Confidential Report

Summary Report:
July 2001 Soil Sampling Program
PCB Litigation – Crystal Springs, Mississippi

3TM Project Reference: 3TM-DNA-102000-03

prepared for

David Nutt & Associates
Jackson, Mississippi

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3TM International, Inc.
1500 S. Dairy Ashford
Suite 190
Houston, Texas 77077
[281] 497-1230
[281] 497-1676 fax

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1.0 Introduction and Overview

This Report summarizes the results of the collection of soil samples from various residences surrounding the Kuhlman Electric facility in Crystal Springs, Mississippi.

Previous sampling of soils, sediments, and indoor dust conducted by 3TM International at or near residences surrounding the Kuhlman Electric facility indicated the presence of Polychlorinated Biphenyls (PCBs). Limited analytical testing also indicated the presence of Dioxins.

Soil sampling performed by Kuhlman Electric has also indicated the presence of PCBs in the soils at several residences of interest.

Thus, the purpose of the July, 2001 field program was to collect additional soil samples at various residences in Crystal Springs, Mississippi to further characterize the presence of PCBs and Dioxins in the general area.

The July, 2001 field program was conducted during July 24 - 25, 2000, and consisted of collecting 63 soil samples at 5 residences. All of the samples were tested for PCBs, and six samples were tested for Dioxins.

The testing results indicated the presence of high levels of PCBs in the soil at a number of residences in Crystal Springs. Sample testing results indicated levels of PCB 1260 ranging from Below Reporting Limits (BRL) to 108 parts per million (ppm). Testing results also indicated levels of 2,3,7,8-TCDD ranging from 0.348 parts per trillion (ppt) to 3.63 ppt, and total Dioxin Toxic Equivalency Quotient (TEQ) ranging from 23.9 ppt to 189 ppt.

2.0 Description of Soil Sampling Program

2.1 Sampling Locations and Procedures

For purposes of this Report, the term "surface soil" is defined as the top layer of soil at a sampling location, generally from 0 to 18 inches below ground surface (bgs). All samples were collected using the standard procedures previously developed by 3TM International in previous field campaigns, and summarized below.

The sampling locations were determined by 3TM International prior to conducting the field campaign. The locations were selected based on the locations tested by representatives of Kuhlman Electric that showed high levels of PCBs. Additional samples were collected at residences with no prior environmental media testing, but at which the residents had blood testing results that indicated the presence of PCBs.

Soil samples were collected at the following residences in Crystal Springs, Mississippi (hereinafter referred to as the "sites"):

- Site #1
  108 Tucker Street
  Crystal Springs, Mississippi

- Site #2
  103 Tucker Street
  Crystal Springs, Mississippi

- Site #3
  107 Forrest Street
  Crystal Springs, Mississippi

- Site #4
  104 Forrest Street
  Crystal Springs, Mississippi

- Site #5
  100 Pearl Street
  Crystal Springs, Mississippi

Samples at 108 Tucker Street, 107 Forrest Street, and 104 Forrest Street were collected in grids around specific Kuhlman sample collection locations.

The samples at 108 Tucker Street were collected in a 9-point grid around DP-994.

Samples at 107 Forrest Street were collected at locations corresponding to two different Kuhlman sampling locations – Samples HA-20 through HA-24 were collected in a 5-point grid around DP-848, and Samples HA-25 through HA-29 were collected in a 5-point grid

around DP-846.

Each sample at 104 Forrest Street was collected at a location corresponding to a different Kuhlman sampling location. Sample HA-30 was collected at the approximate location of Kuhlman Sample DP-820. Sample HA-31 was collected at the approximate location of Kuhlman Sample DP-821. Sample HA-32 was collected at the approximate location of Kuhlman Sample DP-818.

All samples at 103 Tucker Street and 100 Pearl Street were collected due to elevated levels of contaminant in the residents' blood.

Five samples from 103 Tucker Street were randomly collected throughout the backyard and in the garden. The remaining five samples were collected in a 5-point grid in the front yard.

