
12.49	12.42	12.56	10856	558335	4,4'-DDE	0.020000	542800	
13.45	13.38	13.52	19764	515266	Endrin	0.040000	494100	
14.01	13.94	14.08	13991	367186	4,4'-DDD	0.040000	349775	
14.96	14.89	15.03	15479	394594	Endrin Aldehyde	0.040000	386975	M 2
15.05			175					
15.68	15.61	15.75	17617	464389	Endosulfan sulfate	0.040000	440400	
16.99	16.92	17.06	47226	497694	Endrin Ketone	0.100000	472250	
20.42	20.35	20.49	35105	459870	Decachlorobiphenyl	0.080000	451650	

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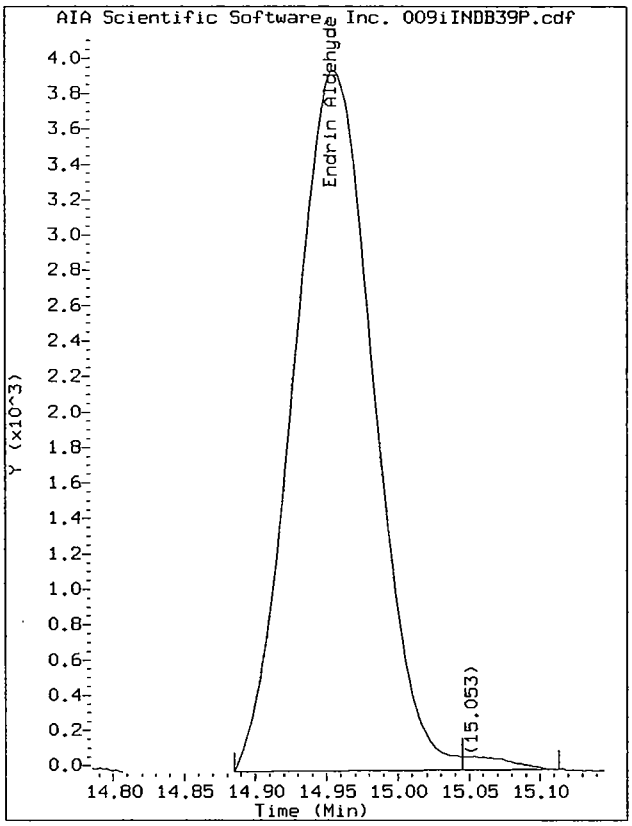
Manually Integrated Peaks



Start: 14.88 Stop: 15.04

Data File: /chem/tracegc83.i/i060110.b/010iINDA49P.d

Date : 10-JAN-2006 18:50

Client ID: INDA49P

Instrument: tracegc83.i

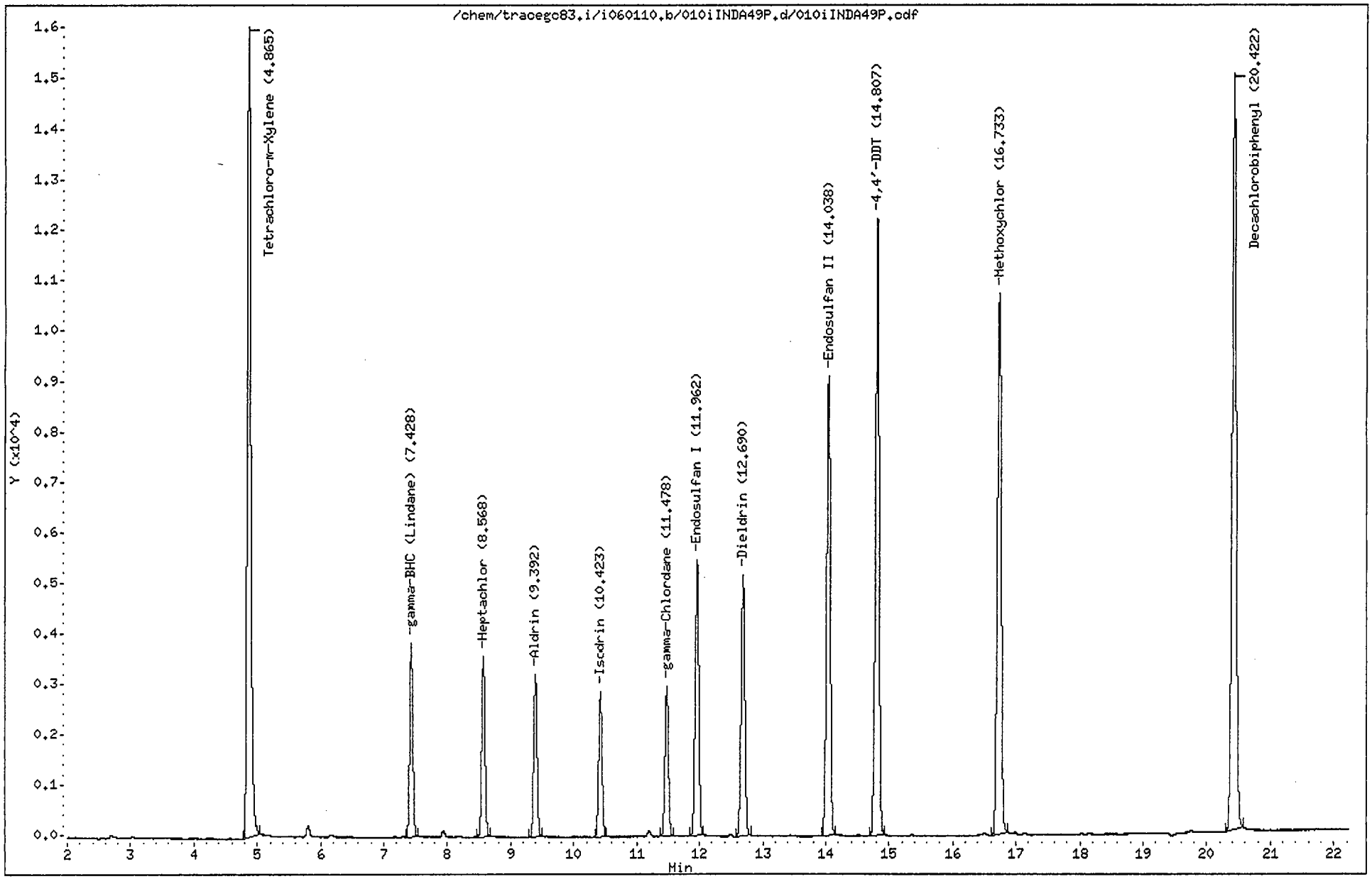
Sample Info: INDA49P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : INDA49P Client Smp Id : INDA49P
Sample Type : INITIAL CAL: Level 4 Sublist : INDA
Inj Date : 10-JAN-2006 18:50 Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.94			7267179					
4.86	4.79	4.93	61548	403926	Tetrachloro-m-Xylene	0.160000	384669	
7.43	7.36	7.50	13054	689670	gamma-BHC (Lindane)	0.020000	652650	
8.57	8.50	8.64	13493	732145	Heptachlor	0.020000	674600	
9.39	9.32	9.46	12261	661560	Aldrin	0.020000	613050	
10.42	10.35	10.49	10918	589030	Isodrin	0.020000	545850	
11.48	11.41	11.55	11581	627645	gamma-Chlordane	0.020000	579050	
11.96	11.89	12.03	21281	581450	Endosulfan I	0.040000	532000	
12.69	12.62	12.76	20681	563772	Dieldrin	0.040000	517000	
14.04	13.97	14.11	35521	481879	Endosulfan II	0.080000	444000	
14.81	14.73	14.87	47333	414793	4,4'-DDT	0.120000	394433	
16.73	16.66	16.80	43923	241339	Methoxychlor	0.200000	219610	
20.42	20.35	20.49	67158	459870	Decachlorobiphenyl	0.160000	419738	

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Data File: /chem/tracegc83.i/i060110.b/011iINDB49P.d

Date : 10-JAN-2006 19:15

Client ID: INDB49P

Instrument: tracegc83.i

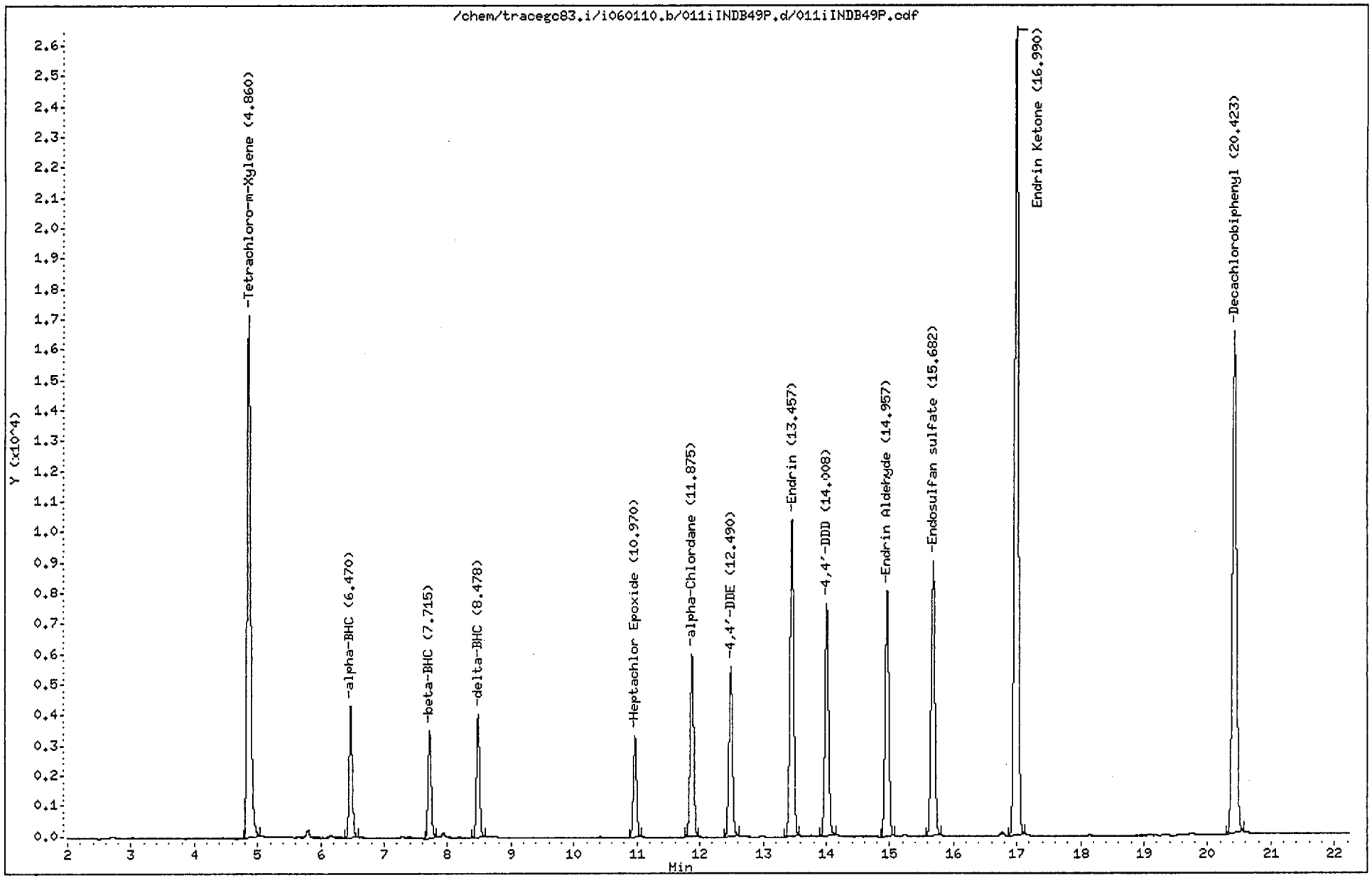
Sample Info: INDB49P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : INDB49P Client Smp Id : INDB49P
Sample Type : INITIAL CAL: Level 4 Sublist : INDB
Inj Date : 10-JAN-2006 19:15 Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.93			6262266					
4.86	4.79	4.93	64931	403926	Tetrachloro-m-Xylene	0.160000	384669	
6.47	6.40	6.54	14905	762580	alpha-BHC	0.020000	745200	
7.72	7.64	7.78	12199	311082	beta-BHC	0.040000	304975	
8.48	8.41	8.55	13642	687745	delta-BHC	0.020000	682050	
10.97	10.90	11.04	12666	660355	Heptachlor Epoxide	0.020000	633250	
11.88	11.81	11.95	23351	602048	alpha-Chlordane	0.040000	583750	
12.49	12.42	12.56	21994	558335	4,4'-DDE	0.040000	549825	
13.46	13.38	13.52	40417	515266	Endrin	0.080000	505200	
14.01	13.94	14.08	29420	367186	4,4'-DDD	0.080000	367750	
14.96	14.89	15.03	31942	394594	Endrin Aldehyde	0.080000	399262	
15.68	15.61	15.75	36361	464389	Endosulfan sulfate	0.080000	454512	
16.99	16.92	17.06	103201	497694	Endrin Ketone	0.200000	516000	
20.42	20.35	20.49	74183	459870	Decachlorobiphenyl	0.160000	419738	

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Data File: /chem/tracegc83.i/i060110.b/012iINDA59P.d

Date : 10-JAN-2006 19:41

Client ID: INDA59P

Instrument: tracegc83.i

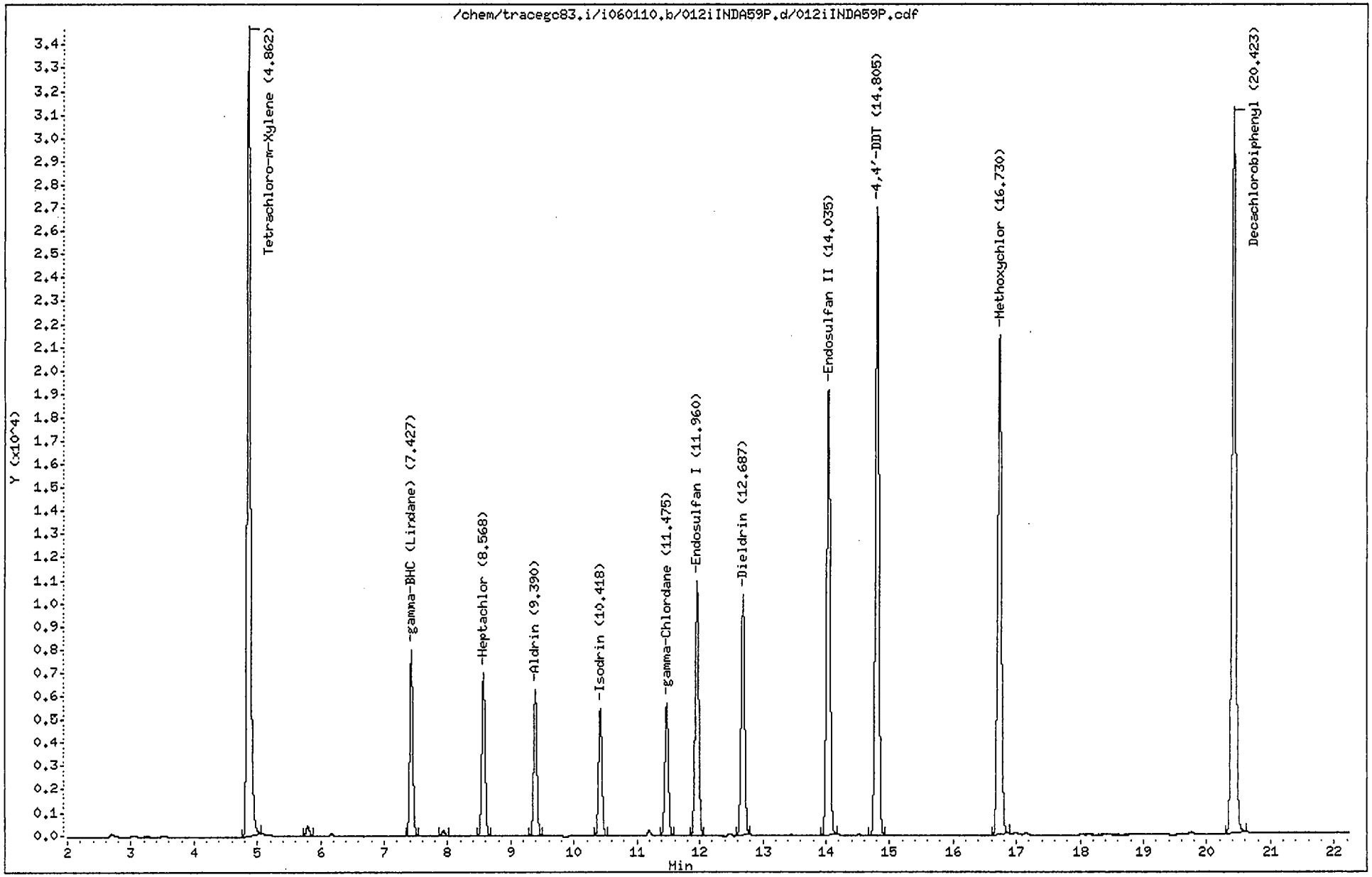
Sample Info: INDA59P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: olpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : INDA59P
Client Smp Id : INDA59P
Sample Type : INITIAL CAL: Level 5
Sublist : INDA
Inj Date : 10-JAN-2006 19:41
Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.88			2549					
4.86	4.79	4.93	130069	403926	Tetrachloro-m-Xylene	0.320000	406462	
5.80			1635					
7.43	7.36	7.50	26565	689670	gamma-BHC (Lindane)	0.040000	664100	
7.93			928					
8.57	8.50	8.64	26078	732145	Heptachlor	0.040000	651925	
9.39	9.32	9.46	23727	661560	Aldrin	0.040000	593150	
10.42	10.35	10.49	20864	589030	Isodrin	0.040000	521600	
11.48	11.41	11.55	21995	627645	gamma-Chlordane	0.040000	549875	
11.96	11.89	12.03	41768	581450	Endosulfan I	0.080000	522100	
12.69	12.62	12.76	40506	563772	Dieldrin	0.080000	506312	
14.04	13.97	14.11	72912	481879	Endosulfan II	0.160000	455694	
14.80	14.73	14.87	100265	414793	4,4'-DDT	0.240000	417767	
16.73	16.66	16.80	86574	241339	Methoxychlor	0.400000	216435	
20.42	20.35	20.49	137109	459870	Decachlorobiphenyl	0.320000	428462	

1/10/06

Data File: /chem/tracegc83.i/i060110.b/013iINDB59P.d

Date : 10-JAN-2006 20:07

Client ID: INDB59P

Instrument: tracegc83.i

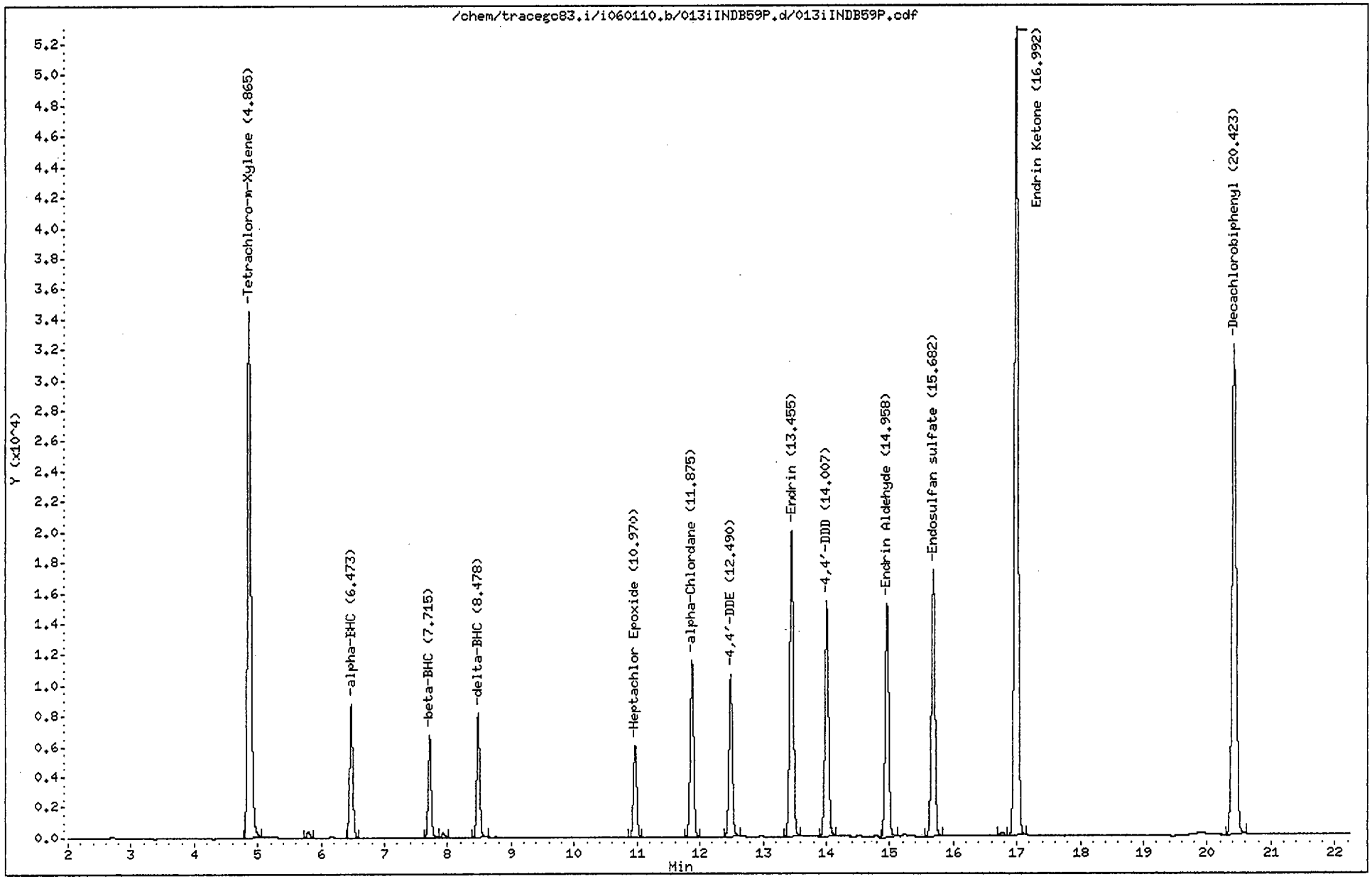
Sample Info: INDB59P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : INDB59P
Client Smp Id : INDB59P
Sample Type : INITIAL CAL: Level 5
Sublist : INDB
Inj Date : 10-JAN-2006 20:07
Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.89			3620					
0.92			12271					
4.86	4.79	4.93	129576	403926	Tetrachloro-m-Xylene	0.320000	406462	
5.80			1603					
6.47	6.40	6.54	29377	762580	alpha-BHC	0.040000	734400	
7.72	7.64	7.78	23312	311082	beta-BHC	0.080000	291388	
7.93			1095					
8.48	8.41	8.55	26967	687745	delta-BHC	0.040000	674175	
10.97	10.90	11.04	23113	660355	Heptachlor Epoxide	0.040000	577825	
11.88	11.81	11.95	43956	602048	alpha-Chlordane	0.080000	549438	
12.49	12.42	12.56	40956	558335	4,4'-DDE	0.080000	511950	
13.46	13.38	13.52	76702	515266	Endrin	0.160000	479381	
14.01	13.94	14.08	57178	367186	4,4'-DDD	0.160000	357356	
14.96	14.89	15.03	59309	394594	Endrin Aldehyde	0.160000	370681	
15.68	15.61	15.75	68334	464389	Endosulfan sulfate	0.160000	427081	
16.77			942					
16.99	16.92	17.06	202489	497694	Endrin Ketone	0.400000	506222	
20.42	20.35	20.49	141627	459870	Decachlorobiphenyl	0.320000	428462	

1/10/06

Data File: /chem/tracegc83.i/i060110.b/014iCLPAMP.d

Page 1

Date : 10-JAN-2006 20:32

Client ID: CLPAMP

Instrument: tracegc83.i

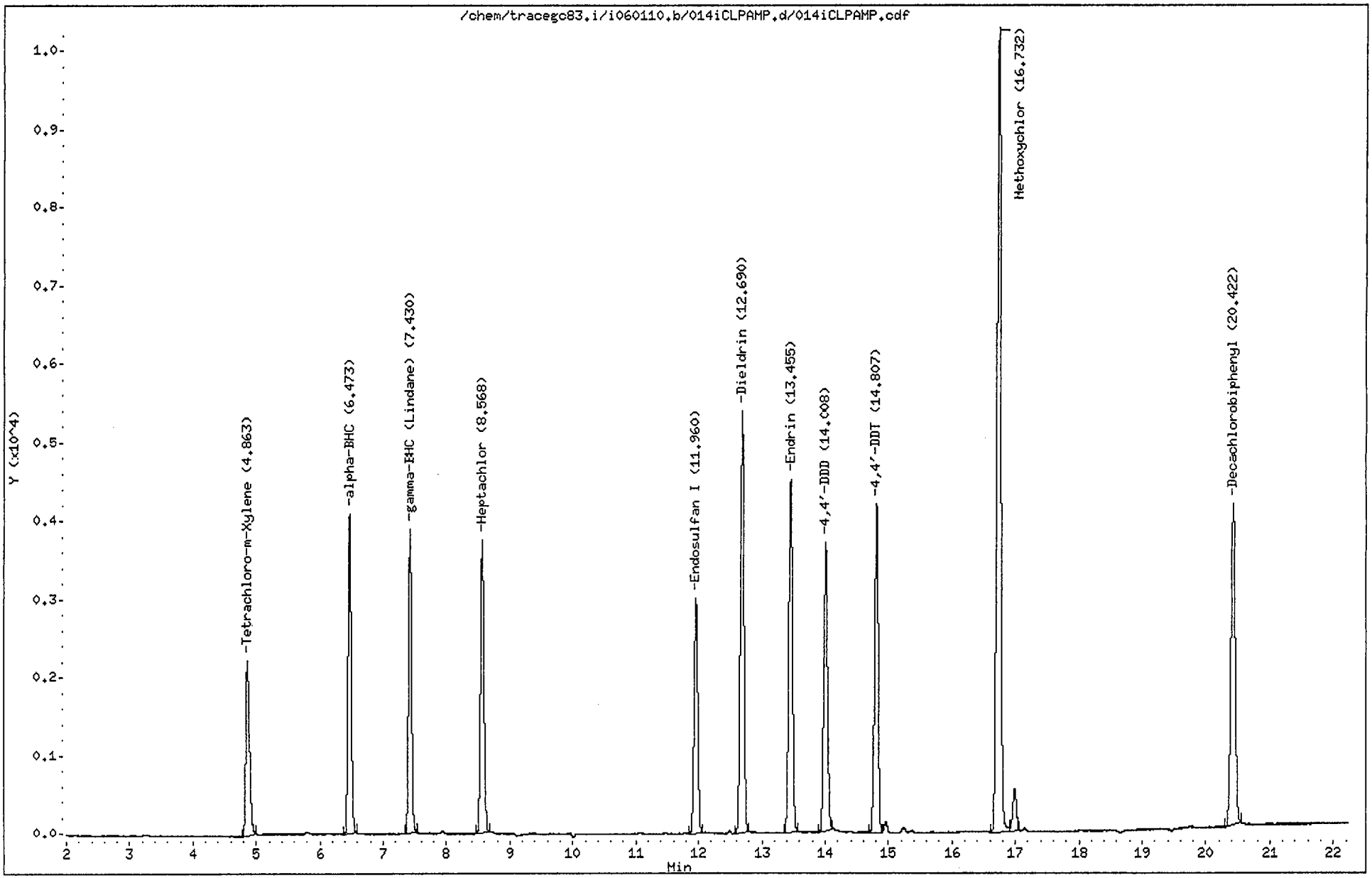
Sample Info: CLPAMP

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : CLPAMP
Client Smp Id : CLPAMP
Sample Type : QCCHECK
Sublist : MDLA
Inj Date : 10-JAN-2006 20:32
Inst ID : TRACEGC83
Operator : 2512
Spike Sublist : INDAchek
Method : /chem/tracegc83.i/i060110.b/8081A_clpest2v4.m
Misc. Info : None

RT	AREA
0.89	3795
0.92	6688
4.86	8838
6.47	14087
7.43	13261
8.57	13993
11.96	11736
12.69	21012
13.46	18004
14.01	14508
14.81	16587
16.73	43392
16.99	2121
20.42	19185

1/10/06

CompuChem

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: CLPAMP
Level: LOW
Data Type: GC MULTI COMP
SpikeList File: INDAchek.spk
Sublist File: MDLA.sub
Method File: /chem/tracegc83.i/i060110.b/8081A_clpest2v4.m
Misc Info: None

Client SDG: i060110
Fraction: PEST
Client Smp ID: CLPAMP
Operator: 2512
SampleType: QCCHECK
Quant Type: ESTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
2 alpha-BHC	0.020	0.018	92.36	80-120
3 gamma-BHC (Lindane	0.020	0.019	96.14	80-120
4 Heptachlor	0.020	0.019	95.56	80-120
13 Endosulfan I	0.020	0.020	100.92	80-120
15 Dieldrin	0.040	0.037	93.18	80-120
16 Endrin	0.040	0.035	87.35	80-120
17 4,4'-DDD	0.040	0.040	98.77	80-120
19 4,4'-DDT	0.040	0.040	99.97	80-120
22 Methoxychlor	0.20	0.18	89.90	80-120

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tetrachloro-m-Xyle	0.020	0.022	109.40	43-135
$ 33 Decachlorobiphenyl	0.020	~~0.042~~ 0.021	~~208.59*~~ 104.295	43-144

RP 1/10/06

Data File: /chem/tracegc83.i/i060110.b/015iCLPBM9P.d

Date : 10-JAN-2006 20:58

Client ID: CLPBM9P

Instrument: tracegc83.i

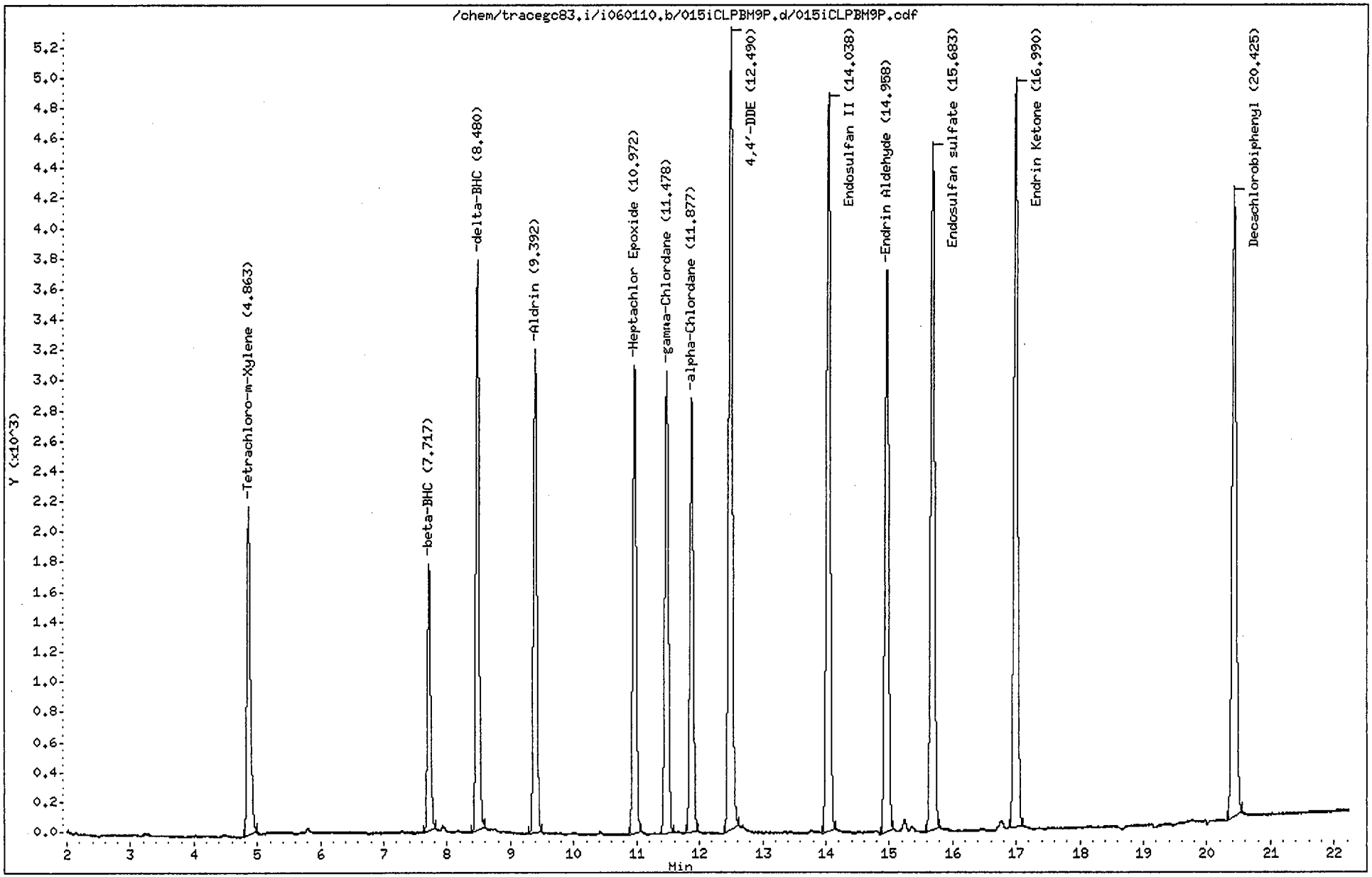
Sample Info: CLPBM9P

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : CLPBM9P
Client Smp Id : CLPBM9P
Sample Type : QCCHECK
Sublist : MDLB
Inj Date : 10-JAN-2006 20:58
Inst ID : TRACEGC83
Operator : 2512
Spike Sublist : INDBchek
Method : /chem/tracegc83.i/i060110.b/8081A_clpest2v4.m
Misc. Info : None

RT	AREA
0.89	2559
4.86	8515
7.72	6070
8.48	12893
9.39	12162
10.97	11857
11.48	12064
11.88	11317
12.49	20944
14.04	19514
14.96	14860
15.68	18850
16.99	20017
20.43	19307

1/10/06

CompuChem

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: CLPBM9P
Level: LOW
Data Type: GC MULTI COMP
SpikeList File: INDBchek.spk
Sublist File: MDLB.sub
Client SDG: i060110
Fraction: PEST
Client Smp ID: CLPBM9P
Operator: 2512
SampleType: QCCHECK
Quant Type: ESTD
Method File: /chem/tracegc83.i/i060110.b/8081A_clpest2v4.m
Misc Info: None

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
7 beta-BHC	0.020	0.020	97.56	80-120
8 delta-BHC	0.020	0.019	93.73	80-120
5 Aldrin	0.020	0.018	91.92	80-120
9 Heptachlor Epoxide	0.020	0.018	89.77	80-120
10 gamma-Chlordane	0.020	0.019	96.11	80-120
11 alpha-Chlordane	0.020	0.019	93.99	80-120
14 4,4'-DDE	0.040	0.038	93.78	80-120
18 Endosulfan II	0.040	0.040	101.24	80-120
20 Endrin Aldehyde	0.040	0.038	94.15	80-120
21 Endosulfan sulfate	0.040	0.041	101.48	80-120
23 Endrin Ketone	0.040	0.040	100.55	80-120

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 Tetrachloro-m-Xyle	0.020	0.021	105.41	43-135
$ 33 Decachlorobiphenyl	0.020	~~0.042~~ 0.021	~~209.91*~~ 104.95	43-144

DL 1/10/06

Data File: /chem/tracegc82.i/i060110e.b/072iTOXAPH49P.d

Date : 11-JAN-2006 22:48

Client ID: TOXAPH49P

Instrument: tracegc82.i

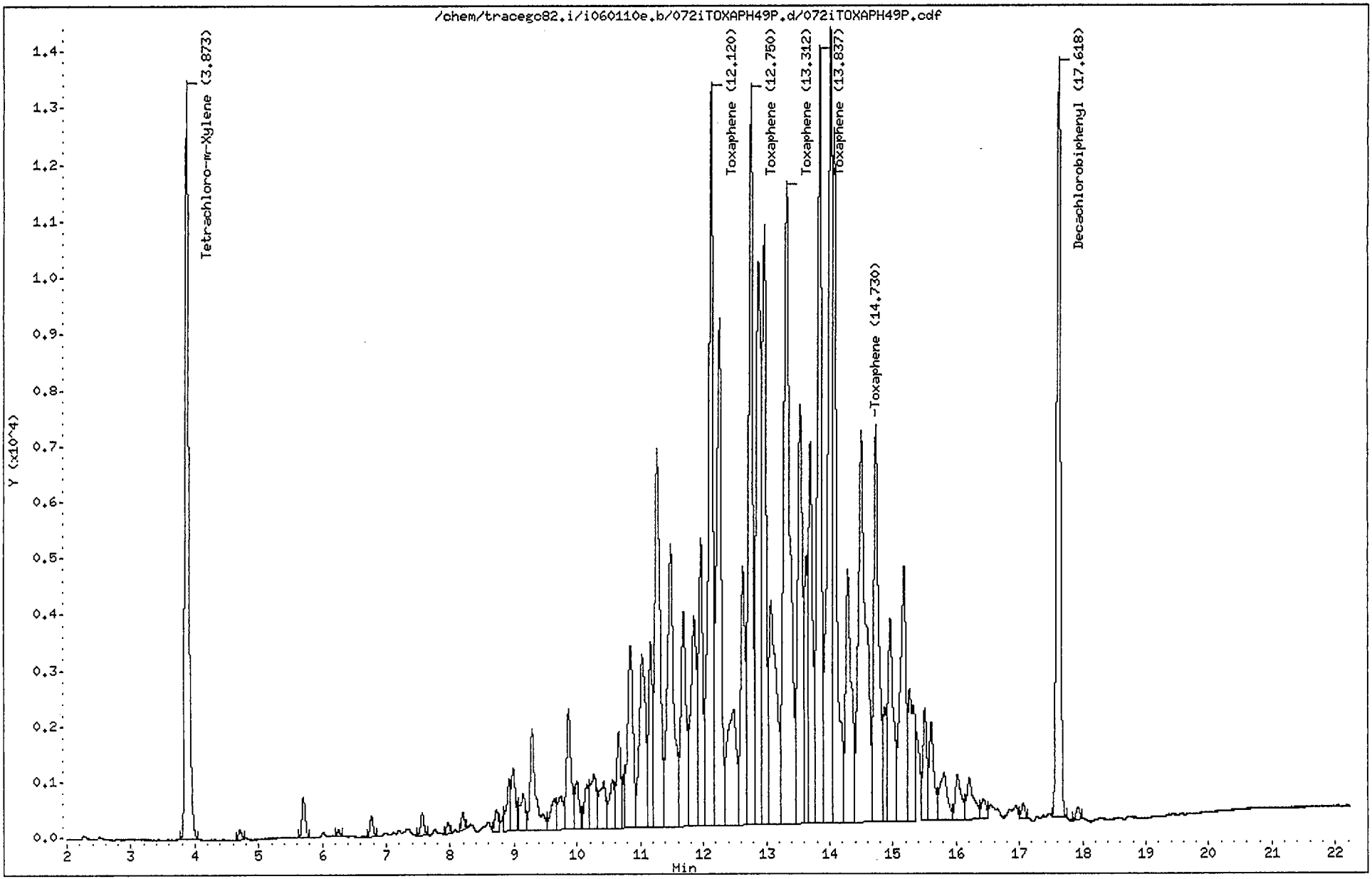
Sample Info: TOXAPH49P

Volume Injected (uL): 1.0

Operator: 2564

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : TOXAPH49P Client Smp Id : TOXAPH49P
Sample Type : INITIAL CAL: Level 4 Sublist : TOXAPH
Inj Date : 11-JAN-2006 22:48 Inst ID : TRACEGC82
Operator : 2564
Method : /chem/tracegc82.i/i060110e.b/8081A_clpestv4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.15			401					
0.91			7198					
3.87	3.78	3.92	53166	306784	Tetrachloro-m-Xylene	0.160000	289281	
4.71			564					
5.70			2637					
6.26			368					
6.77			1310					
7.56			1484					
7.96			707					
8.19			1090					
8.72			1575					
8.92			4106					
8.99			4801					
9.14			3655					
9.29			11076					
9.63			3569					
9.74			3477					
9.87			11270					
9.99			4175					
10.15			3633					
10.27			6869					
10.36			5958					
10.56			4831					
10.65			8021					
10.75			2694					
10.85			19801					
11.03			22146					
11.16			14216					
11.27			40738					
11.48			37476					
11.68			22150					
11.85			24966					
11.96			23499					
12.12	12.05	12.19	64255	16064	Toxaphene Peak 1	4.000000	16064	
12.25			47816					
12.47			21625					
12.63			23411					
12.75	12.68	12.82	57051	14263	Toxaphene Peak 2	4.000000	14263	
12.87			54955					
12.96			49035					
13.07			32756					
13.31	13.24	13.38	80565	20141	Toxaphene Peak 3	4.000000	20141	

1/12/06

CompuChem

Lab Smp Id : TOXAPH49P Client Smp Id : TOXAPH49P
Sample Type : INITIAL CAL: Level 4 Sublist : TOXAPH
Inj Date : 11-JAN-2006 22:48 Inst ID :
Operator : 2564
Method : /chem/tracegc82.i/i060110e.b/8081A_clpestv4.m
Misc. Info : None

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
13.53		39728					
13.63		16478					
13.69		33625					
13.84	13.77 13.91	64142	16036	Toxaphene Peak 4	4.000000	16036	
14.01		70278					
14.07		54491					
14.29		28762					
14.50		59960					
14.73	14.66 14.80	40594	10148	Toxaphene Peak 5	4.000000	10148	
14.87		7565					
14.96		22603					
15.18		28807					
15.27		16439					
15.51		9254					
15.61		9342					
15.81		7348					
16.02		5279					
16.21		6021					
16.43		1906					
17.05		982					
17.62	17.52 17.66	55632	362764	Decachlorobiphenyl	0.160000	325544	
17.92		786					

Data File: /chem/tracegc82.i/i060110e.b/073iCHLOR049P.d

Page 1

Date : 11-JAN-2006 23:13

Client ID: CHLOR049P

Instrument: tracegc82.i

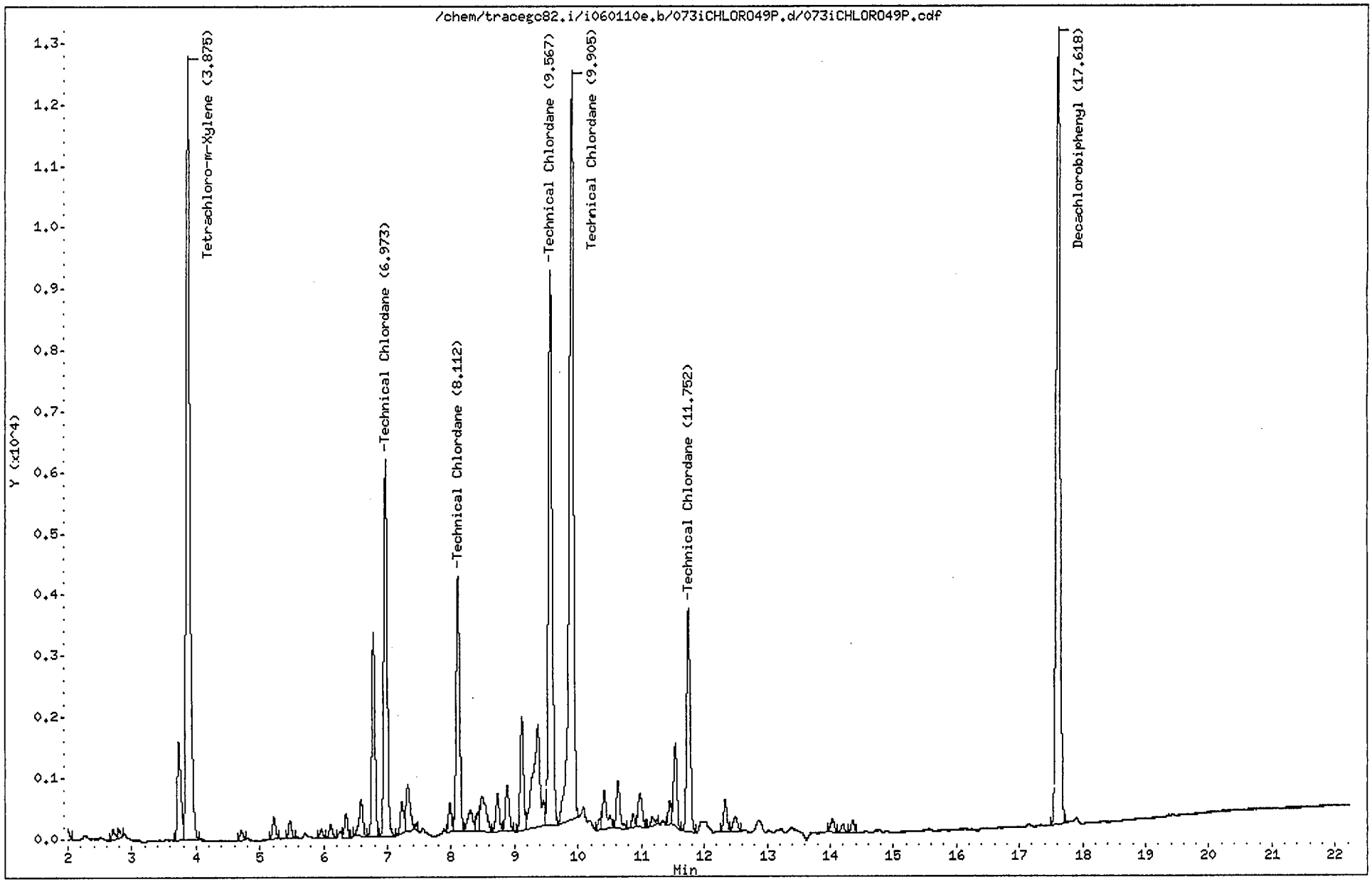
Sample Info: CHLOR049P

Volume Injected (uL): 1.0

Operator: 2564

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : CHLORO49P Client Smp Id : CHLORO49P
Sample Type : INITIAL CAL: Level 4 Sublist : TechChlor
Inj Date : 11-JAN-2006 23:13 Inst ID : TRACEGC82
Operator : 2564
Method : /chem/tracegc82.i/i060110e.b/8081A_clpestv4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.91			10145					
1.07			1999					
1.92			3488					
2.70			586					
2.80			356					
3.73			6301					
3.88	3.78	3.92	50709	306784	Tetrachloro-m-Xylene	0.160000	289281	
4.70			548					
5.22			1349					
5.47			992					
5.96			480					
6.11			802					
6.35			1395					
6.58			2499					
6.78			11938					
6.97	6.90	7.04	22592	28239	TechnicalChlordane Peak 1	0.800000	28239	
7.22			1833					
7.32			3806					
7.98			1559					
8.11	8.04	8.18	16031	20039	TechnicalChlordane Peak 2	0.800000	20039	
8.31			2012					
8.41			955					
8.49			3834					
8.73			2309					
8.88			3025					
9.11			6787					
9.37			13294					
9.57	9.50	9.64	36138	45171	TechnicalChlordane Peak 3	0.800000	45171	
9.90	9.83	9.97	55841	69800	TechnicalChlordane Peak 4	0.800000	69800	
10.34			598					
10.41			3117					
10.63			3172					
10.87			654					
10.98			2532					
11.17			728					
11.45			1180					
11.54			4978					
11.75	11.68	11.82	14183	17729	TechnicalChlordane Peak 5	0.800000	17729	
12.33			2007					
12.49			1177					
14.03			832					
14.20			534					

c 1/12/06

CompuChem

Lab Smp Id : CHLORO49P
Client Smp Id : CHLORO49P
Sample Type : INITIAL CAL: Level 4
Sublist : TechChlor
Inj Date : 11-JAN-2006 23:13
Inst ID :
Operator : 2564
Method : /chem/tracegc82.i/i060110e.b/8081A_clpestv4.m
Misc. Info : None

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
14.36		709					
17.62	17.52 17.66	53168	362764	Decachlorobiphenyl	0.160000	325544	

Data File: /chem/tracegc83.i/i060110e.b/072iTOXAPH49P.d

Page 1

Date : 11-JAN-2006 22:48

Client ID: TOXAPH49P

Instrument: tracegc83.i

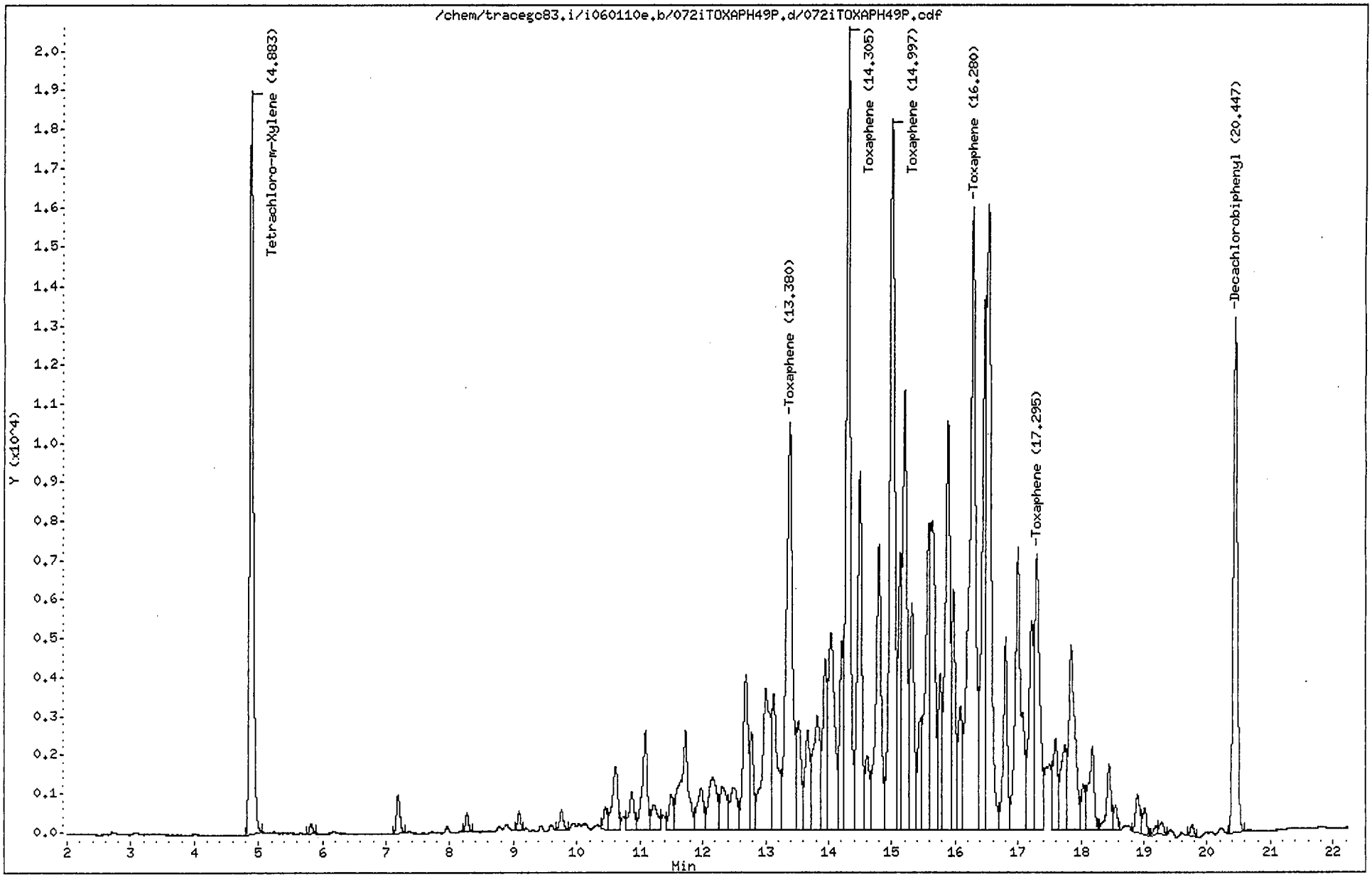
Sample Info: TOXAPH49P

Volume Injected (uL): 1.0

Operator: 2564

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : TOXAPH49P Client Smp Id : TOXAPH49P
Sample Type : INITIAL CAL: Level 4 Sublist : TOXAPH
Inj Date : 11-JAN-2006 22:48 Inst ID : TRACEGC83
Operator : 2564
Method : /chem/tracegc83.i/i060110e.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.90		3790					
0.93		8233					
4.88	4.79 4.93	70515	403926	Tetrachloro-m-Xylene	0.160000	384669	
5.82		925					
7.19		3821					
8.27		1620					
9.09		1618					
9.76		2195					
10.45		2518					
10.61		10088					
10.87		5634					
11.09		13363					
11.23		4696					
11.50		4576					
11.72		22352					
11.98		7746					
12.16		12518					
12.31		8599					
12.51		8734					
12.69		22438					
12.78		10849					
13.00		32834					
13.13		22382					
13.38	13.31 13.45	72116	18029	Toxaphene Peak 1	4.000000	18029	
13.52		15070					
13.66		14157					
13.82		23763					
13.95		20605					
14.04		35651					
14.21		19972					
14.30	14.23 14.37	92957	23239	Toxaphene Peak 2	4.000000	23239	
14.49		46684					
14.61		9763					
14.79		44697					
15.00	14.93 15.07	101416	25354	Toxaphene Peak 3	4.000000	25354	
15.13		26029					
15.20		55347					
15.32		29567					
15.44		12012					
15.58		41495					
15.63		42055					
15.76		16900					