The samples at 100 Pearl Street were collected in two separate 5-point grids. One sampling grid was placed in the front yard and the other was placed in the back yard.

2.2 Decontamination of Sampling Equipment

Sampling at each location was accomplished using only sampling equipment that had been properly decontaminated, in order to eliminate the possibility for cross-contamination. Upon completion of sampling at a location, the sampling tools were decontaminated by manually removing large portions of adhered soils, scrubbing with Alconox detergent (a phosphate free soap) and potable water, and final rinsing with de-ionized water. The sampler donned new latex gloves before collecting each sample. Care was taken to ensure the utmost integrity of the samples.

2.3 Documentation of Sample Collection

Each sampling point and each sample collected were documented in the field by the field supervisor by completing the following forms:

- Soil Sample Collection Logs that document the method of sample collection and various sample-specific aspects of the sample. Soil Sample Collection Logs include documentation of the project and sample point location, sample collection date and time, sample number, method of sample collection, type of soil, quantity of sample collected, sample depth, type of sample container and preservative, name of field supervisor, signature of field supervisor, and similar information. Soil Sample Collection Logs are presented in Appendix A.

- Site Sketches that document the approximate location of the sampling point. The Site Sketches are shown in Appendix B.

- Photographic representation is provided for each sampling location. Photographs are taken to pinpoint where samples were collected in the field. Photographs are presented in Appendix C.

- Analytical Testing Chain-of-Custody that documents the handling of samples submitted to Xenco Laboratories, during the collection, shipping, and testing process. The Chain-of-Custody forms are presented in Appendix D along with the complete Xenco analytical testing results.

- Analytical Testing Chain-of-Custody that documents the handling of samples submitted to Midwest Research Institute (MRI), during the collection, shipping, and testing process. The Chain-of-Custody forms are presented in Appendix E along with the complete MRI analytical testing results.

2.4 Analytical Testing Methodology

All soil samples were tested for Polychlorinated Biphenyls (PCBs) using EPA Method 8082 by Xenco Laboratories of Houston, Texas.

Six of the samples were tested for Dioxins using EPA Method 8290 by Midwest Research Institute of Kansas City, Missouri. These six samples include HA-01, HA-06, HA-21, HA-22, HA-30, and HA-32.

The results of the analytical testing are summarized in Table 1, Table 2, and Table 3. The complete analytical testing reports are presented in Appendix D and Appendix E.

3.2 Significance of Findings

The findings should be considered in light of the following:

- The soil sampling program was limited in scope, both in terms of the number of residences sampled, and the number of samples collected and tested from each residence.

- Therefore, the results presented herein do not necessarily represent the maximum extent of PCB contamination that could potentially exist at the residences, or the maximum concentrations of PCBs that could exist at any given residence.

3.3 Recommendations

Based on the analytical testing results of the July, 2001 Soil Sampling Program, we recommend:

- Correlation of the soil sampling data with other analytical testing results from soil and sediment sampling data, indoor dust sampling data, human blood sampling data, and other information.

- Correlating the PCB data with the Dioxin data.

- Formulating a plan of further action based on the results of the above correlations and evaluations.

TABLE 1
Summary of Surface Soil Sampling
Analytical Results

Sample ID	Depth (bgs)	Address	Collection Date	Concentration PCB-1260 (ug/kg)
HA-1	18 in.	108 Tucker St.	7/24/01	9160
HA-2	18 in.	108 Tucker St.	7/24/01	3340
HA-3	18 in.	108 Tucker St.	7/24/01	5610
HA-4	18 in.	108 Tucker St.	7/24/01	5020
HA-5A	6 in	108 Tucker St.	7/24/01	2120
HA-5B	18 in	108 Tucker St.	7/24/01	2070
HA-6	18 in.	108 Tucker St.	7/24/01	16900
HA-7	18 in.	108 Tucker St.	7/24/01	2850
HA-8	18 in.	108 Tucker St.	7/24/01	1480
HA-9	18 in.	108 Tucker St.	7/24/01	2370
HA-10A	6 in	103 Tucker St.	7/24/01	BRL
HA-10B	18 in.	103 Tucker St.	7/24/01	BRL
HA-11A	6 in	103 Tucker St.	7/24/01	BRL
HA-11B	18 in.	103 Tucker St.	7/24/01	BRL
HA-12A	6 in	103 Tucker St.	7/24/01	26.1
HA-12B	18 in.	103 Tucker St.	7/24/01	BRL
HA-13A	6 in	103 Tucker St.	7/24/01	BRL
HA-13B	18 in.	103 Tucker St.	7/24/01	51.9
HA-14A	6 in	103 Tucker St.	7/24/01	BRL
HA-14B	18 in.	103 Tucker St.	7/24/01	BRL
HA-15A	6 in	103 Tucker St.	7/24/01	BRL
HA-15B	18 in.	103 Tucker St.	7/24/01	BRL
HA-16A	6 in	103 Tucker St.	7/24/01	BRL
HA-16B	18 in.	103 Tucker St.	7/24/01	BRL
HA-17A	6 in	103 Tucker St.	7/24/01	BRL
HA-17B	18 in.	103 Tucker St.	7/24/01	BRL
HA-18A	6 in	103 Tucker St.	7/24/01	BRL
HA-18B	18 in.	103 Tucker St.	7/24/01	BRL
HA-19A	6 in	103 Tucker St.	7/24/01	BRL
HA-19B	6 in	103 Tucker St.	7/24/01	BRL
HA-20	6 in	107 Forrest St.	7/24/01	4450
HA-21	6 in	107 Forrest St.	7/24/01	18700
HA-22	6 in	107 Forrest St.	7/24/01	20000
HA-23	6 in	107 Forrest St.	7/24/01	4630
HA-24	6 in	107 Forrest St.	7/24/01	1510
HA-25	6 in	107 Forrest St.	7/24/01	162
HA-26	6 in	107 Forrest St.	7/24/01	BRL
HA-27	6 in	107 Forrest St.	7/24/01	3310
HA-28	6 in	107 Forrest St.	7/24/01	2260
HA-29	6 in	107 Forrest St.	7/24/01	359

TABLE 1
Summary of Surface Soil Sampling
Analytical Results

Sample ID	Depth (bgs)	Address	Collection Date	Concentration PCB-1260 (ug/kg)
HA-30	6 in	104 Forrest St.	7/24/01	108000
HA-31	6 in	104 Forrest St.	7/24/01	1710
HA-32	6 in	104 Forrest St.	7/24/01	9920
HA-33A	6 in	100 Pearl St.	7/25/01	210
HA-33B	18 in.	100 Pearl St.	7/25/01	BRL
HA-34A	6 in	100 Pearl St.	7/25/01	300
HA-34B	18 in.	100 Pearl St.	7/25/01	BRL
HA-35A	6 in	100 Pearl St.	7/25/01	BRL
HA-35B	18 in.	100 Pearl St.	7/25/01	BRL
HA-36A	6 in	100 Pearl St.	7/25/01	17
HA-36B	18 in.	100 Pearl St.	7/25/01	BRL
HA-37A	6 in	100 Pearl St.	7/25/01	69.6
HA-37B	18 in.	100 Pearl St.	7/25/01	BRL
HA-38A	6 in	100 Pearl St.	7/25/01	130
HA-38B	18 in.	100 Pearl St.	7/25/01	BRL
HA-39A	6 in	100 Pearl St.	7/25/01	33.8
HA-39B	18 in.	100 Pearl St.	7/25/01	BRL
HA-40A	6 in	100 Pearl St.	7/25/01	142
HA-40B	18 in.	100 Pearl St.	7/25/01	BRL
HA-41A	6 in	100 Pearl St.	7/25/01	44.6
HA-41B	18 in.	100 Pearl St.	7/25/01	157
HA-42A	6 in	100 Pearl St.	7/25/01	157
HA-42B	18 in.	100 Pearl St.	7/25/01	BRL