CompuChem

Lab Smp Id : TOXAPH49P Client Smp Id : TOXAPH49P
Sample Type : INITIAL CAL: Level 4 Sublist : TOXAPH
Inj Date : 11-JAN-2006 22:48 Inst ID :
Operator : 2564
Method : /chem/tracegc83.i/i060110e.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
15.88		55129					
15.97		25882					
16.08		16069					
16.28	16.21 16.35	109108	27277	Toxaphene Peak 4	4.000000	27277	
16.47		60413					
16.53		82644					
16.80		23201					
17.00		49745					
17.21		27825					
17.30	17.23 17.37	41856	10464	Toxaphene Peak 5	4.000000	10464	
17.59		13010					
17.74		14462					
17.84		33101					
18.03		5088					
18.18		13796					
18.45		8804					
18.55		2677					
18.90		4888					
19.01		3006					
19.18		973					
19.28		1631					
19.76		1327					
20.45	20.35 20.49	58547	459870	Decachlorobiphenyl	0.160000	419738	

Data File: /chem/tracegc83.i/i060110e.b/073iCHLOR049P.d

Date : 11-JAN-2006 23:13

Client ID: CHLOR049P

Sample Info: CHLOR049P

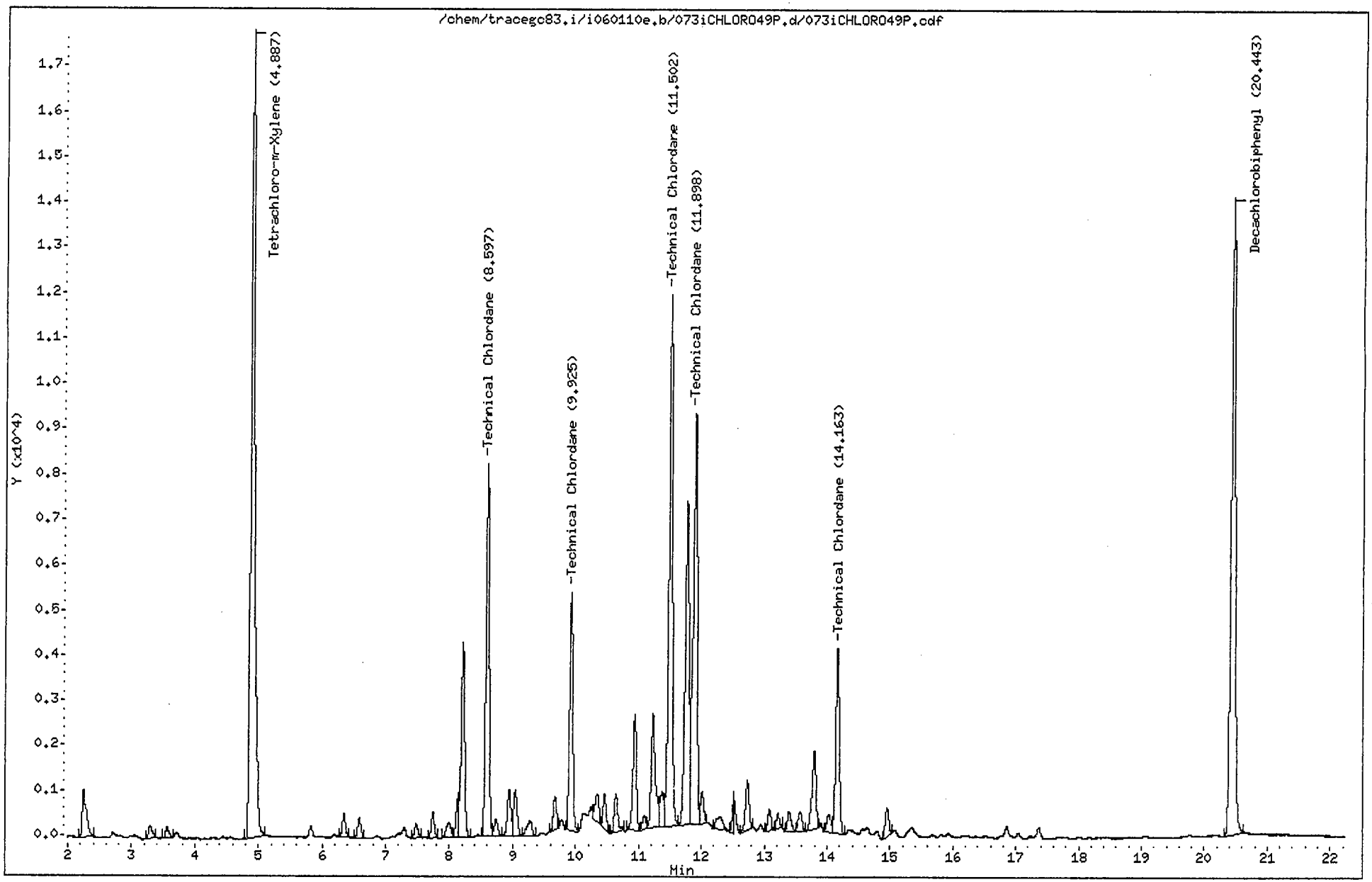
Volume Injected (uL): 1.0

Column phase: clpest2

Instrument: tracegc83.i

Operator: 2564

Column diameter: 0.53



CompuChem

Lab Smp Id : CHLORO49P Client Smp Id : CHLORO49P
Sample Type : INITIAL CAL: Level 4 Sublist : TechChlor
Inj Date : 11-JAN-2006 23:13 Inst ID : TRACEGC83
Operator : 2564
Method : /chem/tracegc83.i/i060110e.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
0.90			5470					
0.93			11924					
1.06			1955					
1.12			3671					
2.25			4612					
3.29			1110					
3.56			925					
4.89	4.79	4.93	75132	403926	Tetrachloro-m-Xylene	0.160000	384669	
6.34			1726					
6.58			1493					
7.48			1131					
7.74			1933					
7.99			1728					
8.13			2557					
8.21			16345					
8.60	8.53	8.67	30177	37720	TechnicalChlordane Peak 1	0.800000	37720	
8.74			1553					
8.95			4042					
9.04			4231					
9.28			1934					
9.67			2657					
9.92	9.85	9.99	19464	24329	TechnicalChlordane Peak 2	0.800000	24329	
10.34			2551					
10.46			2769					
10.64			3193					
10.94			10033					
11.09			1156					
11.23			11922					
11.38			3347					
11.50	11.43	11.57	46982	58726	TechnicalChlordane Peak 3	0.800000	58726	
11.77			32060					
11.90	11.83	11.97	40665	50830	TechnicalChlordane Peak 4	0.800000	50830	
12.01			2633					
12.30			2225					
12.52			1361					
12.73			4278					
13.08			1746					
13.22			1064					
13.39			1907					
13.57			1839					
13.80			7622					
14.03			1673					

1/12/06

CompuChem

Lab Smp Id : CHLORO49P Client Smp Id : CHLORO49P
Sample Type : INITIAL CAL: Level 4 Sublist : TechChlor
Inj Date : 11-JAN-2006 23:13 Inst ID :
Operator : 2564
Method : /chem/tracegc83.i/i060110e.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
14.16	14.09 14.23	16740	20925	TechnicalChlordane Peak 5	0.800000	20925	
14.95		2431					
20.44	20.35 20.49	62580	459870	Decachlorobiphenyl	0.160000	419738	

Data File: /chem/tracegc82.i/i060110zb.b/340iINDAMBF.d

Date : 24-JAN-2006 19:41

Client ID: INDAMBF

Instrument: tracegc82.i

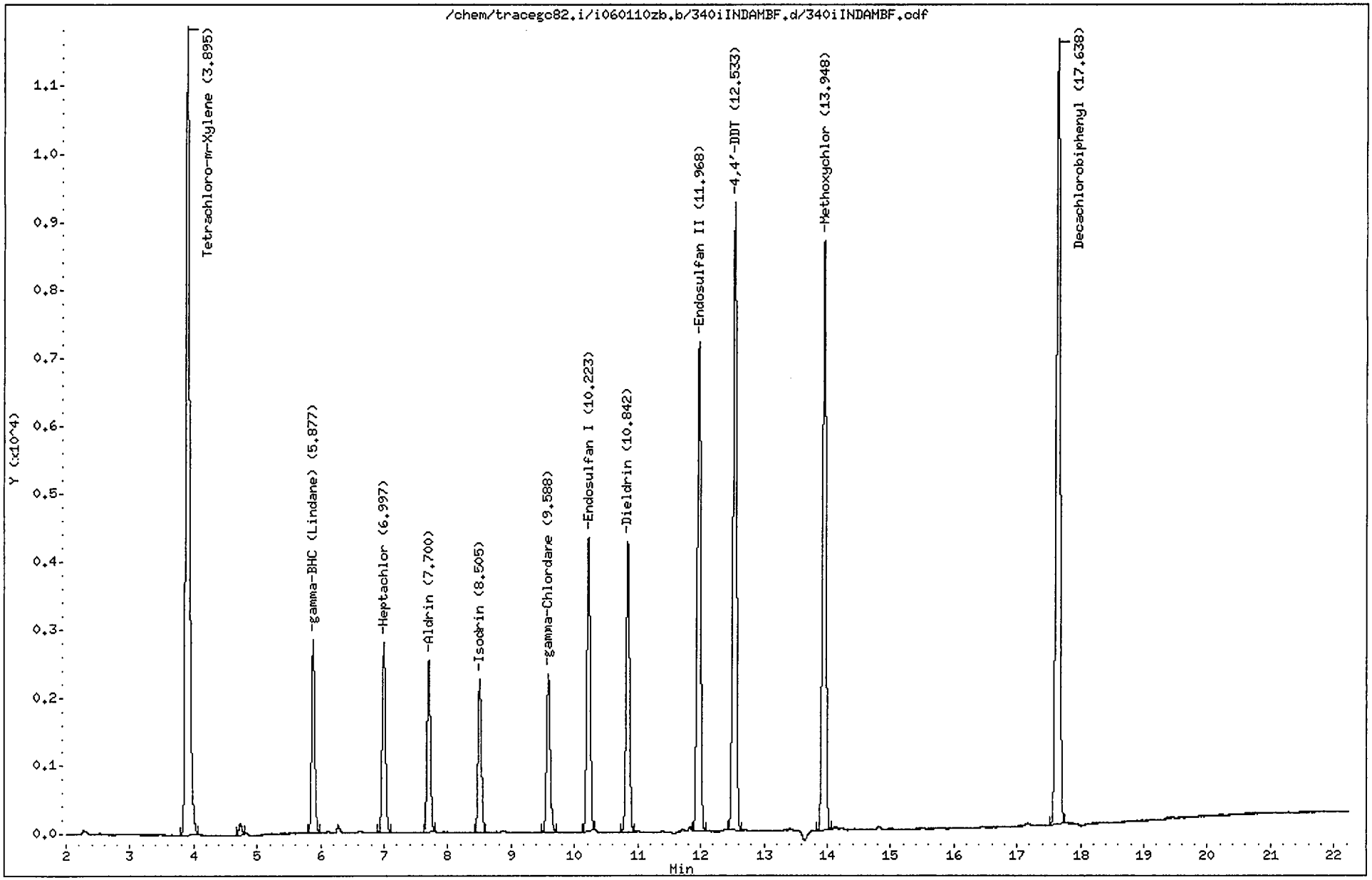
Sample Info: INDAMBF

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : INDAMBF Client Smp Id : INDAMBF
Sample Type : CONT CAL: Level 4 Sublist : INDA
Inj Date : 24-JAN-2006 19:41 Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110zb.b/8081A_clpestv4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CCAL RF	%D	%D LIMIT	FLAGS	
0.95			5726013								
3.90	3.78	3.92	47610	306784	Tetrachloro-m-Xylene	0.160000	297565	3.0	15.0		
4.73			529								
5.88	5.76	5.90	9578	491545	gamma-BHC (Lindane)	0.020000	478910	2.6	15.0		
7.00	6.88	7.02	10082	524870	Heptachlor	0.020000	504085	4.0	15.0		
7.70	7.58	7.72	9059	482395	Aldrin	0.020000	452940	6.1	15.0		
8.50	8.39	8.53	8105	430775	Isodrin	0.020000	405250	5.9	15.0		
9.59	9.47	9.61	8850	465605	gamma-Chlordane	0.020000	442515	5.0	15.0		
10.22	10.10	10.24	15833	428652	Endosulfan I	0.040000	395815	7.7	15.0		
10.84	10.72	10.86	15767	426262	Dieldrin	0.040000	394176	7.5	15.0		
11.97	11.85	11.99	26477	362004	Endosulfan II	0.080000	330964	8.6	15.0		
12.53	12.41	12.55	34213	315540	4,4'-DDT	0.120000	285109	9.6	15.0		
13.95	13.83	13.97	33386	193873	Methoxychlor	0.200000	166928	13.9	15.0		
17.64	17.53	17.67	47421	362764	Decachlorobiphenyl	0.160000	296382	18.3*	15.0	R	

1/24/06
$\bar{x} = 7.7$

Data File: /chem/tracegc82.i/i060110zb.b/341iINDBMBF.d

Page 1

Date : 24-JAN-2006 20:06

Client ID: INDBMBF

Instrument: tracegc82.i

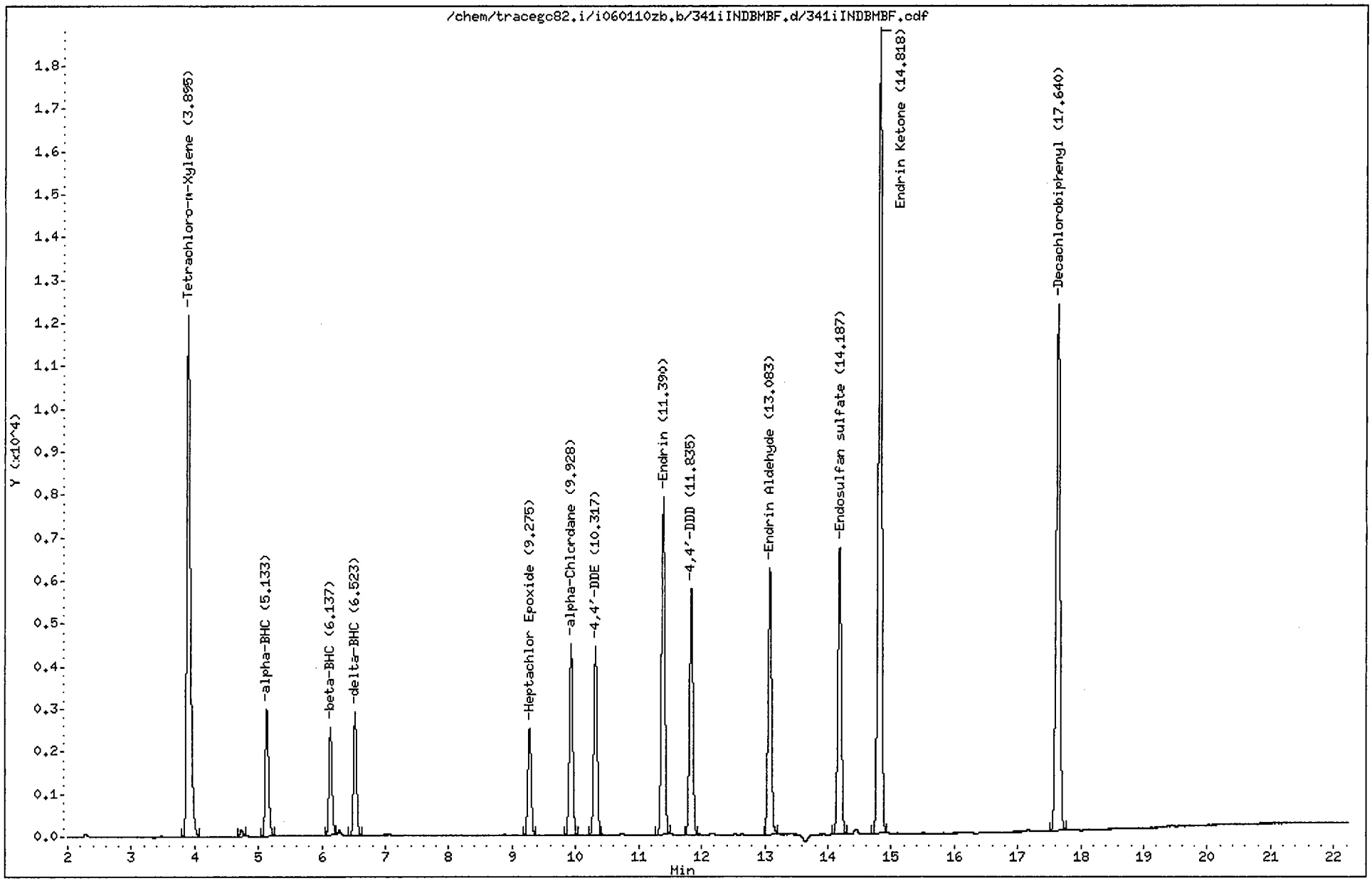
Sample Info: INDBMBF

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : INDBMBF Client Smp Id : INDBMBF
Sample Type : CONT CAL: Level 4 Sublist : INDB
Inj Date : 24-JAN-2006 20:06 Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110zb.b/8081A_clpestv4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CCAL RF	%D	%D LIMIT	FLAGS	
0.17			419								
0.95			4823158								
3.90	3.78	3.92	48444	306784	Tetrachloro-m-Xylene	0.160000	297565	3.0	15.0		
4.73			515								
5.13	5.02	5.16	10485	531660	alpha-BHC	0.020000	524255	1.4	15.0		
6.14	6.02	6.16	8721	232362	beta-BHC	0.040000	218024	6.2	15.0		
6.52	6.41	6.55	9545	495960	delta-BHC	0.020000	477238	3.8	15.0		
9.28	9.16	9.30	9118	489070	Heptachlor Epoxide	0.020000	455905	6.8	15.0		
9.93	9.81	9.95	16430	444438	alpha-Chlordane	0.040000	410740	7.6	15.0		
10.32	10.20	10.34	16150	440000	4,4'-DDE	0.040000	403760	8.2	15.0		
11.39	11.27	11.41	29010	386241	Endrin	0.080000	362619	6.1	15.0		
11.84	11.72	11.86	20846	279150	4,4'-DDD	0.080000	260579	6.7	15.0		
13.08	12.96	13.10	23669	321174	Endrin Aldehyde	0.080000	295861	7.9	15.0		
14.19	14.07	14.21	25753	353870	Endosulfan sulfate	0.080000	321914	9.0	15.0		
14.82	14.70	14.84	69987	374160	Endrin Ketone	0.200000	349934	6.5	15.0		
17.64	17.53	17.67	50443	362764	Decachlorobiphenyl	0.160000	296382	18.3*	15.0	R	

1/24/06
$\bar{X} = 7.0$

Data File: /chem/tracegc83.i/i060110zb.b/340iINDAMBF.d

Date : 24-JAN-2006 19:41

Client ID: INDAMBF

Sample Info: INDAMBF

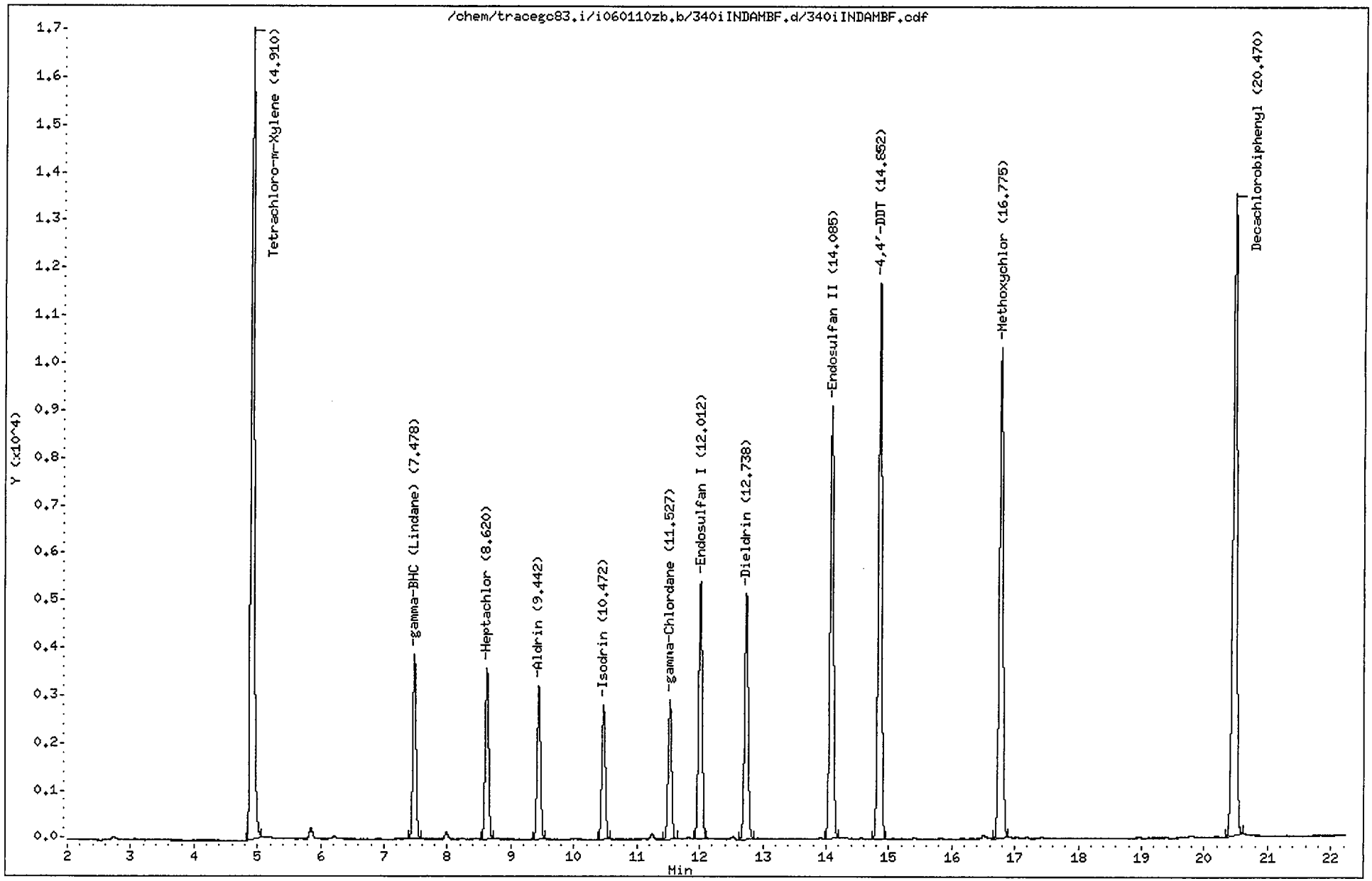
Volume Injected (uL): 1.0

Column phase: clpest2

Instrument: tracegc83.i

Operator: 2512

Column diameter: 0.53



CompuChem

Lab Smp Id : INDAMBF
Client Smp Id : INDAMBF
Sample Type : CONT CAL: Level 4
Sublist : INDA
Inj Date : 24-JAN-2006 19:41
Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110zb.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CCAL RF	%D	%D LIMIT	FLAGS	
0.95			7283949								
4.91	4.79	4.93	63680	403926	Tetrachloro-m-Xylene	0.160000	397997	1.5	15.0		
7.48	7.36	7.50	13046	689670	gamma-BHC (Lindane)	0.020000	652310	5.4	15.0		
8.62	8.50	8.64	13348	732145	Heptachlor	0.020000	667395	8.8	15.0		
9.44	9.32	9.46	12110	661560	Aldrin	0.020000	605510	8.5	15.0		
10.47	10.35	10.49	10718	589030	Isodrin	0.020000	535880	9.0	15.0		
11.53	11.41	11.55	11264	627645	gamma-Chlordane	0.020000	563222	10.3	15.0		
12.01	11.89	12.03	20844	581450	Endosulfan I	0.040000	521097	10.4	15.0		
12.74	12.62	12.76	20125	563772	Dieldrin	0.040000	503129	10.8	15.0		
14.08	13.97	14.11	35022	481879	Endosulfan II	0.080000	437781	9.2	15.0		
14.85	14.73	14.87	43978	414793	4,4'-DDT	0.120000	366487	11.6	15.0		
16.78	16.66	16.80	41242	241339	Methoxychlor	0.200000	206211	14.6	15.0		
20.47	20.35	20.49	59538	459870	Decachlorobiphenyl	0.160000	372111	19.1*	15.0	R	

bf
1/24/06
Y=9.9

Data File: /chem/tracegc83.i/i060110zb.b/341iINDBMBF.d

Date : 24-JAN-2006 20:06

Client ID: INDBMBF

Instrument: tracegc83.i

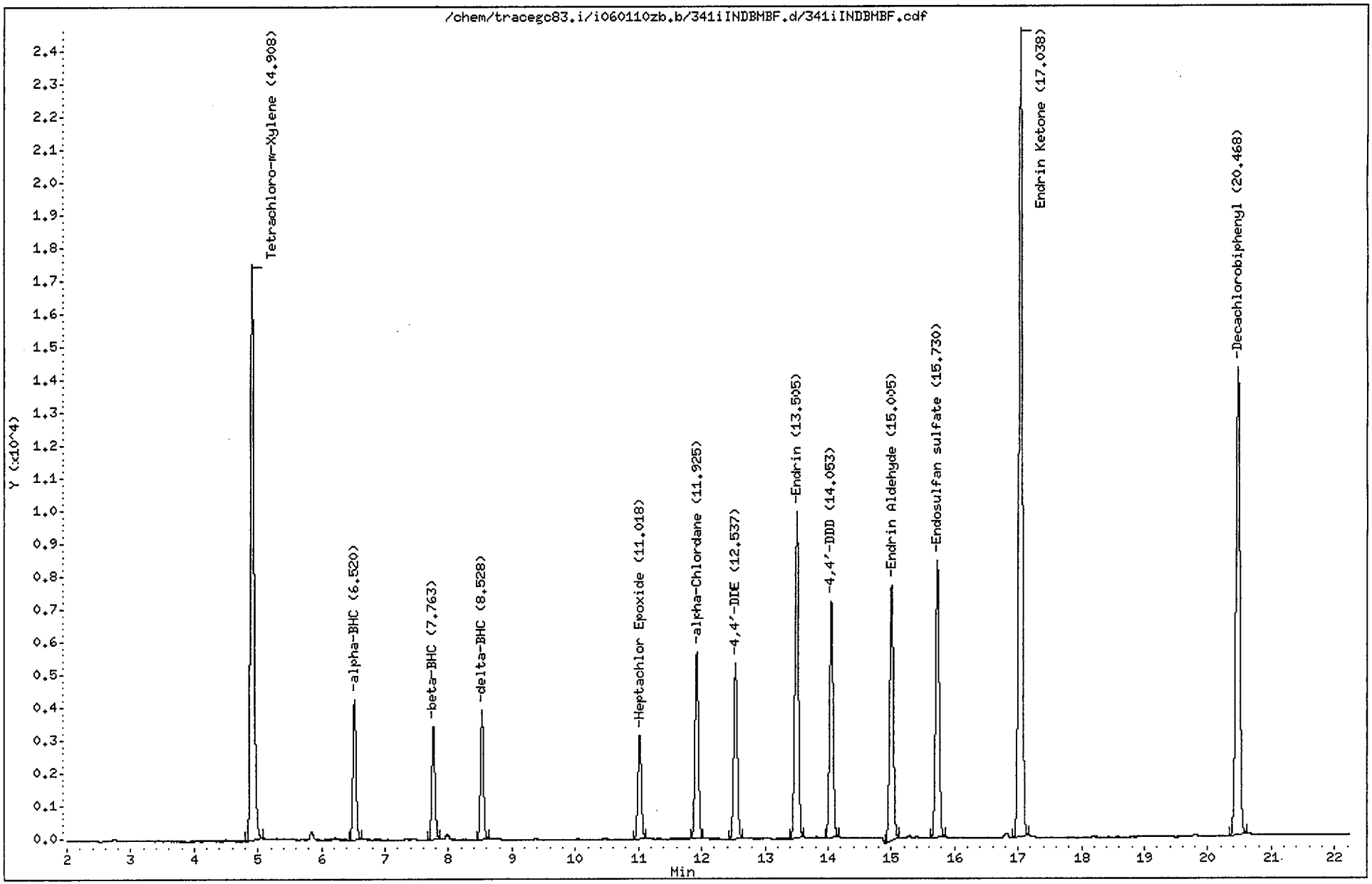
Sample Info: INDBMBF

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : INDBMBF
Client Smp Id : INDBMBF
Sample Type : CONT CAL: Level 4
Sublist : INDB
Inj Date : 24-JAN-2006 20:06
Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110zb.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CCAL RF	%D	%D LIMIT	FLAGS	
0.95			6213864								
4.91	4.79	4.93	64728	403926	Tetrachloro-m-Xylene	0.160000	397997	1.5	15.0		
6.52	6.40	6.54	14467	762580	alpha-BHC	0.020000	723355	5.1	15.0		
7.76	7.65	7.79	11690	311082	beta-BHC	0.040000	292255	6.1	15.0		
8.53	8.41	8.55	12893	687745	delta-BHC	0.020000	644637	6.3	15.0		
11.02	10.90	11.04	11841	660355	Heptachlor Epoxide	0.020000	592060	10.3	15.0		
11.92	11.81	11.95	21590	602048	alpha-Chlordane	0.040000	539743	10.3	15.0		
12.54	12.42	12.56	20467	558335	4,4'-DDE	0.040000	511679	8.4	15.0		
13.50	13.39	13.53	37809	515266	Endrin	0.080000	472613	8.3	15.0		
14.05	13.94	14.08	27134	367186	4,4'-DDD	0.080000	339173	7.6	15.0		
15.00	14.89	15.03	30100	394594	Endrin Aldehyde	0.080000	376253	4.6	15.0		
15.73	15.61	15.75	33245	464389	Endosulfan sulfate	0.080000	415563	10.5	15.0		
17.04	16.92	17.06	93002	497694	Endrin Ketone	0.200000	465011	6.6	15.0		
20.47	20.35	20.49	63576	459870	Decachlorobiphenyl	0.160000	372111	19.1*	15.0	R	

KP 1/24/06
$\bar{X} = 8.1$

Data File: /chem/tracegc82.i/i060110zc.b/351iINDAMBH.d

Date : 25-JAN-2006 00:22

Client ID: INDAMBH

Instrument: tracegc82.i

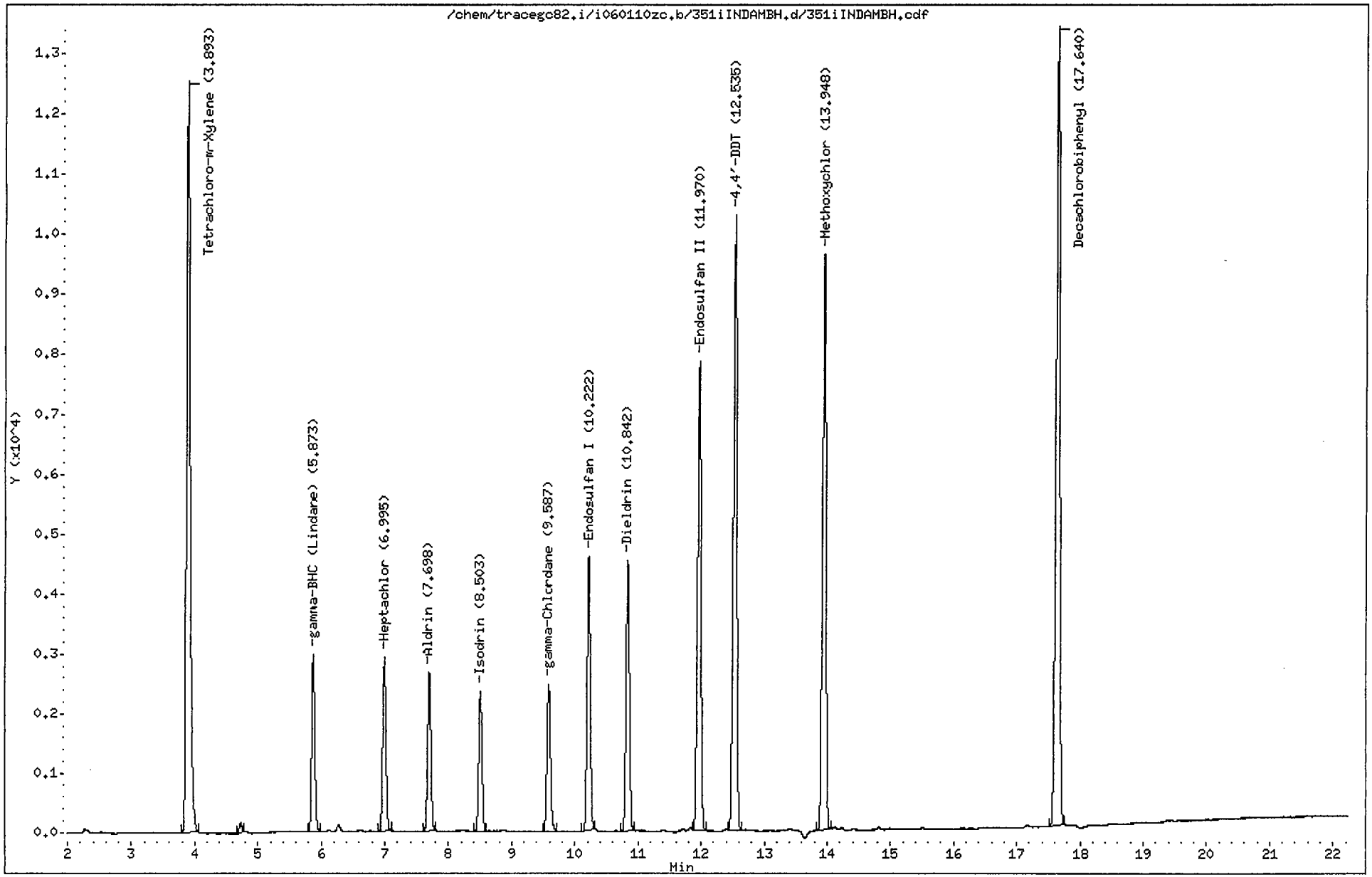
Sample Info: INDAMBH

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : INDAMBH
Client Smp Id : INDAMBH
Sample Type : CONT CAL: Level 4
Sublist : INDA
Inj Date : 25-JAN-2006 00:22
Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110zc.b/8081A_clpestv4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CCAL RF	%D	%D LIMIT	FLAGS	
0.16			374								
0.95			5799451								
3.89	3.78	3.92	49289	306784	Tetrachloro-m-Xylene	0.160000	308056	-0.4	15.0		
4.73			552								
5.87	5.76	5.90	10035	491545	gamma-BHC (Lindane)	0.020000	501765	-2.1	15.0		
7.00	6.88	7.02	10546	524870	Heptachlor	0.020000	527318	-0.5	15.0		
7.70	7.58	7.72	9513	482395	Aldrin	0.020000	475670	1.4	15.0		
8.50	8.39	8.53	8575	430775	Isodrin	0.020000	428728	0.5	15.0		
9.59	9.47	9.61	9441	465605	gamma-Chlordane	0.020000	472042	-1.4	15.0		
10.22	10.10	10.24	16930	428652	Endosulfan I	0.040000	423260	1.3	15.0		
10.84	10.72	10.86	16830	426262	Dieldrin	0.040000	420760	1.3	15.0		
11.97	11.85	11.99	28819	362004	Endosulfan II	0.080000	360234	0.5	15.0		
12.54	12.41	12.55	37798	315540	4,4'-DDT	0.120000	314985	0.2	15.0		
13.95	13.83	13.97	37109	193873	Methoxychlor	0.200000	185547	4.3	15.0		
17.64	17.53	17.67	54345	362764	Decachlorobiphenyl	0.160000	339656	6.4	15.0		

Data File: /chem/tracegc82.i/i060110zc.b/352iINDBMBH.d

Page 1

Date : 25-JAN-2006 00:48

Client ID: INDBMBH

Instrument: tracegc82.i

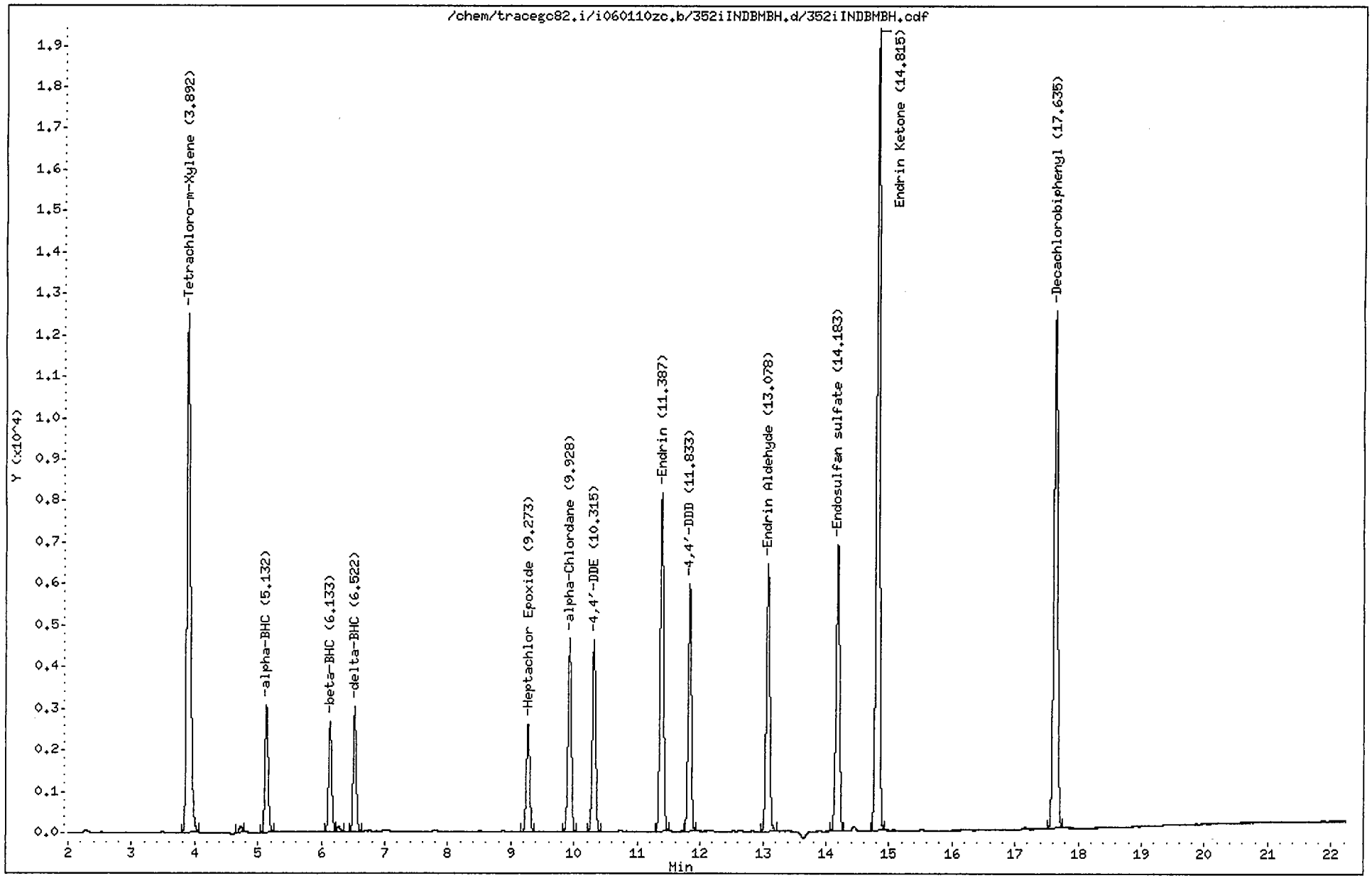
Sample Info: INDBMBH

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : INDBMBH
Client Smp Id : INDBMBH
Sample Type : CONT CAL: Level 4
Sublist : INDB
Inj Date : 25-JAN-2006 00:48
Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110zc.b/8081A_clpestv4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CCAL RF	%D	%D LIMIT	FLAGS	
0.16			465								
0.92			996494								
0.95			3834644								
3.89	3.78	3.92	49532	306784	Tetrachloro-m-Xylene	0.160000	382256	-24.6*	15.0	R	
4.73			545								
5.13	5.02	5.16	10781	531660	alpha-BHC	0.020000	539055	-1.4	15.0		
6.13	6.02	6.16	9138	232362	beta-BHC	0.040000	228441	1.7	15.0		
6.28			425								
6.52	6.41	6.55	9906	495960	delta-BHC	0.020000	495325	0.1	15.0		
9.27	9.16	9.30	9439	489070	Heptachlor Epoxide	0.020000	471970	3.5	15.0		
9.93	9.81	9.95	17027	444438	alpha-Chlordane	0.040000	425687	4.2	15.0		
10.32	10.20	10.34	16727	440000	4,4'-DDE	0.040000	418185	5.0	15.0		
11.39	11.27	11.41	30006	386241	Endrin	0.080000	375069	2.9	15.0		
11.83	11.72	11.86	21519	279150	4,4'-DDD	0.080000	268988	3.6	15.0		
13.08	12.96	13.10	24403	321174	Endrin Aldehyde	0.080000	305040	5.0	15.0		
14.18	14.07	14.21	26422	353870	Endosulfan sulfate	0.080000	330279	6.7	15.0		
14.82	14.70	14.84	71895	374160	Endrin Ketone	0.200000	359473	3.9	15.0		
17.64	17.53	17.67	50781	362764	Decachlorobiphenyl	0.160000	329612	9.1	15.0		

Data File: /chem/tracegc82.i/i060110zc.b/353iPEMBH.d

Date : 25-JAN-2006 01:13

Client ID: PEMBH

Instrument: tracegc82.i

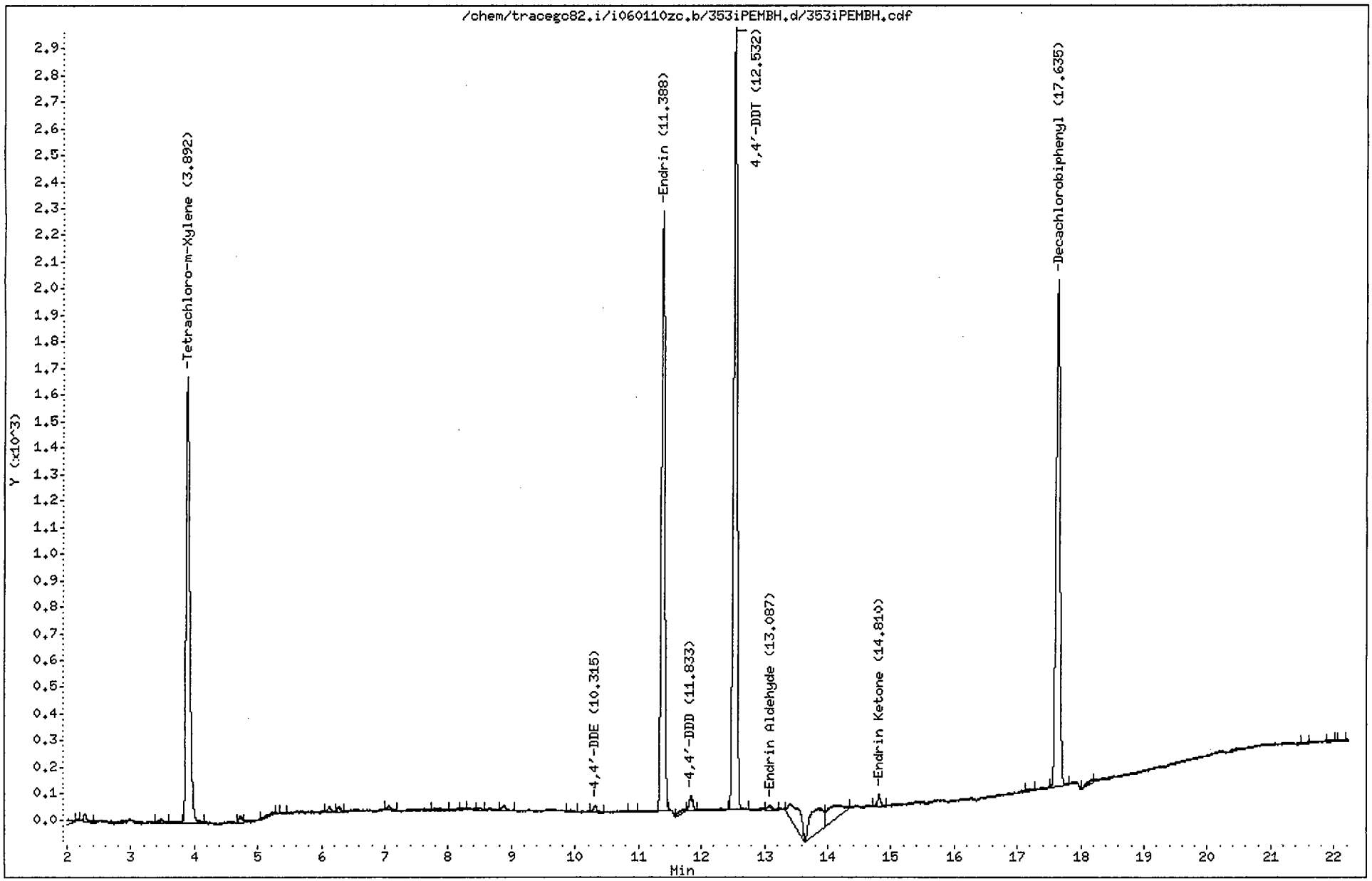
Sample Info: PEMBH

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : PEMBH Client Smp Id : PEMBH
Sample Type : SAMPLE Sublist : PEM
Inj Date : 25-JAN-2006 01:13 Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110zc.b/8081A_clpestv4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
0.16			2107								
0.51			57								
0.76			22								
0.91			23590								
1.46			275								
1.56			20								
1.63			92								
1.97			157								
2.28			114								
3.48			86								
3.89	3.78	3.92	6969	306784	Tetrachloro-m-Xylene	0.022717	0.227166		113.6	43 - 135	
4.73			81								
5.23			82								
5.37			26								
6.12			93								
6.29			86								
7.06			61								
7.79			63								
8.24			36								
8.49			39								
8.88			82								
9.93			38								
10.32	10.20	10.34	110	440000	4,4'-DDE	0.000249	0.002493	0.050000			J
10.85			27								
11.39	11.27	11.41	8359	386241	Endrin	0.021642	0.216424	0.100000			M2
11.71			101								
11.83	11.72	11.86	228	279150	4,4'-DDD	0.000817	0.008173	0.100000			J
12.53	12.41	12.55	11156	315540	4,4'-DDT	0.035355	0.353549	0.150000			
13.09	12.96	13.10	78	321174	Endrin Aldehyde	0.000243	0.002435	0.100000			J
13.41			975								
13.85			1327								
14.18			919								
14.81	14.70	14.84	192	374160	Endrin Ketone	0.000512	0.005125	0.250000			J
17.17			54								
17.64	17.53	17.67	7829	362764	Decachlorobiphenyl	0.021581	0.215813		107.9	43 - 144	
18.16			83								
21.60			35								

$\%DDT = \frac{110 + 228}{110 + 228 + 11158} \times 100 =$

$\frac{338}{11494} \times 100 = 2.9\%$

1/25/06

$\%Endrin = \frac{78 + 192}{78 + 192 + 8359} \times 100 =$

$\frac{270}{8629} \times 100 = 3.1\%$

TAJ 1/25/06

CompuChem

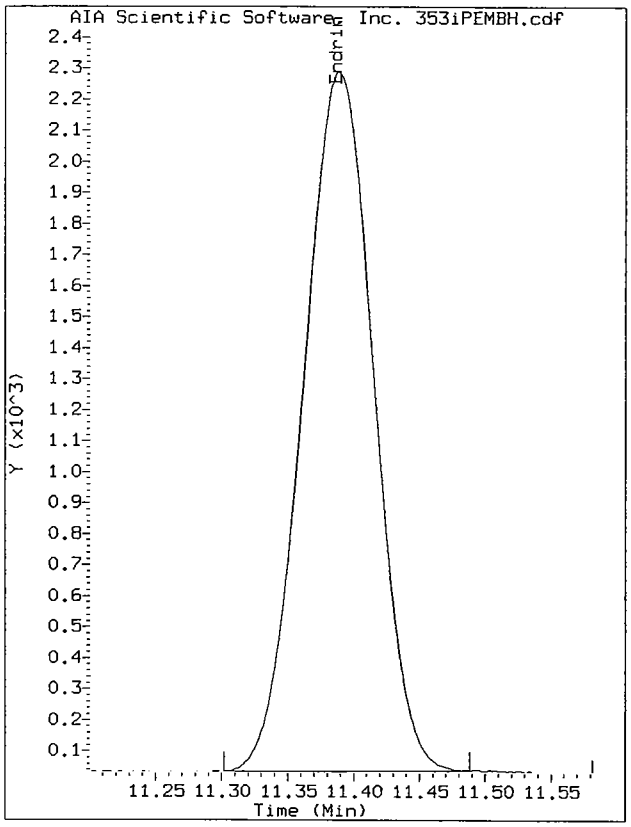
Lab Smp Id : PEMBH Client Smp Id : PEMBH
Sample Type : SAMPLE Sublist : PEM
Inj Date : 25-JAN-2006 01:13 Inst ID :
Operator : 2512
Method : /chem/tracegc82.i/i060110zc.b/8081A_clpestv4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
21.96		34								
22.07		25								