Notes:

bgs - Below ground Surface
ug/kg - Equivalent to parts per billion
BRL - Below reporting limits

TABLE 2
Summary of Surface Soil Dioxin Analytical Results
Midwest Research Institute

Sample ID	HA-01	HA-06	HA-21	HA-22	HA-30	HA-32
Depth (inches bgs):	18	18	6	6	6	6
Media:	Soil	Soil	Soil	Soil	Soil	Soil
Date Collected:	7/24/01	7/24/01	7/24/01	7/24/01	7/24/01	7/24/01
Collected By:	3TM	3TM	3TM	3TM	3TM	3TM
units in pg/g (dry weight)						
2,3,7,8-TCDF	6.14	9.83	19.8	13	112	7.06
2,3,7,8-TCDD	0.534	0.348	3.63	0.506	2.2	1.32
1,2,3,7,8-PeCDF	3.57	6.53	11.8	6.85	52.4	4.03
2,3,4,7,8-PeCDF	12.4	15.8	34.7	20.9	147	13.9
1,2,3,7,8-PeCDD	2.76	1.78	14	2.15	13.9	5.07
1,2,3,4,7,8-HxCDF	32.1	45.6	80.4	58.7	258	31.4
1,2,3,6,7,8-HxCDF	10	12	26.4	14.2	80.7	10.3
2,3,4,6,7,8-HxCDF	11.2	11	32.4	14.4	88.1	13.6
1,2,3,7,8,9-HxCDF	3.05	3.83	7.52	4.86	20.2	3.24
1,2,3,4,7,8-HxCDD	10.1	3.68	18.2	3.11	23.8	5.93
1,2,3,6,7,8-HxCDD	11.7	8.54	47.2	7.73	80.5	16.5
1,2,3,7,8,9-HxCDD	4.33	2.97	16.6	2.72	22.8	5.41
1,2,3,4,6,7,8-HpCDF	293	250	883	222	1840	401
1,2,3,4,7,8,9-HpCDF	14.5	19.6	35.2	27	119	13.3
1,2,3,4,6,7,8-HpCDD	169	98.4	404	86.4	787	146
OCDF	162	177	429	224	1450	214
OCDD	5840 C	3600	4280 C	2260	5440 C	3990
Total TEQ (pg/g dry weight)	23.9	24.2	74.2	28.9	189	28.9

NOTES:

bgs - below ground surface

pg/g - picograms per gram is equivalent to parts per trillion

C - Value is above the upper calibration standard

TEQ - Toxic Equivalency Quotient

TABLE 3
David Nutt & Associates - Crystal Springs
Overview of July Soil Sampling

Address	# of Samples	of PCB hits	Highest	Lowest	of PCB > 1pp	with PCB
108 Tucker St.	10	10	16.9	1.48	10	100%
103 Tucker St.	20	2	0.0519	BRL	N/A	10%
107 Forrest St.	10	9	20	BRL	7	90%
104 Forrest St.	3	3	108	1.7	3	100%
100 Pearl St.	20	10	0.3	BRL	N/A	50%
Total	**63**	**34**	**108**	**BRL**	**20**	**54%**

BRL - Below Laboratory Analytical Reporting Limit
N/A - Not Applicable
units - parts per million (ppm)

Appendix A
Sample Collection Logs

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 108 Tucker St.

Boring Number: HA-1

Date Sampled: 7/24/01

Time Sampled: 915 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty clayey Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-1

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 108 Tucker St.

Boring Number: HA-2

Date Sampled: 7/24/01

Time Sampled: 925 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T. J. Dunnahoe 10/02/01

Remarks:

Sample ID: HA-2

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 108 Tucker St.

Boring Number: HA-3

Date Sampled: 7/24/01

Time Sampled: 935 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: clayey silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: TJDunnahoe 10/02/01

Remarks:

Sample ID: HA-3

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 108 Tucker St.