Manually Integrated Peaks



Start: 11.30 Stop: 11.49

Data File: /chem/tracegc83.i/i060110zc.b/351iINDAMBH.d

Page 1

Date : 25-JAN-2006 00:22

Client ID: INDAMBH

Instrument: tracegc83.i

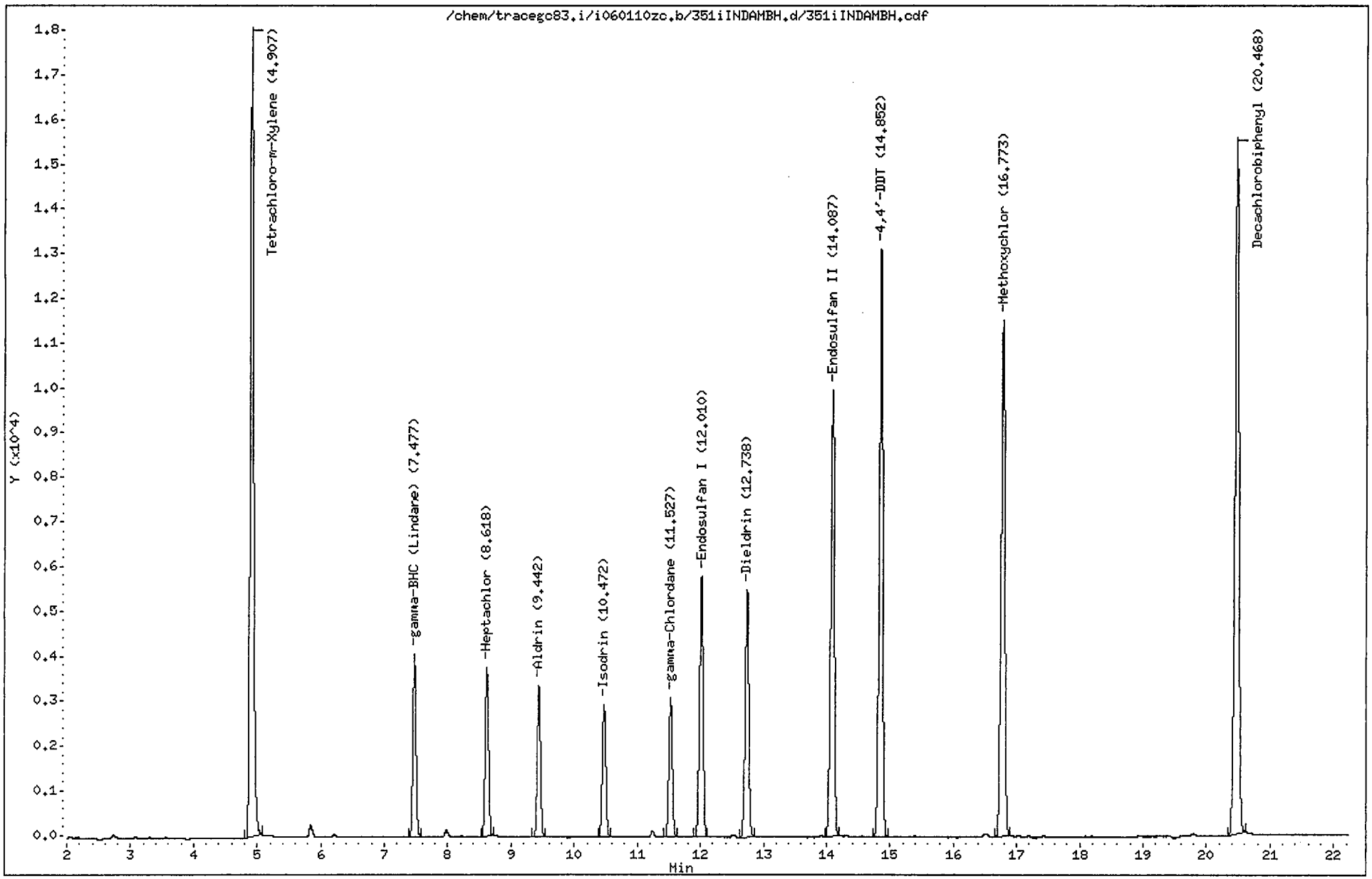
Sample Info: INDAMBH

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : INDAMBH Client Smp Id : INDAMBH
Sample Type : CONT CAL: Level 4 Sublist : INDA
Inj Date : 25-JAN-2006 00:22 Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110zc.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CCAL RF	%D	%D LIMIT	FLAGS	
0.95			7388434								
4.91	4.79	4.93	66203	403926	Tetrachloro-m-Xylene	0.160000	413768	-2.4	15.0		
7.48	7.36	7.50	13603	689670	gamma-BHC (Lindane)	0.020000	680173	1.4	15.0		
8.62	8.50	8.64	13941	732145	Heptachlor	0.020000	697063	4.8	15.0		
9.44	9.32	9.46	12701	661560	Aldrin	0.020000	635065	4.0	15.0		
10.47	10.35	10.49	11320	589030	Isodrin	0.020000	565990	3.9	15.0		
11.53	11.41	11.55	12012	627645	gamma-Chlordane	0.020000	600618	4.3	15.0		
12.01	11.89	12.03	22308	581450	Endosulfan I	0.040000	557709	4.1	15.0		
12.74	12.62	12.76	21617	563772	Dieldrin	0.040000	540430	4.1	15.0		
14.09	13.97	14.11	38111	481879	Endosulfan II	0.080000	476387	1.1	15.0		
14.85	14.73	14.87	48811	414793	4,4'-DDT	0.120000	406755	1.9	15.0		
16.77	16.66	16.80	46074	241339	Methoxychlor	0.200000	230371	4.5	15.0		
20.47	20.35	20.49	68887	459870	Decachlorobiphenyl	0.160000	430545	6.4	15.0		

Data File: /chem/tracegc83.i/i060110zc.b/352iINDBMBH.d

Date : 25-JAN-2006 00:48

Client ID: INDBMBH

Instrument: tracegc83.i

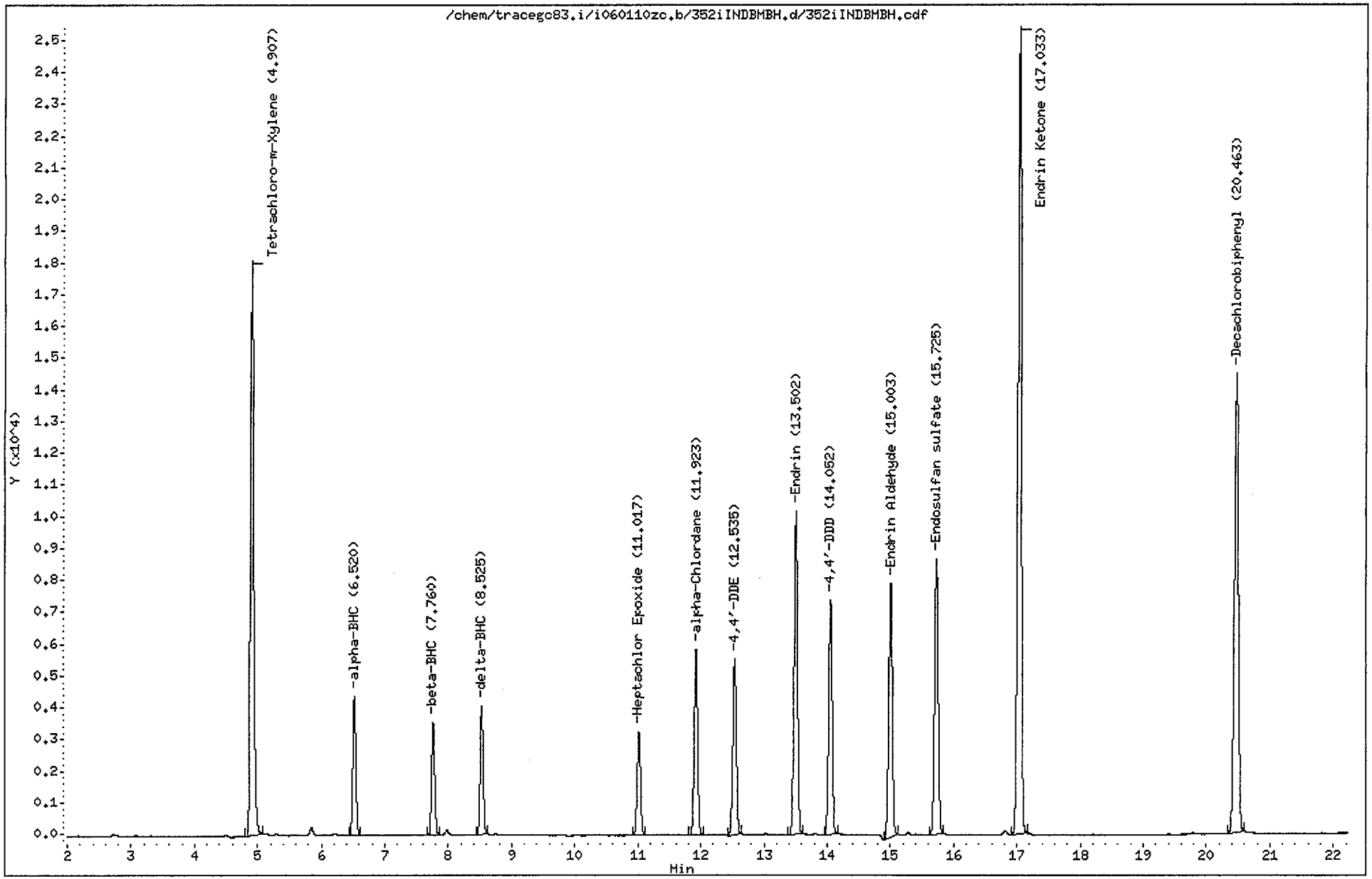
Sample Info: INDBMBH

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : INDBMBH
Client Smp Id : INDBMBH
Sample Type : CONT CAL: Level 4
Sublist : INDB
Inj Date : 25-JAN-2006 00:48
Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110zc.b/8081A_clpest2v4.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CCAL RF	%D	%D LIMIT	FLAGS	
0.94			6242769								
4.91	4.79	4.93	66394	403926	Tetrachloro-m-Xylene	0.160000	520688	-28.9*	15.0	R	
6.52	6.40	6.54	14848	762580	alpha-BHC	0.020000	742415	2.6	15.0		
7.76	7.65	7.79	12140	311082	beta-BHC	0.040000	303510	2.4	15.0		
8.52	8.41	8.55	13424	687745	delta-BHC	0.020000	671223	2.4	15.0		
11.02	10.90	11.04	12298	660355	Heptachlor Epoxide	0.020000	614918	6.9	15.0		
11.92	11.81	11.95	22451	602048	alpha-Chlordane	0.040000	561285	6.8	15.0		
12.54	12.42	12.56	21020	558335	4,4'-DDE	0.040000	525504	5.9	15.0		
13.50	13.39	13.53	39134	515266	Endrin	0.080000	489175	5.1	15.0		
14.05	13.94	14.08	27989	367186	4,4'-DDD	0.080000	349856	4.7	15.0		
15.00	14.89	15.03	31027	394594	Endrin Aldehyde	0.080000	387835	1.7	15.0		
15.72	15.61	15.75	34183	464389	Endosulfan sulfate	0.080000	427289	8.0	15.0		
17.03	16.92	17.06	95951	497694	Endrin Ketone	0.200000	479754	3.6	15.0		
20.46	20.35	20.49	64142	459870	Decachlorobiphenyl	0.160000	418688	9.0	15.0		

Data File: /chem/tracegc83.i/i060110zc.b/353iPEMBH.d

Date : 25-JAN-2006 01:13

Client ID: PEMBH

Instrument: tracegc83.i

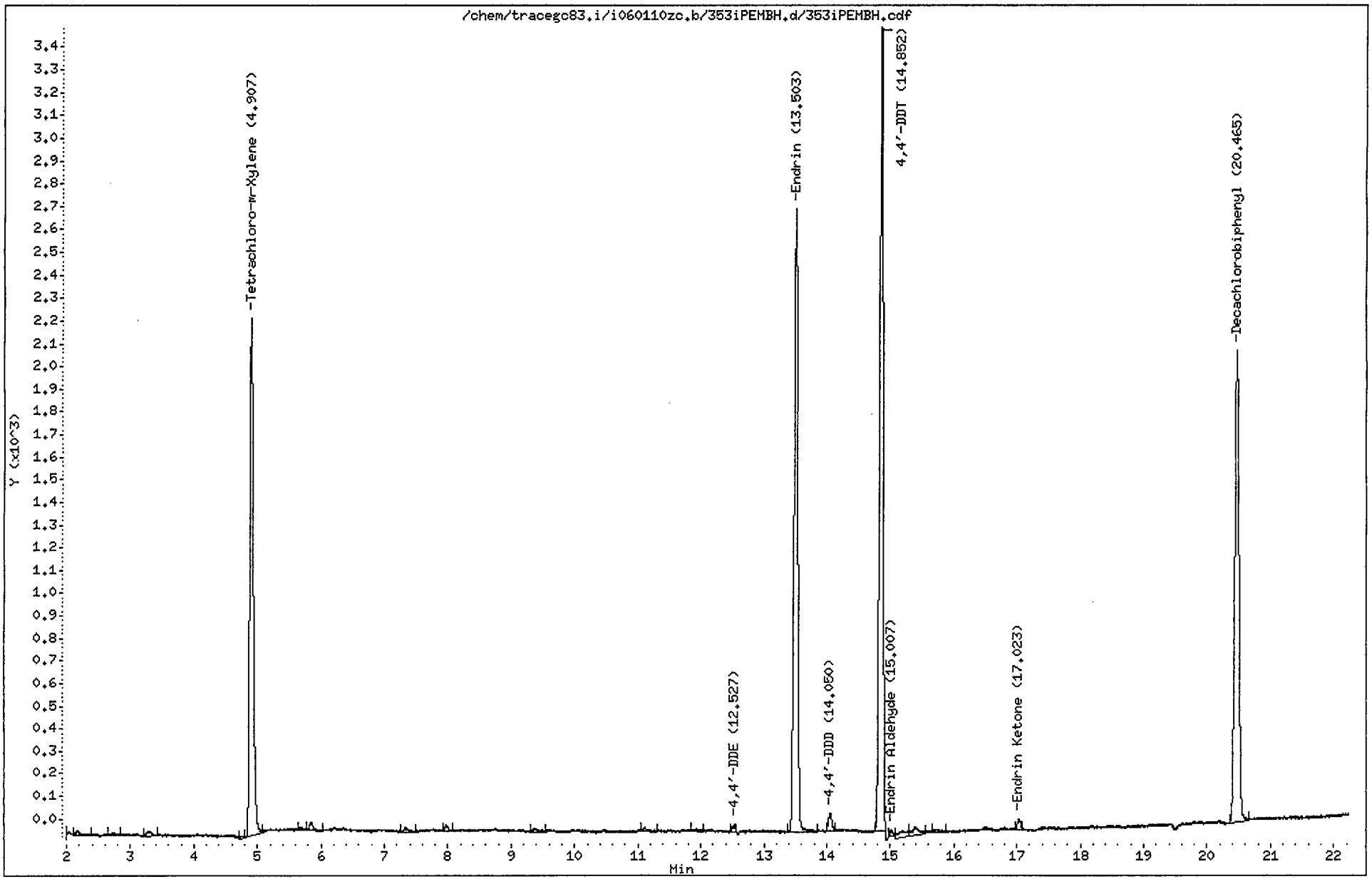
Sample Info: PEMBH

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : PEMBH Client Smp Id : PEMBH
Sample Type : SAMPLE Sublist : PEM
Inj Date : 25-JAN-2006 01:13 Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110zc.b/8081A_clpest2v4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
0.15			1019								
0.91			23281								
1.56			1259								
1.90			125								
2.17			111								
2.72			53								
3.32			137								
4.77			31								
4.91	4.79	4.93	9030	403926	Tetrachloro-m-Xylene	0.022356	0.223558		111.8	43 - 135	
5.68			31								
5.84			178								
7.34			119								
7.97			117								
9.36			101								
11.12			86								
11.93			60								
12.53	12.42	12.56	84	558335	4,4'-DDE	0.000150	0.001501	0.050000			JM 2
13.50	13.39	13.53	11101	515266	Endrin	0.021545	0.215450	0.100000			
14.05	13.94	14.08	289	367186	4,4'-DDD	0.000788	0.007879	0.100000			JM 2
14.85	14.73	14.87	13642	414793	4,4'-DDT	0.032888	0.328877	0.150000			M 2
15.01	14.89	15.03	81	394594	Endrin Aldehyde	0.000205	0.002049	0.100000			JM 2
15.18			280								
15.40			280								
15.74			60								
17.02	16.92	17.06	162	497694	Endrin Ketone	0.000325	0.003251	0.250000			JM 2
20.46	20.35	20.49	9589	459870	Decachlorobiphenyl	0.020852	0.208523		104.3	43 - 144	

% DDT = 84 + 289 / 84 + 289 + 13642 X100 =

373 / 14015 X100 = 2.6%

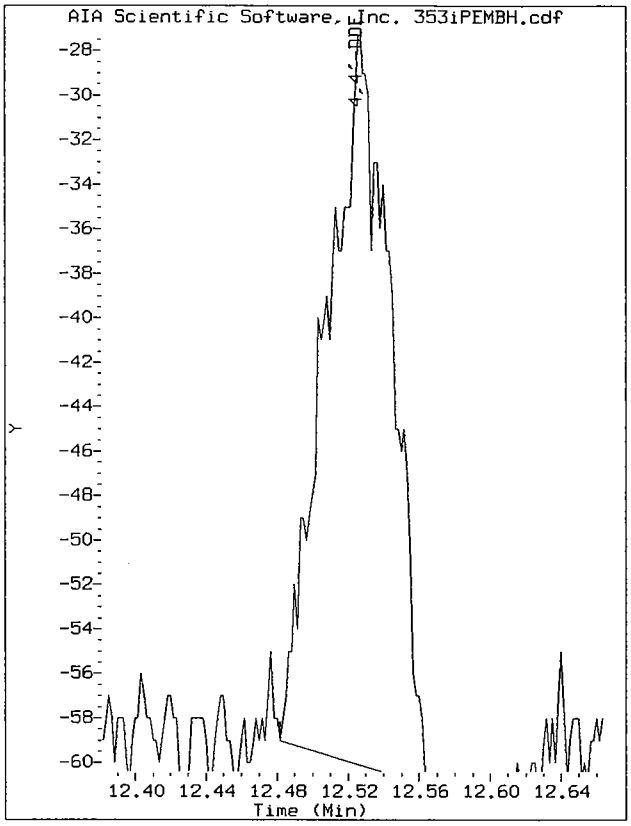
1/25/06

% Endrin = 81 + 162 / 81 + 162 + 11101 X100 =

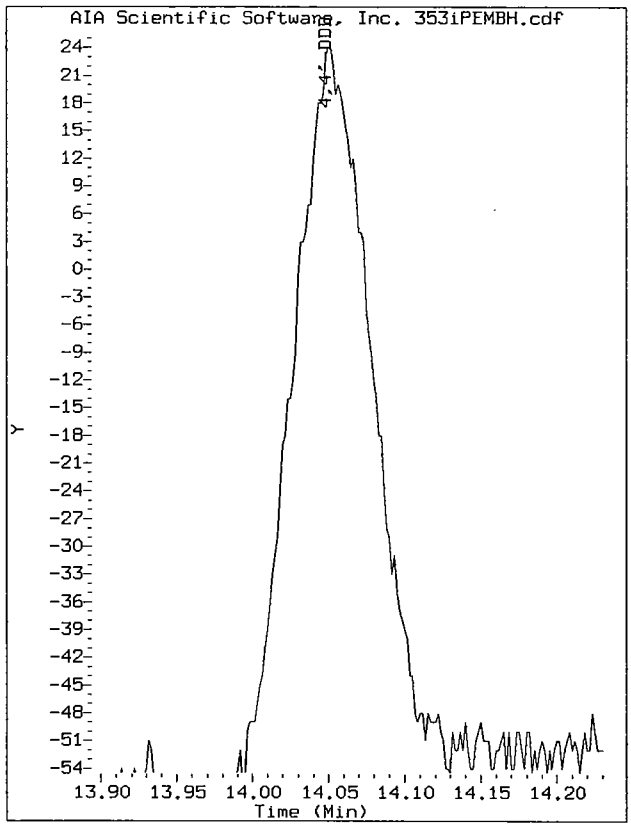
243 / 11344 X100 = 2.1%

TAJ 1/25/06

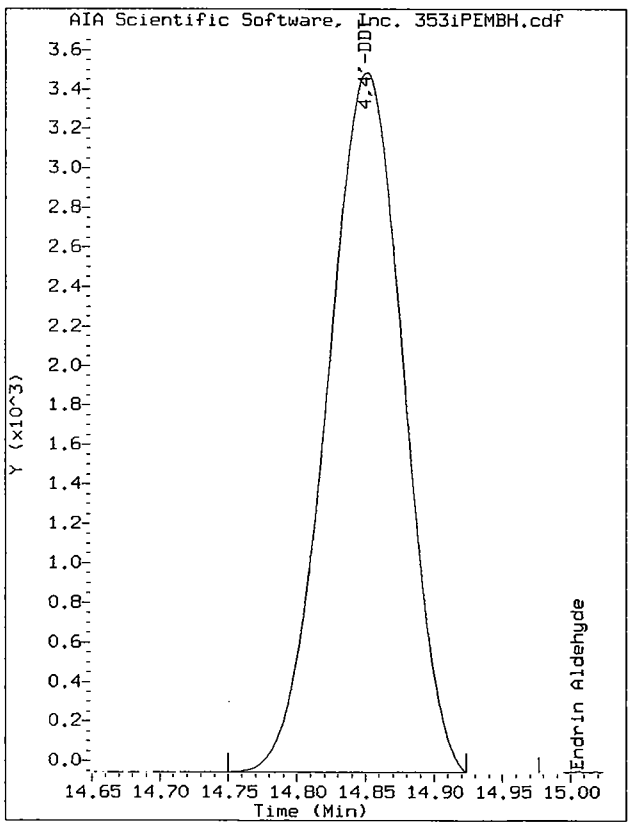
Manually Integrated Peaks



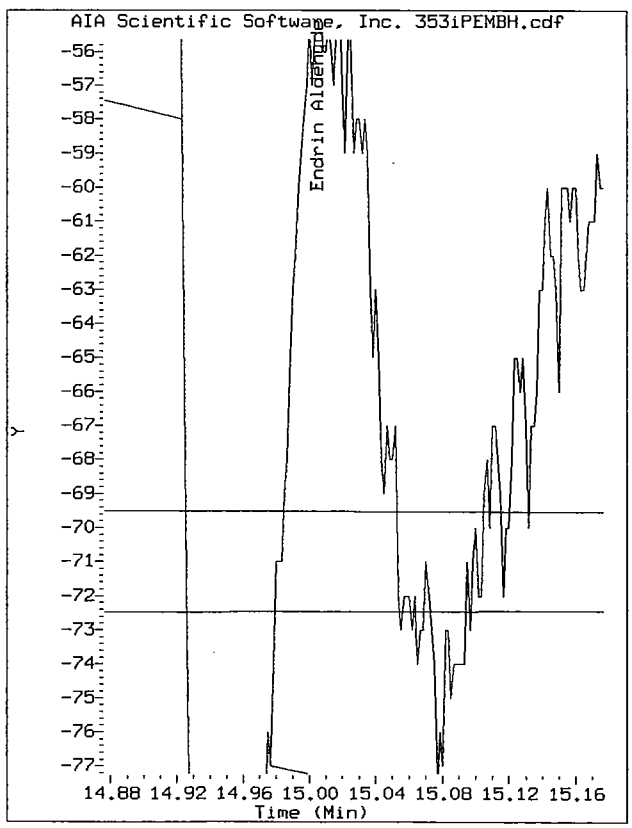
Start: 12.48 Stop: 12.56



Start: 13.99 Stop: 14.13

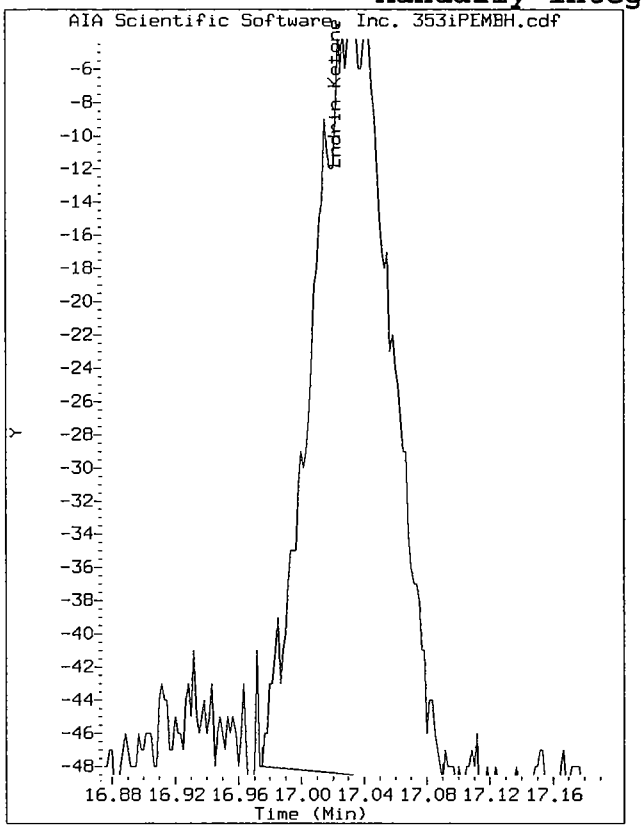


Start: 14.75 Stop: 14.92



Start: 14.98 Stop: 15.08

Manually Integrated Peaks



Start: 16.98 Stop: 17.09

COMPUCHEM a division of Liberty Analytical Corp Instrument ID 82 / 83 DATE 1/10/06

GC EXTRACTABLES RUN LOG Sequence ID: 060110 SHIFT/S(A)_____(B)_____

COMPUCHEM LOGBOOK 4 M(4) 23 Amt. Inj. 2 µL (1 µL on column)

Method 8081A 8082 8151A CLP Other_____

	MS/SCTED	FILE NAME	RTBD	DATE	CompuChem #	CASE/SDG#	CHEMIST	COMMENTS(ETC.)/DISPOSITION
1		1		1/10/06	Hexane	Solvt	ZSR	
2		2		/ /	√	√		
3		3	✓	/ /	PENTAP	58147		
4		4	✓	/ /	INDA1AP	58128		
5		5	✓	/ /	INDB1AP	58047		
6		6	✓	/ /	INDA2AP	58089		
7		7	✓	/ /	INDB2AP	58043		
8		8	✓	/ /	INDA3AP	58050		
9		9	✓	/ /	INDB3AP	58074		
10		10	✓	/ /	INDA4AP	58173		
11		11	✓	/ /	INDB4AP	58174		
12		12	✓	/ /	INDA5AP	58032		
13		13	✓	/ /	INDB5AP	58057		
14		14	✓	/ /	CUPA1AP	58116		
15		15	✓	/ /	CUPB1AP	58014		
~~16~~				/ /				
17				/ /				
18				/ /				
19				/ /		KP 1/10/06		
20				/ /				
21				/ /				
22				/ /				
23				/ /				
24				/ /				

SUPERVISOR APPROVAL Karen Parker

DATE 1/10/06

Hexane Lot No C0760

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

COMPUCHEM a division of Liberty Analytical Corp Instrument ID 82 / 83
GC EXTRACTABLES RUN LOG Sequence ID: 060110e
COMPUCHEM LOGBOOK 4 M(4) 23

DATE 1/11/06
SHIFT/S(A)_____(B)_____
Amt. Inj. 2 µL (1 µL on column)

Method (8081A) 8082 8151A CLP Other_____

	REVIEWED	FILE NAME	REVIEWED	DATE	CompuChem #	CASE/SDG#	CHEMIST	COMMENTS(ETC.)/DISPOSITION
1		69	✓	1/11/06	PIBLKAG4H	58134	25e4	
2		70	✓	/ /	INDAMA4H	58173		
3		71	✓	/ /	INDBMA4H	58174		
4		72	–	/ /	TOXAPH49H	58103		
5		73	–	/ /	CHLORO49H	58002		
6		74	–	/ /	AR1616019H	58115		
7		75	–	1/12/06	AR1616029H	16		
8		76	–	/ /	AR1616039H	17		
9		77	–	/ /	AR1616049H	18		
10		78	–	/ /	AR1616059H	19		
11		79	–	/ /	AR122149H	57834A		
12		80	–	/ /	AR123249H	58187		
13		81	–	/ /	AR124249H	58193		
14		82	–	/ /	AR124849H	57994		
15		83	–	/ /	AR125449H	58212		
16		84	–	/ /	NSTD1616091H	58181		
17		85		/ /	PIBLK	58134		
18				/ /				
19				/ /				
20				/ /				
21				/ /		TAJ	1/12/06	
22				/ /				
23				/ /				
24				/ /				

SUPERVISOR APPROVAL TAJ

DATE 1/12/06

Hexane Lot No C0760

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

10/27/05:jad

COMPUCHEM a division of Liberty Analytical Corp Instrument ID 82 / 83 DATE 1/24/06

GC EXTRACTABLES RUN LOG Sequence ID: C060110Z6 SHIFT/S(A)_____(B)_____

COMPUCHEM LOGBOOK 4 M(4) 23 Amt. Inj. 2 µL (1 µL on column)

Method : 8081A 8082 8151A CLP Other_____

	CTD	FILE NAME	ITD	DATE	CompuChem #	CASE/SDG#	CHEMIST	COMMENTS(ETC)/DISPOSITION
1		338	✓	1/24/06	PIBLKBFBF	58134	2512	
2		339	✓	/ /	AR1660BF	58118	↓	
3		340	✓	/ /	INDAMBF	58173		
4		341	✓	/ /	INDBMBF	58174	↓	
5		342	✓	/ /	91895	Varias	2564	
6		343	✓	/ /	91896	↓		
7		344	✓	/ /	91765	8925		
8		345	✓	/ /	91770	8926		
9		346	✓	/ /	892501	8925		
10		347	✓	/ /	892601	8926		
11		348		/ /	PIBLK	58134	↓	
12				/ /				
13				/ /				
14				/ /				
15				/ /				
16				/ /				
17				/ /		TAJ 1/25/06		
18				/ /				
19				/ /				
20				/ /				
21				/ /				
22				/ /				
23				/ /				
24				/ /				

SUPERVISOR APPROVAL TAJ

DATE 1/25/06

Hexane Lot No C0760

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

10/27/05:jad

COMPUCHEM a division of Liberty Analytical Corp Instrument ID 82 / 83

GC EXTRACTABLES RUN LOG

Sequence ID: L060111026

DATE 1/24/06

SHIFT/S(A)_____(B)_____

Amt. Inj. 2 µL (1 µL on column)

COMPUCHEM LOGBOOK 4 M(4) 23

Method: 8081A 8082 8151A CLP Other_____

	RUN	FILE NAME	RUN	DATE	CompuChem #	CASE/SDG#	CHEMIST	COMMENTS(ETC.)/DISPOSITION
1		349		1/24/06	PIBUKBGBH	58134	2564	
2		350		1/ /	ARIOGOBH	58118		
3		351		1/25/06	INDAMBH	58173		
4		352		/ /	INDBMBH	58174		
5		353		/ /	PEMBH	58198		
6				/ /				
7				/ /				
8				/ /				
9				/ /				
10				/ /				
11				/ /	DATA STILL	ACQUIRING		
12				/ /				
13				/ /				
14				/ /				
15				/ /				
16				/ /				
17				/ /				
18				/ /				
19				/ /				
20				/ /				
21				/ /				
22				/ /				
23				/ /				
24				/ /				

SUPERVISOR APPROVAL TAJ

DATE 1/25/06

Hexane Lot No C0760

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

10/27/05:jad

4. Raw QC Data

   a. Blank Data

   b. Laboratory Control Sample Data

   c. Matrix Spike Data

   d. Matrix Spike Duplicate Data

a. Blank Data

Arranged by type of blank (method, then instrument), and shall be in chronological order, by instrument.

- Tabulated Results (Form I)

- Chromatograms and data system printout(s) by instrument used for analysis.

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKGN

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 91895

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(uL) Date Analyzed: 01/24/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
58-89-9	gamma-BHC (Lindane)	0.025	U
72-20-8	Endrin	0.10	U
76-44-8	Heptachlor	0.025	U
1024-57-3	Heptachlor Epoxide	0.025	U
72-43-5	Methoxychlor	0.25	U
8001-35-2	Toxaphene	5.0	U
57-74-09	Technical Chlordane	1.6	U

Data File: /chem/tracegc82.i/i060110zb.b/342i91895.d

Date : 24-JAN-2006 20:32

Client ID: PBLKGN

Instrument: tracegc82.i

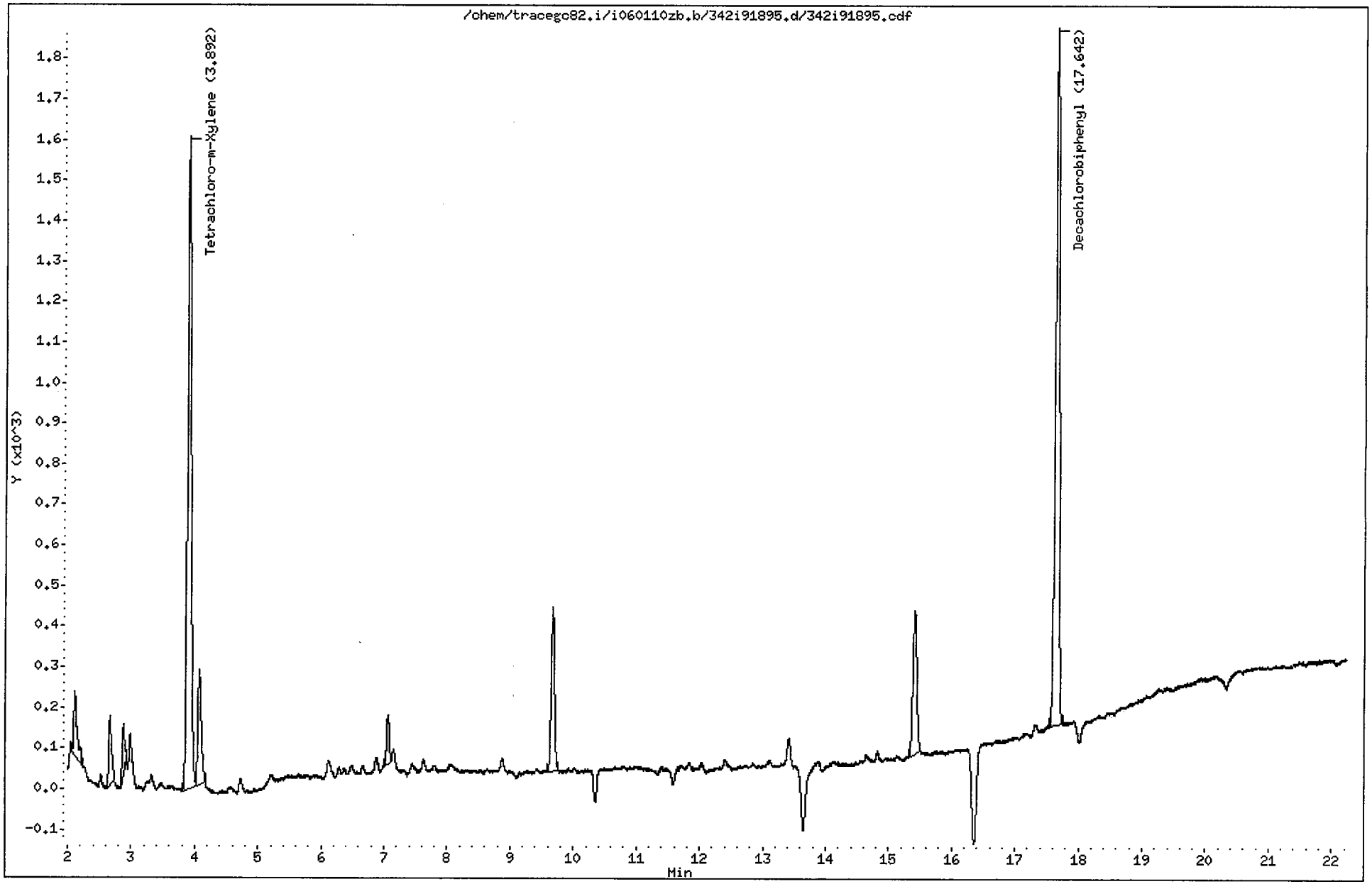
Sample Info: 91895

Volume Injected (uL): 1.0

Operator: 2564

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : 91895 Client Smp Id : PBLKGN
Sample Type : BLANK Sublist : TCLP
Inj Date : 24-JAN-2006 20:32 Inst ID : TRACEGC82
Operator : 2564
Method : /chem/tracegc82.i/i060110zb.b/8081A_clpestv4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 500.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
0.92			5136								
1.04			9213								
1.21			4686								
1.66			636								
1.78			3514								
2.12			580								
2.67			543								
2.88			311								
3.89	3.78	3.92	6414	306784	Tetrachloro-m-Xylene	0.020904	0.209039		104.5	43 - 135	
4.07			1063								
7.06			355								
9.67			1430								
15.41			1555								
17.64	17.53	17.67	7047	362764	Decachlorobiphenyl	0.019423	0.194231		97.1	43 - 144	

TAJ 1/25/06

Data File: /chem/tracegc83.i/i060110zb.b/342i91895.d

Date : 24-JAN-2006 20:32

Client ID: PBLKGN

Instrument: tracegc83.i

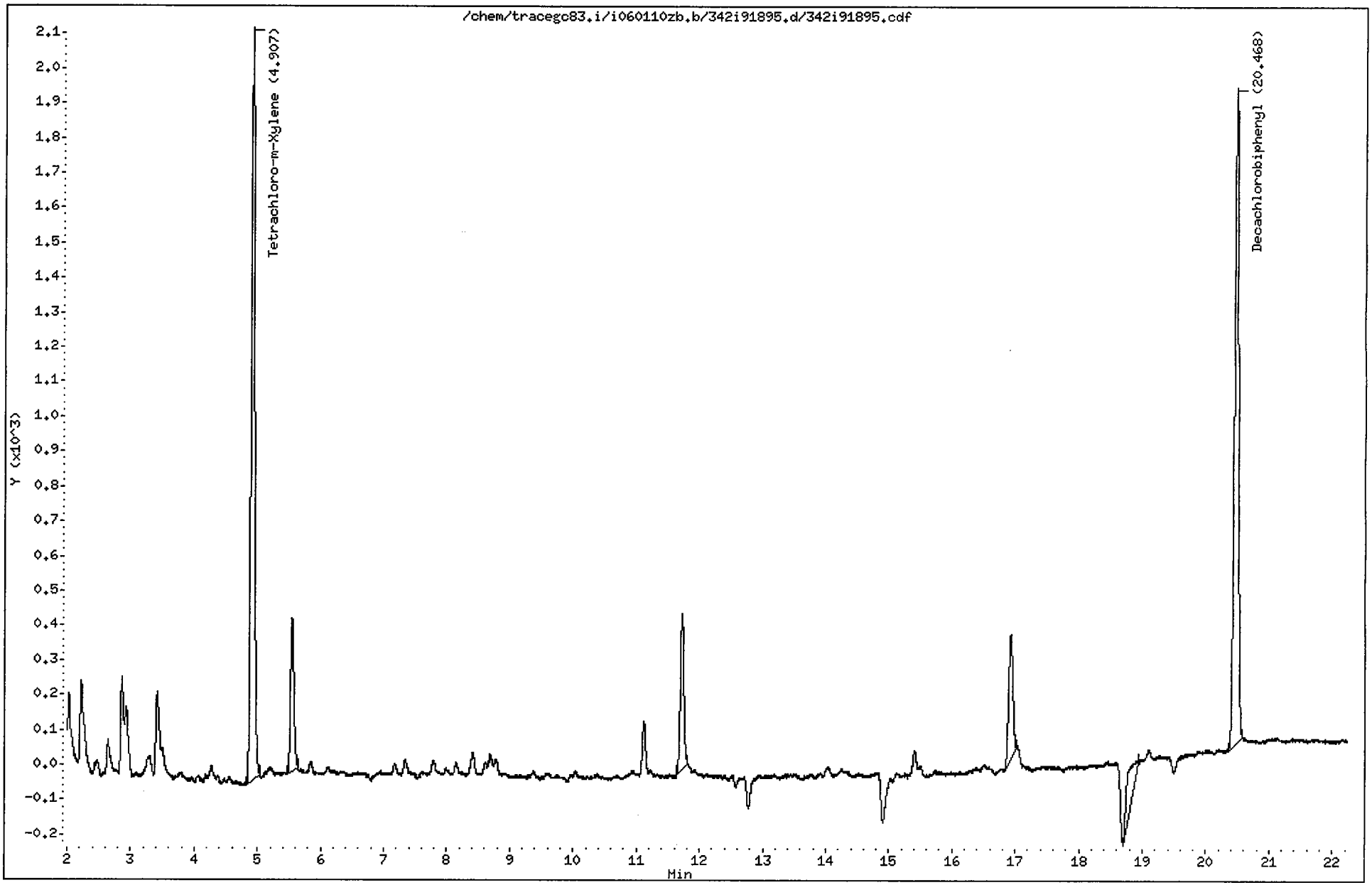
Sample Info: 91895

Volume Injected (uL): 1.0

Operator: 2564

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : 91895 Client Smp Id : PBLKGN
Sample Type : BLANK Sublist : TCLP
Inj Date : 24-JAN-2006 20:32 Inst ID : TRACEGC83
Operator : 2564
Method : /chem/tracegc83.i/i060110zb.b/8081A_clpest2v4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 500.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
0.91			1278								
0.94			2133								
1.02			14465								
1.23			16301								
1.83			2944								
4.91	4.79	4.93	8375	403926	Tetrachloro-m-Xylene	0.020734	0.207340		103.7	43 - 135	
5.54			1625								
11.72			1681								
16.92			1670								
18.92			1024								
20.47	20.35	20.49	8477	459870	Decachlorobiphenyl	0.018433	0.184335		92.2	43 - 144	

TAJ 1/25/06

COMPUCHEM

EXTRACTION WORKSHEET

Pesticide in Water; BY SW-846 Method 3510C

TCLP Waste Characterization - 8081A

ASSIGNED TO: Richard/Margaret/Lael/Eric/Rod

EMP ID NUMBER: 2583/2611 / 2566/2171

DATE EXTRACTED/POSTED: 1/24/2006

BATCH NO.: 88980

-1021

1-24-5

	COMPUCHEM NUMBER	CLIENT SAMPLE ID	QC SAMPLE TYPE	SAMPLE VOLUME (mL)	Initial pH	pH Adjusted? (Y / N)	FINAL VOLUME (mL)	COMMENTS
1	892501	WAR-IDW-4	SAMPLE	~~500~~ 100	4.0	Y (5.0)	5.0	
2	892601	WAR-IDW-3	SAMPLE	~~500~~ 100	8.0	N		
3	91765	TCLPBLKGW	PLCHBK	~~500~~ 100	4.0	Y (8.0)		
4	91770	TCLPBLKGX	PLCHBK	~~500~~ 100	5.0	N		Use 100 mL of TCLP leachate and dilute to 500 mL with extracted
5	91895	PBLKGN	MB	~~500~~ 100	5.0	N		water for all samples. Add 0.5 mL TCLP Pesticides spike
6	91896	PGNLCS	LCS	~~500~~ 100	5.0	N	5.0	to SS's and BS. Add 0.5 mL of #426 Surr. To all samples.
7								Final volume = 5.0 mL.
8								
9								Florisil (3620B) performed Y (N)
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

1-24-06 KM

1-24-06 KM

		EXT. TPH	SURROGATE & SPIKE ADDED BY
SURROGATE	No.	426	VG 1/24/06
	Amt.	0.5 ml	INITIALS / DATE
		58113	
TCLP PEST SPIKE	No.		Witness MK 1/24/06
	Amt.	0.5 ml	Initials Date
		58060	

FINAL VOLUME VERIFIED

SUPERVISOR REVIEWED

Analysts Initials. Extracted RH/MK/VG/AW/KM KD VG/KM N2 KM Bottle up KM

Manufacturer and lot number of reagents/solvents used CH_2Cl_2 - 45166, Na_2SO_4 - 2xx4-320-4, 10N NaOH - B05P00, C_6H_{14} - CP584

Rev. 7/21/05:dce

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TCLPBLKGW

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 91765

Sample wt/vol: 100.0 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(uL) Date Analyzed: 01/24/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
58-89-9	gamma-BHC (Lindane)	0.13	U
72-20-8	Endrin	0.50	U
76-44-8	Heptachlor	0.13	U
1024-57-3	Heptachlor Epoxide	0.13	U
72-43-5	Methoxychlor	1.3	U
8001-35-2	Toxaphene	25	U
57-74-09	Technical Chlordane	8.0	U

Data File: /chem/tracegc82.i/i060110zb.b/344i91765.d

Date : 24-JAN-2006 21:23

Client ID: TCLPBLKGW

Instrument: tracegc82.i

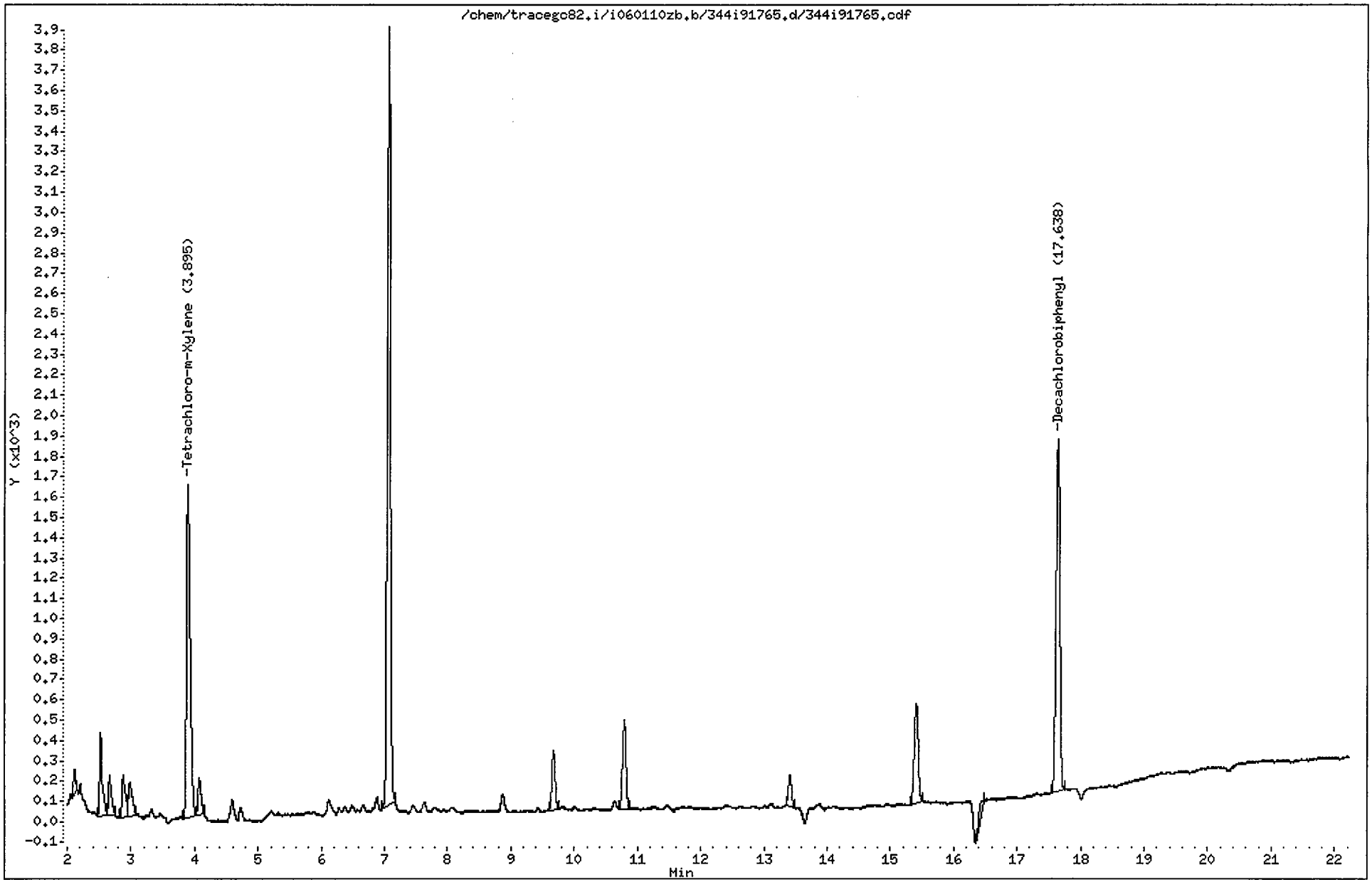
Sample Info: 91765

Volume Injected (uL): 1.0

Operator: 2564

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : 91765 Client Smp Id : TCLPBLKGW
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 24-JAN-2006 21:23 Inst ID : TRACEGC82
Operator : 2564
Method : /chem/tracegc82.i/i060110zb.b/8081A_clpestv4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
0.17			523								
0.92			6179								
1.04			13432								
1.21			12536								
1.67			745								
1.78			2646								
2.12			288								
2.52			1174								
2.66			627								
2.88			764								
2.99			684								
3.90	3.78	3.92	6438	306784	Tetrachloro-m-Xylene	0.020982	1.049108		104.9	43 - 135	
4.08			606								
7.07			12712								
9.68			1046								
10.79			1664								
13.41			573								
15.41			2144								
16.47			300								
17.64	17.53	17.67	7146	362764	Decachlorobiphenyl	0.019699	0.984939		98.5	43 - 144	

TAJ 1/25/06

Data File: /chem/tracegc83.i/i060110zb.b/344i91765.d

Date : 24-JAN-2006 21:23

Client ID: TCLPBLKGW

Instrument: tracegc83.i

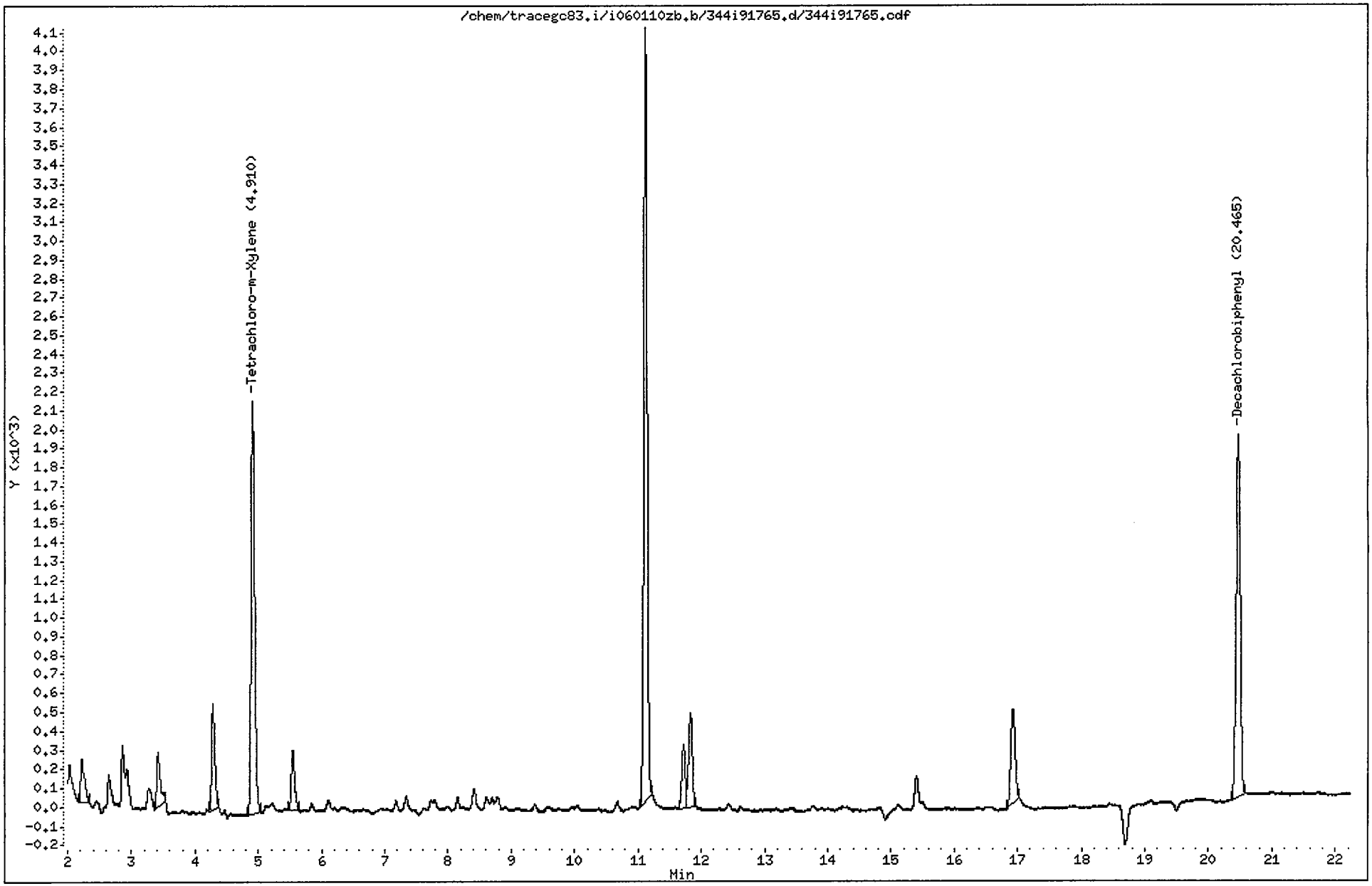
Sample Info: 91765

Volume Injected (uL): 1.0

Operator: 2564

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : 91765 Client Smp Id : TCLPBLKGW
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 24-JAN-2006 21:23 Inst ID : TRACEGC83
Operator : 2564
Method : /chem/tracegc83.i/i060110zb.b/8081A_clpest2v4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
0.94			3707								
1.02			11806								
1.13			4056								
1.23			18335								
1.84			2960								
2.23			930								
3.42			1143								
4.28			1904								
4.91	4.79	4.93	8421	403926	Tetrachloro-m-Xylene	0.020845	1.042269		104.2	43 - 135	
5.54			1153								
11.12			14513								
11.72			1264								
11.83			2046								
16.93			2441								
20.46	20.35	20.49	8593	459870	Decachlorobiphenyl	0.018686	0.934286		93.4	43 - 144	

TAJ 1/25/06

CompuChem, a Division of Liberty Analytical Corp.