Boring Number: HA-4

Date Sampled: 7/24/01

Time Sampled: 945 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: clayey silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-4

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 108 Tucker St.

Boring Number: HA-5A

Date Sampled: 7/24/01

Time Sampled: 955 am

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: gravelly Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: TJ Dunnahoe 10/02/01

Remarks:

Sample ID: HA-5A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 108 Tucker St.

Boring Number: HA-5B

Date Sampled: 7/24/01

Time Sampled: 1045 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

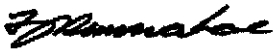
Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 

Remarks:

Sample ID: HA-5B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 108 Tucker St.

Boring Number: HA-6

Date Sampled: 7/24/01

Time Sampled: 1000 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-6

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 108 Tucker St.

Boring Number: HA-7

Date Sampled: 7/24/01

Time Sampled: 1015 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-7

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 108 Tucker St.

Boring Number: HA-8

Date Sampled: 7/24/01

Time Sampled: 1025 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-8

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 108 Tucker St.

Boring Number: HA-9

Date Sampled: 7/24/01

Time Sampled: 1035 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T. J. Dunnahoe 10/02/01

Remarks:

Sample ID: HA-9

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-10A

Date Sampled: 7/24/01

Time Sampled: 1115 am

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: clayey Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T Dunnahoe 10/02/01

Remarks:

Sample ID: HA-10A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 108 Tucker St.

Boring Number: HA-10B

Date Sampled: 7/24/01

Time Sampled: 1130 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: clayey Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T J Dunnahoe 10/02/01

Remarks:

Sample ID: HA-10B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-11A

Date Sampled: 7/24/01

Time Sampled: 1145 am

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: clayey Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T Dunnahoe 10/02/01

Remarks:

Sample ID: HA-11A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-11B

Date Sampled: 7/24/01

Time Sampled: 1155 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: clayey Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T Dunnahoe 10/02/01

Remarks:

Sample ID: HA-11B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-12A

Date Sampled: 7/24/01

Time Sampled: 1200 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: sandy Silt

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T Dunnahoe 10/02/01

Remarks:

Sample ID: HA-12A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-12B

Date Sampled: 7/24/01

Time Sampled: 1205 pm

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: sandy Silt

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-12B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-13A

Date Sampled: 7/24/01

Time Sampled: 1210 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T J Dunnahoe 10/02/01

Remarks:

Sample ID: HA-13A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-13B

Date Sampled: 7/24/01

Time Sampled: 1215 pm

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T Dunnahoe 10/02/01

Remarks:

Sample ID: HA-13B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-14A

Date Sampled: 7/24/01

Time Sampled: 1225 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T Dunnahoe 10/02/01

Remarks:

Sample ID: HA-14A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-14B

Date Sampled: 7/24/01

Time Sampled: 1230 pm

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T J Dunnahoe 10/2/01

Remarks:

Sample ID: HA-14B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-15A

Date Sampled: 7/24/01

Time Sampled: 1235 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-15A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-15B

Date Sampled: 7/24/01

Time Sampled: 1240 pm

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T. J. Dunnahoe 10/02/01

Remarks:

Sample ID: HA-15B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-16A

Date Sampled: 7/24/01

Time Sampled: 1245 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T Dunnahoe 10/02/01

Remarks:

Sample ID: HA-16A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-16B

Date Sampled: 7/24/01

Time Sampled: 1250 pm

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-16B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-17A

Date Sampled: 7/24/01

Time Sampled: 1255 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T. Dunnahoe 10/02/01

Remarks:

Sample ID: HA-17A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-17B

Date Sampled: 7/24/01

Time Sampled: 100 pm

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-17B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-18A

Date Sampled: 7/24/01

Time Sampled: 105 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-18A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-18B

Date Sampled: 7/24/01

Time Sampled: 115 pm

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T J Dunnahoe 10/02/01

Remarks:

Sample ID: HA-18B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-19A

Date Sampled: 7/24/01

Time Sampled: 120 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-19A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 103 Tucker St.