TCLP WASTE CHARACTERIZATION LEACHATE

Method 1311

SPP -814

Assigned to: RMcKay/Norma

Employee No.: 2171 1151

Date Extracted: 1/23/2006

Batch No.: 8877

186

COMPUCHEM NUMBER	CLIENT SAMPLE ID	SAMPLE TYPE	PRE-TEST pH VALUE START	PRE-TEST pH VALUE FINAL	PRE-TEST EXTRACTION FLUID AND VOL. (mL) ADDED[1] 1	PRE-TEST EXTRACTION FLUID AND VOL. (mL) ADDED[1] 2	PARTICLE REDUCT. DONE (Y/N)	SAMPLE WEIGHT (g)	FINAL LEACH. pH VALUE	FINAL VOLUME (ml)	PERCENT SOLID	COMMENTS
91764/65/66/67/68	TCLPBLKFW	SLCHBK	N/A	N/A	N/A	2000	N	N/A	2.87	1900	N/A	
91769/70/71/72/73	TCLPBLKFX	SLCHBK	N/A	N/A	N/A	N/A	N	N/A	7.71	2000	N/A	Filter Blk - diH2O
892501	WAR-IDW-4	SAMPLE	9.71	5.69	N/A	2000	N	100	4.18	1800	100	
892601	WAR-IDW-3	SAMPLE	N/A	N/A	N/A	N/A	N	N/A	7.52	1900	N/A	Filter only

1-24-06

LOADED TUMBLER CALIB. CHECK (MUST BE 30 rpm ± 2 rpm)	
TUMBLER #	CALC. RPM
2A	32

(COUNT rpm FOR 30 sec. AND MULTIPLY NUMBER BY 2 TO CALCULATE rpm)

ROTATION TIME ONLY

Date/Time Started 1/23/06 / 3:15

Date/Time Stopped 1/24/06 / 0900

Room Temp. 24°C

Manufacturer and lot # of reagent used TCLP Fluid #2 2XX4-323-1

Final Vol. Verified:

Reviewed By:

Ext. Fluid 1 pH N/A (4.93 ± 0.05)

Ext. Fluide 2 pH 2.90 (2.88 ± 0.05)

Enter volume (mL) of Extraction Fluid added into appropriate column, e.g., enter volume into column 1 if Ext. Fluid #1 is used. Ensure that the fluid volume to sample weight ration is 20:1.

Rev. 7/29/03:dce

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLKBE

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

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

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) ____ Date Extracted:_____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 01/24/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
58-89-9	gamma-BHC (Lindane)	0.025	U
72-20-8	Endrin	0.10	U
76-44-8	Heptachlor	0.025	U
1024-57-3	Heptachlor Epoxide	0.025	U
72-43-5	Methoxychlor	0.25	U
8001-35-2	Toxaphene	5.0	U
57-74-09	Technical Chlordane	1.6	U

Data File: /chem/tracegc82.i/i060110zb.b/338iPIBLKBEBF.d

Date : 24-JAN-2006 18:50

Client ID: PIBLKBE

Instrument: tracegc82.i

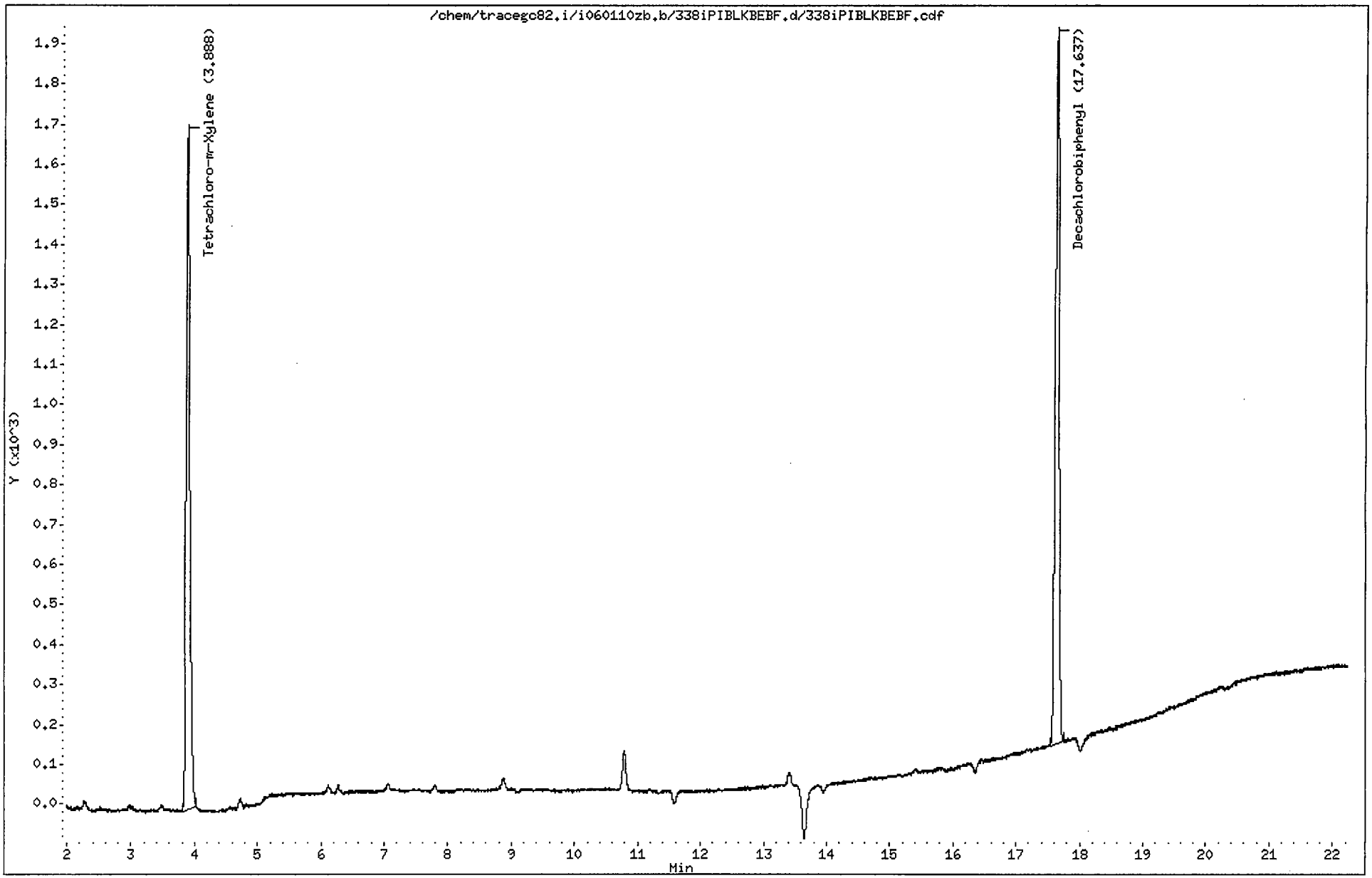
Sample Info: PIBLKBEBF

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : PIBLKBE Client Smp Id : PIBLKBE
Sample Type : INSTBLANK Sublist : all
Inj Date : 24-JAN-2006 18:50 Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110zb.b/8081A_clpestv4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Ws) * (100/(100-M))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Ws Sample Weight: 30.0(g) M Moisture: 0(%)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/Kg)	ADJUSTED PQL (ug/Kg)	FLAGS
0.15			432						
0.90			21490						
3.89	3.78	3.92	6831	306784	Tetrachloro-m-Xylene	0.022266	3.711048		
17.64	17.53	17.67	7389	362764	Decachlorobiphenyl	0.020368	3.394588		

1/24/06

1D

EPA SAMPLE NO.

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

PIBLKBF

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

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

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) _____ Date Extracted:_____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 01/24/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
58-89-9	gamma-BHC (Lindane)	0.025	U
72-20-8	Endrin	0.10	U
76-44-8	Heptachlor	0.025	U
1024-57-3	Heptachlor Epoxide	0.025	U
72-43-5	Methoxychlor	0.25	U
8001-35-2	Toxaphene	5.0	U
12789-03-6	Technical Chlordane	1.6	U

Data File: /chem/tracegc83.i/i060110zb.b/338iPIBLKBEBF.d

Date : 24-JAN-2006 18:50

Client ID: PIBLKBF

Instrument: tracegc83.i

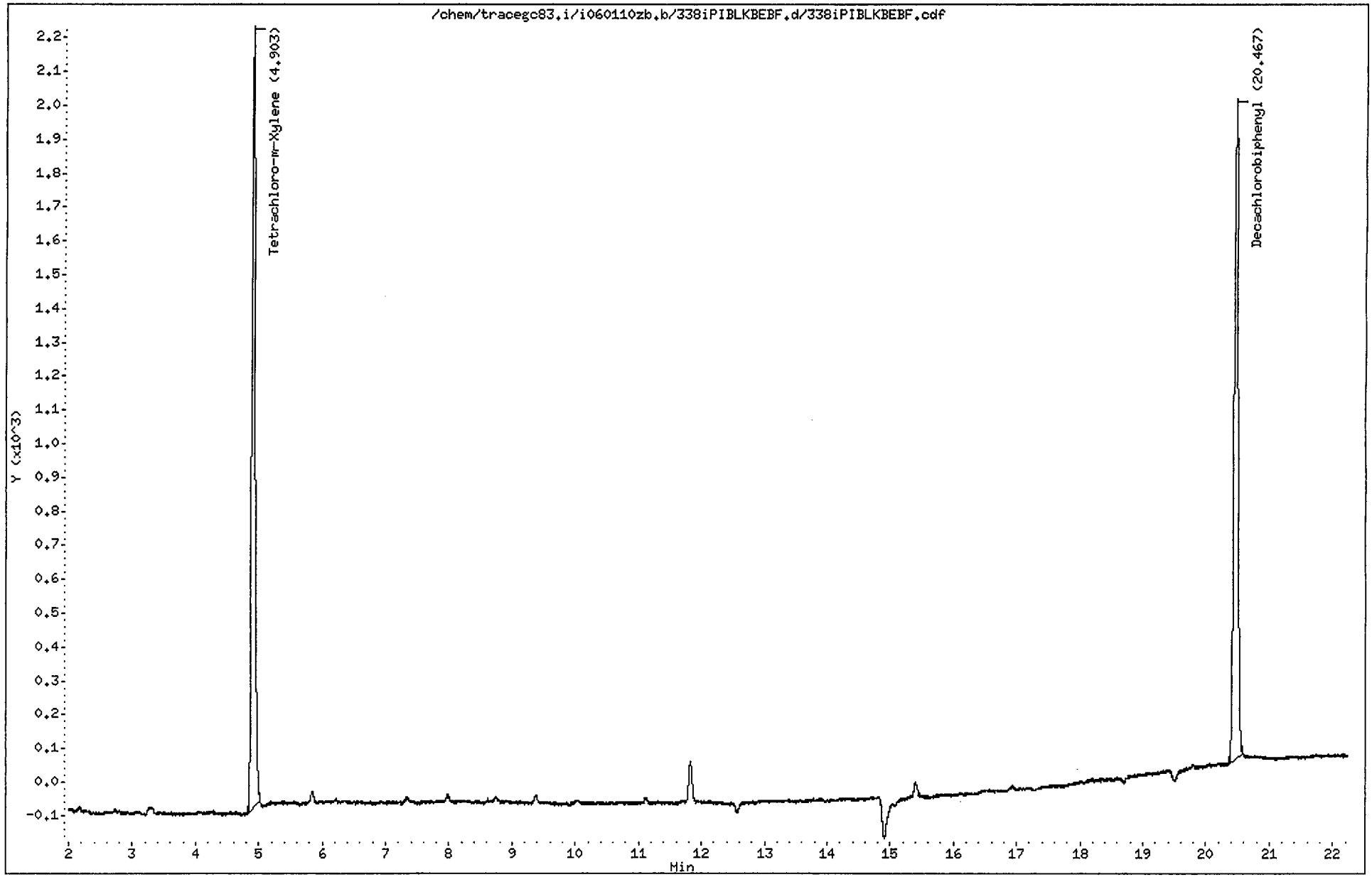
Sample Info: PIBLKBEBF

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : PIBLKBF Client Smp Id : PIBLKBF
Sample Type : INSTBLANK Sublist : all
Inj Date : 24-JAN-2006 18:50 Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110zb.b/8081A_clpest2v4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	FLAGS
0.90			15628						
4.90	4.79	4.93	8807	403926	Tetrachloro-m-Xylene	0.021804	0.218037		
20.47	20.35	20.49	8760	459870	Decachlorobiphenyl	0.019048	0.190480		

1/24/06

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLKBG

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

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

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) _____ Date Extracted:_____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 01/24/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
58-89-9	gamma-BHC (Lindane)	0.025	U
72-20-8	Endrin	0.10	U
76-44-8	Heptachlor	0.025	U
1024-57-3	Heptachlor Epoxide	0.025	U
72-43-5	Methoxychlor	0.25	U
8001-35-2	Toxaphene	5.0	U
57-74-09	Technical Chlordane	1.6	U

Data File: /chem/tracegc82.i/i060110zc.b/349iPIBLKBGBH.d

Date : 24-JAN-2006 23:31

Client ID: PIBLKBG

Instrument: tracegc82.i

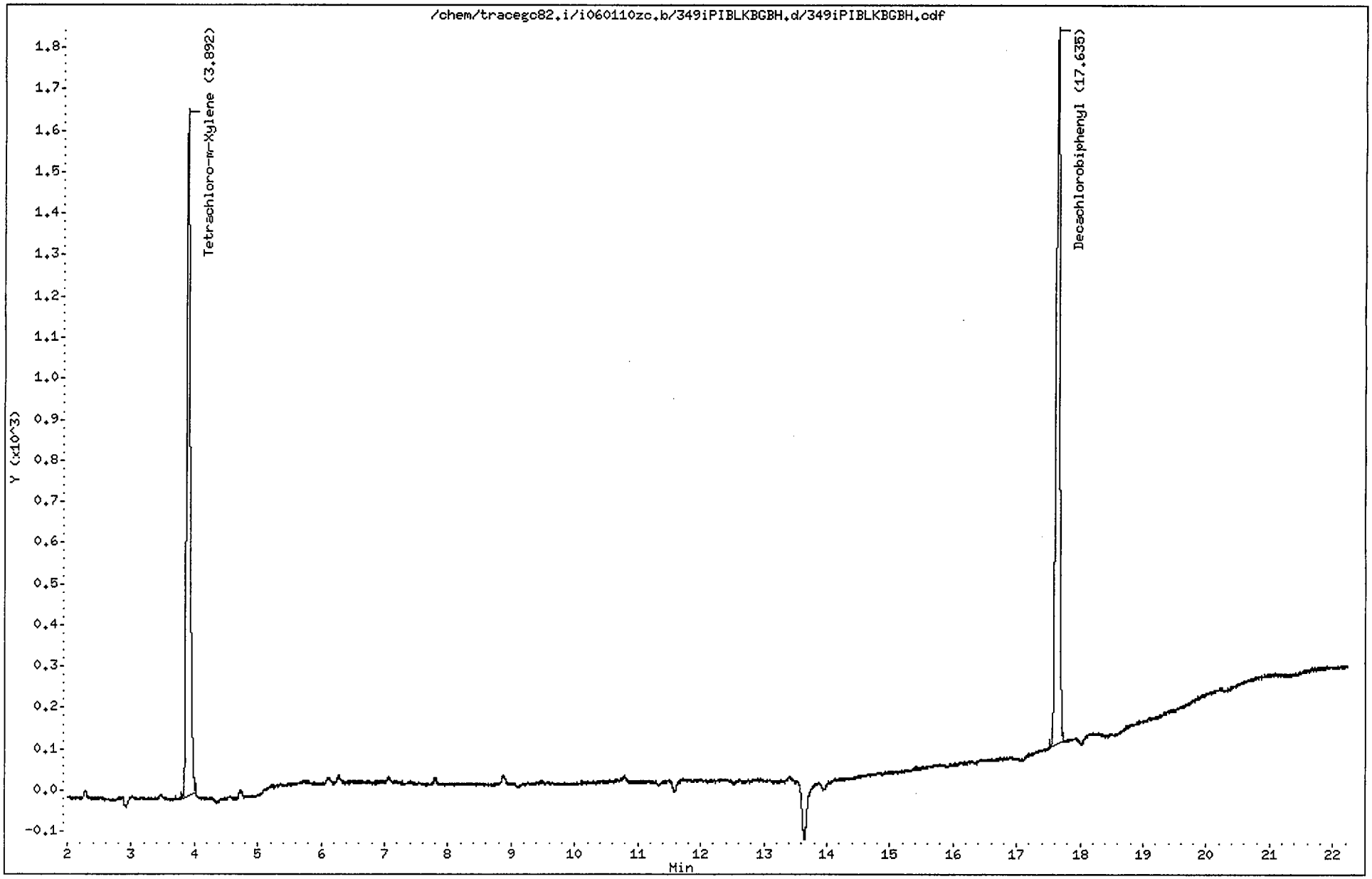
Sample Info: PIBLKBGBH

Volume Injected (uL): 1.0

Operator: 2512

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : PIBLKBG Client Smp Id : PIBLKBG
Sample Type : INSTBLANK Sublist : all
Inj Date : 24-JAN-2006 23:31 Inst ID : TRACEGC82
Operator : 2512
Method : /chem/tracegc82.i/i060110zc.b/8081A_clpestv4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	FLAGS
0.17			439						
0.91			3570						
3.89	3.78	3.92	6588	306784	Tetrachloro-m-Xylene	0.021474	0.214744		
17.64	17.53	17.67	7176	362764	Decachlorobiphenyl	0.019782	0.197819		

4/5/06

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLKBH

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

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

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) ____ Date Extracted:_____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 01/24/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
58-89-9	gamma-BHC (Lindane)	0.025	U
72-20-8	Endrin	0.10	U
76-44-8	Heptachlor	0.025	U
1024-57-3	Heptachlor Epoxide	0.025	U
72-43-5	Methoxychlor	0.25	U
8001-35-2	Toxaphene	5.0	U
12789-03-6	Technical Chlordane	1.6	U

Data File: /chem/tracegc83.i/i060110zc.b/349iPIBLKBGBH.d

Date : 24-JAN-2006 23:31

Client ID: PIBLKBH

Instrument: tracegc83.i

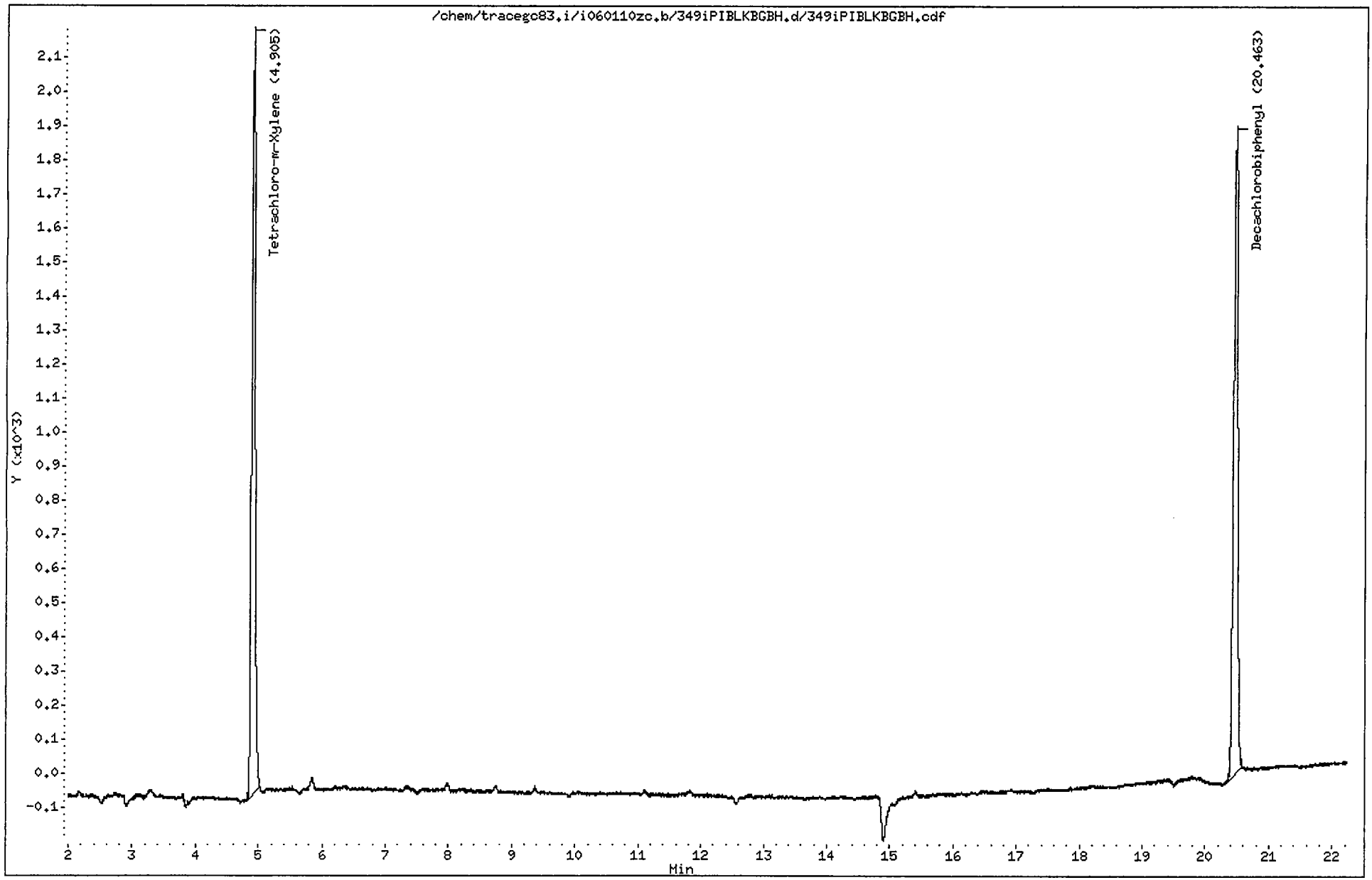
Sample Info: PIBLKBGBH

Volume Injected (uL): 1.0

Operator: 2512

Column phase: olpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : PIBLKBH Client Smp Id : PIBLKBH
Sample Type : INSTBLANK Sublist : all
Inj Date : 24-JAN-2006 23:31 Inst ID : TRACEGC83
Operator : 2512
Method : /chem/tracegc83.i/i060110zc.b/8081A_clpest2v4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	FLAGS
4.90	4.79	4.93	8654	403926	Tetrachloro-m-Xylene	0.021424	0.214245		
20.46	20.35	20.49	8723	459870	Decachlorobiphenyl	0.018969	0.189693		

b. Matrix Spike Data

- Tabulated Results (Form I)

- Chromatograms and data system printout(s)

c. Matrix Spike Duplicate Data

- Tabulated Results (Form I)

- Chromatograms and data system printout(s)

d. Laboratory Control Sample Data

- Tabulated Results (Form I)

- Chromatograms and data system printout(s)

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PGNLCS

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 91896

Sample wt/vol: 100.0 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(uL) Date Analyzed: 01/24/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
58-89-9	gamma-BHC (Lindane)	1.4	
72-20-8	Endrin	0.50	U
76-44-8	Heptachlor	1.4	
1024-57-3	Heptachlor Epoxide	1.2	
72-43-5	Methoxychlor	1.3	U
8001-35-2	Toxaphene	47	
57-74-09	Technical Chlordane	8.0	U

Data File: /chem/tracegc82.i/i060110zb.b/343i91896.d

Page 1

Date : 24-JAN-2006 20:58

Client ID: PGNLCS

Instrument: tracegc82.i

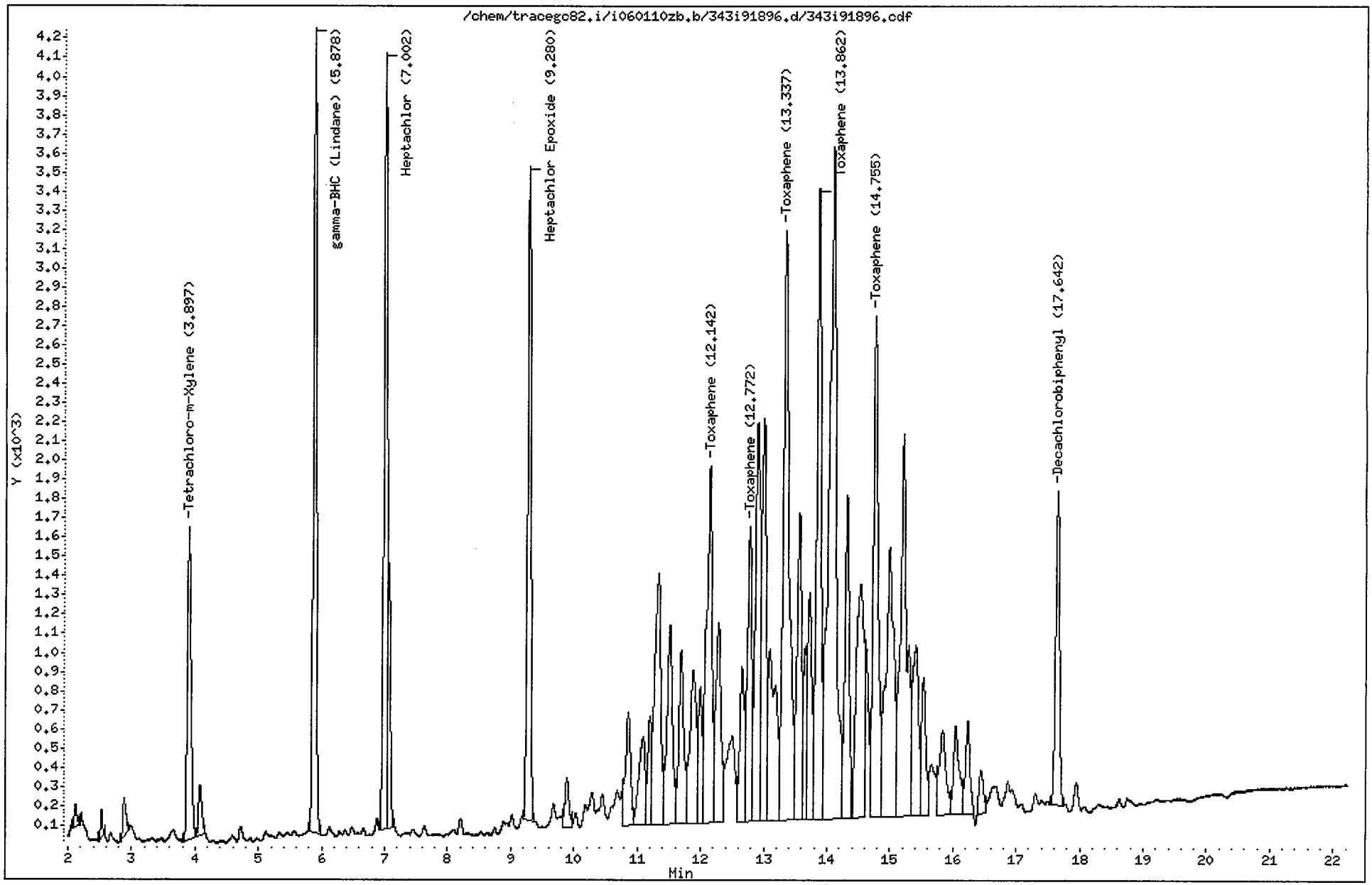
Sample Info: 91896

Volume Injected (uL): 1.0

Operator: 2564

Column phase: clpest

Column diameter: 0.53



CompuChem

Lab Smp Id : 91896 Client Smp Id : PGNLCS
Sample Type : LCS Sublist : TCLP
Inj Date : 24-JAN-2006 20:58 Inst ID : TRACEGC82
Operator : 2564 Spike Sublist : TCLP
Method : /chem/tracegc82.i/i060110zb.b/8081A_clpestv4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
0.92			6133								
1.04			11596								
1.21			8560								
1.78			526								
2.12			321								
2.53			299								
2.88			656								
3.90	3.78	3.92	6539	306784	Tetrachloro-m-Xylene	0.021315	1.065732		106.6	43 - 135	
4.08			952								
5.88	5.76	5.90	14224	491545	gamma-BHC (Lindane)	0.028937	1.446867	0.125000	96.5	32 - 127	
7.00	6.88	7.02	14832	524870	Heptachlor	0.028258	1.412921	0.125000	94.2	34 - 111	M2
7.05			3650								
9.28	9.16	9.30	12171	489070	Heptachlor Epoxide	0.024886	1.244300	0.125000	83.0	37 - 142	
9.89			1120								
10.86			3430								
11.10			3196								
11.20			2396								
11.33			8943								
11.51			6500								
11.69			4798								
11.88			5838								
11.99			2869								
12.14	12.05	12.19	11718	16064	Toxaphene Peak 1	0.729469	36.47343	25.00000	94.0	41 - 126	
12.28			6422								
12.65			3963								
12.77	12.68	12.82	7820	14263	Toxaphene Peak 2	0.548281	27.41407	25.00000	94.0	41 - 126	
12.89			11409								
12.99			10318								
13.09			7641								
13.34	13.24	13.38	20306	20141	Toxaphene Peak 3	1.008192	50.40961	25.00000	94.0	41 - 126	
13.56			8534								
13.65			3093								
13.72			5633								
13.86	13.77	13.91	16175	16036	Toxaphene Peak 4	1.008699	50.43497	25.00000	94.0	41 - 126	
14.10			28794								
14.31			8006								
14.53			11078								

M2

TAJ 1/25/06

CompuChem

Lab Smp Id : 91896
Client Smp Id : PGNLCS
Sample Type : LCS
Sublist : TCLP
Inj Date : 24-JAN-2006 20:58
Inst ID :
Operator : 2564
Spike Sublist : TCLP
Method : /chem/tracegc82.i/i060110zb.b/8081A_clpestv4.m
Misc. Info : None

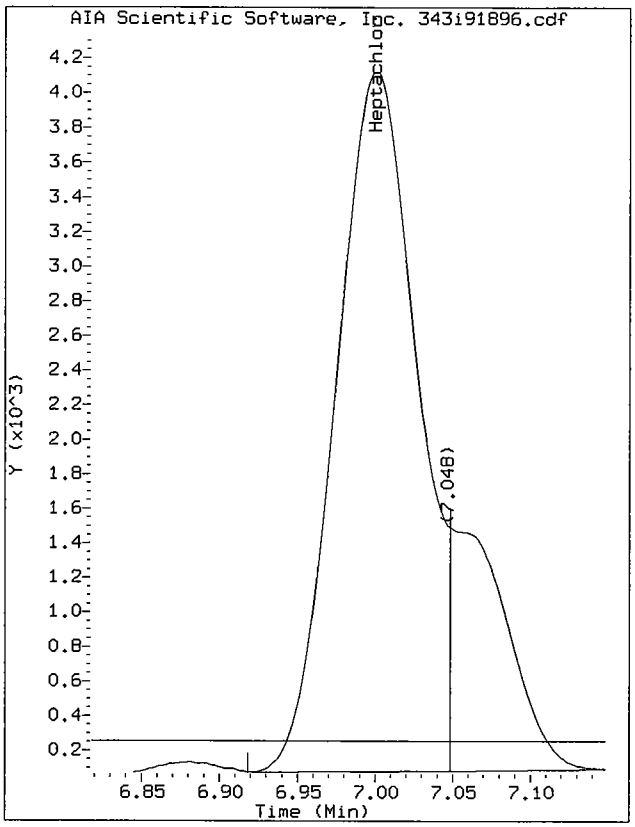
Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul)
Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
14.76	14.66 14.80	14250	10148	Toxaphene Peak 5	1.404050	70.20249	25.00000	94.0	41 - 126	Mz
14.98		12522								
15.21		14873								
15.41		6324								
15.53		3518								
15.84		3184								
16.04		2947								
16.23		2370								
16.44		1095								
17.64	17.53 17.67	6851	362764	Decachlorobiphenyl	0.018883	0.944141		94.4	43 - 144	

TAJ 1/25/06

Manually Integrated Peaks



Start: 6.92 Stop: 7.05

Data File: /chem/tracegc83.i/i060110zb.b/343i91896.d

Date : 24-JAN-2006 20:58

Client ID: PGNLCS

Instrument: tracegc83.i

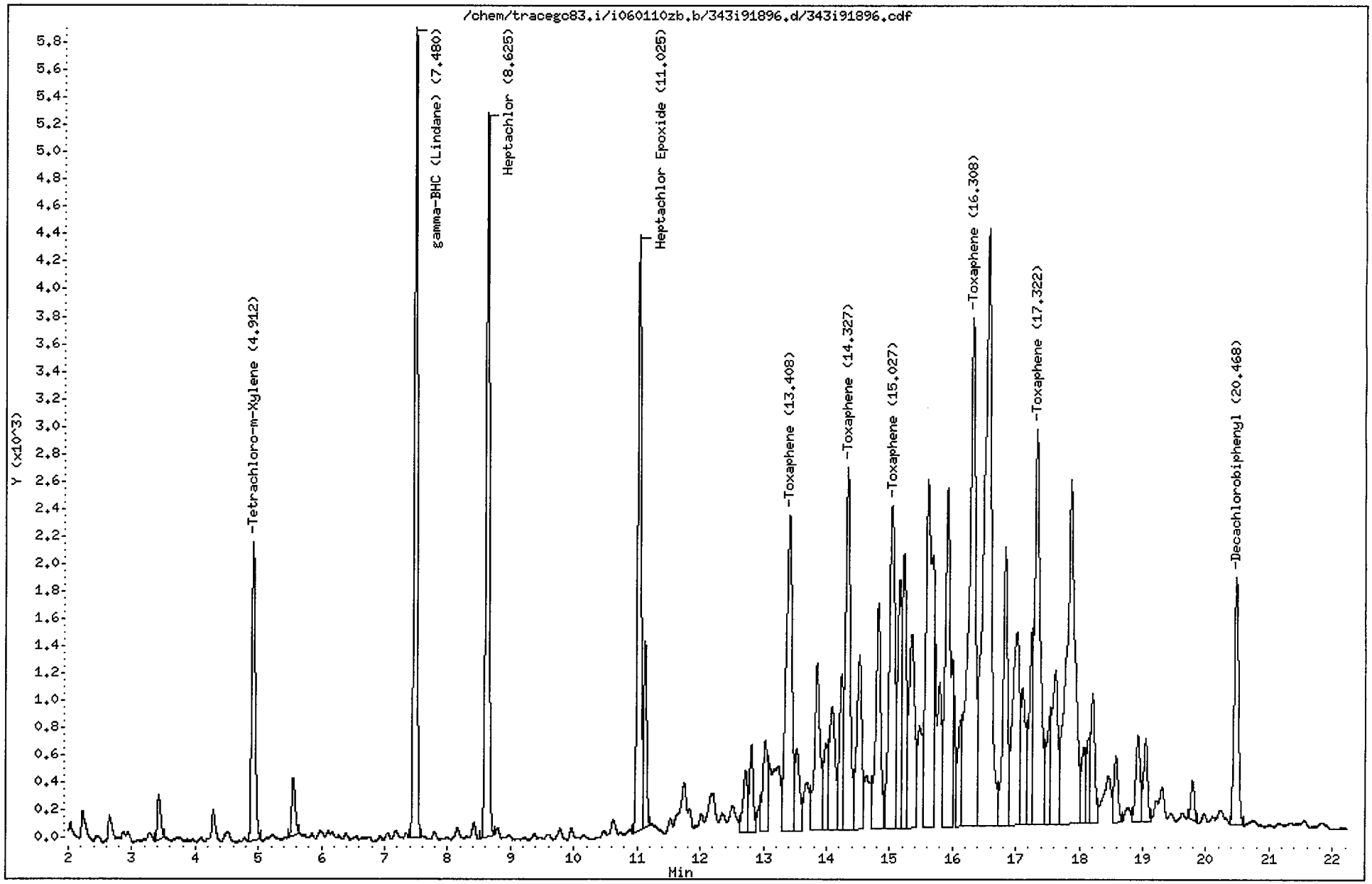
Sample Info: 91896

Volume Injected (uL): 1.0

Operator: 2564

Column phase: clpest2

Column diameter: 0.53



CompuChem

Lab Smp Id : 91896
Client Smp Id : PGNLCS
Sample Type : LCS
Sublist : TCLP
Inj Date : 24-JAN-2006 20:58
Inst ID : TRACEGC83
Operator : 2564
Spike Sublist : TCLP
Method : /chem/tracegc83.i/i060110zb.b/8081A_clpest2v4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul)
Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
0.91			3533								
1.02			13785								
1.23			12254								
1.84			1582								
3.42			1216								
4.91	4.79	4.93	8329	403926	Tetrachloro-m-Xylene	0.020620	1.031005		103.1	43 - 135	
5.55			1582								
7.48	7.36	7.50	19456	689670	gamma-BHC (Lindane)	0.028209	1.410457	0.125000	94.0	32 - 127	
8.62	8.50	8.64	19620	732145	Heptachlor	0.026797	1.339830	0.125000	89.3	34 - 111	
11.02	10.90	11.04	16412	660355	Heptachlor Epoxide	0.024853	1.242665	0.125000	82.8	37 - 142	
11.12			4703								
12.71			2214								
12.81			2618								
13.03			3692								
13.41	13.31	13.45	15343	18029	Toxaphene Peak 1	0.850974	42.54871	25.00000	94.0	41 - 126	
13.52			3054								
13.85			7503								
13.98			2825								
14.09			6084								
14.23			4879								
14.33	14.23	14.37	13998	23239	Toxaphene Peak 2	0.602349	30.11747	25.00000	94.0	41 - 126	
14.52			7592								
14.81			9170								
15.03	14.93	15.07	14696	25354	Toxaphene Peak 3	0.579638	28.98191	25.00000	94.0	41 - 126	
15.15			7693								
15.22			9096								
15.35			9230								
15.60			19736								
15.91			16171								
16.12			3191								
16.31	16.21	16.35	26889	27277	Toxaphene Peak 4	0.985776	49.28878	25.00000	94.0	41 - 126	
16.56			36661								
16.83			9907								
17.01			11156								
17.10			5453								
17.25			5898								
17.32	17.23	17.37	17658	10464	Toxaphene Peak 5	1.687445	84.37224	25.00000	94.0	41 - 126	

M_2

TAJ 1/25/06

CompuChem

Lab Smp Id : 91896 Client Smp Id : PGNLCS
Sample Type : LCS Sublist : TCLP
Inj Date : 24-JAN-2006 20:58 Inst ID :
Operator : 2564 Spike Sublist : TCLP
Method : /chem/tracegc83.i/i060110zb.b/8081A_clpest2v4.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
17.54		3925								M2
17.62		6980								
17.86		24042								
18.06		2465								
18.13		2068								
18.20		4563								
18.57		2301								
18.92		3218								
19.04		2714								
19.79		1114								
20.47	20.35 20.49	8448	459870	Decachlorobiphenyl	0.018368	0.918412		91.8	43 - 144	

TAJ 1/25/06

CompuChem
a division of Liberty Analytical Corp.

HC (summary only) + full + EDD CD

31-Jan-06

ADRIENNE JONES
CH2M HILL, INC.
5700 CLEVELAND STREET
SUITE 101
VIRGINIA BEACH, VA 23462

Subject:
Report of Data-Project: CTO-007 (AR) Workorder: 8925

Attn.: ADRIENNE JONES

Enclosed are the results of analytical work performed in accordance with the referenced account number.

This report covers sample(s) appearing on the attached listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097.

Sincerely,

CompuChem
A Division of Liberty Analytical

Attachment

TOTAL NUMBER
OF PAGES_____

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem
a division of Liberty Analytical Corp.

HC (summary only) + full + CD

31-Jan-06

MARK STINNETT
CH2M HILL, INC.
3011 SW WILLISTON ROAD

GAINESVILLE, FL 32608

Subject:
Report of Data-Project: CTO-007 (AR) Workorder: 8925

Attn.: MARK STINNETT

Enclosed are the results of analytical work performed in accordance with the referenced account number.

This report covers sample(s) appearing on the attached listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097.

Sincerely,

CompuChem
A Division of Liberty Analytical

Attachment

TOTAL NUMBER

OF PAGES_____

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem

a division of Liberty Analytical Corp.

full HC (hole punched)

31-Jan-06

SHAWNE RODGERS
ENVIRONMENTAL DATA QUALITY, INC.
967 EAST SWEDESFORD ROAD
SUITE 404
Exton, PA 19341

Subject:
Report of Data-Project: CTO-007 (AR) Workorder: 8925

Attn.: SHAWNE RODGERS

Enclosed are the results of analytical work performed in accordance with the referenced account number.

This report covers sample(s) appearing on the attached listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097.

Sincerely,

CompuChem
A Division of Liberty Analytical

Attachment

TOTAL NUMBER

OF PAGES_____

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem, a division of Liberty Analytical

Hsn	Client ID	Wordorder	Matrix	Account	Project	Report
892501	WAR-IDW-4	8925	L	CH2MHILL	CTO-007 (AR)	

CompuChem, a Division of Liberty Analytical Corporation

I. SAMPLE DATA SUMMARY PACKAGE

GC by SW-846

The sample data summary package shall contain data for all samples in one Sample Delivery Group (SDG) of the Case, as follows:

A. SDG Narrative

B. Tabulated target compound results (Form I)

C. Surrogate spike analysis results (Form II)
By matrix (Water or Soil), and
by concentration (Low, or Medium)

D. Spike results MS / MSD / LCS (Form III)

E. Blank data (Form IV)
Tabulated blank results (Form I)

LAB CODE : COMPU

METHOD: 8151A

SDG # : 8925

A. SDG Narrative

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 8925
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS:
WAR-IDW-4

The one water sample listed above was received intact, properly refrigerated, with proper documentation, in sealed shipping containers, on January 19, 2006. The sample was scheduled for the requested analyses of the herbicide fraction. SW-846, 3rd Edition, Update 3, the Toxicity Characteristic Leaching Procedure (TCLP) (Method 1311), Separatory Funnel extraction and Method 8151A were used to prepare and analyze these samples, with the exceptions and/or additions requested by the client. This portion of the SDG narrative deals with the herbicide fraction only.

Herbicide-TCLP

Extraction and analysis holding time requirements were met for this sample.

There were no herbicide project analytes confirmed by dual column analysis above the Quantitation Limit (QL) in this sample.

Manual quantitations were performed on one or more of the process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

The surrogate met recovery and retention time criteria in the analyses of this sample.

The associated method blank met all quality control criteria.

There is no associated duplicate matrix spikes for this SDG.

The associated Laboratory Control Sample (LCS) prepared and analyzed along with this sample met all accuracy criteria.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

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. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Elsie S. Byrd
Senior Scientist I
January 27, 2006

GC and GC/MS Column and Trap Specifications Table

SDG #:	8925

COLUMNS

Columns Utilized	Brand Name	Coating Material	ID (mm)	Film Thickness (um)	Length (m)
	GC Laboratory				
	Restek	RTX-5	0.53	1.0	30
	Restek	RTX-SMS	0.53	1.0	30
✓	Restek	CLPesticides	0.53	0.5	30
✓	Restek	CLPesticides II	0.53	0.42	30
	J&W	DB-210	0.53	1.0	30
	J&W	GS-GASPRO	0.32		30
	GC Volatiles Laboratory				
	Restek	RTX-Volatiles	0.53	2.0	30
	GC/MS Volatiles Laboratory				
	Restek	RTX-624	0.32	1.8	60
	Restek	RTX-VMS*	0.18	1.0	20
	Phenomonex	ZB-624	0.32	1.8	60
	Supelco	SPB-624	0.32	3	75
	GC/MS Semivolatiles Laboratory				
	Restek	RTX-5MS	0.25	0.3	30
	Restek	RTX-5MS	0.32	0.3	30
	HPLC Laboratory				
	Supelco	Supelcosil LC-PAH	4.6	5.0	15 cm
	Supelco	Discovery RP Amide C16	4.6	5.0	25 cm
	Restek	Pinnacle Cyano	4.6	5	25 cm
	Restek	Allure C18	4.6	5	25 cm

TRAPS

	GC and GC/MS Volatiles Laboratory	
	Tekmar 3	* 8 cm of 2,6-diphenylene oxide polymer (Tenax)
		* 8 cm of silica gel
		* 7 cm of coconut charcoal
		* 0.5 cm of silanized glass wool at each end
	Tekmar 5	* 1 cm of methyl silicone packing (OV-1 coating)
		* 8 cm of 2,6-diphenylene oxide polymer (Tenax)
		* 8 cm of silica gel
		* 7 cm of coconut charcoal
		* 0.5 cm of silanized glass wool at each end
	Supelco K (Vocarb3000)	* 10 cm of Carbopack B (Graphitized Carbons)
		* 6 cm of Carboxen 1000 (Carbon molecular sieves)
		* 1 cm of Carboxen 1001 (Carbon molecular sieves)

Rev. 18

CompuChem

a division of Liberty Analytical Corporation

CompuChem's Pagination Convention

As required by the EPA CLP Statement of Work (SOW) documents, data to be delivered must be paginated (by machine or hand). In the event that the initial numbering is incorrect (a page numbered twice or a page skipped, for example), it is CompuChem's policy to add an alphabetic suffix to a page number when necessary (e.g., 100A, 100B, etc.).

Notification Regarding Manual Editing/Integration Flags

In some instances, manual adjustments to the software output are necessary to provide accurate data. These manual integrations are performed by the data reviewers, GC/MS operators, or GC chemists. An Extracted Ion Current Profile (EICP) or a GC chromatographic peak has been provided for the manual integration performed on each compound to demonstrate the accuracy of that process. The manual integrations are flagged on the quantitation report in the far right column beyond the FINAL concentration for GC/MS analysis, and in the "Flags" column for GC analysis. The manual editing/integration flags are:

M - Denotes that a manual integration has been performed for this compound. The manual integration was performed in order to provide the most accurate area count possible for the peak.

H - Denotes that the data reviewer, GC/MS operator, or GC Chemist has chosen an alternate peak within the retention time window from that chosen by the software for that compound. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

MH - Denotes that an alternate peak has been chosen within the retention time window from that chosen by the software for that compound and also a manual integration of the chosen peak has been performed. The manual integration was performed in order to provide the most accurate area count possible for the peak.

L - Denotes that a data reviewer or GC/MS operator has selected an alternate library search. This is typically done when an additional tentatively identified compound (TIC) has been added to the number of peaks searched. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

ML - Denotes that an alternate library search has been selected and a manual integration has also been performed. This is typically done when an additional TIC has been added and the TIC peak also required a manual integration.

The EPA CLP SOW documents require additional explanations for manual editing/integration. In the accompanying raw data packages, additional codes have been applied to the "M" flag and carry the following meanings;

M1 - The compound was not found by the automatic integration routine.

M2 - The compound was incorrectly integrated by the automatic integration routine.

M3 - The co-eluting compounds were incorrectly integrated by the automatic integration routine.

These codes will appear in the GC/MS and GC raw data.

DATA REPORTING QUALIFIERS

On the Form I, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on Form I for each compound. The qualifiers used are:

U : This flag indicates the compound was analyzed for but not detected. The Contract Required Quantitation Limit (CRQL), or reporting limit, will be adjusted to reflect any dilution and, for soils, the percent moisture.

J : This flag indicates an estimated value. The flag is used as detailed below:

1. When estimating a concentration for tentatively identified compounds (TICs) where a response factor of 1.0 is assumed for the TIC analyte,

2. When the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the CRQL (or Reporting Limit) but greater than zero, and

3. When the retention time data indicate the presence of a compound that meets the pesticide/Aroclor or other GC or HPLC identification criteria, and the result is less than the CRQL (or Reporting Limit) but greater than zero. For example, if the CRQL (or Reporting Limit) is 10 µg/L, but a concentration of 3 µg/L is calculated, it is reported as 3J.

N : This flag indicates presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search. For generic characterization of a TIC such as 'chlorinated hydrocarbon', the N flag is not used.

P : In the EPA's Contract Laboratory Program (CLP), this flag is used for a pesticide/Aroclor target analyte, when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form I and flagged with a P.
For SW-846 GC and HPLC analyses, when the Relative Percent Difference (RPD) is greater than 40% and there is no evidence of chromatographic anomalies or interferences, then the higher of the two values is reported and flagged with a P. When the RPD is equal to or less than 40%, our policy is to also report the higher of the two values, although the choice could be a project specific issue. For certain HPLC analyses, if one of the HPLC columns displays co-elution of target analytes, all results are reported from a primary column displaying no co-elution. Results are still flagged with a P if the RPD between columns is greater than 40%.

DATA REPORTING QUALIFIERS (continued)

C : This flag applies to GC or HPLC results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, this flag is not applied; a laboratory-defined flag is used instead (see the X/Y/Z qualifier.)

B : This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified target compound. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

E : This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis. If one or more compounds have a response greater than the upper level of the calibration range, the sample or extract will be diluted and reanalyzed. All such compounds with a response greater than the upper level of the calibration range will have the concentration flagged with an E on Form I for the original analysis.

D : If a sample or extract is reanalyzed at a higher dilution factor, for example when the concentration of an analyte exceeds the upper calibration range, the DL suffix is appended to the sample number on Form I for the more diluted sample, and **all** reported concentrations on that Form I are flagged with the D flag. This flag alerts data users that any discrepancies between the reported concentrations may be due to dilution of the sample or extract.

NOTE 1: The D flag is not applied to compounds which are not detected in the sample analysis i.e. compounds reported with the CRQL (or Reporting Limit) and the U flag.

NOTE 2: Separate Form Is are used for reporting the original analysis (Client Sample No. XXXXX) and the more diluted sample analysis (Client Sample No. XXXXXDL) i.e. the results from both analyses <u>are not combined</u> on a single Form I.

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

S: In the SOM01.1 SOW, this flag is used to indicate an estimated value for Aroclor target compounds where a valid 5-point initial calibration was not performed prior to the analytes detection in a sample. If an "S" flag is used for a specific Aroclor, then a reanalysis of the sample is required after a valid 5-point calibration is performed for the detected Aroclor.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y and Z.

B. Form I

Organic Analysis Data Sheet (OADS)
- All samples in alphanumeric order
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Control Sample(s)

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WAR-IDW-4

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 892501

Sample wt/vol: 100.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 01/19/06

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(ul) Date Analyzed: 01/25/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	25	U
93-72-1	silvex	5.0	U

FORM I PEST

1D

EPA SAMPLE NO.

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

PGMLCS

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 91894

Sample wt/vol: 100.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(ul) Date Analyzed: 01/25/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	74	
93-72-1	silvex	19	

C. Form II

Surrogate spike analysis

- By level (low, medium) -

2E

WATER PESTICIDE SURROGATE RECOVERY

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

GC Column(1): CLPEST ID: 0.53 (mm) GC Column(2): CLPEST2 ID: 0.53 (mm)

	EPA SAMPLE NO.	S1 1 %REC	#	S1 2 %REC	#	S2 1 %REC	#	S2 2 %REC	#	S3 1 %REC	#	S3 2 %REC	#	TOT OUT
01	PBLKGM	88		87										0
02	PGMLCS	94		91										0
03	TCLPBLKFW	56		56										0
04	WAR-IDW-4	82		83										0
05														
06														
07														
08														
09														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														
29														
30														

ADVISORY
QC LIMITS

S1 = DCAA (50-148)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

D. Form III

Matrix Spike/Matrix Spike Duplicate results

- By level (low, medium) -

Laboratory Control Sample(s)

3E
WATER PESTICIDE LAB CONTROL SAMPLE

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

LCS ID: PGMLCS

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
2,4-D	80	74	93	50-150
silvex	20	19	95	50-150

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

* Values outside of QC limits

Spike Recovery: 0 out of 2 outside limits

COMMENTS: _____

_____

FORM III PEST-1

E. Form IV

Method Blank Results
Form IV, Form I

Method blank summary, OADS
- In chronological order of analysis

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLKGM

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Lab Sample ID: 91893 Lab File ID: 036L91893

Matrix (soil/water) WATER Extraction:(SepF/Cont/Sonc) SEPF

Sulfur Cleanup (Y/N) N Date Extracted: 01/24/06

Date Analyzed (1): 01/25/06 Date Analyzed (2): 01/25/06

Time Analyzed (1): 1949 Time Analyzed (2): 1949

Instrument ID (1): VARIAN37 Instrument ID (2): VARIAN42

GC Column (1): CLPEST ID: 0.53(mm) GC Column (2): CLPEST2 ID: 0.53(mm)

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

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	PGMLCS	91894	01/25/06	01/25/06
02	TCLPBLKFW	91766	01/25/06	01/25/06
03	WAR-IDW-4	892501	01/25/06	01/25/06
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: _____

1D

EPA SAMPLE NO.

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

PBLKGM

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 91893

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(ul) Date Analyzed: 01/25/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	5.0	U
93-72-1	silvex	1.0	U

CompuChem, a Division of Liberty Analytical Corporation

I. SAMPLE DATA PACKAGE

GC by SW-846

The sample data package shall include data for all analyses of all samples in one Sample Delivery Group (SDG), including field samples, dilutions, reanalyses, blanks, matrix spikes, matrix spike duplicates, and laboratory control samples. The sample data package consists of the following:

A. SDG Narrative

B. Chain-of-Custody Documentation

C. SDG Data

LAB CODE : COMPU

METHOD: 8151A

CASE # : _____

SDG # : 8925

A. SDG Narrative

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 8925
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS:
WAR-IDW-4

The one water sample listed above was received intact, properly refrigerated, with proper documentation, in sealed shipping containers, on January 19, 2006. The sample was scheduled for the requested analyses of the herbicide fraction. SW-846, 3rd Edition, Update 3, the Toxicity Characteristic Leaching Procedure (TCLP) (Method 1311), Separatory Funnel extraction and Method 8151A were used to prepare and analyze these samples, with the exceptions and/or additions requested by the client. This portion of the SDG narrative deals with the herbicide fraction only.

Herbicide-TCLP

Extraction and analysis holding time requirements were met for this sample.

There were no herbicide project analytes confirmed by dual column analysis above the Quantitation Limit (QL) in this sample.

Manual quantitations were performed on one or more of the process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

The surrogate met recovery and retention time criteria in the analyses of this sample.

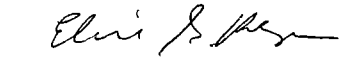
The associated method blank met all quality control criteria.

There is no associated duplicate matrix spikes for this SDG.

The associated Laboratory Control Sample (LCS) prepared and analyzed along with this sample met all accuracy criteria.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

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. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.



Elsie S. Byrd
Senior Scientist I
January 27, 2006

GC and GC/MS Column and Trap Specifications Table

SDG #:	8925

COLUMNS

Columns Utilized	Brand Name	Coating Material	ID (mm)	Film Thickness (um)	Length (m)
	GC Laboratory				
	Restek	RTX-5	0.53	1.0	30
	Restek	RTX-SMS	0.53	1.0	30
✓	Restek	CLPesticides	0.53	0.5	30
✓	Restek	CLPesticides II	0.53	0.42	30
	J&W	DB-210	0.53	1.0	30
	J&W	GS-GASPRO	0.32		30
	GC Volatiles Laboratory				
	Restek	RTX-Volatiles	0.53	2.0	30
	GC/MS Volatiles Laboratory				
	Restek	RTX-624	0.32	1.8	60
	Restek	RTX-VMS*	0.18	1.0	20
	Phenomonex	ZB-624	0.32	1.8	60
	Supelco	SPB-624	0.32	3	75
	GC/MS Semivolatiles Laboratory				
	Restek	RTX-5MS	0.25	0.3	30
	Restek	RTX-5MS	0.32	0.3	30
	HPLC Laboratory				
	Supelco	Supelcosil LC-PAH	4.6	5.0	15 cm
	Supelco	Discovery RP Amide C16	4.6	5.0	25 cm
	Restek	Pinnacle Cyano	4.6	5	25 cm
	Restek	Allure C18	4.6	5	25 cm

TRAPS

	GC and GC/MS Volatiles Laboratory	
	Tekmar 3	* 8 cm of 2,6-diphenylene oxide polymer (Tenax)
		* 8 cm of silica gel
		* 7 cm of coconut charcoal
		* 0.5 cm of silanized glass wool at each end
	Tekmar 5	* 1 cm of methyl silicone packing (OV-1 coating)
		* 8 cm of 2,6-diphenylene oxide polymer (Tenax)
		* 8 cm of silica gel
		* 7 cm of coconut charcoal
		* 0.5 cm of silanized glass wool at each end
	Supelco K (Vocarb3000)	* 10 cm of Carbopack B (Graphitized Carbons)
		* 6 cm of Carboxen 1000 (Carbon molecular sieves)
		* 1 cm of Carboxen 1001 (Carbon molecular sieves)

Rev. 18

CompuChem

a division of Liberty Analytical Corporation

CompuChem's Pagination Convention

As required by the EPA CLP Statement of Work (SOW) documents, data to be delivered must be paginated (by machine or hand). In the event that the initial numbering is incorrect (a page numbered twice or a page skipped, for example), it is CompuChem's policy to add an alphabetic suffix to a page number when necessary (e.g., 100A, 100B, etc.).

Notification Regarding Manual Editing/Integration Flags

In some instances, manual adjustments to the software output are necessary to provide accurate data. These manual integrations are performed by the data reviewers, GC/MS operators, or GC chemists. An Extracted Ion Current Profile (EICP) or a GC chromatographic peak has been provided for the manual integration performed on each compound to demonstrate the accuracy of that process. The manual integrations are flagged on the quantitation report in the far right column beyond the FINAL concentration for GC/MS analysis, and in the "Flags" column for GC analysis. The manual editing/integration flags are:

M - Denotes that a manual integration has been performed for this compound. The manual integration was performed in order to provide the most accurate area count possible for the peak.

H - Denotes that the data reviewer, GC/MS operator, or GC Chemist has chosen an alternate peak within the retention time window from that chosen by the software for that compound. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

MH - Denotes that an alternate peak has been chosen within the retention time window from that chosen by the software for that compound and also a manual integration of the chosen peak has been performed. The manual integration was performed in order to provide the most accurate area count possible for the peak.

L - Denotes that a data reviewer or GC/MS operator has selected an alternate library search. This is typically done when an additional tentatively identified compound (TIC) has been added to the number of peaks searched. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

ML - Denotes that an alternate library search has been selected and a manual integration has also been performed. This is typically done when an additional TIC has been added and the TIC peak also required a manual integration.

The EPA CLP SOW documents require additional explanations for manual editing/integration. In the accompanying raw data packages, additional codes have been applied to the "M" flag and carry the following meanings;

M1 - The compound was not found by the automatic integration routine.

M2 - The compound was incorrectly integrated by the automatic integration routine.

M3 - The co-eluting compounds were incorrectly integrated by the automatic integration routine.

These codes will appear in the GC/MS and GC raw data.

DATA REPORTING QUALIFIERS

On the Form I, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on Form I for each compound. The qualifiers used are:

U : This flag indicates the compound was analyzed for but not detected. The Contract Required Quantitation Limit (CRQL), or reporting limit, will be adjusted to reflect any dilution and, for soils, the percent moisture.

J : This flag indicates an estimated value. The flag is used as detailed below:

1. When estimating a concentration for tentatively identified compounds (TICs) where a response factor of 1.0 is assumed for the TIC analyte,

2. When the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the CRQL (or Reporting Limit) but greater than zero, and

3. When the retention time data indicate the presence of a compound that meets the pesticide/Aroclor or other GC or HPLC identification criteria, and the result is less than the CRQL (or Reporting Limit) but greater than zero. For example, if the CRQL (or Reporting Limit) is 10 µg/L, but a concentration of 3 µg/L is calculated, it is reported as 3J.

N : This flag indicates presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search. For generic characterization of a TIC such as 'chlorinated hydrocarbon', the N flag is not used.

P : In the EPA's Contract Laboratory Program (CLP), this flag is used for a pesticide/Aroclor target analyte, when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form I and flagged with a P.
For SW-846 GC and HPLC analyses, when the Relative Percent Difference (RPD) is greater than 40% and there is no evidence of chromatographic anomalies or interferences, then the higher of the two values is reported and flagged with a P. When the RPD is equal to or less than 40%, our policy is to also report the higher of the two values, although the choice could be a project specific issue. For certain HPLC analyses, if one of the HPLC columns displays co-elution of target analytes, all results are reported from a primary column displaying no co-elution. Results are still flagged with a P if the RPD between columns is greater than 40%.

DATA REPORTING QUALIFIERS (continued)

C : This flag applies to GC or HPLC results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, this flag is not applied; a laboratory-defined flag is used instead (see the X/Y/Z qualifier.)

B : This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified target compound. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

E : This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis. If one or more compounds have a response greater than the upper level of the calibration range, the sample or extract will be diluted and reanalyzed. All such compounds with a response greater than the upper level of the calibration range will have the concentration flagged with an E on Form I for the original analysis.

D : If a sample or extract is reanalyzed at a higher dilution factor, for example when the concentration of an analyte exceeds the upper calibration range, the DL suffix is appended to the sample number on Form I for the more diluted sample, and **all** reported concentrations on that Form I are flagged with the D flag. This flag alerts data users that any discrepancies between the reported concentrations may be due to dilution of the sample or extract.

NOTE 1: The D flag is not applied to compounds which are not detected in the sample analysis i.e. compounds reported with the CRQL (or Reporting Limit) and the U flag.

NOTE 2: Separate Form Is are used for reporting the original analysis (Client Sample No. XXXXX) and the more diluted sample analysis (Client Sample No. XXXXXDL) i.e. the results from both analyses <u>are not combined</u> on a single Form I.

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

S: In the SOM01.1 SOW, this flag is used to indicate an estimated value for Aroclor target compounds where a valid 5-point initial calibration was not performed prior to the analytes detection in a sample. If an "S" flag is used for a specific Aroclor, then a reanalysis of the sample is required after a valid 5-point calibration is performed for the detected Aroclor.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y and Z.

B. Chains-of-Custody

The laboratory shall include a copy of the Chain-of-Custody (CoC) documentation for all of the samples in the SDG. The CoC documents shall be arranged in increasing Client Sample ID number order, considering both letters and numbers.

Vieques ERP

CH2M HILL

Chain of Custody Form

Project Site	AOC R				Number of Containers	Analysis Requested											Project No. 180357.FI.FK.AR
Project Manager	Brett Doerr																
Contact Tel No.	757-289-9246 (Adrienne Jones)																Lab Batch/SDG ID
Contact Address	4350 W. Cypress Street, Suite 600, Tampa, FL 33607																
Lab Name	CompuChem Labs																Lab Tel No./Fax No.
Lab Contact	Cathy Dover																919-379-4089/919-379-4040
Lab Address	501 Madison Ave. Cary, NC 27513																
Item	Sample ID	Station ID	Matrix	Date & Time Collected		CORR_IGNIT_SO 8oz	REACTIVITY_SO	TCLP_VOC_SO 4oz	TCLP_SO 8oz		CORR_IGNIT_W 2AL	REACTIVITY_W	TCLP_VOC_W 3-40ml	TCLP_W 5AL			Comments
1	WAR-IDW-4	IDW	WW	01/17/2006 1140	3	X	X	X	X								892501
2	WAR-IDW-3	IDW	WW	01/17/2006 1040	10						X	X	X	X			892601
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	

Sampled By: Kenji Butler	Date/Time: 1-18-06 0800	Custody Seal: Y / N Relinquished By:	Date/Time: 1/18/06 0830
Shipped Via: UPS (FedEx) Hand Other (Please specify):			
Samples Temperature and Condition Upon Receipt (for lab's use):			
Received By:	Date/Time:	Custody Seal: Y / N Relinquished By:	Date/Time:
Received By:	Date/Time: 1-19-06 9:15	Custody Seal: Y / N Relinquished By:	Date/Time:

Remarks: 01/18/2006 AOC-R COC # 10

Cooler # 1

Temp @ 4.6 °C

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WORKORDER SUMMARY REPORT

Workorder: 8925 **Account:** CH2MHILL **Project:** CTO-007 (AR)
SDG-Case: CTO-007/18035 **Status:** CLOSED **QC Type:** CLIENT SPECIFIC MS/MSD
Report Style: COMPUCHEM STYLE 9 INTEGRATED W/EDD&CD

SAMPLE ID	CLIENT ID	COLLECT DATE	RECEIVE DATE	DUE DATE	COMMENTS
892501	WAR-IDW-4	1/17/2006	1/19/2006	2/13/2006	LCS ONLY*TCLP VOC, SVOC, PEST, HERB & METALS*RIC
L	GS8081TCLP	TCLP PST ONLY 8081A SOIL			
L	GS8151TCLP	TCLP HERBICIDE 8151 SOIL			
L	MS6010TCLP	TCLP METAL 6010B SOIL			
L	MS74HGTCLP	TCLP MERCURY ONLY 7471A SOIL			
L	SS8270TCLP	TCLP SVOC 8270C SOIL			
L	VS8260ZHE	ZHE VOC 8260B SOIL			
L	WS1010IGNT	IGNITABILITY 1010 SOIL			
L	WS9014RCCN	REACTIVE CYANIDE 9014 SOIL			
L	WS9034RCSF	REACTIVE SULFIDE 9034 SOIL			
L	WS9040COR	CORROSIVITY 9040B SOIL			

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Extract Chain of Custody

Batch: 8893 Date: 1/24/2006

Department: Organic Extractions

Sample ID	Client ID	Product	Matrix	Hold Date
892501	WAR-IDW-4	GW8151TCLX	L	2/1/2006
892601	WAR-IDW-3	GW8151TCLX	L	2/1/2006
91766	HLCHBK for	GW8151TCLX	W	2/1/2006
91771	HLCHBK for	GW8151TCLX	W	2/1/2006
91893	PBLKGM	GW8151TCLX	W	2/1/2006
91894	PGMLCS	GW8151TCLX	W	2/1/2006

1-25-6

Relinquished By:	Received By:	Date/Time
GC#3	GC Rebug #3	1/25/06 4:00
		1/25/61 1600
	GC#4	1/25/06 1600

C. SDG Data

1. QC Summary
2. Sample Data
3. Standards Data
4. Raw QC Data

LAB CODE : COMPU

METHOD: _____

CASE # : _____

SDG # : _____

1. Q C Summary

a. Surrogate Percent Recovery Summary (Form II)

b. Matrix Spike/Matrix Spike Duplicate/
Laboratory Control Sample Summary
(Form III)

c. Method Blank Summary (Form IV)

a. Surrogate Percent Recovery Summary

(Form II)

2E

WATER PESTICIDE SURROGATE RECOVERY

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

GC Column(1): CLPEST ID: 0.53 (mm) GC Column(2): CLPEST2 ID: 0.53 (mm)

	EPA SAMPLE NO.	S1 1 %REC	#	S1 2 %REC	#	S2 1 %REC	#	S2 2 %REC	#	S3 1 %REC	#	S3 2 %REC	#	TOT OUT
01	PBLKGM	88		87										0
02	PGMLCS	94		91										0
03	TCLPBLKFW	56		56										0
04	WAR-IDW-4	82		83										0
05														
06														
07														
08														
09														
10														
11														
12														
13														
14														
15														
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27														
28														
29														
30														

ADVISORY QC LIMITS

S1 = DCAA (50-148)

\# Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

b. Matrix Spike/Matrix Spike Duplicate/
Laboratory Control Sample Summary

(Form III)

3E
WATER PESTICIDE LAB CONTROL SAMPLE

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

LCS ID: PGMLCS

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
2,4-D	80	74	93	50-150
silvex	20	19	95	50-150

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

* Values outside of QC limits

Spike Recovery: 0 out of 2 outside limits

COMMENTS: _____

_____

FORM III PEST-1

c. Method Blank Summary (Form IV)

If more than a single form is necessary, forms shall be arranged in chronological order by date of analysis of the blanks, by instrument.

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLKGM

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Lab Sample ID: 91893 Lab File ID: 036L91893

Matrix (soil/water) WATER Extraction:(SepF/Cont/Sonc) SEPF

Sulfur Cleanup (Y/N) N Date Extracted: 01/24/06

Date Analyzed (1): 01/25/06 Date Analyzed (2): 01/25/06

Time Analyzed (1): 1949 Time Analyzed (2): 1949

Instrument ID (1): VARIAN37 Instrument ID (2): VARIAN42

GC Column (1): CLPEST ID: 0.53(mm) GC Column (2): CLPEST2 ID: 0.53(mm)

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

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	PGMLCS	91894	01/25/06	01/25/06
02	TCLPBLKFW	91766	01/25/06	01/25/06
03	WAR-IDW-4	892501	01/25/06	01/25/06
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: _____

2. Sample Data

Sample data shall be arranged in packets with the Organic Analysis Data Sheet (Form I), followed by the raw data for samples. These sample packets shall be placed in increasing Client Sample ID number order, considering both letters and numbers.

a. Target Analyte Results (Form I)

Tabulated results (identification and quantitation) shall be included.

b. Copies of Chromatograms

Positively identified compounds shall be labeled with the names of compounds, either directly out from the peak on the chromatogram, or on a printout of retention times on the data system printout if retention times are printed over the peak on the chromatogram. Include for each sample or sample extract, including dilutions and reanalyses. The chromatogram shall contain the following header information: Client Sample ID number, volume injected (μL), date and time of injection, GC column ID, and GC instrument ID.

c. Copies of Chromatograms from the Second Column (if necessary)

d. Data System Printout

A printout of retention time and corresponding peak height or peak area shall accompany each chromatogram. Where edits have been made, initialing, dating and integration time range are required.

1D

EPA SAMPLE NO.

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

WAR-IDW-4

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 892501

Sample wt/vol: 100.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 01/19/06

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(ul) Date Analyzed: 01/25/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	25	U
93-72-1	silvex	5.0	U

Data File: /chem/varian37.i/1060112c.b/0401892501.d

Date : 25-JAN-2006 21:41

Client ID: WAR-IDW-4

Instrument: varian37.i

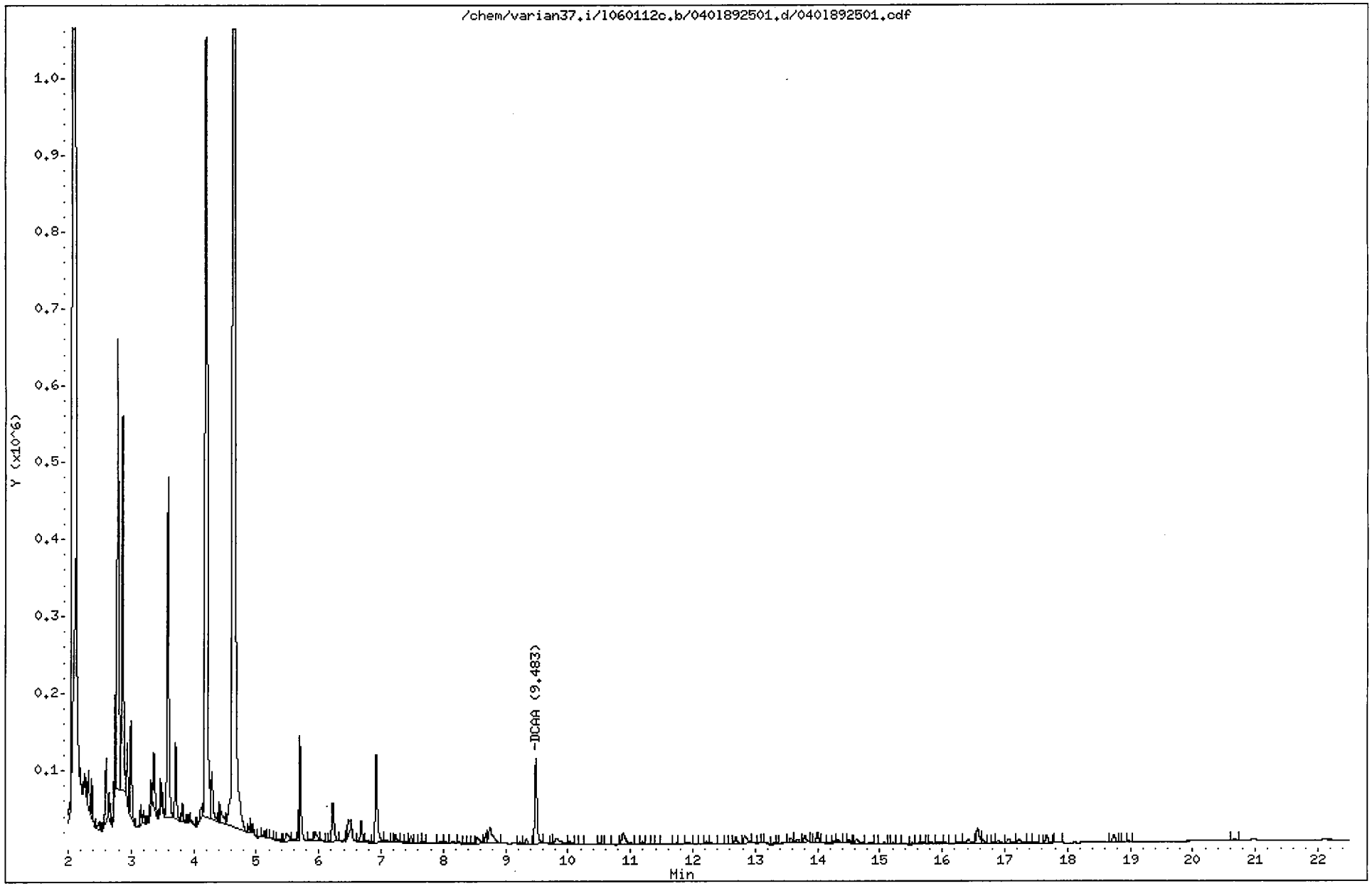
Sample Info: 892501

Volume Injected (uL): 1.0

Operator: 2512

Column phase: CLPest

Column diameter: 0.53



CompuChem

Lab Smp Id : 892501 Client Smp Id : WAR-IDW-4
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 25-JAN-2006 21:41 Inst ID : VARIAN37
Operator : 2512
Method : /chem/varian37.i/l060112c.b/8151f_clpestv2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
0.09		1529								
1.34		292815								
1.36		251805								
1.42		1125								
1.62		270598								
1.65		83182								
1.76		106145								
1.83		7789								
1.87		15981								
1.90		26479								
2.02		16808								
2.07		3434993								
2.20		9713								
2.26		12679								
2.28		12900								
2.32		70637								
2.38		63997								
2.49		22773								
2.61		144628								
2.66		43711								
2.73		23187								
2.75		135937								
2.79		1067970								
2.86		843102								
2.94		97397								
3.00		218066								
3.15		35134								
3.20		23206								
3.26		12343								
3.31		65555								
3.36		132170								
3.47		54505								
3.50		25609								
3.59		829090								
3.71		180246								
3.82		42150								
3.89		1961								

TAJ 1/26/06

CompuChem

Lab Smp Id : 892501 Client Smp Id : WAR-IDW-4
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 25-JAN-2006 21:41 Inst ID :
Operator : 2512
Method : /chem/varian37.i/l060112c.b/8151f_clpestv2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
3.93		2217								
3.96		7456								
4.12		36529								
4.20		2846385								
4.29		151333								
4.41		12964								
4.44		47312								
4.65		4385325								
4.89		8949								
4.91		13302								
4.96		9656								
5.05		1842								
5.13		17812								
5.18		1465								
5.23		3363								
5.34		6981								
5.49		35127								
5.58		7241								
5.70		120148								
5.84		8408								
5.95		38204								
6.03		4856								
6.22		126860								
6.48		59197								
6.68		58076								
6.79		7770								
6.92		275046								
7.08		7580								
7.18		1320								
7.23		23555								
7.33		3180								
7.42		2914								
7.48		15865								
7.65		1773								
7.69		5361								
7.96		5376								
8.04		4144								

CompuChem

Lab Smp Id : 892501 Client Smp Id : WAR-IDW-4
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 25-JAN-2006 21:41 Inst ID :
Operator : 2512
Method : /chem/varian37.i/l060112c.b/8151f_clpestv2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
8.15		6334								
8.26		5483								
8.34		1542								
8.40		1402								
8.47		2089								
8.55		29542								
8.69		27251								
8.75		87204								
9.22		4295								
9.33		18035								
9.48	9.45 9.51	260440	63689	DCAA	4.089228	204.4614		81.8	50 - 148	
9.73		1858								
9.81		35554								
10.03		7231								
10.20		1548								
10.50		3335								
10.63		2528								
10.88		66158								
11.19		7873								
11.29		2675								
11.44		1750								
11.74		1100								
11.92		7595								
12.14		1599								
12.22		8274								
12.29		6158								
12.46		2396								
12.61		1598								
12.69		21654								
12.84		39978								
13.06		1137								
13.18		6973								
13.29		3257								
13.47		6339								
13.57		17362								
13.68		16768								
13.80		25823								

CompuChem

Lab Smp Id : 892501 Client Smp Id : WAR-IDW-4
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 25-JAN-2006 21:41 Inst ID :
Operator : 2512
Method : /chem/varian37.i/l060112c.b/8151f_clpestv2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
14.00		33542								
14.17		3388								
14.27		5473								
14.33		13497								
14.50		10070								
14.62		24112								
14.84		7368								
15.07		5814								
15.21		1985								
15.29		1771								
15.52		3177								
15.68		2894								
15.83		2493								
15.94		5161								
16.05		2010								
16.27		7304								
16.42		23319								
16.57		60098								
16.64		13295								
16.82		3301								
16.90		13746								
17.06		23667								
17.23		18259								
17.39		4315								
17.48		5545								
17.67		27920								
17.84		3337								
18.74		26425								
18.91		1564								
18.97		3472								
20.67		3027								

Data File: /chem/varian42.i/1060112c.b/0401892501.d

Date : 25-JAN-2006 21:41

Client ID: WAR-IDW-4

Instrument: varian42.i

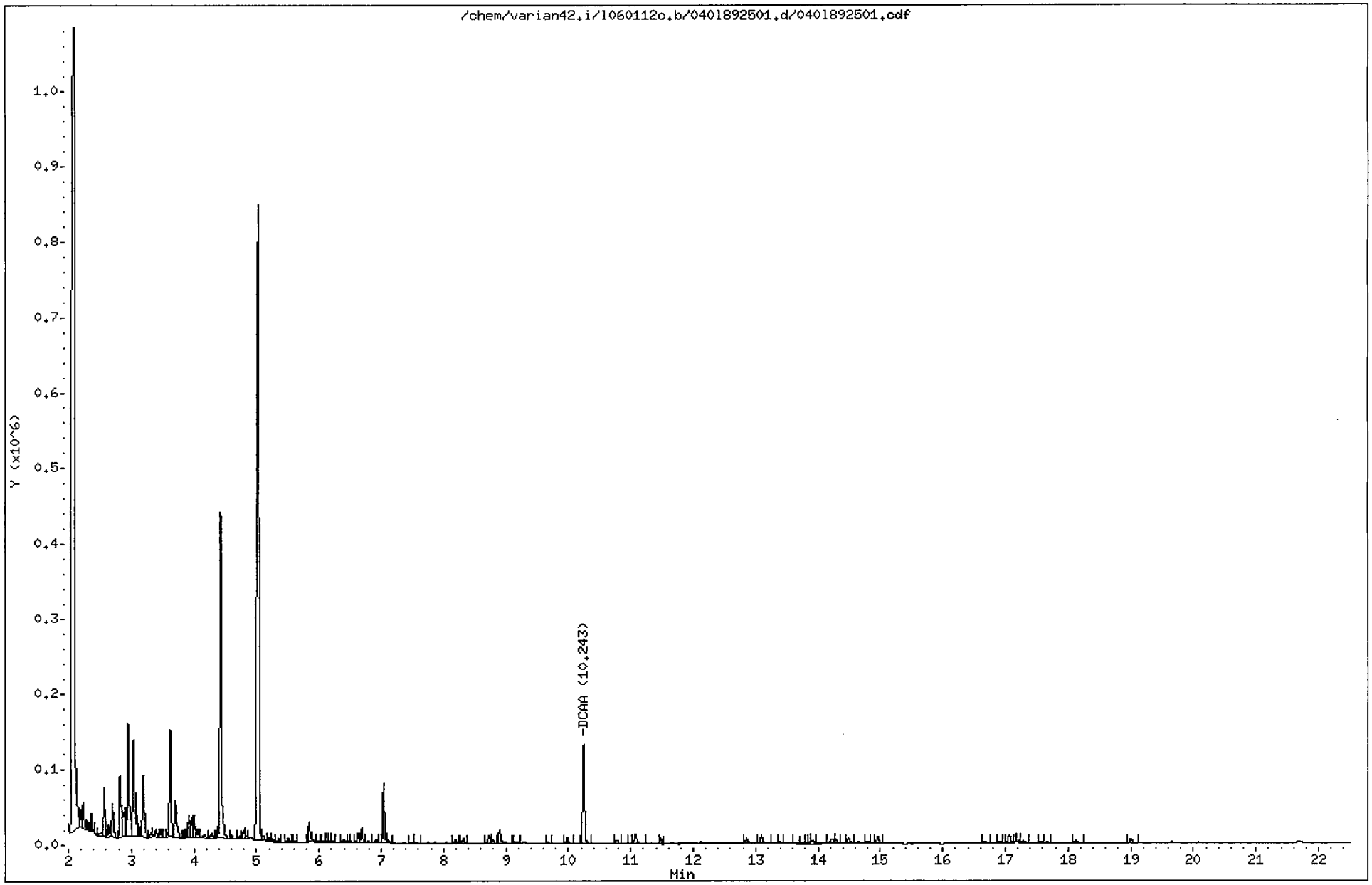
Sample Info: 892501

Volume Injected (uL): 1.0

Operator: 2512

Column phase: CLPest2

Column diameter: 0.53



CompuChem

Lab Smp Id : 892501 Client Smp Id : WAR-IDW-4
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 25-JAN-2006 21:41 Inst ID : VARIAN42
Operator : 2512
Method : /chem/varian42.i/l060112c.b/8151f_clpest2v2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
1.30		1881299								
1.34		292808								
1.35		1439863								
1.51		86662								
1.55		79703								
1.73		44802								
1.86		24393								
1.89		12629								
1.95		19884								
2.10		3767859								
2.19		44493								
2.23		61117								
2.31		17649								
2.36		32897								
2.50		13994								
2.57		89298								
2.64		25938								
2.70		82629								
2.82		169216								
2.87		50571								
2.91		56701								
2.95		287598								
3.04		290549								
3.10		32921								
3.15		4204								
3.19		190610								
3.31		13272								
3.39		23024								
3.47		21286								
3.58		9215								
3.62		273476								
3.71		108067								
3.87		19878								
3.92		46812								
3.96		44878								
4.00		55333								
4.06		21610								

TAJ 1/26/06

CompuChem

Lab Smp Id : 892501 Client Smp Id : WAR-IDW-4
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 25-JAN-2006 21:41 Inst ID :
Operator : 2512
Method : /chem/varian42.i/l060112c.b/8151f_clpest2v2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
4.17		12366								
4.29		17935								
4.37		16375								
4.43		799575								
4.60		11202								
4.73		4696								
4.79		22798								
4.84		5798								
5.03		2075399								
5.10		14533								
5.20		8876								
5.25		6114								
5.35		11038								
5.50		10930								
5.61		4366								
5.84		49908								
5.98		3663								
6.08		5084								
6.12		3745								
6.16		5627								
6.21		5493								
6.40		11217								
6.47		3526								
6.52		3449								
6.62		29563								
6.68		39213								
6.79		3585								
6.92		9761								
7.04		148764								
7.11		8745								
7.47		5912								
7.55		5396								
8.19		11680								
8.32		14407								
8.73		24206								
8.79		14236								
8.90		52915								

CompuChem

Lab Smp Id : 892501 Client Smp Id : WAR-IDW-4
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 25-JAN-2006 21:41 Inst ID :
Operator : 2512
Method : /chem/varian42.i/l060112c.b/8151f_clpest2v2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
9.17		5430								
9.67		3043								
9.98		17934								
10.24	10.21 10.27	290094	69876	DCAA	4.151550	207.5775		83.0	50 - 148	
10.77		13866								
10.89		2934								
11.07		39141								
11.48		14376								
12.86		19627								
13.09		33282								
13.39		4878								
13.64		5122								
13.76		4282								
13.83		6411								
13.87		7233								
13.91		12917								
14.02		9654								
14.23		19030								
14.29		12398								
14.49		18363								
14.79		3760								
14.95		25138								
16.68		7494								
16.92		6128								
17.07		30095								
17.21		4241								
17.28		6650								
17.55		7236								
17.67		5365								
18.12		10530								
19.01		16118								

3. Standards Data

a. Initial Calibration Data (Form VI)

b. Calibration Verification Summary (Form VII)

c. Analytical Sequence (Form VIII)

d. Identification Summary for Single Component Analytes (Form X)

e. Identification Summary for Multicomponent Analytes (Form X) - if applicable

f. Chromatograms and Data System Printouts

a. Initial Calibration Data
(Form VI)

For all GC columns, all instruments, in chronological order by GC column and instrument.

FORM 6
8151 INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: VARIAN37 Calibration Date(s): 01/12/06 01/12/06

Column: CLPEST ID: 0.53 (mm) Calibration Time(s): 0107 0259

LAB FILE ID: RF0.063: 003L81511RF0.125: 004L81512RF0.25: 005L815135
RF0.5: 006L815145PRF1: 007L815155P

COMPOUND	RF0.063	RF0.125	RF0.25	RF0.5	RF1
2,4-D	133621.28	124937.23	135573.40	148484.75	130213.19
silvex	1455415.4	1335867.5	1355562.6	1407642.8	1164001.1
DCAA	63740.385	63818.910	62418.803	68433.048	60034.081

FORM 6
8151 INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: VARIAN37 Calibration Date(s): 01/12/06 01/12/06

Column: CLPEST ID: 0.53 (mm) Calibration Time(s): 0107 0259

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
2,4-D	AVRG	134565.972	6.5
silvex	AVRG	1343697.86	8.2
DCAA	AVRG	63689.0456	4.8

FORM VI 8151

FORM 6
8151 INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: VARIAN42 Calibration Date(s): 01/12/06 01/12/06

Column: CLPEST2 ID: 0.53 (mm) Calibration Time(s): 0107 0259

LAB FILE ID: RF0.063: 003L81511RF0.125: 004L81512RF0.25: 005L815135
RF0.5: 006L815145PRF1: 007L815155P

COMPOUND	RF0.063	RF0.125	RF0.25	RF0.5	RF1
2,4-D	136164.00	116960.00	116271.00	119784.67	99215.600
silvex	984320.00	845400.00	805062.50	783375.00	618886.00
DCAA	80272.000	69414.000	68949.500	71460.667	59283.000

FORM 6
8151 INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: VARIAN42 Calibration Date(s): 01/12/06 01/12/06

Column: CLPEST2 ID: 0.53 (mm) Calibration Time(s): 0107 0259

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
2,4-D	AVRG	117679.067	11.2
silvex	AVRG	807408.840	16.2
DCAA	AVRG	69875.8373	10.7

FORM VI 8151

b. Calibration Verification Summary (Form VII)

For all performance evaluation mixtures (if applicable) and continuing calibration verification standards, on all GC columns and instruments, in chronological order by GC column and instrument.

FORM 6
8151 INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: VARIAN37 Calibration Date(s): 01/12/06 01/12/06

Column: CLPEST ID: 0.53 (mm) Calibration Time(s): 0107 0259

LAB FILE ID: RT1: 003L815115P RT2: 004L815125P RT3: 005L815135P
RT4: 006L815145P RT5: 007L815155P

COMPOUND	RT1	RT2	RT3	RT4	RT5
2,4-D	11.172	11.157	11.132	11.135	11.125
silvex	12.242	12.233	12.212	12.218	12.210
DCAA	9.502	9.497	9.478	9.487	9.478

FORM 6
8151 INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: VARIAN37 Calibration Date(s): 01/12/06 01/12/06

Column: CLPEST ID: 0.53 (mm) Calibration Time(s): 0107 0259

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
2,4-D	11.144	11.095	11.155
silvex	12.223	12.180	12.240
DCAA	9.488	9.448	9.508

FORM VI 8151

FORM 6
8151 INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: VARIAN42 Calibration Date(s): 01/12/06 01/12/06

Column: CLPEST2 ID: 0.53 (mm) Calibration Time(s): 0107 0259

LAB FILE ID: RT1: 003L815115P RT2: 004L815125P RT3: 005L815135P
RT4: 006L815145P RT5: 007L815155P

COMPOUND	RT1	RT2	RT3	RT4	RT5
2,4-D	11.945	11.938	11.918	11.925	11.917
silvex	12.982	12.978	12.958	12.965	12.957
DCAA	10.255	10.253	10.237	10.247	10.238

FORM 6
8151 INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: VARIAN42 Calibration Date(s): 01/12/06 01/12/06

Column: CLPEST2 ID: 0.53 (mm) Calibration Time(s): 0107 0259

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
2,4-D	11.929	11.887	11.947
silvex	12.968	12.927	12.987
DCAA	10.246	10.208	10.268

FORM 7B
8151 CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: VARIAN37 Calibration Date: 01/25/06 Time: 1701

Lab File ID: 030L8151M5V Init. Calib. Date(s): 01/12/06 01/12/06

Init. Calib. Times: 0107 0259

GC Column: CLPEST ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF0.5000 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE
2,4-D	134565.97	149938.97	0.01	11.42	15.00	AVRG
silvex	1343697.9	1421073.3	0.01	5.76	15.00	AVRG
DCAA	63689.045	68736.369	0.01	7.92	15.00	AVRG

FORM VII 8151

FORM 7B
8151 CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: VARIAN42 Calibration Date: 01/25/06 Time: 1701

Lab File ID: 030L8151M5V Init. Calib. Date(s): 01/12/06 01/12/06

Init. Calib. Times: 0107 0259

GC Column: CLPEST2 ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF0.5000 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE
2,4-D	117679.05	109076.07	0.01	-7.31	15.00	AVRG
silvex	807408.70	716988.33	0.01	-11.20	15.00	AVRG
DCAA	69875.833	65532.083	0.01	-6.22	15.00	AVRG

FORM VII 8151

FORM 7B
8151 CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: VARIAN37 Calibration Date: 01/26/06 Time: 0045

Lab File ID: 046L8151M5X Init. Calib. Date(s): 01/12/06 01/12/06

Init. Calib. Times: 0107 0259

GC Column: CLPEST ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF0.5000 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE
2,4-D	134565.97	148061.63	0.01	10.03	15.00	AVRG
silvex	1343697.9	1390207.2	0.01	3.46	15.00	AVRG
DCAA	63689.045	68502.840	0.01	7.56	15.00	AVRG

FORM VII 8151

FORM 7B
8151 CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Instrument ID: VARIAN42 Calibration Date: 01/26/06 Time: 0045

Lab File ID: 046L8151M5X Init. Calib. Date(s): 01/12/06 01/12/06

Init. Calib. Times: 0107 0259

GC Column: CLPEST2 ID: 0.53 (mm)

COMPOUND	RRF OR AMOUNT	RRF0.5000 OR AMOUNT	MIN RRF	%D OR %DRIFT	MAX %D OR %DRIFT	CURV TYPE
2,4-D	117679.05	115665.03	0.01	-1.71	15.00	AVRG
silvex	807408.70	761548.00	0.01	-5.68	15.00	AVRG
DCAA	69875.833	69603.225	0.01	-0.39	15.00	AVRG

FORM VII 8151

c. Analytical Sequence (Form VIII)

For all GC columns, all instruments, in chronological order by GC column and instrument.

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

GC Column: CLPEST ID: 0.53 (mm) Init. Calib. Date(s): 01/12/06 01/12/06

Instrument ID: VARIAN37

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 9.48

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT	#	RT	#
01	815115P	815115P	01/12/06	0107	9.50			
02	815125P	815125P	01/12/06	0135	9.50			
03	815135P	815135P	01/12/06	0203	9.48			
04	815145P	815145P	01/12/06	0231	9.49			
05	815155P	815155P	01/12/06	0259	9.48			
06	HIBLK5U	HIBLK5U	01/25/06	1634	9.49			
07	8151M5V	8151M5V	01/25/06	1701	9.49			
08	PBLKGM	91893	01/25/06	1949	9.48			
09	PGMLCS	91894	01/25/06	2017	9.48			
10	TCLPBLKFW	91766	01/25/06	2045	9.50			
11	WAR-IDW-4	892501	01/25/06	2141	9.48			
12	HIBLK5W	HIBLK5W	01/26/06	0015	9.51			
13	8151M5X	8151M5X	01/26/06	0045	9.49			
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								

S1 = DCAA

QC LIMITS
(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PEST

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

GC Column: CLPEST2 ID: 0.53 (mm) Init. Calib. Date(s): 01/12/06 01/12/06

Instrument ID: VARIAN42

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 10.24

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	RT #
01	815115P	815115P	01/12/06	0107	10.26	
02	815125P	815125P	01/12/06	0135	10.25	
03	815135P	815135P	01/12/06	0203	10.24	
04	815145P	815145P	01/12/06	0231	10.25	
05	815155P	815155P	01/12/06	0259	10.24	
06	HIBLK5V	HIBLK5V	01/25/06	1634	10.24	
07	8151M5V	8151M5V	01/25/06	1701	10.25	
08	PBLKGM	91893	01/25/06	1949	10.24	
09	PGMLCS	91894	01/25/06	2017	10.24	
10	TCLPBLKFW	91766	01/25/06	2045	10.26	
11	WAR-IDW-4	892501	01/25/06	2141	10.24	
12	HIBLK5X	HIBLK5X	01/26/06	0015	10.26	
13	8151M5X	8151M5X	01/26/06	0045	10.26	
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

S1 = DCAA

QC LIMITS
(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PEST

d. Identification Summary for Single Component Analytes (Form X)

For all samples with positively identified single component analytes, in order by increasing Client Sample ID number.

10A

EPA SAMPLE NO.

PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

PGMLCS

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Lab Sample ID: 91894 Date(s) Analyzed: 01/25/06 01/25/06

Instrument ID (1): VARIAN37 Instrument ID (2): VARIAN42

GC Column(1): CLPEST ID: 0.53(mm) GC Column(2): CLPEST2 ID: 0.53(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	RPD
2,4-D	1	11.13	11.10	11.15	69	
	2	11.92	11.89	11.95	74	7.0
silvex	1	12.22	12.18	12.24	19	
	2	12.96	12.93	12.99	19	0.0
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM X PEST-1

e. Identification Summary for Multicomponent Analytes (Form X) - if applicable

For all samples with positively identified multicomponent analytes, in order by increasing Client Sample ID number.

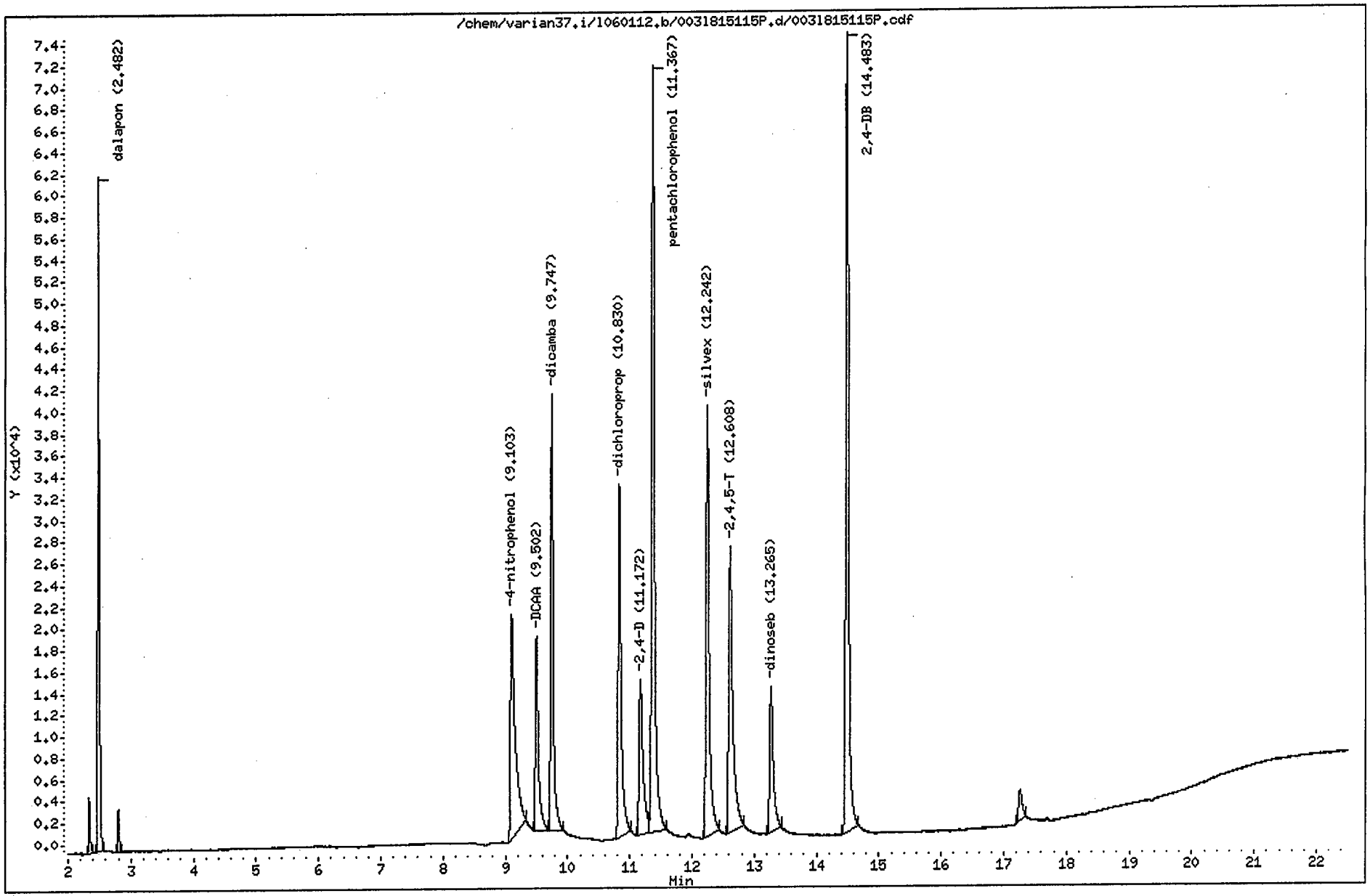
f. Chromatograms and Data System Printouts

For all methods, standards packages shall include the following:

- Performance evaluation mixtures (8081 only)
- Initial Calibration Standards
- Second Source Initial Calibration Verifications (if required by client)
- Continuing Calibration Verification Standards
- The quantitation report must include the Client Sample ID number.
- The chromatograms shall include the following: Client Sample ID number for the standard, labeled standard peaks, volume injected, for each standard, date and time of injection GC column identifier, and GC instrument identifier.

Data File: /chem/varian37.i/1060112.b/0031815115P.d
Date : 12-JAN-2006 01:07
Client ID: 815115P
Sample Info: 815115P
Volume Injected (uL): 1.0
Column phase: CLPest

Instrument: varian37.i
Operator: 2564
Column diameter: 0.53



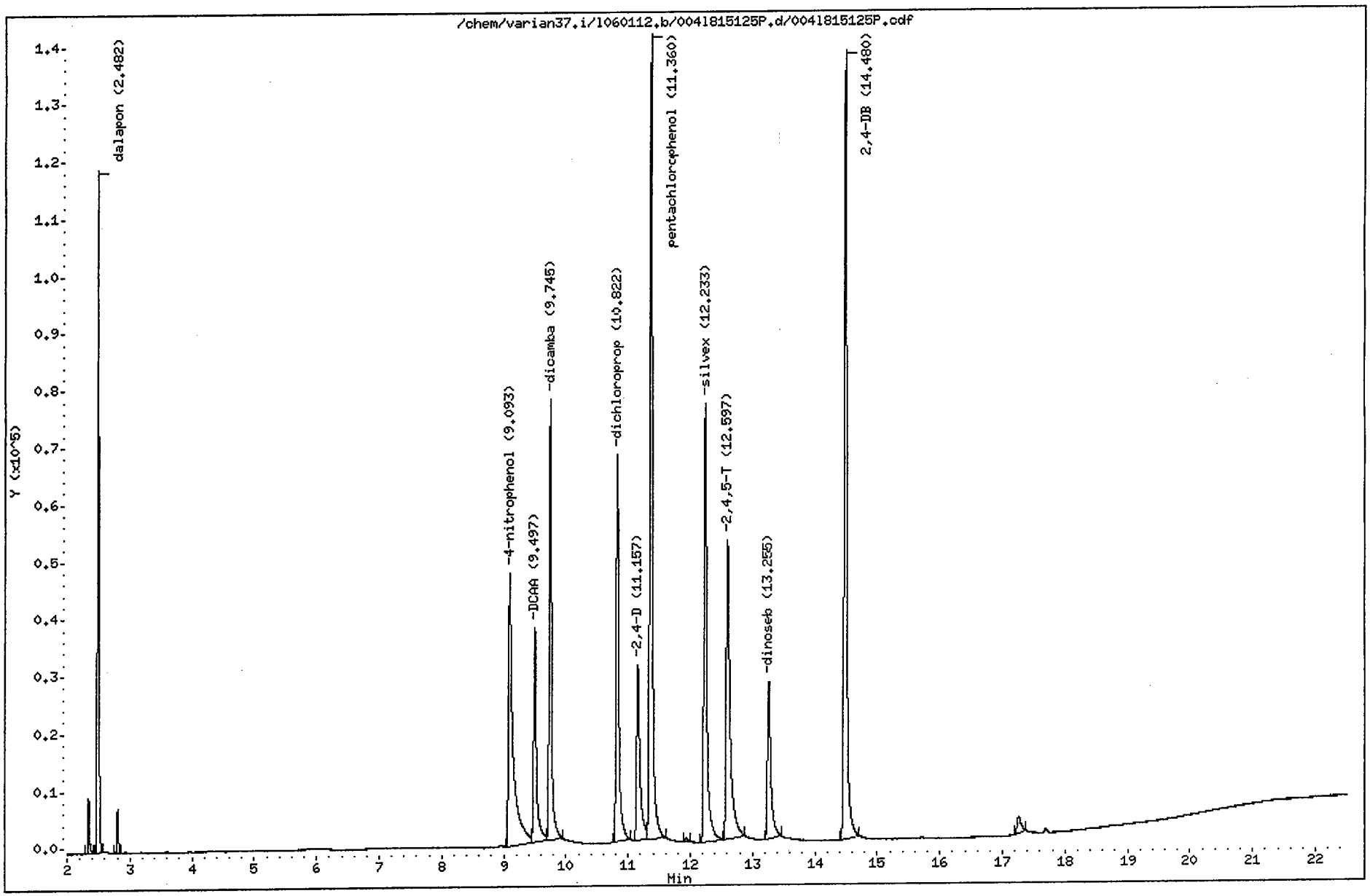
CompuChem

Lab Smp Id : 815115P Client Smp Id : 815115P
Sample Type : INITIAL CAL: Level 1 Sublist : FULL8151new
Inj Date : 12-JAN-2006 01:07 Inst ID : VARIAN37
Operator : 2564
Method : /chem/varian37.i/1060112.b/8151f_clpestv2.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
1.35			4080					
1.39			48658					
1.43			62438					
2.34			7876					
2.48	2.45	2.51	98879	201114	dalapon	0.455000	217314	
2.80			6464					
9.10	9.04	9.12	108710	506043	4-nitrophenol	0.227000	478894	
9.50	9.46	9.52	59662	63689	DCAA	0.936000	63740	
9.75	9.71	9.77	114131	432434	dicamba	0.235000	485660	
10.83	10.78	10.84	112334	119362	dichloroprop	0.944000	118997	
11.17	11.11	11.17	62802	134566	2,4-D	0.470000	133621	
11.37	11.32	11.38	228086	4417153	pentachlorophenol	0.047500	4801811	
12.24	12.19	12.25	138411	1343698	silvex	0.095100	1455415	
12.61	12.55	12.61	116496	1185886	2,4,5-T	0.094800	1228850	
13.26	13.21	13.27	53572	242034	dinoseb	0.236300	226708	
14.48	14.44	14.50	227281	218780	2,4-DB	0.947000	240000	
17.26			11675					

Data File: /chem/varian37.i/1060112.b/0041815125P.d
Date : 12-JAN-2006 01:35
Client ID: 815125P
Sample Info: 815125P
Volume Injected (uL): 1.0
Column phase: CLPest

Instrument: varian37.i
Operator: 2564
Column diameter: 0.53



CompuChem

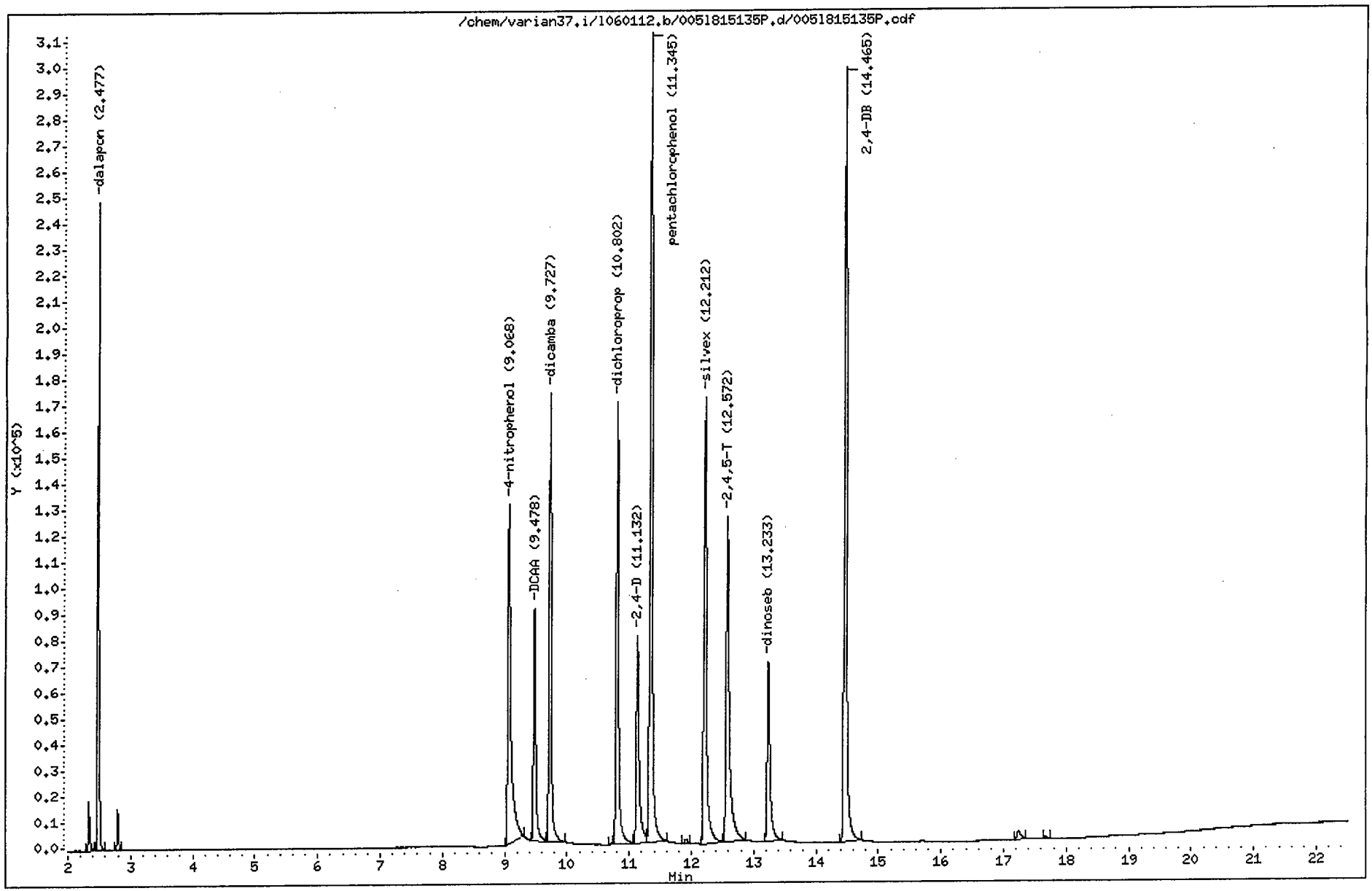
Lab Smp Id : 815125P Client Smp Id : 815125P
Sample Type : INITIAL CAL: Level 2 Sublist : FULL8151new
Inj Date : 12-JAN-2006 01:35 Inst ID : VARIAN37
Operator : 2564
Method : /chem/varian37.i/l060112.b/8151f_clpestv2.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
1.35			4044					
1.39			53027					
1.44			67633					
2.34			14177					
2.48	2.45	2.51	175499	201114	dalapon	0.911000	192644	
2.80			11846					
9.09	9.04	9.12	240428	506043	4-nitrophenol	0.454000	529575	
9.50	9.46	9.52	119470	63689	DCAA	1.872000	63819	
9.74	9.71	9.77	208496	432434	dicamba	0.470000	443606	
10.82	10.78	10.84	205379	119362	dichloroprop	1.888000	108781	
11.16	11.11	11.17	117442	134802	2,4-D	0.940000	124937	
11.36	11.32	11.38	413370	4417154	pentachlorophenol	0.095000	4351263	
11.93			1845					
12.23	12.19	12.25	254083	1343698	silvex	0.190200	1335868	
12.60	12.55	12.61	220612	1175145	2,4,5-T	0.196800	1120996	
13.26	13.21	13.27	104573	242034	dinoseb	0.472500	221316	
14.48	14.44	14.50	406570	218780	2,4-DB	1.894000	214662	
17.26			11808					

1/12/06

Data File: /chem/varian37.i/1060112.b/0051815135P.d
Date : 12-JAN-2006 02:03
Client ID: 815135P
Sample Info: 815135P
Volume Injected (uL): 1.0
Column phase: CLPest

Instrument: varian37.i
Operator: 2564
Column diameter: 0.53



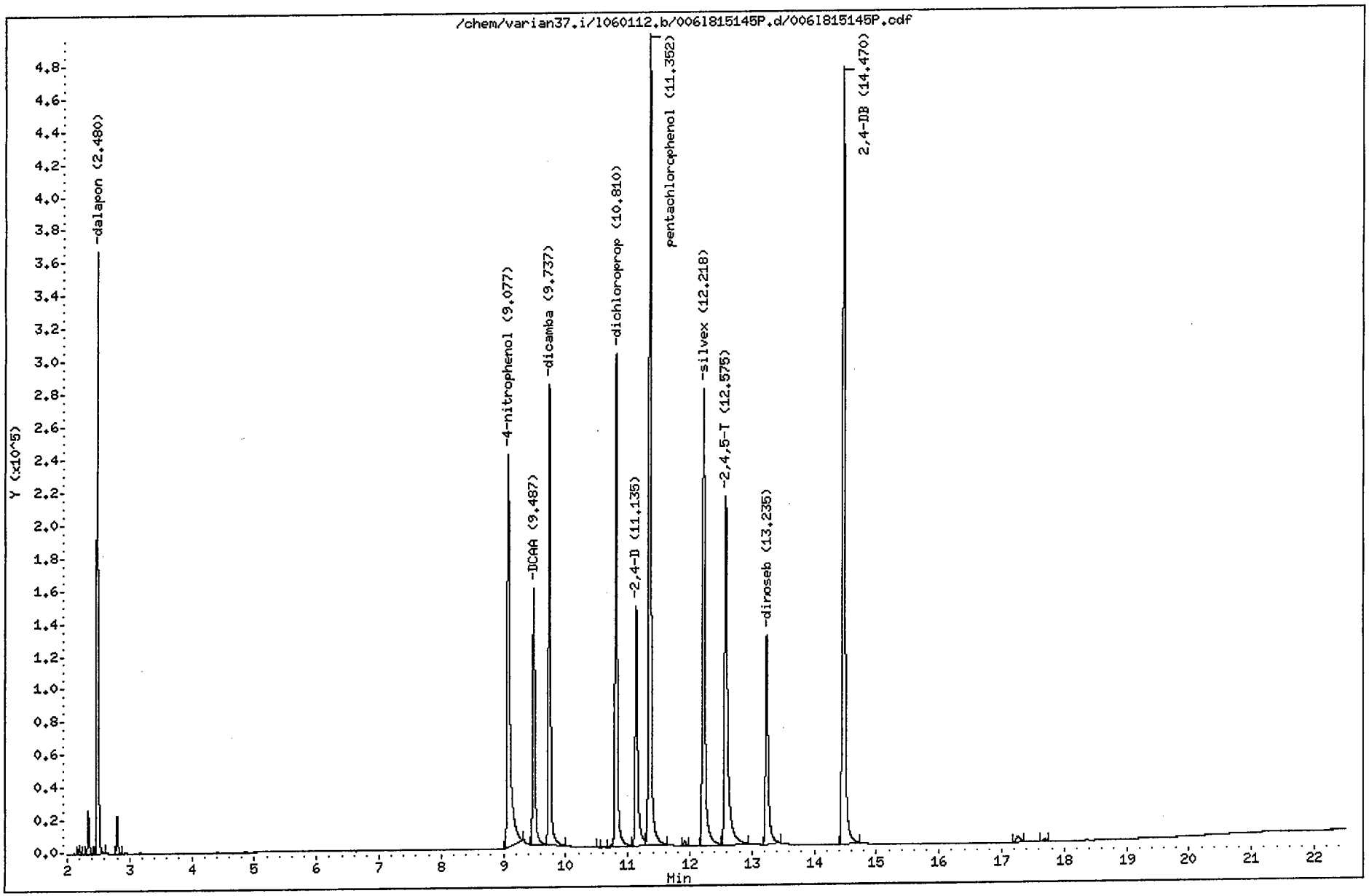
CompuChem

Lab Smp Id : 815135P Client Smp Id : 815135P
Sample Type : INITIAL CAL: Level 3 Sublist : FULL8151new
Inj Date : 12-JAN-2006 02:03 Inst ID : VARIAN37
Operator : 2564
Method : /chem/varian37.i/l060112.b/8151f_clpestv2.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
1.35			4073					
1.39			205050					
2.33			29775					
2.48	2.45	2.51	371145	201114	dalapon	1.822000	203701	
2.79			24777					
9.07	9.04	9.12	453000	506043	4-nitrophenol	0.908000	498898	
9.48	9.46	9.52	233696	63689	DCAA	3.744000	62419	
9.73	9.71	9.77	428134	432434	dicamba	0.940000	455462	
10.72			1913					
10.80	10.78	10.84	455609	119362	dichloroprop	3.776000	120659	
11.13	11.11	11.17	254879	134802	2,4-D	1.880000	135573	
11.34	11.32	11.38	850430	4417154	pentachlorophenol	0.190000	4475942	
11.91			4716					
12.21	12.19	12.25	515657	1343698	silvex	0.380400	1355563	
12.57	12.55	12.61	461431	1175145	2,4,5-T	0.379200	1216854	
13.23	13.21	13.27	232863	242034	dinoseb	0.945000	246415	
14.46	14.44	14.50	830192	218780	2,4-DB	3.788000	219164	
17.24			13154					
17.68			3124					

Data File: /chem/varian37.i/1060112.b/0061815145P.d
Date : 12-JAN-2006 02:31
Client ID: 815145P
Sample Info: 815145P
Volume Injected (uL): 1.0
Column phase: CLPest

Instrument: varian37.i
Operator: 2564
Column diameter: 0.53



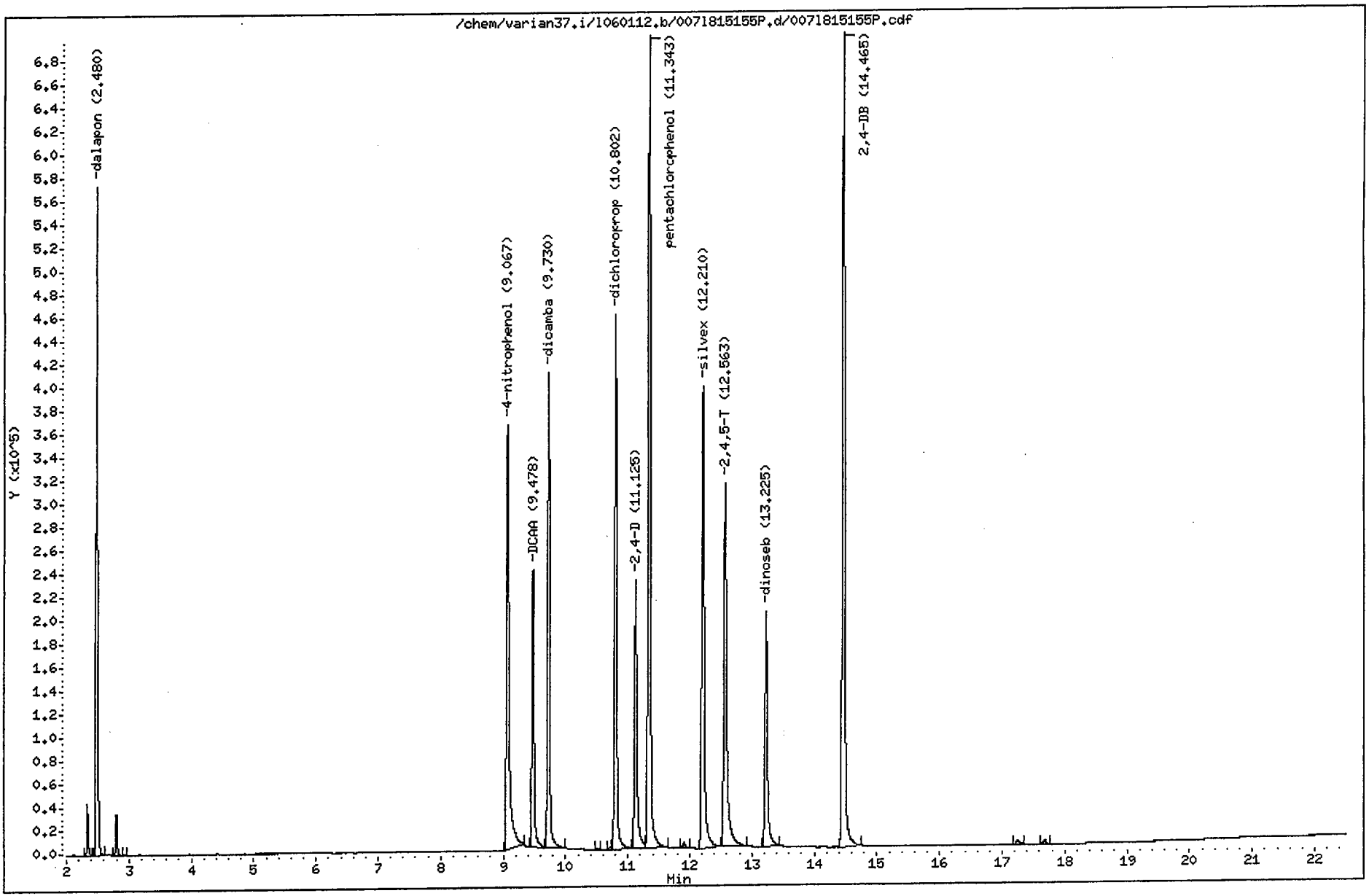
CompuChem

Lab Smp Id : 815145P Client Smp Id : 815145P
Sample Type : INITIAL CAL: Level 4 Sublist : FULL8151new
Inj Date : 12-JAN-2006 02:31 Inst ID : VARIAN37
Operator : 2564
Method : /chem/varian37.i/l060112.b/8151f_clpestv2.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
1.34			2497					
1.39			2096					
2.19			7057					
2.33			42731					
2.48	2.45	2.51	562393	201114	dalapon	2.733000	205779	
2.80			37289					
9.08	9.04	9.12	742314	506043	4-nitrophenol	1.362000	545017	
9.49	9.46	9.52	384320	63689	DCAA	5.616000	68433	
9.74	9.71	9.77	685603	432434	dicamba	1.880000	364682	
10.53			1126					
10.73			3706					
10.81	10.78	10.84	750110	119362	dichloroprop	5.664000	132435	
11.14	11.11	11.17	418728	134802	2,4-D	2.820000	148485	
11.35	11.32	11.38	1311874	4417154	pentachlorophenol	0.285000	4603063	
11.92			7996					
12.22	12.19	12.25	803201	1343698	silvex	0.570600	1407643	
12.58	12.55	12.61	733418	1175145	2,4,5-T	0.568000	1291229	
13.24	13.21	13.27	387065	242034	dinoseb	1.417500	273062	
14.47	14.44	14.50	1284433	218780	2,4-DB	5.682000	226053	
17.25			12873					
17.68			5945					

Data File: /chem/varian37.i/1060112.b/0071815155P.d
Date : 12-JAN-2006 02:59
Client ID: 815155P
Sample Info: 815155P
Volume Injected (uL): 1.0
Column phase: CLPest

Instrument: varian37.i
Operator: 2564
Column diameter: 0.53



CompuChem

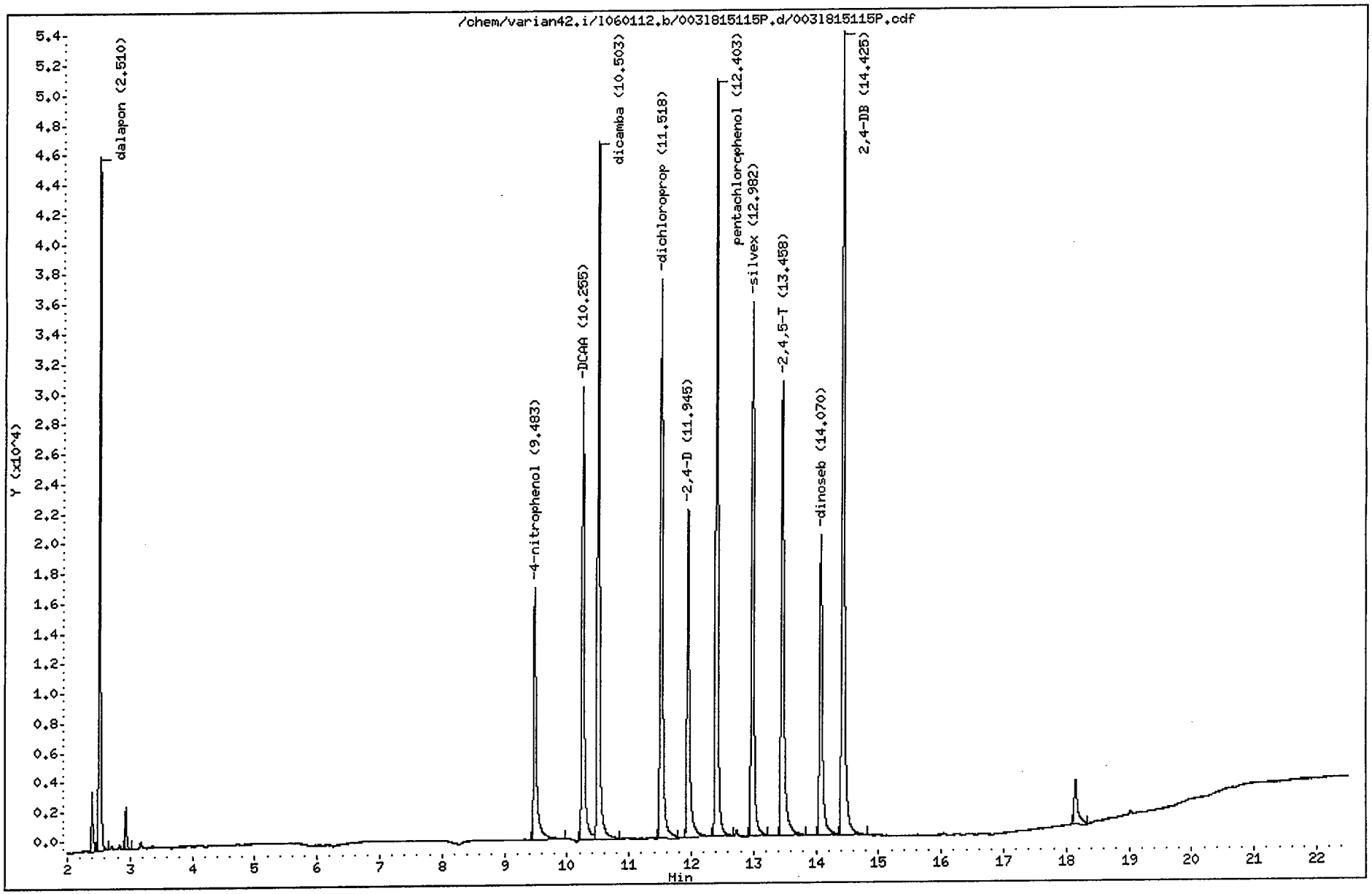
Lab Smp Id : 815155P Client Smp Id : 815155P
Sample Type : INITIAL CAL: Level 5 Sublist : FULL8151new
Inj Date : 12-JAN-2006 02:59 Inst ID : VARIAN37
Operator : 2564
Method : /chem/varian37.i/l060112.b/8151f_clpestv2.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
1.35			3959					
1.40			31083					
1.44			55027					
2.34			65341					
2.48	2.45	2.51	847834	201114	dalapon	4.555000	186132	
2.80			55261					
2.93			1067					
9.07	9.04	9.12	1084676	506043	4-nitrophenol	2.270000	477831	
9.48	9.46	9.52	561920	63689	DCAA	9.360000	60034	
9.73	9.71	9.77	969983	432434	dicamba	2.350000	412759	
10.52			1778					
10.72			5435					
10.80	10.78	10.84	1094470	119362	dichloroprop	9.440000	115940	
11.12	11.11	11.17	612003	134802	2,4-D	4.700000	130213	
11.34	11.32	11.38	1830503	4417154	pentachlorophenol	0.475000	3853688	
11.91			12461					
12.21	12.19	12.25	1106965	1343698	silvex	0.951000	1164001	
12.56	12.55	12.61	1015783	1175145	2,4,5-T	0.948000	1071501	
13.22	13.21	13.27	573311	242034	dinoseb	2.362500	242671	
14.46	14.44	14.50	1837396	218780	2,4-DB	9.470000	194023	
17.25			13257					
17.68			9177					

Data File: /chem/varian42.i/1060112.b/0031815115P.d
Date : 12-JAN-2006 01:07
Client ID: 815115P
Sample Info: 815115P
Volume Injected (uL): 1.0
Column phase: CLPest2

Instrument: varian42.i

Operator: 2564
Column diameter: 0.53



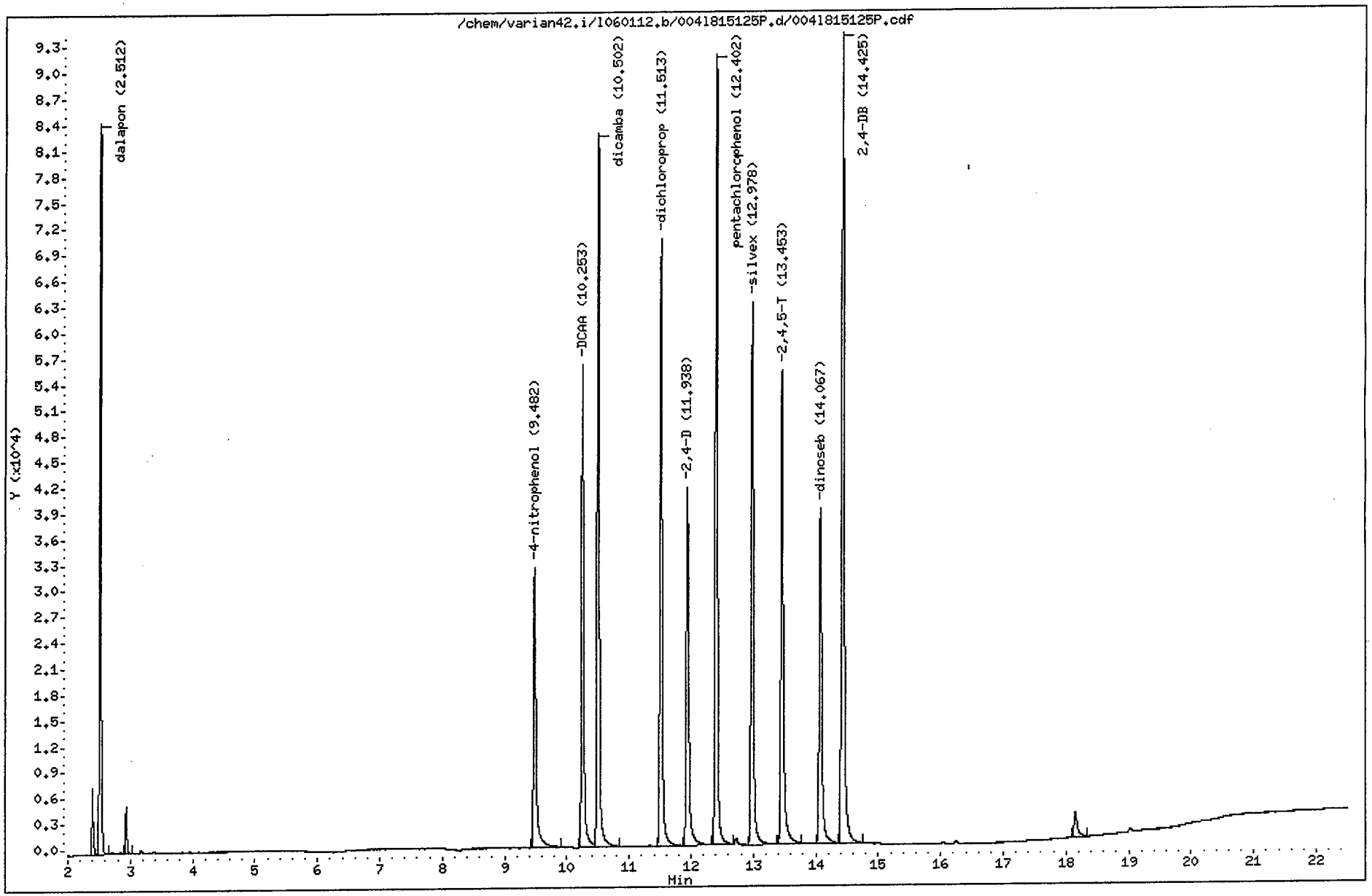
CompuChem

Lab Smp Id : 815115P
Client Smp Id : 815115P
Sample Type : INITIAL CAL: Level 1
Sublist : FULL8151new
Inj Date : 12-JAN-2006 01:07
Inst ID : VARIAN42
Operator : 2564
Method : /chem/varian42.i/l060112.b/8151f_clpest2v2.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
1.33			21688					
2.39			6064					
2.51	2.48	2.54	78430	134001	dalapon	0.500000	156858	
2.93			4731					
9.48	9.44	9.50	51835	181557	4-nitrophenol	0.250000	207336	
10.26	10.22	10.28	80273	69876	DCAA	1.000000	80272	
10.50	10.45	10.53	120266	392690	dicamba	0.250000	481060	
11.52	11.48	11.54	106148	91737	dichloroprop	1.000000	106148	
11.94	11.90	11.96	68083	117679	2,4-D	0.500000	136164	
12.40	12.35	12.43	134340	2232541	pentachlorophenol	0.050000	2686800	
12.98	12.94	13.00	98433	807409	silvex	0.100000	984320	
13.46	13.41	13.47	94351	784415	2,4,5-T	0.100000	943500	
14.07	14.02	14.08	63928	236426	dinoseb	0.250000	255708	
14.42	14.38	14.44	155270	124308	2,4-DB	1.000000	155270	
18.14			11138					

Data File: /chem/varian42.i/1060112.b/0041815125P.d
Date : 12-JAN-2006 01:35
Client ID: 815125P
Sample Info: 815125P
Volume Injected (uL): 1.0
Column phase: CLPest2

Instrument: varian42.i
Operator: 2564
Column diameter: 0.53



CompuChem

Lab Smp Id : 815125P Client Smp Id : 815125P
Sample Type : INITIAL CAL: Level 2 Sublist : FULL8151new
Inj Date : 12-JAN-2006 01:35 Inst ID : VARIAN42
Operator : 2564
Method : /chem/varian42.i/l060112.b/8151f_clpest2v2.m
Misc. Info : None

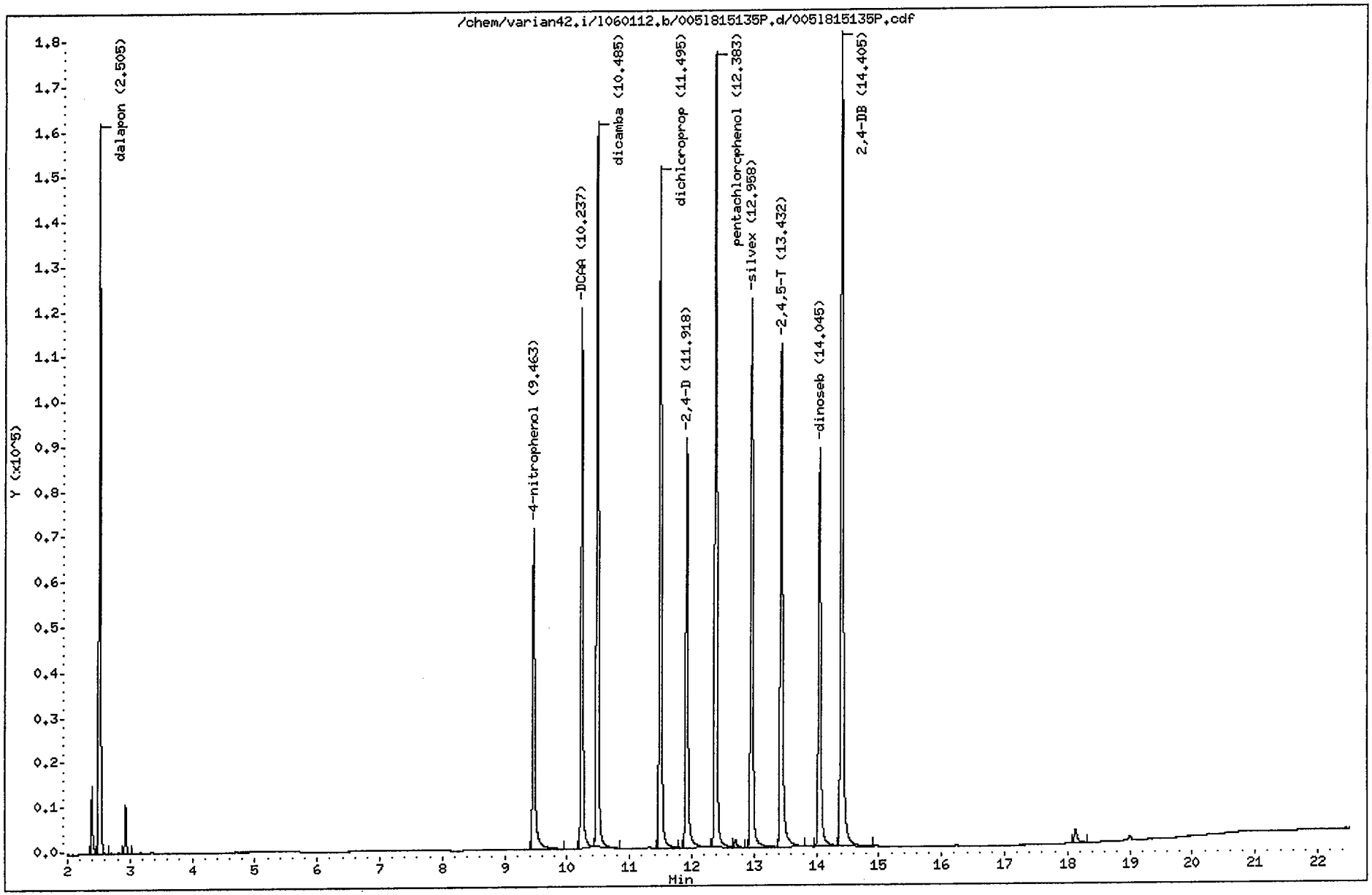
RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
1.33			18289					
1.40			4375					
2.39			11353					
2.51	2.48	2.54	135461	134001	dalapon	1.000000	135461	
2.93			8581					
9.48	9.44	9.50	89678	181557	4-nitrophenol	0.500000	179354	
10.25	10.22	10.28	138829	69876	DCAA	2.000000	69414	
10.50	10.45	10.53	204142	392690	dicamba	0.500000	408284	
11.51	11.48	11.54	181681	91737	dichloroprop	2.000000	90840	
11.94	11.90	11.96	116960	117679	2,4-D	1.000000	116960	
12.40	12.35	12.43	233300	2232541	pentachlorophenol	0.100000	2333000	
12.98	12.94	13.00	169080	807409	silvex	0.200000	845400	
13.45	13.41	13.47	162546	784415	2,4,5-T	0.200000	812730	
14.07	14.02	14.08	114071	236426	dinoseb	0.500000	228142	
14.42	14.38	14.44	260326	124308	2,4-DB	2.000000	130162	
18.14			10488					

1/11/06

Data File: /chem/varian42.i/1060112.b/0051815135P.d
Date : 12-JAN-2006 02:03
Client ID: 815135P
Sample Info: 815135P
Volume Injected (uL): 1.0
Column phase: CLPest2

Instrument: varian42.i

Operator: 2564
Column diameter: 0.53



CompuChem

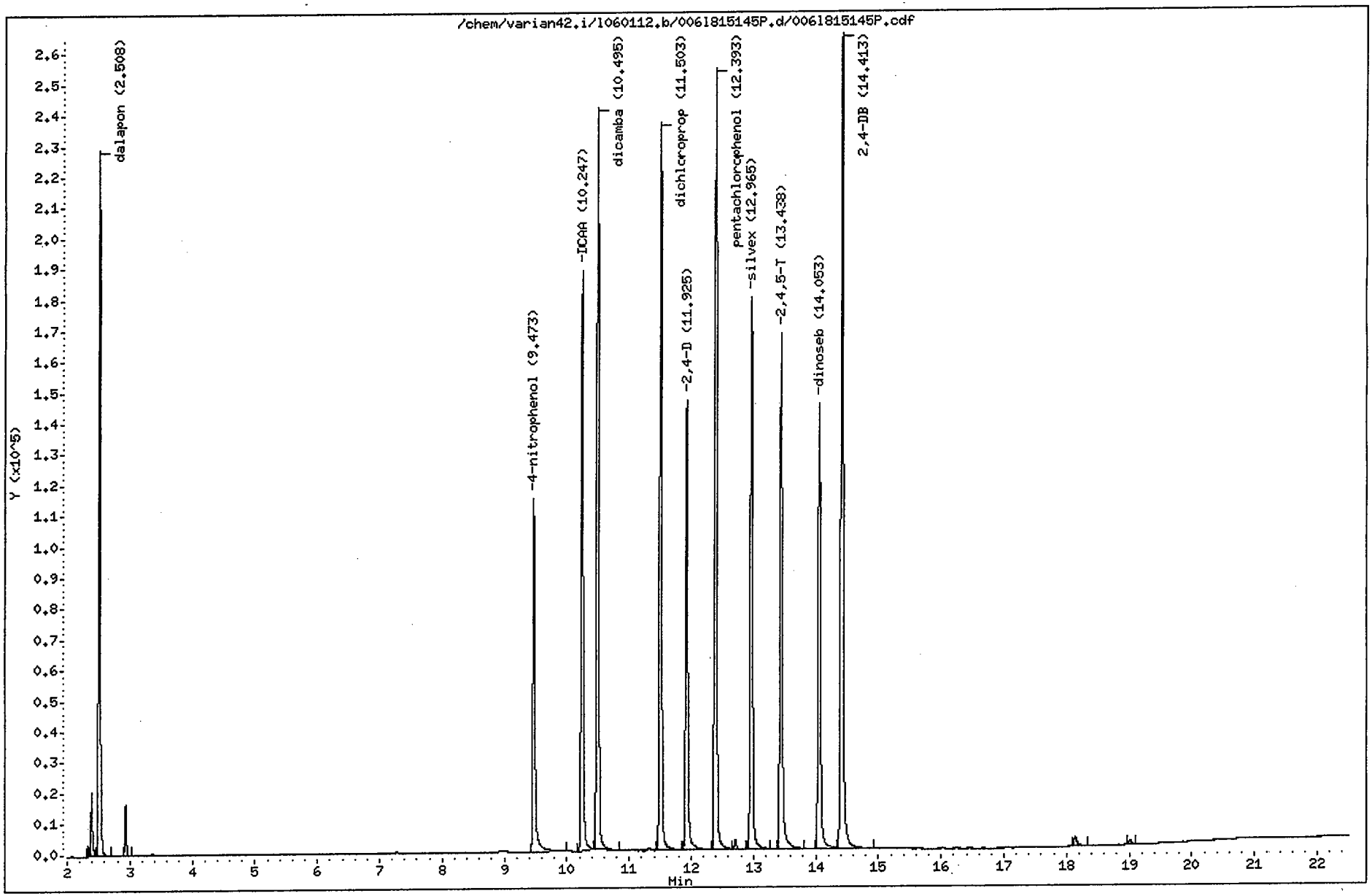
Lab Smp Id : 815135P Client Smp Id : 815135P
Sample Type : INITIAL CAL: Level 3 Sublist : FULL8151new
Inj Date : 12-JAN-2006 02:03 Inst ID : VARIAN42
Operator : 2564
Method : /chem/varian42.i/l060112.b/8151f_clpest2v2.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
1.33			60740					
2.39			23703					
2.50	2.48	2.54	269083	134001	dalapon	2.000000	134542	
2.92			18141					
9.46	9.44	9.50	180483	181557	4-nitrophenol	1.000000	180482	
10.24	10.22	10.28	275798	69876	DCAA	4.000000	68950	
10.48	10.45	10.53	384435	392690	dicamba	1.000000	384435	
11.50	11.48	11.54	363650	91737	dichloroprop	4.000000	90912	
11.92	11.90	11.96	232543	117679	2,4-D	2.000000	116271	
12.38	12.35	12.43	449070	2232541	pentachlorophenol	0.200000	2245345	
12.70			4574					
12.96	12.94	13.00	322026	807409	silvex	0.400000	805062	
13.43	13.41	13.47	314659	784415	2,4,5-T	0.400000	786645	
14.04	14.02	14.08	238014	236426	dinoseb	1.000000	238014	
14.40	14.38	14.44	490312	124308	2,4-DB	4.000000	122578	
18.12			11789					

1/12/06

Data File: /chem/varian42.i/1060112.b/0061815145P.d
Date : 12-JAN-2006 02:31
Client ID: 815145P
Sample Info: 815145P
Volume Injected (uL): 1.0
Column phase: CLPest2

Instrument: varian42.i
Operator: 2564
Column diameter: 0.53



CompuChem

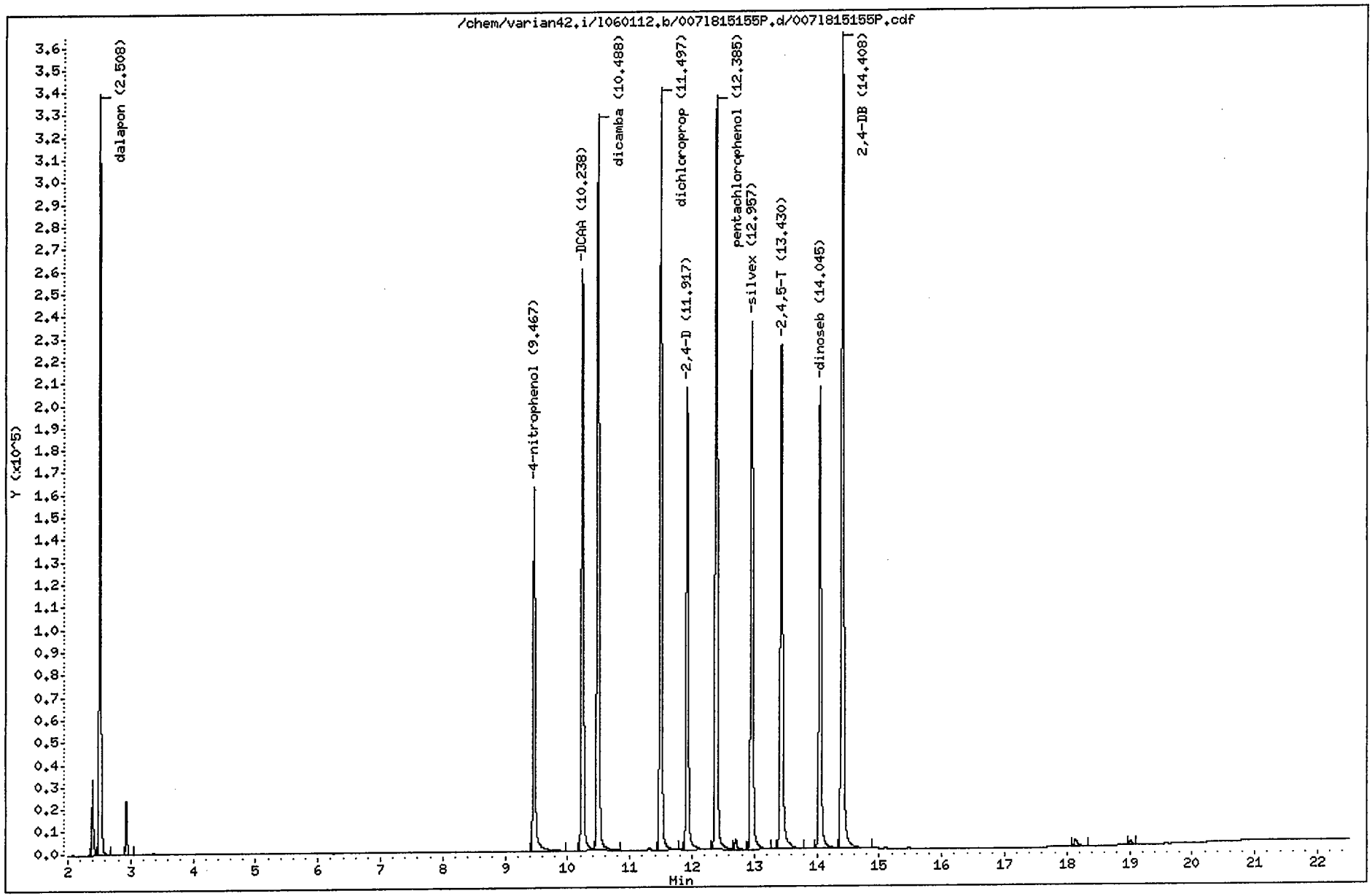
Lab Smp Id : 815145P
Client Smp Id : 815145P
Sample Type : INITIAL CAL: Level 4
Sublist : FULL8151new
Inj Date : 12-JAN-2006 02:31
Inst ID : VARIAN42
Operator : 2564
Method : /chem/varian42.i/l060112.b/8151f_clpest2v2.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
1.33			6777					
2.34			3866					
2.39			32809					
2.51	2.48	2.54	392370	134001	dalapon	3.000000	130790	
2.93			27198					
9.47	9.44	9.50	279561	181557	4-nitrophenol	1.500000	186373	
10.25	10.22	10.28	428765	69876	DCAA	6.000000	71461	
10.50	10.45	10.53	572069	392690	dicamba	1.500000	381379	
11.50	11.48	11.54	559839	91737	dichloroprop	6.000000	93306	
11.92	11.90	11.96	359355	117679	2,4-D	3.000000	119785	
12.39	12.35	12.43	654085	2232541	pentachlorophenol	0.300000	2180283	
12.71			7616					
12.96	12.94	13.00	470025	807409	silvex	0.600000	783375	
13.44	13.41	13.47	461818	784415	2,4,5-T	0.600000	769695	
14.05	14.02	14.08	375264	236426	dinoseb	1.500000	250175	
14.41	14.38	14.44	712692	124308	2,4-DB	6.000000	118782	
18.14			11622					
19.02			3808					

1/12/06

Data File: /chem/varian42.i/1060112.b/0071815155P.d
Date : 12-JAN-2006 02:59
Client ID: 815155P
Sample Info: 815155P
Volume Injected (uL): 1.0
Column phase: CLPest2

Instrument: varian42.i
Operator: 2564
Column diameter: 0.53



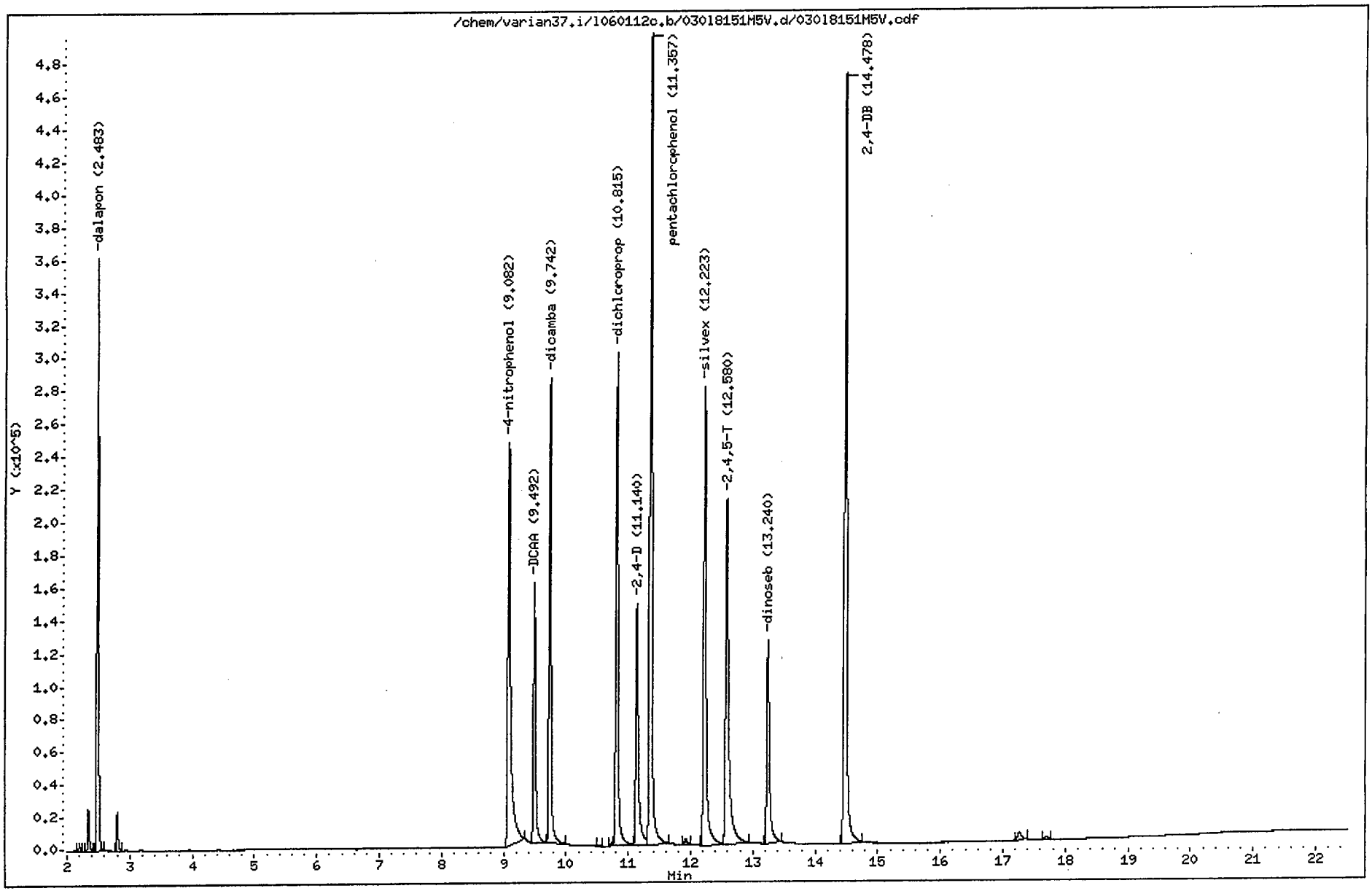
CompuChem

Lab Smp Id : 815155P Client Smp Id : 815155P
Sample Type : INITIAL CAL: Level 5 Sublist : FULL8151new
Inj Date : 12-JAN-2006 02:59 Inst ID : VARIAN42
Operator : 2564
Method : /chem/varian42.i/l060112.b/8151f_clpest2v2.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	RF	FLAGS
1.33			8291					
2.39			51586					
2.51	2.48	2.54	561768	134001	dalapon	5.000000	112353	
2.93			39721					
9.47	9.44	9.50	385604	181557	4-nitrophenol	2.500000	154241	
10.24	10.22	10.28	592830	69876	DCAA	10.00000	59283	
10.49	10.45	10.53	770730	392690	dicamba	2.500000	308292	
11.50	11.48	11.54	774768	91737	dichloroprop	10.00000	77477	
11.92	11.90	11.96	496078	117679	2,4-D	5.000000	99216	
12.38	12.35	12.43	858638	2232541	pentachlorophenol	0.500000	1717276	
12.70			10818					
12.96	12.94	13.00	618887	807409	silvex	1.000000	618886	
13.43	13.41	13.47	609504	784415	2,4,5-T	1.000000	609504	
14.04	14.02	14.08	525226	236426	dinoseb	2.500000	210090	
14.41	14.38	14.44	947505	124308	2,4-DB	10.00000	94750	
18.13			12025					
19.01			5503					

Data File: /chem/varian37.i/1060112c.b/03018151M5V.d
Date : 25-JAN-2006 17:01
Client ID: 8151M5V
Sample Info: 8151M5V
Volume Injected (uL): 1.0
Column phase: CLPest

Instrument: varian37.i
Operator: 2512
Column diameter: 0.53



CompuChem

Lab Smp Id : 8151M5V
Client Smp Id : 8151M5V
Sample Type : CONT CAL: Level 4
Sublist : FULL8151new
Inj Date : 25-JAN-2006 17:01
Inst ID : VARIAN37
Operator : 2512
Method : /chem/varian37.i/l060112c.b/8151f_clpestv2.m
Misc. Info : None

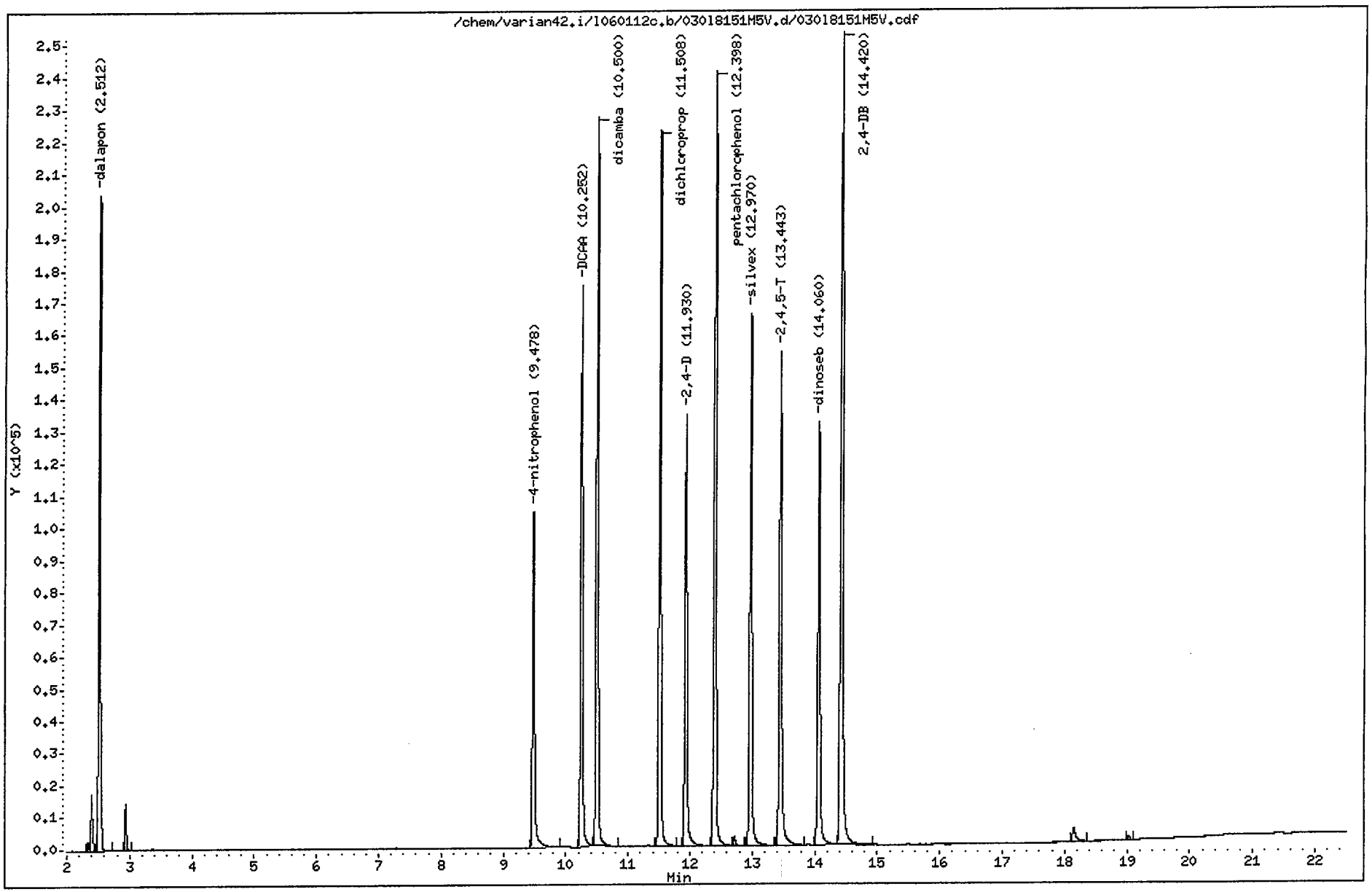
RT	RT WINDOW		AREA	QUANT RF.	COMPOUND	STD AMT ON-COLUMN (Ng)	CCAL RF	%D	%D LIMIT	FLAGS	
1.34			3632								
1.40			31605								
1.44			60890								
2.20			7252								
2.34			44666								
2.48	2.45	2.51	582167	201114	dalapon	2.733000	213014	-5.9	15.0		
2.80			39302								
9.08	9.03	9.11	786793	506043	4-nitrophenol	1.362000	577675	-14.2	15.0		
9.49	9.45	9.51	386023	63689	DCAA	5.616000	68736	-7.9	15.0		
9.74	9.70	9.76	688551	432434	dicamba	1.880000	366251	15.3*	15.0	R	
10.53			1141								
10.73			3858								
10.82	10.77	10.83	754033	119362	dichloroprop	5.664000	133127	-11.5	15.0		
11.14	11.09	11.15	422828	134566	2,4-D	2.820000	149939	-11.4	15.0		
11.36	11.31	11.37	1327067	4417153	pentachlorophenol	0.285000	4656375	-5.4	15.0		
11.92			8300								
12.22	12.18	12.24	810864	1343698	silvex	0.570600	1421073	-5.8	15.0		
12.58	12.53	12.59	740905	1185886	2,4,5-T	0.568000	1304410	-10.0	15.0		
13.24	13.19	13.25	381402	242034	dinoseb	1.417500	269067	-11.2	15.0		
14.48	14.43	14.49	1284707	218780	2,4-DB	5.682000	226101	-3.3	15.0		
17.26			20797								
17.69			5776								

1/25/06
$\bar{x} = 9.3$

Data File: /chem/varian42.i/1060112c.b/03018151M5V.d
Date : 25-JAN-2006 17:01
Client ID: 8151M5V
Sample Info: 8151M5V
Volume Injected (uL): 1.0
Column phase: CLPest2

Instrument: varian42.i

Operator: 2512
Column diameter: 0.53



CompuChem

Lab Smp Id : 8151M5V Client Smp Id : 8151M5V
Sample Type : CONT CAL: Level 4 Sublist : FULL8151new
Inj Date : 25-JAN-2006 17:01 Inst ID : VARIAN42
Operator : 2512
Method : /chem/varian42.i/l060112c.b/8151f_clpest2v2.m
Misc. Info : None

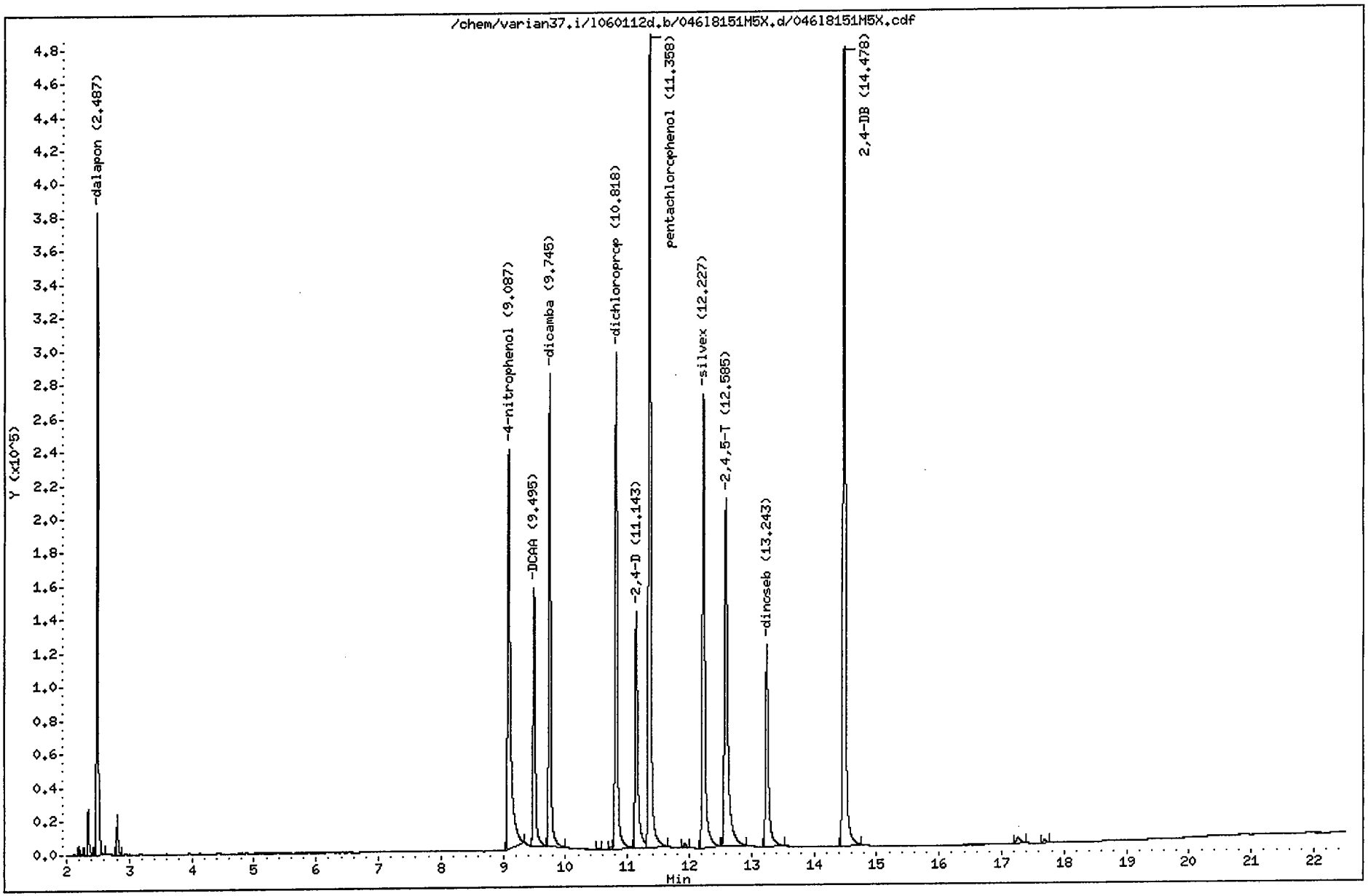
RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CCAL RF	%D	%D LIMIT	FLAGS	
1.34			7574								
2.34			4143								
2.39			30819								
2.51	2.48	2.54	357460	134001	dalapon	3.000000	119153	11.1	15.0		
2.93			24846								
9.48	9.44	9.50	251341	181557	4-nitrophenol	1.500000	167561	7.7	15.0		
10.25	10.21	10.27	393193	69876	DCAA	6.000000	65532	6.2	15.0		
10.50	10.45	10.53	528678	392690	dicamba	1.500000	352452	10.2	15.0		
11.51	11.47	11.53	517440	91737	dichloroprop	6.000000	86240	6.0	15.0		
11.93	11.89	11.95	327228	117679	2,4-D	3.000000	109076	7.3	15.0		
12.40	12.34	12.42	607057	2232541	pentachlorophenol	0.300000	2023525	9.4	15.0		
12.71			6676								
12.97	12.93	12.99	430193	807409	silvex	0.600000	716988	11.2	15.0		
13.44	13.40	13.46	420476	784415	2,4,5-T	0.600000	700793	10.7	15.0		
14.06	14.01	14.07	336905	236426	dinoseb	1.500000	224603	5.0	15.0		
14.42	14.38	14.44	665891	124308	2,4-DB	6.000000	110982	10.7	15.0		
18.14			15254								
19.02			3248								

1/25/06

Data File: /chem/varian37.i/1060112d.b/04618151M5X.d
Date : 26-JAN-2006 00:45
Client ID: 8151M5X
Sample Info: 8151M5X
Volume Injected (uL): 1.0
Column phase: CLPest

Instrument: varian37.i

Operator: 2564
Column diameter: 0.53



CompuChem

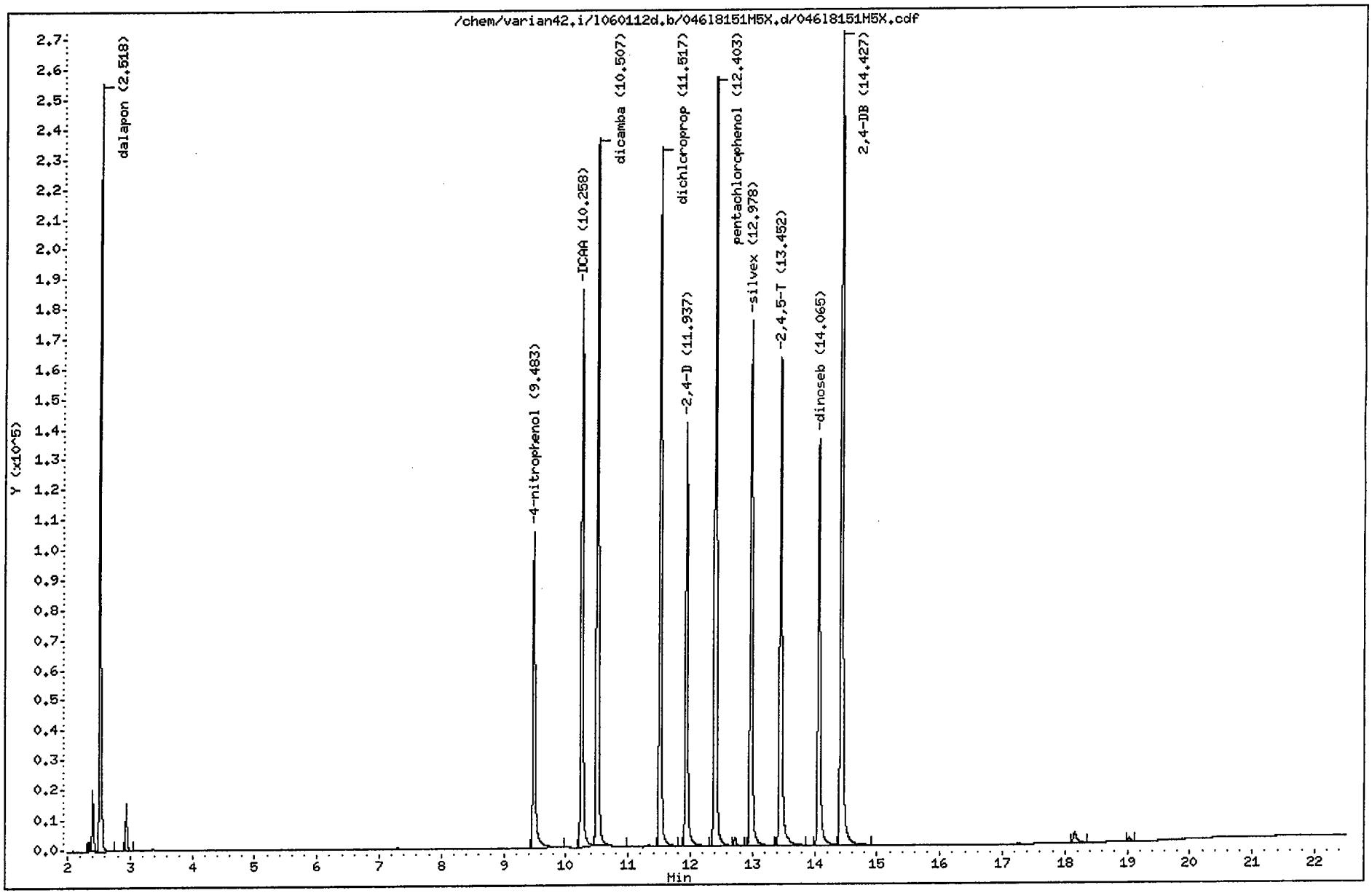
Lab Smp Id : 8151M5X Client Smp Id : 8151M5X
Sample Type : CONT CAL: Level 4 Sublist : FULL8151new
Inj Date : 26-JAN-2006 00:45 Inst ID : VARIAN37
Operator : 2564
Method : /chem/varian37.i/1060112d.b/8151f_clpestv2.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CCAL RF	%D	%D LIMIT	FLAGS	
1.34			3617								
1.40			6414								
1.44			88940								
2.20			7008								
2.34			43546								
2.49	2.45	2.51	586664	201114	dalapon	2.733000	214659	-6.7	15.0		
2.81			37730								
9.09	9.04	9.12	768038	506043	4-nitrophenol	1.362000	563904	-11.4	15.0		
9.50	9.45	9.51	384712	63689	DCAA	5.616000	68503	-7.6	15.0		
9.74	9.71	9.77	681790	432434	dicamba	1.880000	362654	16.1*	15.0	R	
10.53			1187								
10.74			3676								
10.82	10.78	10.84	747171	119362	dichloroprop	5.664000	131916	-10.5	15.0		
11.14	11.11	11.17	417534	134566	2,4-D	2.820000	148062	-10.0	15.0		
11.36	11.32	11.38	1308021	4417153	pentachlorophenol	0.285000	4589547	-3.9	15.0		
11.93			8067								
12.23	12.19	12.25	793252	1343698	silvex	0.570600	1390207	-3.5	15.0		
12.58	12.55	12.61	735505	1185886	2,4,5-T	0.568000	1294904	-9.2	15.0		
13.24	13.21	13.27	386299	242034	dinoseb	1.417500	272522	-12.6	15.0		
14.48	14.44	14.50	1310534	218780	2,4-DB	5.682000	230647	-5.4	15.0		
17.26			16037								
17.69			5599								

1/25/06
$\bar{x} = 8.8$

Data File: /chem/varian42.i/1060112d.b/04618151M5X.d
Date : 26-JAN-2006 00:45
Client ID: 8151M5X
Sample Info: 8151M5X
Volume Injected (uL): 1.0
Column phase: CLPest2

Instrument: varian42.i
Operator: 2564
Column diameter: 0.53



CompuChem

Lab Smp Id : 8151M5X
Client Smp Id : 8151M5X
Sample Type : CONT CAL: Level 4
Sublist : FULL8151new
Inj Date : 26-JAN-2006 00:45
Inst ID : VARIAN42
Operator : 2564
Method : /chem/varian42.i/l060112d.b/8151f_clpest2v2.m
Misc. Info : None

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CCAL RF	%D	%D LIMIT	FLAGS	
1.34			7187								
2.34			3695								
2.40			31304								
2.52	2.48	2.54	407796	134001	dalapon	3.000000	135932	-1.4	15.0		
2.94			26070								
9.48	9.44	9.50	260182	181557	4-nitrophenol	1.500000	173455	4.5	15.0		
10.26	10.21	10.27	417619	69876	DCAA	6.000000	69603	0.4	15.0		
10.51	10.45	10.53	558515	392690	dicamba	1.500000	372343	5.2	15.0		
11.52	11.47	11.53	544858	91737	dichloroprop	6.000000	90810	1.0	15.0		
11.94	11.89	11.95	346995	117679	2,4-D	3.000000	115665	1.7	15.0		
12.40	12.34	12.42	646348	2232541	pentachlorophenol	0.300000	2154493	3.5	15.0		
12.72			6931								
12.98	12.93	12.99	456929	807409	silvex	0.600000	761548	5.7	15.0		
13.45	13.40	13.46	455410	784415	2,4,5-T	0.600000	759017	3.2	15.0		
14.06	14.01	14.07	355592	236426	dinoseb	1.500000	237061	-0.3	15.0		
14.43	14.38	14.44	718860	124308	2,4-DB	6.000000	119810	3.6	15.0		
18.15			12974								
19.03			3473								

1/25/06

COMPUCHEM a division of Liberty Analytical Corp
GC EXTRACTABLES RUN LOG
COMPUCHEM LOGBOOK 4 ZZZ 13

Instrument ID 37/42
Sequence ID: 1060112

DATE 1/12/06
SHIFT/S(A)____(B)____(C)____
Amt. Inj. 2 ul

Method : 8081A 8082 (8151A) CLP Other_____

	FILE NAME	DATE	CompuChem #	CASE/SDG#	CHEMIST	COMMENTS(ETC.)/DISPOSITION
1	1	1/12/06	Hexane	Solvent	ZSC4	
2	2	/ /	↓	↓	↓	
3	3	/ /	815115P	58041		
4	4	/ /	815125P	42		
5	5	/ /	8151357P	43		
6	6	/ /	815145P	44		
7	7	/ /	815155P	↓ 45		
8	8	/ /	CALKSTD5P	58109	↓	
9		/ /				
10		/ /				
11		/ /				
12		/ /				
13		/ /				
14		/ /				
15		/ /				
16		/ /		1/12/06		
17		/ /				
18		/ /				
19		/ /				
20		/ /				
21		/ /				
22		/ /				
23		/ /				
24		/ /				

HEXANE LOT # Co74

SUPERVISOR APPROVAL

DATE: 1/12/06

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

8/11/05:jad

COMPUCHEM a division of Liberty Analytical Corp
GC EXTRACTABLES RUN LOG
COMPUCHEM LOGBOOK 4 ZZZ 13

Instrument ID 37/42
Sequence ID: 060112C

DATE 1/25/06
SHIFT/S(A)_____(B)_____(C)_____
Amt. Inj. 2 ul

Method : 8081A 8082 (8151A) CLP Other_____

		FILE NAME		DATE	CompuChem #	CASE/SDG#	CHEMIST	COMMENTS(ETC)/DISPOSITION
1		28		1/25/06	HIBLK	58189	2512	
2		29	✓	/ /	HIBLKSMSV	↓		
3		30	✓	/ /	8157MSV	58044		
4		31		/ /	91946	8931		
5		32		/ /	47			
6		33		/ /	48			
7		34		/ /	893105			
8		35		/ /	Hexane	Solvent		
9		36	✓	/ /	91893	Various		
10		37	✓	/ /	91894	↓		
11		38	✓	/ /	917666	8925		
12		39	✓	/ /	91771	8926		
13		40	✓	/ /	892501	8925		
14		41	✓	/ /	892601	8926		
15		42		/ /	HIBLK	58189		
16				/ /				
17				/ /				
18				/ /				
19				/ /				
20				/ /				
21				/ /				
22				/ /				
23				/ /				
24				/ /				

KF 1/25/06

HEXANE LOT # C0760

SUPERVISOR APPROVAL TAJ

DATE: 1/26/06

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

8/11/05:jad

COMPUCHEM a division of Liberty Analytical Corp
GC EXTRACTABLES RUN LOG
COMPUCHEM LOGBOOK 4 ZZZ 13

Instrument ID 37/42
Sequence ID: 10601126

DATE 1/25/06
SHIFT/S(A)_____(B)_____(C)_____
Amt. Inj. 2 ul

Method : 8081A 8082 (8151A) CLP Other_____

		FILE NAME		DATE	CompuChem #	CASE/SDG#	CHEMIST	COMMENTS/ETC. DISPOSITION
1	✓	43		1/25/06	#1BLKSW5X	58189	2512	RT shift
2	✓	44		↓	8151M5X	58044	↓	
3		45	✓	1/26/06	#1BLKSW5X	58189	2504	fittings tightened
4		46	✓	↓	8151M5X	58044	↓	
5				/ /				
6				/ /				
7				/ /				
8				/ /				
9				/ /				
10				/ /				
11				/ /				
12				/ /				
13				/ /				
14				/ /				
15				/ /				
16				/ /				
17				/ /				
18				/ /				
19				/ /				
20				/ /				
21				/ /				
22				/ /				
23				/ /				
24				/ /				

1/23/06

HEXANE LOT # C076Ø

SUPERVISOR APPROVAL TAJ

DATE: 1/26/06

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

8/11/05:jad

4. Raw QC Data

   a. Blank Data

   b. Laboratory Control Sample Data

   c. Matrix Spike Data

   d. Matrix Spike Duplicate Data

a. Blank Data

Arranged by type of blank (method, then instrument), and shall be in chronological order, by instrument.

- Tabulated Results (Form I)

- Chromatograms and data system printout(s) by instrument used for analysis.

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKGM

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 91893

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(ul) Date Analyzed: 01/25/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	5.0	U
93-72-1	silvex	1.0	U

FORM I PEST

Data File: /chem/varian37.i/1060112c.b/036191893.d

Date : 25-JAN-2006 19:49

Client ID: PBLKGM

Instrument: varian37.i

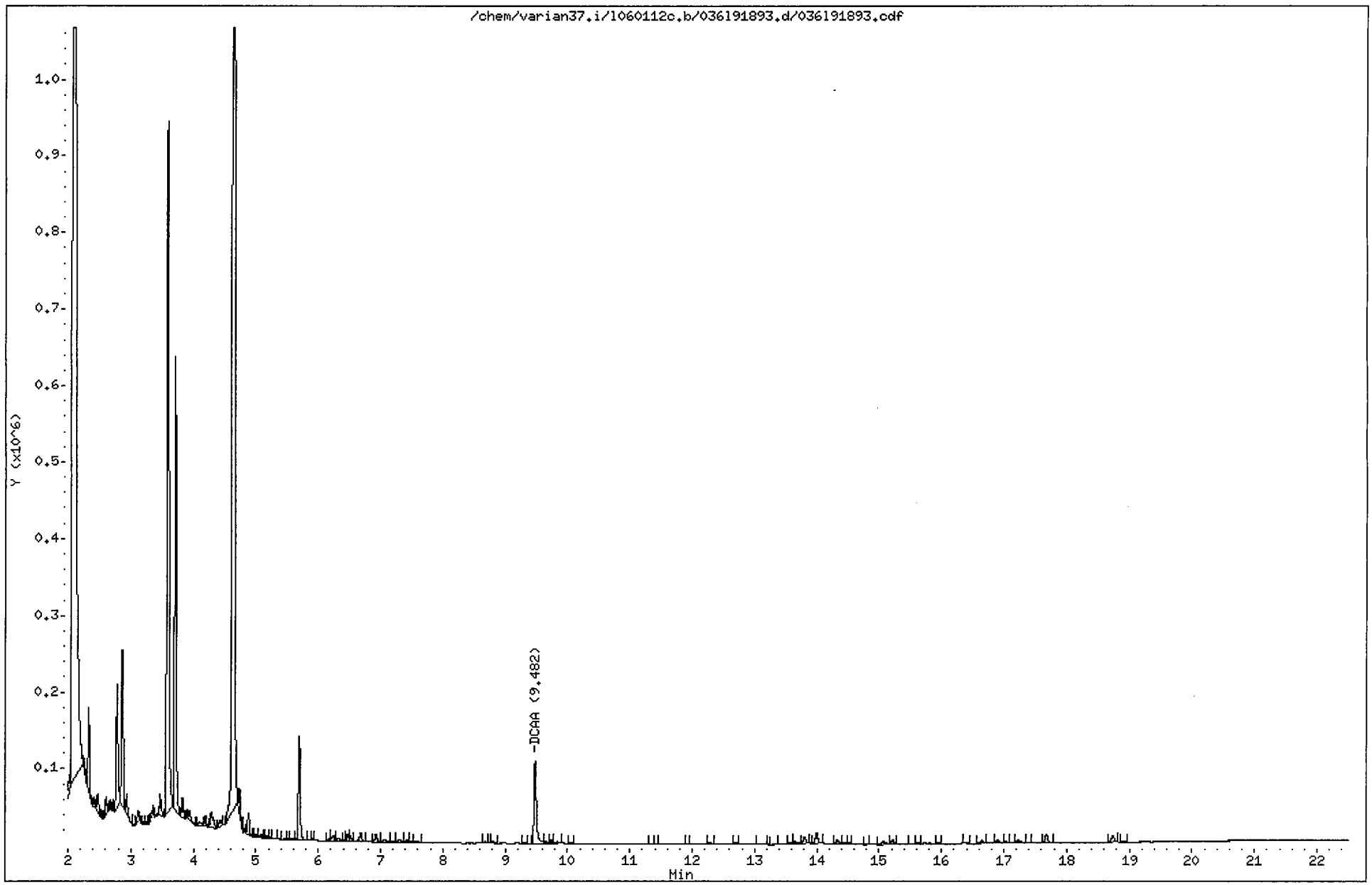
Sample Info: 91893

Volume Injected (uL): 1.0

Operator: 2512

Column phase: CLPest

Column diameter: 0.53



CompuChem

Lab Smp Id : 91893
Client Smp Id : PBLKGM
Sample Type : BLANK
Sublist : TCLP
Inj Date : 25-JAN-2006 19:49
Inst ID : VARIAN37
Operator : 2512
Method : /chem/varian37.i/1060112c.b/8151f_clpestv2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul)
Vi Injection Volume: 1(ul)
Vo Sample Volume: 500.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
1.34		285039								
1.36		182497								
1.75		101990								
1.83		18466								
1.92		124523								
2.02		21314								
2.10		5128083								
2.26		30388								
2.33		186773								
2.42		13975								
2.47		49485								
2.54		1869								
2.61		43357								
2.66		12065								
2.69		7425								
2.72		15645								
2.78		292963								
2.86		423255								
2.93		39620								
3.11		19597								
3.15		9901								
3.20		3431								
3.24		5906								
3.33		13874								
3.36		2831								
3.42		4574								
3.47		52660								
3.59		2135854								
3.71		1055289								
3.82		47239								
3.89		2006								
3.93		28148								
4.09		16267								
4.19		23385								
4.29		61689								
4.43		18542								
4.64		3648892								

TAJ 1/26/06

CompuChem

Lab Smp Id : 91893 Client Smp Id : PBLKGM
Sample Type : BLANK Sublist : TCLP
Inj Date : 25-JAN-2006 19:49 Inst ID :
Operator : 2512
Method : /chem/varian37.i/l060112c.b/8151f_clpestv2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 500.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
4.74		53259								
4.88		50944								
5.00		5398								
5.09		10928								
5.18		5842								
5.23		1360								
5.28		2635								
5.36		2399								
5.46		2217								
5.51		2487								
5.58		4075								
5.70		270397								
5.91		2207								
6.18		7870								
6.24		23813								
6.32		10636								
6.42		3794								
6.47		20344								
6.51		15042								
6.68		30167								
6.92		28863								
7.07		15086								
7.18		3927								
7.31		11967								
7.42		10557								
7.48		4447								
7.59		5350								
8.69		3203								
8.80		6024								
9.31		1765								
9.48	9.45 9.51	280068	63689	DCAA	4.397412	43.97412		87.9	50 - 148	
9.65		7741								
9.74		9346								
9.84		6878								
10.06		2912								
11.35		1936								
11.44		1157								

CompuChem

Lab Smp Id : 91893 Client Smp Id : PBLKGM
Sample Type : BLANK Sublist : TCLP
Inj Date : 25-JAN-2006 19:49 Inst ID :
Operator : 2512
Method : /chem/varian37.i/l060112c.b/8151f_clpestv2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 500.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
11.93		1366								
12.28		3334								
12.70		2466								
13.17		3280								
13.36		3649								
13.58		3215								
13.65		8535								
13.80		23427								
14.00		37473								
14.33		12698								
14.45		1318								
14.51		2156								
14.82		1163								
15.07		16436								
15.21		14366								
15.56		1970								
15.62		2302								
15.95		1786								
16.39		2439								
16.65		12270								
16.90		8732								
17.04		4110								
17.23		13812								
17.39		2538								
17.68		33835								
18.74		27375								
18.91		2557								

Data File: /chem/varian42.i/1060112c.b/036191893.d

Date : 25-JAN-2006 19:49

Client ID: PBLKGM

Instrument: varian42.i

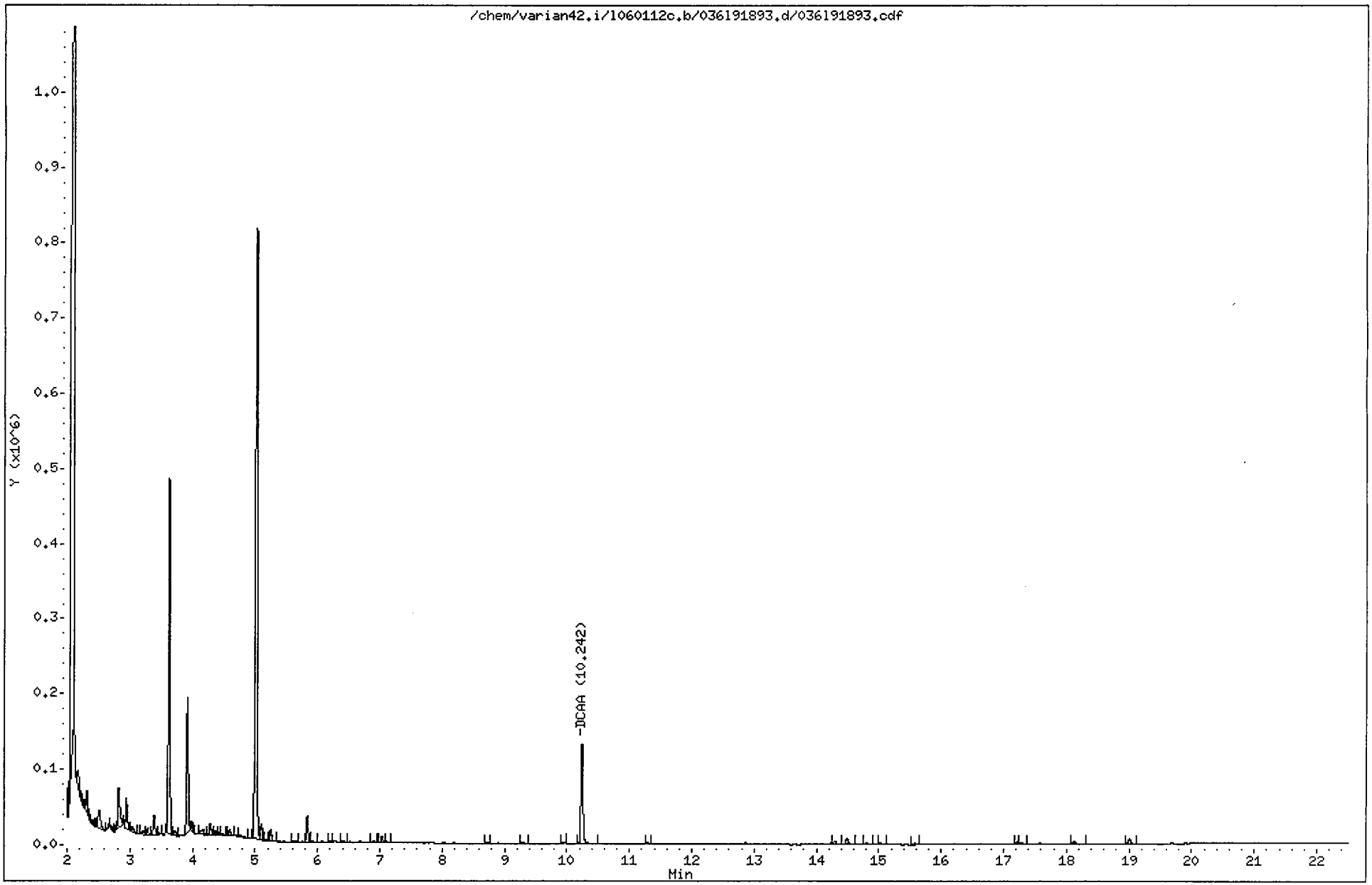
Sample Info: 91893

Volume Injected (uL): 1.0

Operator: 2512

Column phase: CLPest2

Column diameter: 0.53



CompuChem

Lab Smp Id : 91893
Client Smp Id : PBLKGM
Sample Type : BLANK
Sublist : TCLP
Inj Date : 25-JAN-2006 19:49
Inst ID : VARIAN42
Operator : 2512
Method : /chem/varian42.i/l060112c.b/8151f_clpest2v2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul)
Vi Injection Volume: 1(ul)
Vo Sample Volume: 500.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
1.30		2133152								
1.34		1707857								
1.36		1908571								
1.41		8686452								
1.54		2266243								
1.73		202536								
1.86		4546								
1.92		3484								
1.95		44655								
2.09		3431333								
2.17		49532								
2.23		12967								
2.32		49327								
2.35		4884								
2.40		7160								
2.52		71204								
2.67		8422								
2.70		4009								
2.77		7618								
2.82		121442								
2.94		70338								
3.04		15848								
3.22		14773								
3.28		14278								
3.38		54167								
3.47		4158								
3.62		810450								
3.71		16487								
3.92		332612								
4.00		20232								
4.17		25923								
4.29		31580								
4.37		10248								
4.42		5565								
4.47		4065								
4.60		17633								
4.70		3645								

TAJ 1/26/06

CompuChem

Lab Smp Id : 91893 Client Smp Id : PBLKGM
Sample Type : BLANK Sublist : TCLP
Inj Date : 25-JAN-2006 19:49 Inst ID :
Operator : 2512
Method : /chem/varian42.i/l060112c.b/8151f_clpest2v2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 500.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
4.76		7587								
5.02		1826996								
5.10		42884								
5.25		29719								
5.62		5519								
5.84		67321								
5.91		3953								
6.21		2965								
6.41		4576								
6.91		5862								
7.04		16642								
7.10		3642								
8.73		2933								
9.29		3790								
9.94		3054								
10.24	10.21 10.27	303119	69876	DCAA	4.337952	43.37952		86.8	50 - 148	
11.30		3131								
14.29		10054								
14.49		20383								
14.80		3714								
15.03		4719								
15.58		6504								
17.21		7327								
17.29		7198								
18.13		11320								
19.01		18632								

Assigned to: Mary / Vince

Emp. ID # 2583 2611

CompuChem, a division of Liberty Analytical
EXTRACTION WORKSHEET
HERB. IN WATER BY SW-846 METHODS 8151A
TCLP WASTE CHARACTERIZATION

DATE EXTRACTED/POSTED: 1/24/2006

BATCH NO.: 8893

113

1020 1.25.6

	COMPUCHEM NUMBER	CLIENT SAMPLE ID	QC SAMPLE TYPE	SAMPLE VOL. (ml)	1ST HALF DATE/INT.	2ND HALF DATE/INT.	FINAL VOL.	COMMENTS
1	892501	WAR-IDW-4	SAMPLE	100	1/24/06 NB 1/25/06 NB	1/25/06 NB	5.0	USE 100 ml OF TCLP LEACHATE, DILUTE
2	892601	WAR-IDW-3	SAMPLE	100	1/24/06			TO 500 ml WITH D.I. WATER FOR ALL
3	91893	PBLKGM	MB	1/26 ~~100~~ 500				SAMPLES. ADD 200 UL OF TCLP
4	91894	PGMLCS	LCS	100				HERBICIDE SPIKE TO SS's AND BS.
5	91766	TCLPBLKFW	HLCHBK	100				ADD 250 UL OF #445 SURROGATE TO ALL
6	91771	TCLPBLKFX	HLCHBK	100				SAMPLES. CONCENTRATE TO FINAL
7								VOLUME OF 5.0 ml.
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

NB 1/25/06

NB 1/25/06

	ID #	AMOUNT	LOT
	SURR 445	250 UL	58026
	SPIKE 4806	200 UL	58193

FINAL VOLUME VERIFIED

SUPERVISOR REVIEWED

Witness AW , 1/24/06
Initials Date

SPIKE AND SURROGATE ADDED BY MK , 1/24/06
INITIALS DATE

Analysts initials. Extracted MK/VG KD NB/AW Bottle up NB Derivitization NB

MANUFACTURER AND LOT NUMBER OF REAGENTS/SOLVENTS USED NaCl: 56298 6NNaOH: A35519 CH2Cl2: 45166 H2SO4: 2XX4-321-1
Ethyl Ether: C0953 Acidified Na2SO4: 2XX4-320-1 Methanol: 45010 Isooctane: 43316 Diazomethane: 2XX4-323-4 Cal#14: CP584

Rev. 7/21/03:dce

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TCLPBLKFW

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 91766

Sample wt/vol: 100.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(ul) Date Analyzed: 01/25/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	25	U
93-72-1	silvex	5.0	U

Data File: /chem/varian37.i/1060112c.b/038191766.d

Date : 25-JAN-2006 20:45

Client ID: TCLPBLKFW

Instrument: varian37.i

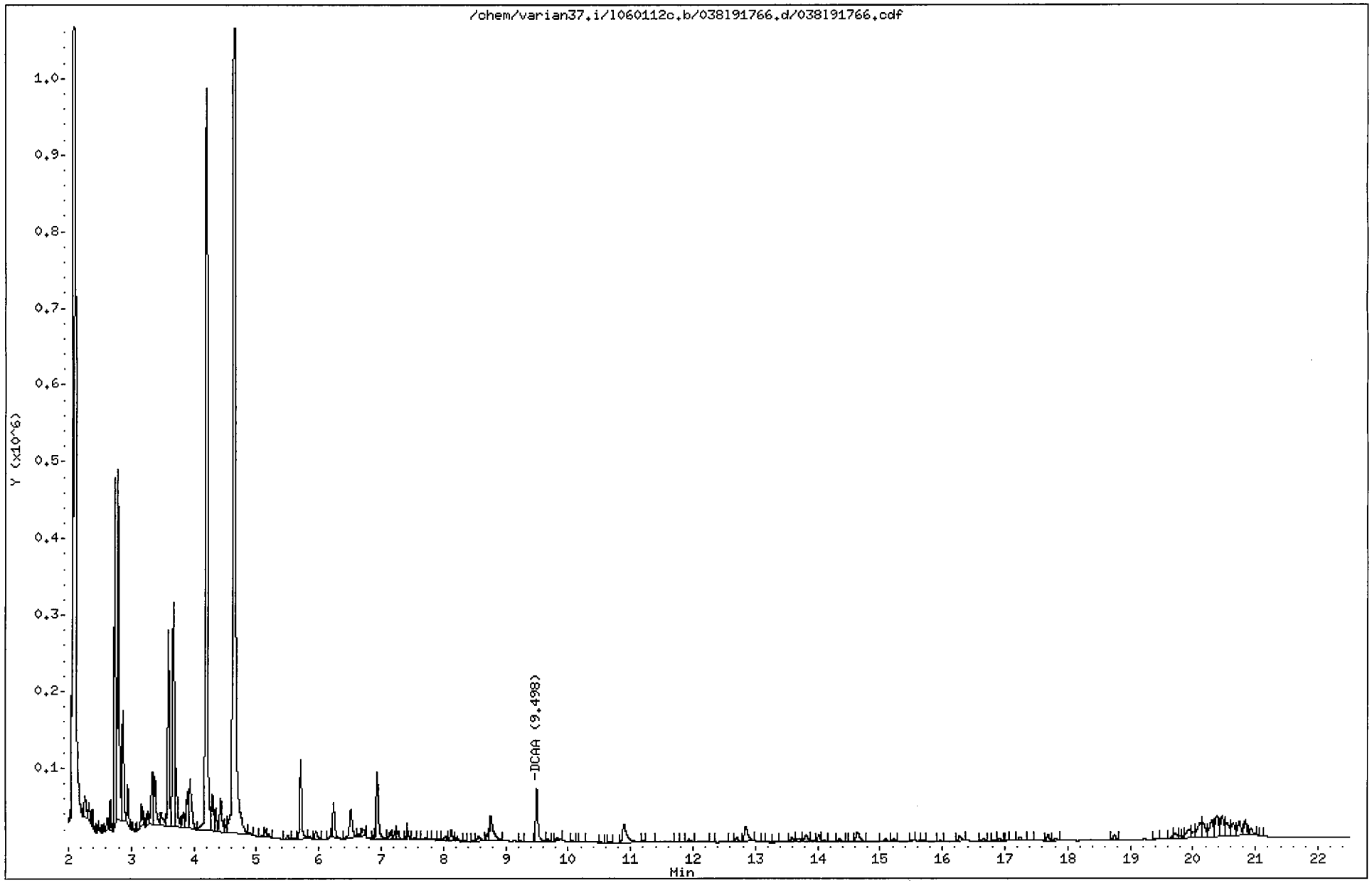
Sample Info: 91766

Volume Injected (uL): 1.0

Operator: 2512

Column phase: CLPest

Column diameter: 0.53



CompuChem

Lab Smp Id : 91766 Client Smp Id : TCLPBLKFW
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 25-JAN-2006 20:45 Inst ID : VARIAN37
Operator : 2512
Method : /chem/varian37.i/l060112c.b/8151f_clpestv2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
1.34		231816								
1.37		762805								
1.62		225916								
1.76		62217								
1.83		119468								
1.87		22579								
1.90		20386								
1.99		1829								
2.03		14327								
2.08		1932672								
2.27		63921								
2.33		36047								
2.38		30939								
2.48		1422								
2.50		3355								
2.56		1452								
2.62		28599								
2.67		49025								
2.74		643351								
2.79		824215								
2.87		278698								
2.94		86767								
3.03		3852								
3.16		46662								
3.21		12068								
3.26		29919								
3.34		158680								
3.38		139083								
3.48		49662								
3.60		470252								
3.68		656211								
3.72		142903								
3.83		44032								
3.90		94593								
3.94		168938								
4.20		2362552								
4.30		114137								

TAJ 1/26/06

CompuChem

Lab Smp Id : 91766 Client Smp Id : TCLPBLKFW
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 25-JAN-2006 20:45 Inst ID :
Operator : 2512
Method : /chem/varian37.i/l060112c.b/8151f_clpestv2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
4.35		63306								
4.43		117778								
4.54		21615								
4.65		3745403								
4.89		8785								
4.98		3123								
5.11		4301								
5.14		15377								
5.19		7706								
5.50		14170								
5.59		3995								
5.71		223686								
5.86		5251								
5.95		31936								
6.18		1190								
6.24		105490								
6.51		121190								
6.64		5843								
6.70		26483								
6.88		10737								
6.94		219911								
7.15		27007								
7.23		26348								
7.27		26180								
7.42		11143								
7.54		6402								
7.61		2792								
7.70		5344								
7.85		3077								
7.93		2356								
8.04		18662								
8.12		35602								
8.21		14460								
8.35		2470								
8.48		1690								
8.56		20997								
8.70		20749								

CompuChem

Lab Smp Id : 91766 Client Smp Id : TCLPBLKFW
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 25-JAN-2006 20:45 Inst ID :
Operator : 2512
Method : /chem/varian37.i/l060112c.b/8151f_clpestv2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
8.76		130301								
9.23		3883								
9.50	9.45 9.51	177835	63689	DCAA	2.792238	139.6119		55.8	50 - 148	
9.67		7022								
9.82		14433								
10.07		2122								
10.22		2013								
10.52		3138								
10.66		1562								
10.89		121146								
11.20		6222								
11.29		5174								
11.75		1096								
11.94		10743								
12.30		1633								
12.62		2008								
12.70		14569								
12.85		77940								
13.13		1504								
13.20		5685								
13.37		2975								
13.59		16884								
13.70		19591								
13.81		33453								
13.90		8267								
14.01		25886								
14.09		5519								
14.34		10150								
14.52		1382								
14.64		53894								
15.09		12344								
15.22		8844								
15.52		4152								
15.69		3204								
15.97		2189								
16.27		22449								
16.66		9364								

CompuChem

Lab Smp Id : 91766 Client Smp Id : TCLPBLKFW
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 25-JAN-2006 20:45 Inst ID :
Operator : 2512
Method : /chem/varian37.i/l060112c.b/8151f_clpestv2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
16.84		2277								
16.91		7587								
17.05		1466								
17.24		15314								
17.40		2166								
17.68		23355								
17.80		9813								
18.75		20129								
19.45		1133								
19.68		10739								
19.72		27248								
19.79		9536								
19.86		8171								
19.94		55468								
20.01		25896								
20.12		95063								
20.17		68574								
20.30		97540								
20.38		106314								
20.47		103947								
20.55		74972								
20.64		76131								
20.74		64796								
20.84		62686								
20.93		28686								
21.09		1710								

Data File: /chem/varian42.i/1060112c.b/038191766.d

Date : 25-JAN-2006 20:45

Client ID: TCLPBLKFW

Instrument: varian42.i

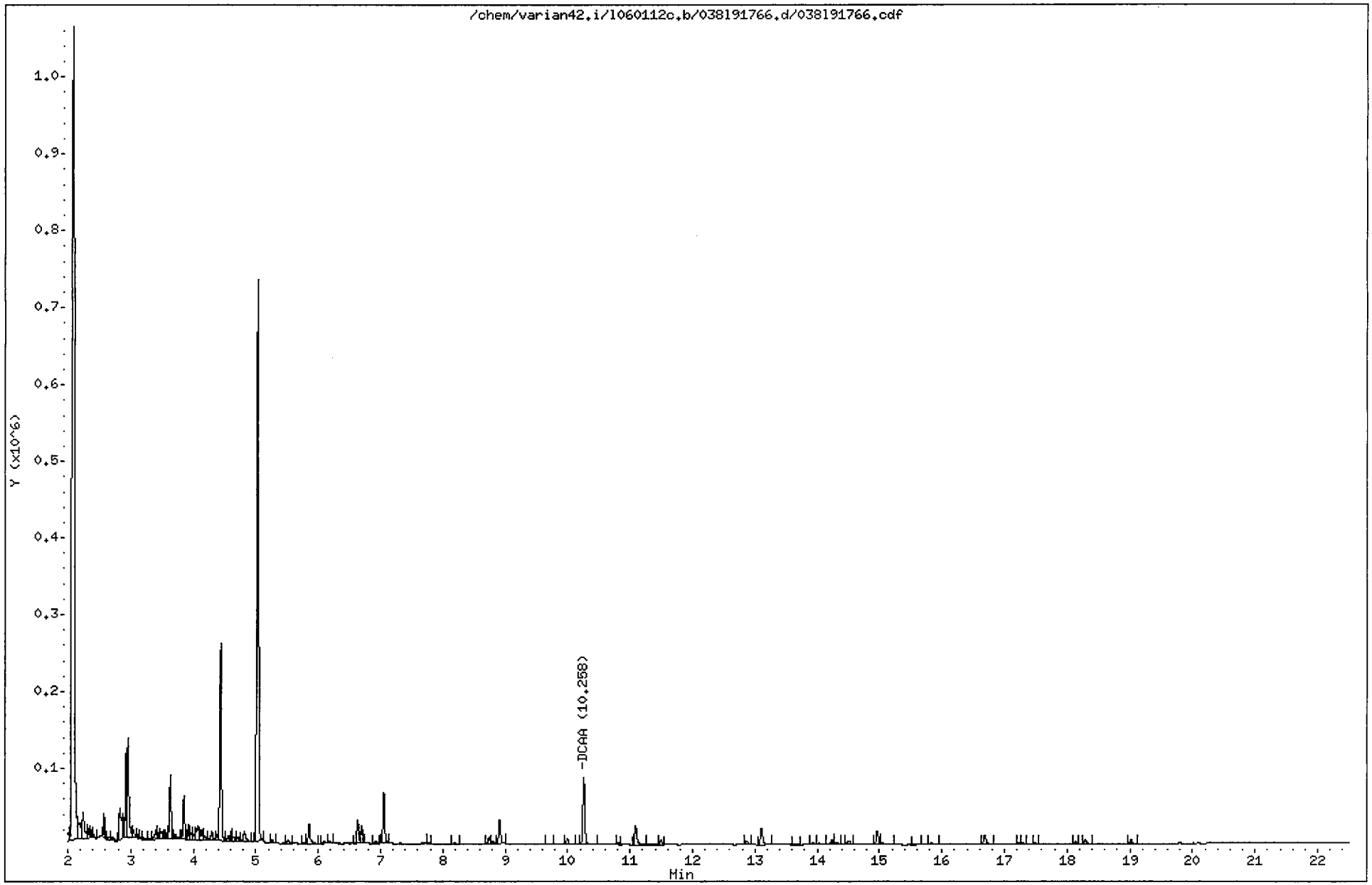
Sample Info: 91766

Volume Injected (uL): 1.0

Operator: 2512

Column phase: CLPest2

Column diameter: 0.53



CompuChem

Lab Smp Id : 91766 Client Smp Id : TCLPBLKFW
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 25-JAN-2006 20:45 Inst ID : VARIAN42
Operator : 2512
Method : /chem/varian42.i/l060112c.b/8151f_clpest2v2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
1.31		2290835								
1.34		791858								
1.35		3335682								
1.42		5686465								
1.52		1505439								
1.74		160852								
1.80		150753								
1.88		115990								
1.96		69619								
2.09		2979808								
2.19		53492								
2.24		80336								
2.31		24757								
2.36		14528								
2.41		8351								
2.58		42144								
2.66		6935								
2.71		7925								
2.83		95156								
2.88		38623								
2.93		167632								
2.96		222196								
3.05		17605								
3.10		7684								
3.20		7402								
3.40		24081								
3.44		10787								
3.49		21270								
3.58		12053								
3.63		155589								
3.72		14681								
3.85		104570								
3.93		33336								
3.97		14369								
4.01		10661								
4.07		51423								
4.13		27900								

TAJ 1/26/06

CompuChem

Lab Smp Id : 91766 Client Smp Id : TCLPBLKFW
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 25-JAN-2006 20:45 Inst ID :
Operator : 2512
Method : /chem/varian42.i/l060112c.b/8151f_clpest2v2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
4.18		13481								
4.30		27336								
4.38		12601								
4.44		479242								
4.56		14865								
4.61		6475								
4.64		12237								
4.71		10788								
4.82		34596								
5.03		1458906								
5.26		8398								
5.52		8780								
5.78		3127								
5.85		56111								
6.09		5970								
6.17		4303								
6.63		57630								
6.70		41769								
6.93		6724								
7.05		120708								
7.76		4196								
8.19		3780								
8.74		17653								
8.80		8149								
8.91		67719								
9.68		3063								
9.99		17637								
10.26	10.21 10.27	197349	69876	DCAA	2.824281	141.2141		56.5	50 - 148	
10.81		4080								
11.09		65389								
11.31		5365								
11.50		12216								
12.87		10398								
13.10		58315								
13.65		6314								
13.93		5421								
14.03		5049								

CompuChem

Lab Smp Id : 91766 Client Smp Id : TCLPBLKFW
Sample Type : SAMPLE Sublist : TCLP
Inj Date : 25-JAN-2006 20:45 Inst ID :
Operator : 2512
Method : /chem/varian42.i/l060112c.b/8151f_clpest2v2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
14.24		16149								
14.30		8005								
14.51		11746								
14.96		45400								
15.04		9375								
15.60		5540								
15.83		4623								
16.69		31444								
17.23		3996								
17.30		4034								
17.50		3606								
18.14		7993								
18.29		13483								
19.02		13436								

CompuChem, a Division of Liberty Analytical Corp.

TCLP WASTE CHARACTERIZATION LEACHATE

Method 1311

SPP -814

Assigned to: R.Mlkoy/Norms

Employee No.: 2171 1157

Date Extracted: 1/23/2006

Batch No.: 8877

COMPUCHEM NUMBER	CLIENT SAMPLE ID	SAMPLE TYPE	PRE-TEST pH VALUE START	PRE-TEST pH VALUE FINAL	EXTRACTION FLUID AND VOL. (mL) ADDED 1	EXTRACTION FLUID AND VOL. (mL) ADDED 2	PARTICLE REDUCT. DONE (Y/N)	SAMPLE WEIGHT (g)	FINAL LEACH. pH VALUE	FINAL VOLUME (ml)	PERCENT SOLID	COMMENTS
91764/65/66/67/68	TCLPBLKFW	SLCHBK	N/A	N/A	N/A	2000	N	N/A	2.87	1900	N/A	
91769/70/71/72/73	TCLPBLKFX	SLCHBK	N/A	N/A	N/A	N/A	N	N/A	7.71	2000	N/A	Filter Blk - diff 20
892501	WAR-IDW-4	SAMPLE	9.71	5.69	N/A	2000	N	100	4.18	1800	100	
892601	WAR-IDW-3	SAMPLE	N/A	N/A	N/A	N/A	N	N/A	7.52	1900	N/A	Filter only

1-24-06

LOADED TUMBLER CALIB. CHECK	
TUMBLER #	CALC. RPM
2A	32

COUNT TIME FOR 30 SEC AND MULTIPLY NUMBER BY 2 TO CALCULATE rpm

ROTATION TIME ONLY

Date/Time Started 1/23/06 / 3:15

Date/Time Stopped 1/24/06 / 0900

Room Temp. 24°C

Manufacturer and lot # of reagent used TCLP Fluid #2 2XX4-323-1

Final Vol. Verified:

Reviewed By:

Ext. Fluid 1 pH N/A (4.93 ± 0.05)

Ext. Fluide 2 pH 2.90 (2.88 ± 0.05)

Enter volume (mL) of Extraction Fluid added into appropriate column, e.g., enter volume into column 1 if Ext. Fluid #1 is used. Ensure that the fluid volume to sample weight ration is 20:1.

Rev. 7/29/03:dce

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HIBLK5U

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: HIBLK5U

Sample wt/vol: 1000 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) _____ Date Extracted:_____

Concentrated Extract Volume: 10000(ul) Date Analyzed: 01/25/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

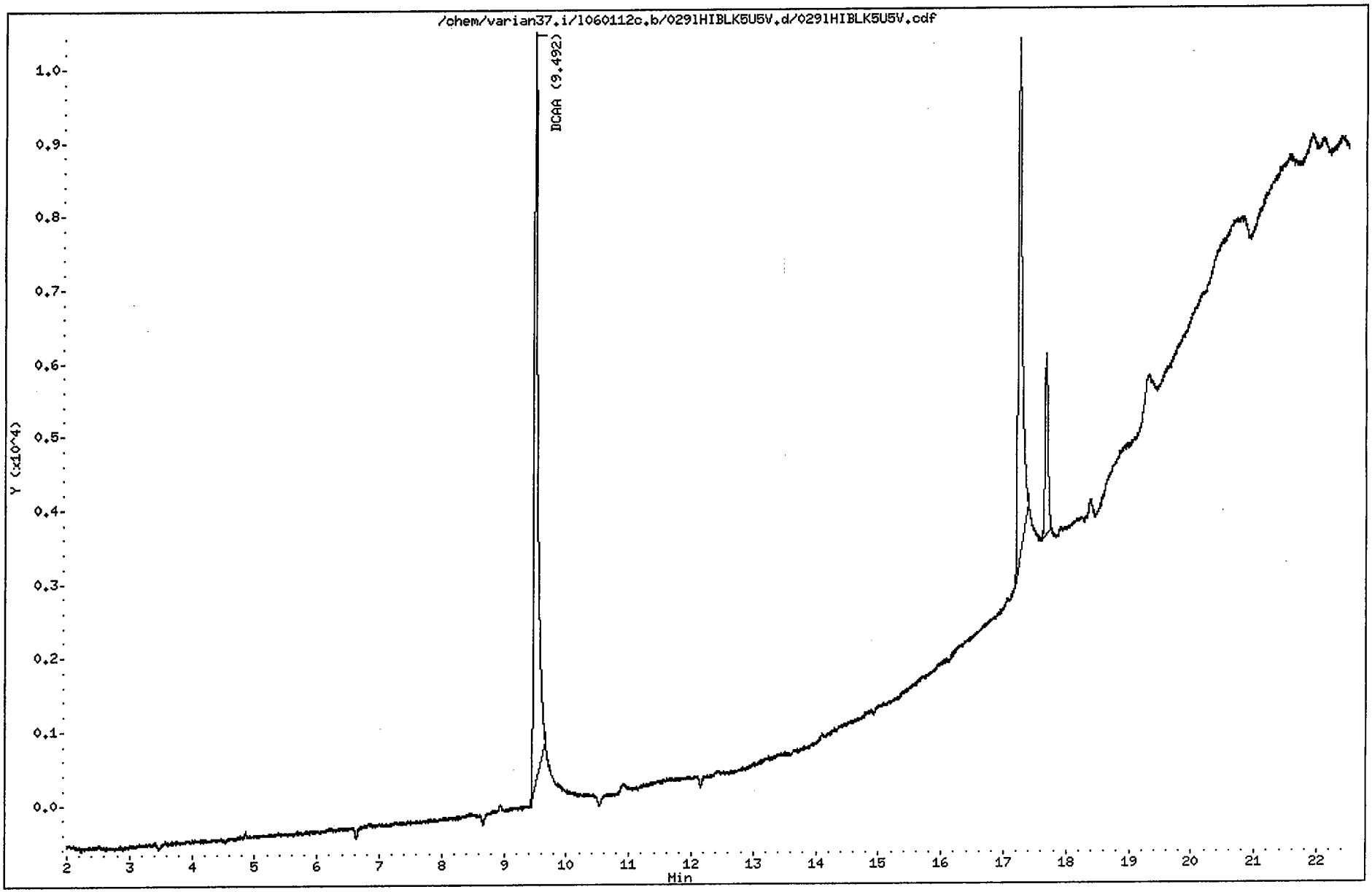
GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	5.0	U
93-72-1	silvex	1.0	U

Data File: /chem/varian37.i/1060112c.b/0291HIBLK5U5V.d
Date : 25-JAN-2006 16:34
Client ID: HIBLK5U
Sample Info: HIBLK5U5V
Volume Injected (uL): 1.0
Column phase: CLPest

Instrument: varian37.i

Operator: 2512
Column diameter: 0.53



CompuChem

Lab Smp Id : HIBLK5U Client Smp Id : HIBLK5U
Sample Type : INSTBLANK Sublist : all
Inj Date : 25-JAN-2006 16:34 Inst ID : VARIAN37
Operator : 2512
Method : /chem/varian37.i/l060112c.b/8151f_clpestv2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	FLAGS
1.35			2452						
1.40			35260						
9.49	9.45	9.51	41109	63689	DCAA	0.645460	6.454595		
17.24			31096						
17.68			7728						

1/25/06

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HIBLK5V

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: HIBLK5V

Sample wt/vol: 1000 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) _____ Date Extracted:_____

Concentrated Extract Volume: 10000(ul) Date Analyzed: 01/25/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

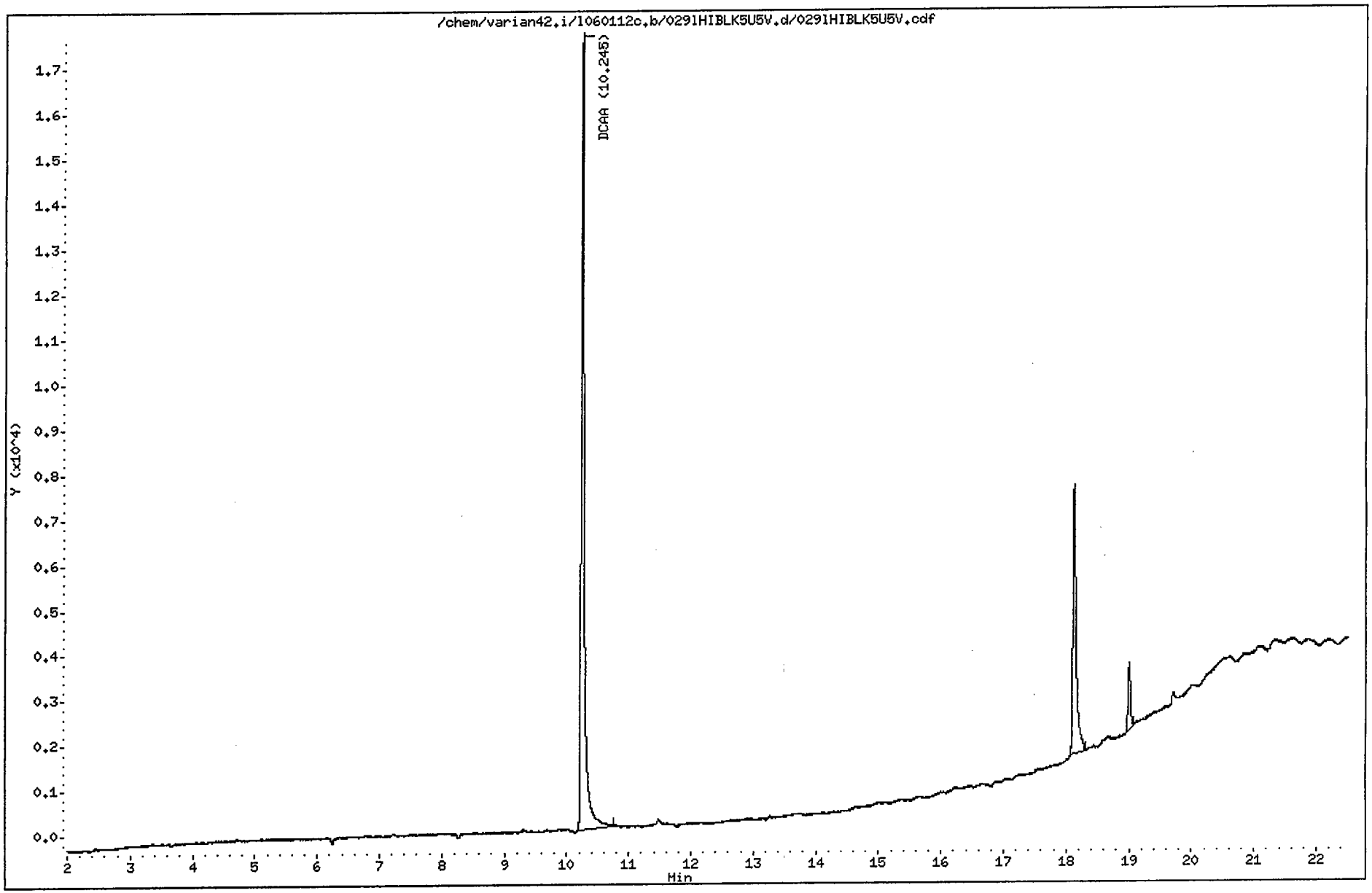
GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	5.0	U
93-72-1	silvex	1.0	U

Data File: /chem/varian42.i/1060112c.b/0291HIBLK5U5V.d
Date : 25-JAN-2006 16:34
Client ID: HIBLK5V
Sample Info: HIBLK5U5V
Volume Injected (uL): 1.0
Column phase: CLPest2

Instrument: varian42.i

Operator: 2512
Column diameter: 0.53



CompuChem

Lab Smp Id : HIBLK5V Client Smp Id : HIBLK5V
Sample Type : INSTBLANK Sublist : all
Inj Date : 25-JAN-2006 16:34 Inst ID : VARIAN42
Operator : 2512
Method : /chem/varian42.i/l060112c.b/8151f_clpest2v2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	FLAGS
10.24	10.21 10.27	58185	69876	DCAA	0.832686	8.326863		
18.13		21168						
19.00		3898						

1/25/06

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HIBLK5W

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: HIBLK5W

Sample wt/vol: 1000 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) _____ Date Extracted:_____

Concentrated Extract Volume: 10000(ul) Date Analyzed: 01/26/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

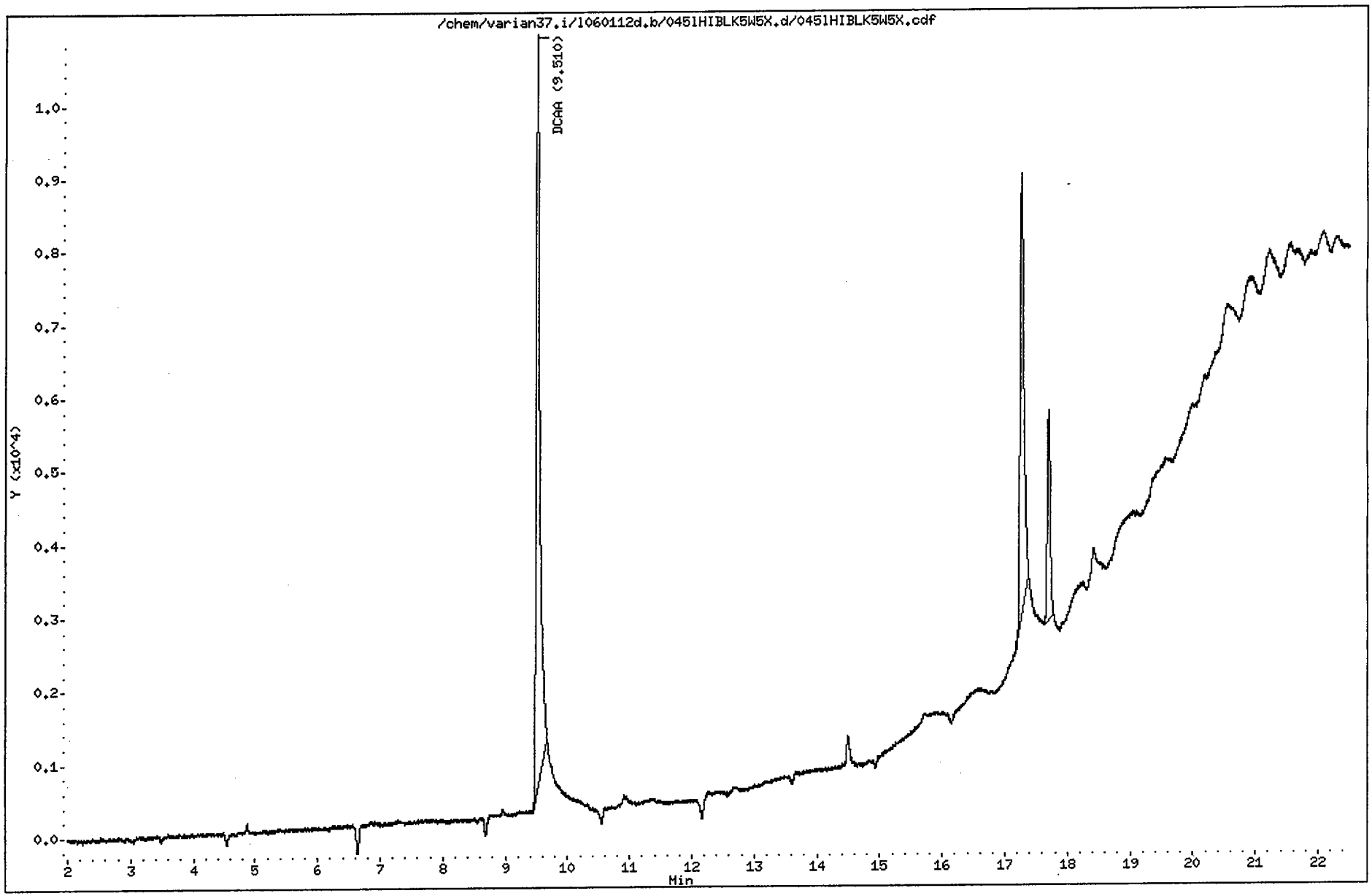
GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	5.0	U
93-72-1	silvex	1.0	U

Data File: /chem/varian37.i/1060112d.b/0451HIBLK5W5X.d
Date : 26-JAN-2006 00:15
Client ID: HIBLK5W
Sample Info: HIBLK5W5X
Volume Injected (uL): 1.0
Column phase: CLPest

Instrument: varian37.i

Operator: 2564
Column diameter: 0.53



CompuChem

Lab Smp Id : HIBLK5W Client Smp Id : HIBLK5W
Sample Type : INSTBLANK Sublist : all
Inj Date : 26-JAN-2006 00:15 Inst ID : VARIAN37
Operator : 2564
Method : /chem/varian37.i/1060112d.b/8151f_clpestv2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	FLAGS
1.34			3951						
1.40			106386						
9.51	9.45	9.51	42743	63689	DCAA	0.671122	6.711225		
17.26			25295						
17.69			9159						

1/25/06

1D

EPA SAMPLE NO.

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

HIBLK5X

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: HIBLK5X

Sample wt/vol: 1000 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) _____ Date Extracted:_____

Concentrated Extract Volume: 10000(ul) Date Analyzed: 01/26/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

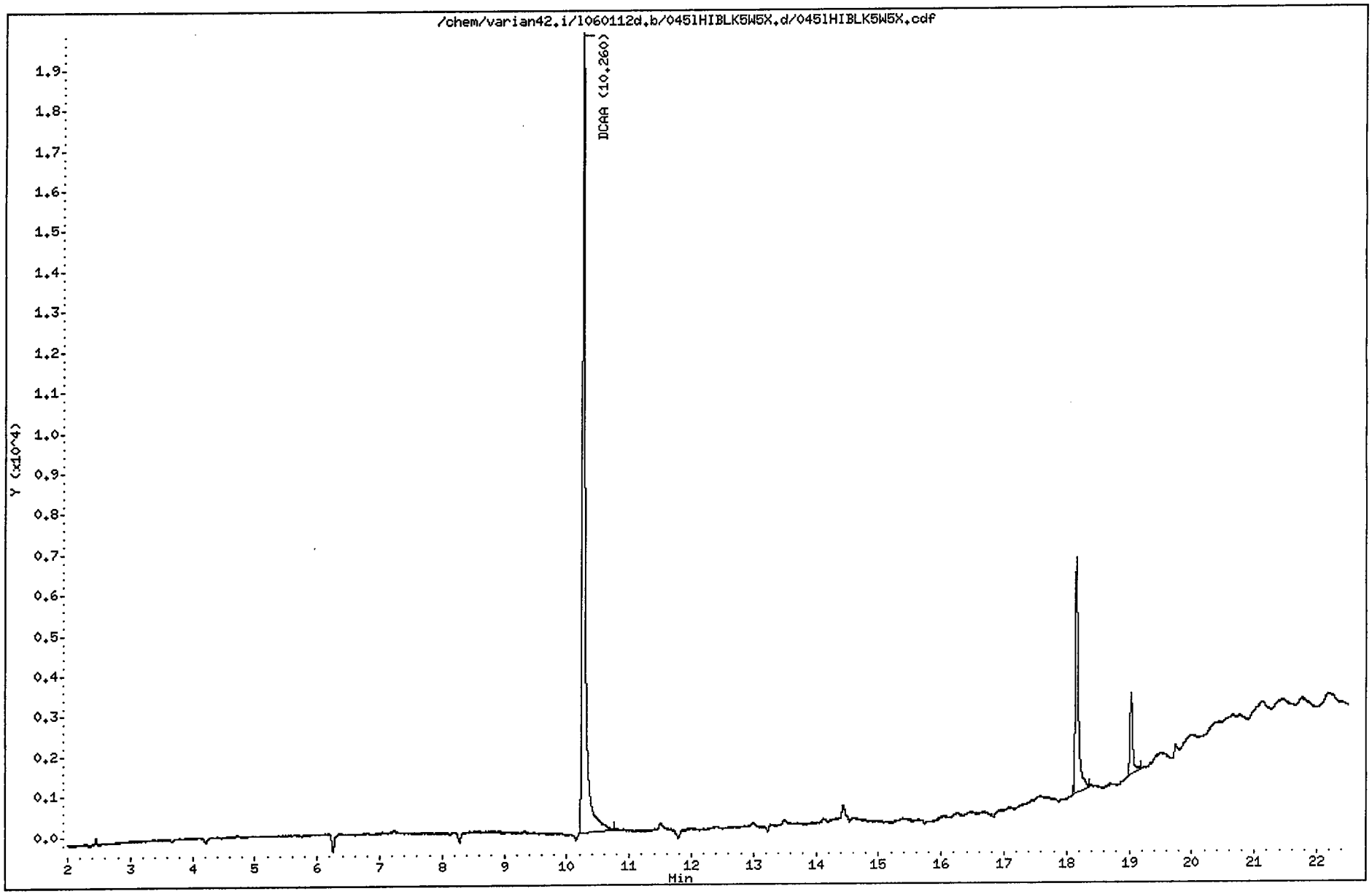
GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	5.0	U
93-72-1	silvex	1.0	U

Data File: /chem/varian42.i/1060112d.b/0451HIBLK5W5X.d
Date : 26-JAN-2006 00:15
Client ID: HIBLK5X
Sample Info: HIBLK5W5X
Volume Injected (uL): 1.0
Column phase: CLPest2

Instrument: varian42.i

Operator: 2564
Column diameter: 0.53



CompuChem

Lab Smp Id : HIBLK5X Client Smp Id : HIBLK5X
Sample Type : INSTBLANK Sublist : all
Inj Date : 26-JAN-2006 00:15 Inst ID : VARIAN42
Operator : 2564
Method : /chem/varian42.i/l060112d.b/8151f_clpest2v2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	FLAGS
1.30		4164						
10.26	10.21 10.27	67274	69876	DCAA	0.962765	9.627648		
18.15		19743						
19.03		5930						

1/25/06

b. Matrix Spike Data

- Tabulated Results (Form I)

- Chromatograms and data system printout(s)

c. Matrix Spike Duplicate Data

- Tabulated Results (Form I)

- Chromatograms and data system printout(s)

d. Laboratory Control Sample Data

- Tabulated Results (Form I)

- Chromatograms and data system printout(s)

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PGMLCS

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 91894

Sample wt/vol: 100.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(ul) Date Analyzed: 01/25/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	74	
93-72-1	silvex	19	

Data File: /chem/varian37.i/1060112c.b/037191894.d

Date : 25-JAN-2006 20:17

Client ID: PGMLCS

Instrument: varian37.i

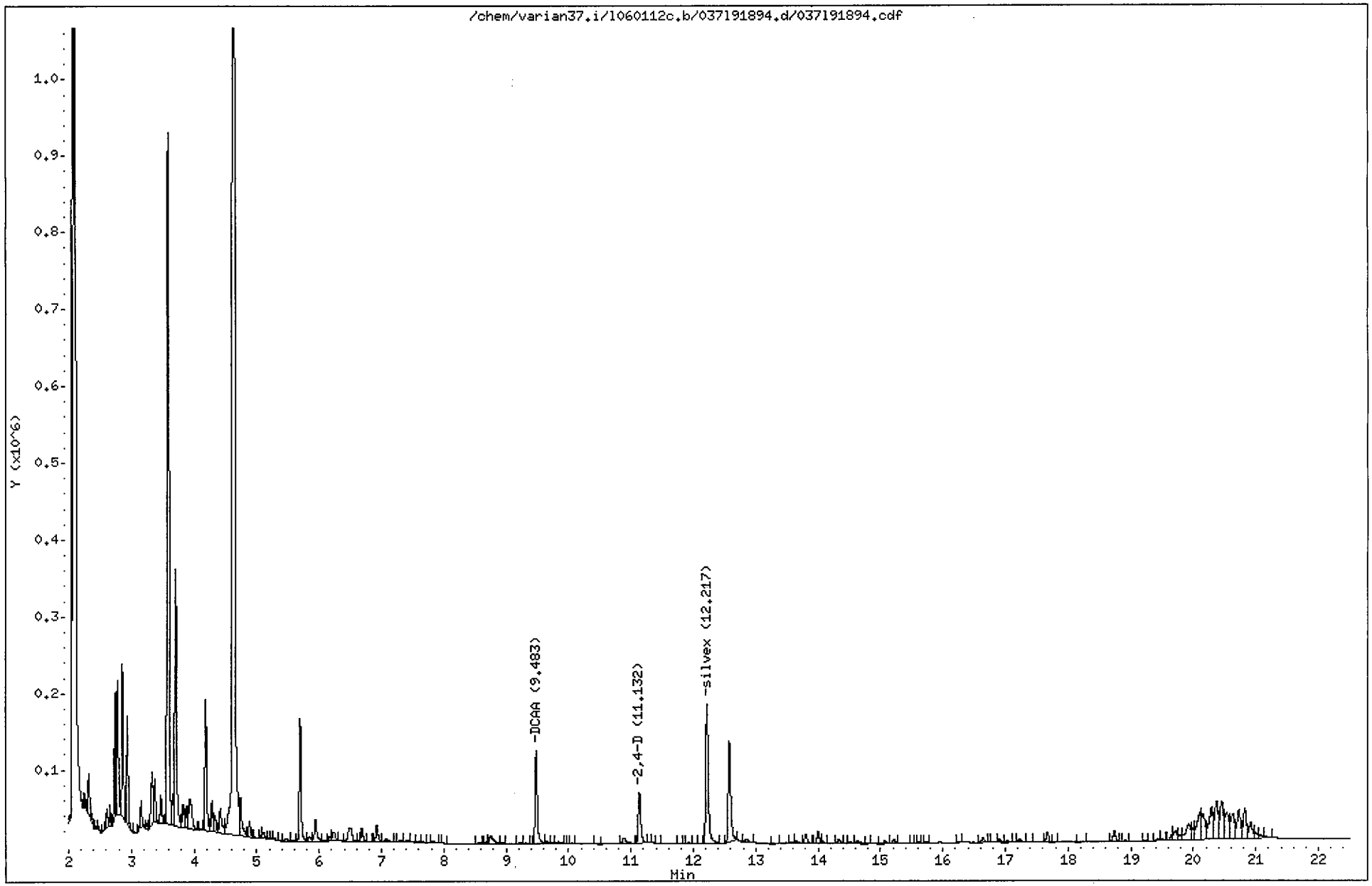
Sample Info: 91894

Volume Injected (uL): 1.0

Operator: 2512

Column phase: CLPest

Column diameter: 0.53



CompuChem

Lab Smp Id : 91894 Client Smp Id : PGMLCS
Sample Type : LCS Sublist : TCLP
Inj Date : 25-JAN-2006 20:17 Inst ID : VARIAN37
Operator : 2512 Spike Sublist : TCLP
Method : /chem/varian37.i/l060112c.b/8151f_clpestv2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
0.10		1082								
1.34		292181								
1.36		1918388								
1.42		970032								
1.61		114395								
1.76		74028								
1.82		308692								
1.92		22048								
2.02		9748								
2.07		549660								
2.25		22485								
2.28		12321								
2.32		91869								
2.38		12491								
2.43		3619								
2.47		10297								
2.56		2328								
2.61		40928								
2.66		35359								
2.73		103365								
2.75		208008								
2.78		297785								
2.86		356655								
2.94		217090								
3.12		3410								
3.15		46840								
3.20		3950								
3.24		12389								
3.33		148757								
3.37		104315								
3.47		70753								
3.59		2008284								
3.67		69479								
3.71		652896								
3.82		72191								
3.89		55520								
3.93		132033								

TAJ 1/26/06

CompuChem

Lab Smp Id : 91894 Client Smp Id : PGMLCS
Sample Type : LCS Sublist : TCLP
Inj Date : 25-JAN-2006 20:17 Inst ID :
Operator : 2512 Spike Sublist : TCLP
Method : /chem/varian37.i/l060112c.b/8151f_clpestv2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
4.13		7119								
4.19		326872								
4.29		83363								
4.34		45789								
4.42		89925								
4.64		3949075								
4.74		139911								
4.88		38877								
4.96		3090								
5.07		4349								
5.11		23423								
5.18		3514								
5.23		4597								
5.28		6798								
5.47		10700								
5.58		5428								
5.70		329575								
5.84		17838								
5.94		75552								
6.08		3873								
6.16		16541								
6.23		40982								
6.50		84067								
6.63		1795								
6.68		42446								
6.87		1070								
6.92		56241								
7.07		16523								
7.31		8138								
7.41		9122								
7.49		3181								
7.60		3438								
7.67		2207								
7.76		1205								
7.83		4101								
7.99		1240								
8.55		2622								

CompuChem

Lab Smp Id : 91894 Client Smp Id : PGMLCS
Sample Type : LCS Sublist : TCLP
Inj Date : 25-JAN-2006 20:17 Inst ID :
Operator : 2512 Spike Sublist : TCLP
Method : /chem/varian37.i/l060112c.b/8151f_clpestv2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
8.69		5551								
8.75		50746								
8.95		2081								
9.22		5255								
9.32		3348								
9.48	9.45 9.51	300792	63689	DCAA	4.722806	236.1403		94.5	50 - 148	
9.65		10135								
9.74		2058								
9.84		11118								
10.00		1080								
10.05		2850								
10.45		1491								
10.88		39567								
11.13	11.09 11.15	184671	134566	2,4-D	1.372338	68.61690	25.00000	85.8	50 - 150	
11.35		1742								
11.42		1841								
11.77		1648								
11.92		3773								
12.10		1579								
12.22	12.18 12.24	512885	1343698	silvex	0.381697	19.08483	5.000000	95.4	50 - 150	
12.57		389169								
12.84		18949								
13.36		3864								
13.57		4063								
13.65		13981								
13.80		34590								
14.00		41539								
14.07		7420								
14.33		14887								
14.45		1662								
14.51		3139								
14.63		16491								
14.82		1294								
15.07		16555								
15.21		15215								
15.53		1007								
15.62		1441								

CompuChem

Lab Smp Id : 91894 Client Smp Id : PGMLCS
Sample Type : LCS Sublist : TCLP
Inj Date : 25-JAN-2006 20:17 Inst ID :
Operator : 2512 Spike Sublist : TCLP
Method : /chem/varian37.i/l060112c.b/8151f_clpestv2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
15.73		1651								
16.27		2340								
16.64		17333								
16.84		3650								
16.90		13804								
17.03		6799								
17.22		14468								
17.39		3428								
17.67		37834								
17.80		1998								
18.24		3686								
18.74		38612								
18.91		2347								
19.23		1664								
19.44		10720								
19.48		7880								
19.66		16645								
19.71		48129								
19.78		19199								
19.92		115664								
19.99		47741								
20.11		167790								
20.16		126403								
20.29		180252								
20.37		188593								
20.45		190642								
20.53		146896								
20.63		150380								
20.73		136347								
20.82		137643								
20.91		77241								
20.99		27665								
21.07		15455								
21.15		9003								

Data File: /chem/varian42.i/1060112c.b/037191894.d

Date : 25-JAN-2006 20:17

Client ID: PGMLCS

Instrument: varian42.i

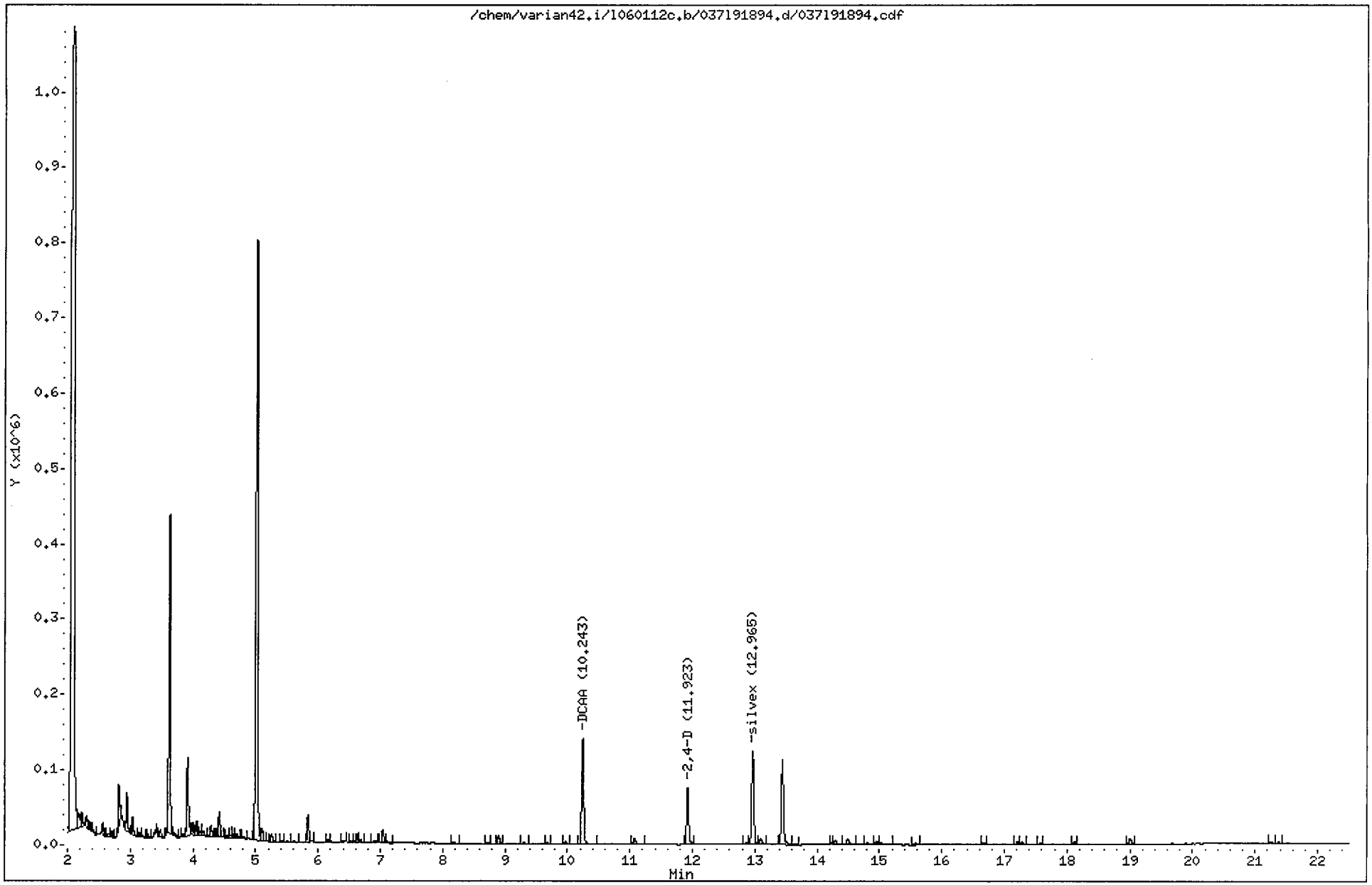
Sample Info: 91894

Volume Injected (uL): 1.0

Operator: 2512

Column phase: CLPest2

Column diameter: 0.53



CompuChem

Lab Smp Id : 91894
Client Smp Id : PGMLCS
Sample Type : LCS
Sublist : TCLP
Inj Date : 25-JAN-2006 20:17
Inst ID : VARIAN42
Operator : 2512
Spike Sublist : TCLP
Method : /chem/varian42.i/l060112c.b/8151f_clpest2v2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul)
Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
1.30		2972270								
1.35		1769865								
1.40		8766110								
1.55		1097615								
1.66		299605								
1.73		183716								
1.79		291390								
1.86		83525								
1.95		62343								
2.08		3805949								
2.18		43455								
2.23		31661								
2.31		23629								
2.36		9196								
2.40		6039								
2.57		19887								
2.65		8323								
2.71		11049								
2.82		106313								
2.94		79965								
3.04		41642								
3.15		8140								
3.19		3230								
3.29		8056								
3.40		7993								
3.48		17884								
3.58		9175								
3.63		722150								
3.71		10585								
3.84		7069								
3.92		194283								
4.00		26846								
4.06		31983								
4.12		7768								
4.17		16322								
4.29		32804								
4.37		17632								

TAJ 1/26/06

CompuChem

Lab Smp Id : 91894
Client Smp Id : PGMLCS
Sample Type : LCS
Sublist : TCLP
Inj Date : 25-JAN-2006 20:17
Inst ID :
Operator : 2512
Spike Sublist : TCLP
Method : /chem/varian42.i/l060112c.b/8151f_clpest2v2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul)
Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
4.42		54573								
4.55		4962								
4.60		6407								
4.63		11574								
4.70		10977								
4.80		6223								
5.02		1771836								
5.10		33746								
5.25		21358								
5.42		3692								
5.50		4003								
5.62		5020								
5.84		71185								
6.16		6313								
6.42		3555								
6.53		3629								
6.62		23076								
6.68		8761								
6.91		7363								
7.04		33425								
7.11		5406								
8.17		6350								
8.73		4368								
8.90		23616								
9.30		3699								
9.67		3799								
9.98		7565								
10.24	10.21 10.27	316957	69876	DCAA	4.535989	226.7994		90.7	50 - 148	
11.07		22422								
11.92	11.89 11.95	175428	117679	2,4-D	1.490724	74.53620	25.00000	93.2	50 - 150	
12.86		5752								
12.96	12.93 12.99	302541	807409	silvex	0.374706	18.73530	5.000000	93.7	50 - 150	
13.09		17004								
13.44		288279								
13.64		8262								
14.23		4118								
14.29		13526								

CompuChem

Lab Smp Id : 91894 Client Smp Id : PGMLCS
Sample Type : LCS Sublist : TCLP
Inj Date : 25-JAN-2006 20:17 Inst ID :
Operator : 2512 Spike Sublist : TCLP
Method : /chem/varian42.i/l060112c.b/8151f_clpest2v2.m
Misc. Info : None

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 5000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 100.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED PQL (ug/L)	% REC	RECOVERY LIMITS	FLAGS
14.49		21737								
14.80		4037								
14.95		12812								
15.03		7870								
15.58		7088								
16.68		5309								
17.21		9386								
17.28		8205								
17.57		3834								
18.12		7635								
19.01		19417								
21.26		3438								
21.38		3287								

[redacted] **CompuChem**

a division of Liberty Analytical Corp.

WORKORDER SUMMARY REPORT

Workorder: 8925 **Account:** CH2MHILL **Project:** CTO-007 (AR)
SDG-Case: CTO-007/18035 **Status:** CLOSED **QC Type:** CLIENT SPECIFIC MS/MSD
Report Style: COMPUCHEM STYLE 9 INTEGRATED W/EDD&CD

SAMPLE ID	CLIENT ID	COLLECT DATE	RECEIVE DATE	DUE DATE	COMMENTS
892501	WAR-IDW-4	1/17/2006	1/19/2006	2/13/2006	LCS ONLY*TCLP VOC, SVOC, PEST, HERB & METALS*RIC
L	GS8081TCLP	TCLP PST ONLY 8081A SOIL			
L	GS8151TCLP	TCLP HERBICIDE 8151 SOIL			
L	MS6010TCLP	TCLP METAL 6010B SOIL			
L	MS74HGTCLP	TCLP MERCURY ONLY 7471A SOIL			
L	SS8270TCLP	TCLP SVOC 8270C SOIL			
L	VS8260ZHE	ZHE VOC 8260B SOIL			
L	WS1010IGNT	IGNITABILITY 1010 SOIL			
L	WS9014RCCN	REACTIVE CYANIDE 9014 SOIL			
L	WS9034RCSF	REACTIVE SULFIDE 9034 SOIL			
L	WS9040COR	CORROSIVITY 9040B SOIL			

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DATA REPORTING QUALIFIERS

On the Form I, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on Form I for each compound. The qualifiers used are:

U : This flag indicates the compound was analyzed for but not detected. The Contract Required Quantitation Limit (CRQL), or reporting limit, will be adjusted to reflect any dilution and, for soils, the percent moisture.

J : This flag indicates an estimated value. The flag is used as detailed below:

1. When estimating a concentration for tentatively identified compounds (TICs) where a response factor of 1.0 is assumed for the TIC analyte,

2. When the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the CRQL (or Reporting Limit) but greater than zero, and

3. When the retention time data indicate the presence of a compound that meets the pesticide/Aroclor or other GC or HPLC identification criteria, and the result is less than the CRQL (or Reporting Limit) but greater than zero. For example, if the CRQL (or Reporting Limit) is 10 µg/L, but a concentration of 3 µg/L is calculated, it is reported as 3J.

N : This flag indicates presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search. For generic characterization of a TIC such as 'chlorinated hydrocarbon', the N flag is not used.

P : In the EPA's Contract Laboratory Program (CLP), this flag is used for a pesticide/Aroclor target analyte, when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form I and flagged with a P.
For SW-846 GC and HPLC analyses, when the Relative Percent Difference (RPD) is greater than 40% and there is no evidence of chromatographic anomalies or interferences, then the higher of the two values is reported and flagged with a P. When the RPD is equal to or less than 40%, our policy is to also report the higher of the two values, although the choice could be a project specific issue. For certain HPLC analyses, if one of the HPLC columns displays co-elution of target analytes, all results are reported from a primary column displaying no co-elution. Results are still flagged with a P if the RPD between columns is greater than 40%.

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WAR-IDW-4

Lab Name: COMPUCHEM Contract: 8151A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 892501

Sample wt/vol: 100.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 01/19/06

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(ul) Date Analyzed: 01/25/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7	2,4-D	25	U
93-72-1	silvex	5.0	U

FORM I HERB

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WAR-IDW-4

Lab Name: COMPUCHEM Contract: 8081A

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 8925

Matrix: (soil/water) WATER Lab Sample ID: 892501

Sample wt/vol: 100.0 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 01/19/06

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/24/06

Concentrated Extract Volume: 5000(uL) Date Analyzed: 01/24/06

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
58-89-9	gamma-BHC (Lindane)	0.13	U
72-20-8	Endrin	0.50	U
76-44-8	Heptachlor	0.13	U
1024-57-3	Heptachlor Epoxide	0.13	U
72-43-5	Methoxychlor	1.3	U
8001-35-2	Toxaphene	25	U
57-74-09	Technical Chlordane	8.0	U

FORM I PEST

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

AMENDED SDG NARRATIVE
SDG # 8925
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS:
WAR-IDW-4

The one soil sample listed above was received intact, properly refrigerated, with proper documentation, in sealed shipping containers, on January 19, 2006. The sample was scheduled for the requested analyses of the herbicide fraction. SW-846, 3rd Edition, Update 3, the Toxicity Characteristic Leaching Procedure (TCLP) (Method 1311), Separatory Funnel extraction and Method 8151A were used to prepare and analyze these samples, with the exceptions and/or additions requested by the client. This portion of the SDG narrative deals with the herbicide fraction only.

Herbicide-TCLP

Extraction and analysis holding time requirements were met for this sample.

There were no herbicide project analytes confirmed by dual column analysis above the Quantitation Limit (QL) in this sample.

Manual quantitations were performed on one or more of the process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

The surrogate met recovery and retention time criteria in the analyses of this sample.

The associated method blank met all quality control criteria.

There is no associated duplicate matrix spikes for this SDG.

The associated Laboratory Control Sample (LCS) prepared and analyzed along with this sample met all accuracy criteria.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

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. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Elsie S. Byrd

Elsie S. Byrd
Senior Scientist I
March 10, 2006

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

AMENDED SDG NARRATIVE
SDG # 8925
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS:
WAR-IDW-4

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501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

AMENDED SDG NARRATIVE
SDG # 8925
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS:
WAR-IDW-4

The one soil sample listed above was received intact, properly refrigerated with proper documentation, in sealed shipping containers, on January 19, 2006. The sample was scheduled for the requested analyses of the pesticide-TCLP fraction. SW-846, 3rd Edition, Update 3, the Toxicity Characteristic Leaching Procedure (TCLP) (Method 1311), Separatory Funnel extraction (Method 3550B), and Method 8081A were used to prepare and analyze this sample, with the exceptions and/or additions requested by the client. This portion of the SDG narrative deals with the pesticide-TCLP fraction only.

Pesticides TCLP

Extraction and analysis holding time requirements were met for this sample.

There were no pesticide-TCLP analytes confirmed by dual column analysis above the Quantitation Limit (QL) in this sample.

Manual quantitations were performed on one or more of the process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

All of the surrogates met recovery and retention time criteria in the analyses of this sample.

The associated method blank met all quality control criteria.

There is no associated duplicate matrix spikes for this SDG.

The associated Laboratory Control Sample prepared and analyzed along with this sample (LCS) met all accuracy criteria.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

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. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

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Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

AMENDED SDG NARRATIVE
SDG # 8925
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS:
WAR-IDW-4

The one soil sample listed above was received intact, properly refrigerated with proper documentation, in sealed shipping containers, on January 19, 2006. The sample was scheduled for the requested analyses of the pesticide-TCLP fraction. SW-846, 3rd Edition, Update 3, the Toxicity Characteristic Leaching Procedure (TCLP) (Method 1311), Separatory Funnel extraction (Method 3550B), and Method 8081A were used to prepare and analyze this sample, with the exceptions and/or additions requested by the client. This portion of the SDG narrative deals with the pesticide-TCLP fraction only.

Pesticides TCLP

Extraction and analysis holding time requirements were met for this sample.

There were no pesticide-TCLP analytes confirmed by dual column analysis above the Quantitation Limit (QL) in this sample.

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Elsie S. Byrd
Senior Scientist I
March 10, 2006

WASTE MANAGEMENT

Waste Profile Document

Soil Profile

Approval No. _____

Expiration Date: _____

IMPORTANT: This form must be completed by a Representative of the Waste Generator. The information on this form must be typed or legibly printed in ink and signed by an Authorized Agent of the Generator. Completed form bearing original signature must be provided to WMI **PRIOR TO ACCEPTANCE AT A WMI FACILITY.** If this form is submitted via facsimile, the original form MUST be received by WMI within five (5) working days.

1.0 Generator Information

1.1 Generator Name: ___US Navy, NAVFAC Atlantic_____

_____

1.2 Generating Facility Address: ___former NASD_____

City: __Vieques Island_____ State: _PR Zip:_____

1.3 Company Representative: ___Pedro Ruiz_____

Title: _____Environmental Engineer_____

1.4 Emergency Contact: _____Terri Fort, 540-777-6547_____

Title: _____Business Manager_____

1.5 Local Registration No.: _____N/A_____

1.6 Generator's EPA ID No.: ____N/A_____

1.7 Facility Phone: (_____)

1.8 After Hours Phone: (_____)

1.9 Emergency Phone: (_____)

2.0 Waste Description

2.1 General Waste Description: _____soil from a subsurface investigation

2.2 Process Generating Waste: _____generated by drilling monitoring wells _____

2.3 Is this waste "Hazardous Waste" as defined by Federal, State or Local Regulations: _____ Yes ____X_____ No

2.4 Has this waste ever been "handled" or "disposed of" as a hazardous _____ material _____ waste or disposed of via a "uniform hazardous waste manifest". If yes, explain: _____NO_____

_____

2.5 State/Local Regulatory Waste Identification Code Number: _____None_____

2.6 Waste Generation Rate: _____ Tons _____ Cubic Yards Other: _____22 drums_____

Per: _____ Day _____ Week _____ Year __one time_____Other

2.7 Waste will be transported in: _____ Roll-off Boxes ___ Drums (Type/Size): _55 gallon drums, open top

_____ Dump Trucks Other: _____ _____

3.0 Waste Properties at Room Temperature

3.1 Physical State: ___X___ Solid _____ Semi-Solid _____ Powder ____ Liquid Combination: _____

3.2 Odor: ___X_____ None _____ Mild _____ Strong 3.3 pH Range: _____7_____ to _____8_____

3.4 Color(s) _____brown_____

3.5 Percent Solid: ____>99%_____% 3.6 Flash Point F°: ___>200_____

4.0 This Waste Contains:

Note if the waste contains any of the following:

_____ Free Liquids	_____ Dioxins	_____ Etiological Agents	_____ Radioactive Materials
_____ Free Cyanide	_____ Organic Solvents	_____ Pathogens	_____ Free Sulfide
_____ Used Oils	_____ OSHA Substances	_____ Free Ammonia	_____ Virgin Oils
_____ Biological Materials	_____ PCB's not regulated y	TSCA 40 CFR 761	__X___ None of the above

5.0 Transportation

If the waste is a DOT Hazardous Material, complete the following:

5.1 Proper U.S. DOT Shipping Name: _____N/A_____

5.2 U.S. DOT Hazard Class: _____N/A_____

5.3 CERCLA Reportable Quantity: _____N/A_____ **5.4 UN or NA Number:** _____N/A_____

6.0 Attached Information

6.1 Analytical (Check all that apply): _____None _____Waste Composition Summary

_____TPH Gas/Diesel _____BTEX _____RCI ___X___TCLP Analysis _____Semi-volatile Organics

_____Volatile Organics _____Herbicides/Pesticides _____Total Metals _____MSDS

6.2 _____Generator Certification **Other:** ____Flash point, corrosivity and reactivity_____

7.0 Billing Information

7.1 Bill to: **Attention:** __Accounts Payable_____

___Capitol Environmental Services, Inc._____ **Phone:** (_540-777-6547)

___15C Trolley Square, Wilmington, DE 19806_____ **P.O.#:** _ROAN-TFORT-2985-12989_____

_____ **Job #:** _same_____

7.2 Does Customer have a current account with WMI?.: ___X__ Yes _____ No Account No._____410-0000401-0041-4_____

==========

GENERATOR CERTIFICATION – MUST BE COMPLETED

I hereby certify that all information supplied is truly representative of the above mentioned waste. I agree to notify Waste Management, Inc. if there is a change in the waste stream information submitted for acceptance. I also authorize Waste Management, Inc. to periodically re-analyze the waste, at my expense. I also certify that all samples were collected according to EPA Method SW-846 and that samples were analyzed by a certified laboratory and that the appropriate chain of custody was attached. I further certify that the wastes submitted for disposal are non-hazardous in accordance with the applicable State Health and Safety Codes, and the Code of Federal Regulations and any applicable local laws or regulations.

Pedro J. Ruiz — Printed Name

NAVFAC LANT — Company or Business

Signature

3/1/2006 — Date

INTERNAL USE ONLY - DO NOT WRITE BELOW THIS LINE

____ Accept ____ Reject **Approval Chemist:**_____ Date:_____

Compliance Manager Signature: _____ Date: _____

Comments:/Restrictions:_____

_____

WASTE MANAGEMENT
PEÑUELAS VALLEY LANDFILL, INC.

TEL: (787) 836-3535 (EXT. 223)
FAX: (787) 836-2590

FAX TRANSMITAL

DATE: 05/02/2006

TO: Terri Fort

COMPANY Capitol Environmental Services

FROM: Lic. María Vidal

SUBJECT: WASTE APPROVAL NOTICE

FAX NUMBER: (540)777-6549

NUMBER OF PAGES: 6 (INCLUDING COVER PAGE)

WASTE MANAGEMENT
PEÑUELAS VALLEY LANDFILL, INC.

ACKNOWLEDGEMENT OF RECEIPT OF NONHAZARDOUS WASTE

DATE: 05/02/2006

COMPANY AND LOCATION: US Navy, NAVFAC Atlantic
Vieques

NAME OF WASTE MATERIAL: Soil from surface investigation

AMOUNT OF WASTE MATERIAL: 22 Drums

WPS CODE NUMBER: 1310-306-6367

HANDLING METHOD: LANDFILL

FACILITY AREA: CELL 1 INDUSTRIAL LANDFILL

THIS IS TO CERTIFY THAT THE ABOVE NAMED WASTE MATERIAL WAS HANDLED AND DISPOSED SAFELY ACCORDING TO INTERNAL PRACTICES AND ENVIRONMENTAL REGULATIONS.

REPORTED BY COMPLIANCE DEPARTMENT

RELEASED BY: _____
AUTHORIZED SIGNATURE

PEÑUELAS VALLEY LANDFILL, INC. Aprobado por Departamento de Cumplimiento WASTE MANAGEMENT DE PUERTO RICO

Daily Report Reference number : 095505
Contractor:

WASTE MANAGEMENT
PEÑUELAS VALLEY LANDFILL, INC.

ACKNOWLEDGEMENT OF RECEIPT OF NONHAZARDOUS WASTE

DATE: 05/02/2006

COMPANY AND LOCATION: US Navy, NAVFAC Atlantic
Vieques

NAME OF WASTE MATERIAL: Water from surface investigation

AMOUNT OF WASTE MATERIAL: 41 Drums

WPS CODE NUMBER: 1310-306-6368

HANDLING METHOD: LANDFILL

FACILITY AREA: CELL 1 INDUSTRIAL LANDFILL

THIS IS TO CERTIFY THAT THE ABOVE NAMED WASTE MATERIAL WAS HANDLED AND DISPOSED SAFELY ACCORDING TO INTERNAL PRACTICES AND ENVIRONMENTAL REGULATIONS.

REPORTED BY COMPLIANCE DEPARTMENT

RELEASED BY: María Vidal Cintrón
AUTHORIZED SIGNATURE

PEÑUELAS VALLEY LANDFILL, INC. Aprobado por AVC Departamento de Cumplimiento WASTE MANAGEMENT DE PUERTO RICO

Daily Report Reference number : 095505
Contractor:

WASTE MANAGEMENT
PEÑUELAS VALLEY LANDFILL, INC.

PAINT FILTER LIQUIDS TEST REPORT

DATE: 05/02/2006

COMPANY/LOCATION: US Navy NAVFAC Atlantic / Vieques

NAME OF WASTE: Water from a surface investigation

W.P.S. CODE: 1310-306-6368

	Passed	Failed
SAMPLE AS RECEIVED		✓
SAMPLE AFTER TREATMENT	✓	

THIS IS TO CERTIFY THAT THE PAINT FILTER TEST REPORTED ABOVE WAS PERFORMED IN ACCORDANCE WITH THE U.S. ENVIRONMENTAL PROTECTION AGENCY'S MANUAL SW-846, "TEST METHODS FOR EVALUATING SOLID WASTES".

APPROVED BY: COMPLIANCE DEPARTMENT

PEÑUELAS VALLEY LANDFILL, INC. WASTE MANAGEMENT DE PUERTO RICO
Aprobado por
Departamento de Cumplimiento

NON - HAZARDOUS WASTE TRANSPORTATION/ACCEPTANCE DOCUMENT

DATE

TO:
PEÑUELAS VALLEY LANDFILL
Carr. 385 KM 4.5 Barrio Tallaboa
Peñuelas, Puerto Rico 00624
1-787-836-3535
FACILITY PERMIT NO. **IDF-57-0020**

FROM:
U.S. NAVY, NAVFAC ATLANTIC
FORMER NASD
VIEQUES ISLAND, PUERTO RICO

P.O. NO.

No. of Units & Container Type	DESCRIPTION AND CLASSIFICATION OF WASTE MATERIAL	Waste Profile Sheet Code	TOTAL QUANTITY (Weight, Volume, Gallons, etc.)	WEIGHT (Subject to Correction)	RATE	CHARGES (For Carrier Use Only)
41 drms	NOT AN US DOT REGULATED MATERIAL.		2,255 gals			
	NOT AN US EPA HAZARDOUS MATERIAL.					
	(CONTAINS WATER)(40 CFR AND 49 CFR)					
	APPROVAL#1310-306-6368					

GENERATOR'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. EPA and the Commonwealth of P.R. The waste described above were consigned to the Transporter named. The Treatment, Storage or Disposal Facility can and will accept the shipment of waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

GENERATOR'S SIGNATURE	TITLE: Env. Eng.	DATE SHIPPED: 04 (MO.) 28 (DAY) 06 (YR.)	EXPECTED ARRIVAL DATE: 05 (MO.) 02 (DAY) 06 (YR.)
TRANSPORTER SIGNATURE: Joel Alvarez González	COMPANY NAME: JUAN E. HERNANDEZ	VEHICLE ID. NO.: RP-9305	DATE RECEIVED: 05 (MO.) 02 (DAY) 06 (YR.)
FACILITY SIGNATURE			DATE RECEIVED: 05 (MO.) 02 (DAY) 06 (YR.)

NON - HAZARDOUS WASTE TRANSPORTATION/ACCEPTANCE DOCUMENT

DATE

TO:
PEÑUELAS VALLEY LANDFILL
Carr. 385 KM 4.5 Barrio Tallaboa
Peñuelas, Puerto Rico 00624
1-787-836-3535
FACILITY PERMIT NO. IDF-57-0020

FROM:
U.S. Navy, NAVFAC Atlantic
Former NASD
Vieques Island, Puerto Rico

P.O. NO.

No. of Units & Container Type	DESCRIPTION AND CLASSIFICATION OF WASTE MATERIAL	Waste Profile Sheet Code	TOTAL QUANTITY (Weight, Volume, Gallons, etc.)	WEIGHT (Subject to Correction)	RATE	CHARGES (For Carrier Use Only)
22 dms	NOT AN US DOT REGULATED MATERIAL,		9,900 lbs			
	NOT AN US EPA HAZARDOUS MATERIAL,					
	(CONTAINS SOIL) (40 CFR AND 49 CFR)					
	APPROVAL#1310-306-6367					

GENERATOR'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. EPA and the Commonwealth of P.R. The waste described above were consigned to the Transporter named. The Treatment, Storage or Disposal Facility can and will accept the shipment of waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

GENERATOR'S SIGNATURE	TITLE: Env Eng	DATE SHIPPED: 04 29 06 (MO. DAY YR.)	EXPECTED ARRIVAL DATE: 05 (MO. DAY YR.)
TRANSPORTER SIGNATURE: José Alberto González	COMPANY NAME: JUAN E. HERNANDEZ	VEHICLE ID. NO.: RP-9305	DATE RECEIVED: 05 (MO. DAY YR.)
FACILITY SIGNATURE			DATE RECEIVED: 05 (MO. DAY YR.)