Boring Number: HA-19B

Date Sampled: 7/24/01

Time Sampled: 125 pm

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: TJDunnahoe 10/02/01

Remarks:

Sample ID: HA-19B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 107 Forrest St.

Boring Number: HA-20

Date Sampled: 7/24/01

Time Sampled: 235 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: sandy Silt

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-20

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 107 Forrest St.

Boring Number: HA-21

Date Sampled: 7/24/01

Time Sampled: 240 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: sandy Silt

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-21

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 107 Forrest St.

Boring Number: HA-22

Date Sampled: 7/24/01

Time Sampled: 245 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: sandy Silt

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-22

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 107 Forrest St.

Boring Number: HA-23

Date Sampled: 7/24/01

Time Sampled: 250 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: sandy Silt

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T Dunnahoe 10/02/01

Remarks:

Sample ID: HA-23

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 107 Forrest St.

Boring Number: HA-24

Date Sampled: 7/24/01

Time Sampled: 255 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: clayey Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T J Dunnahoe 10/02/01

Remarks:

Sample ID: HA-24

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 107 Forrest St.

Boring Number: HA-25

Date Sampled: 7/24/01

Time Sampled: 300 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: sandy Silt

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T. J. Dunnahoe 10/02/01

Remarks:

Sample ID: HA-25

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 107 Forrest St.

Boring Number: HA-26

Date Sampled: 7/24/01

Time Sampled: 305 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: sandy Silt

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: TJ Dunnahoe 10/02/01

Remarks:

Sample ID: HA-26

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 107 Forrest St.

Boring Number: HA-27

Date Sampled: 7/24/01

Time Sampled: 310 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: sandy Silt

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: Dunnahoe 10/02/01

Remarks:

Sample ID: HA-27

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 107 Forrest St.

Boring Number: HA-28

Date Sampled: 7/24/01

Time Sampled: 315 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: sandy Silt

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-28

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 107 Forrest St.

Boring Number: HA-29

Date Sampled: 7/24/01

Time Sampled: 320 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: sandy Silt

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-29

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 104 Forrest St.

Boring Number: HA-30

Date Sampled: 7/24/01

Time Sampled: 325 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: clayey Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T Dunnahoe 10/02/01

Remarks:

Sample ID: HA-30

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 104 Forrest St.

Boring Number: HA-31

Date Sampled: 7/24/01

Time Sampled: 330 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: clayey Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-31

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 104 Forrest St.

Boring Number: HA-32

Date Sampled: 7/24/01

Time Sampled: 335 pm

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: clayey Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T. Dunnahoe 10/02/01

Remarks:

Sample ID: HA-32

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-33A

Date Sampled: 7/25/01

Time Sampled: 825 am

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: clayey Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-33A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-33B

Date Sampled: 7/25/01

Time Sampled: 830 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: sandy Silt

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-33B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-34A

Date Sampled: 7/25/01

Time Sampled: 835 am

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-34A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-34B

Date Sampled: 7/25/01

Time Sampled: 840 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: sandy Silt

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-34B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-35A

Date Sampled: 7/25/01

Time Sampled: 845 am

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-35A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-35B

Date Sampled: 7/25/01

Time Sampled: 855 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-35B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-36A

Date Sampled: 7/25/01

Time Sampled: 910 am

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-36A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-36B

Date Sampled: 7/25/01

Time Sampled: 915 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-36B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-37A

Date Sampled: 7/25/01

Time Sampled: 920 am

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-37A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-37B

Date Sampled: 7/25/01

Time Sampled: 925 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-37B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-38A

Date Sampled: 7/25/01

Time Sampled: 930 am

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-38A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-38B

Date Sampled: 7/25/01

Time Sampled: 935 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: TJDunnahoe 10/02/01

Remarks:

Sample ID: HA-38B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-39A

Date Sampled: 7/25/01

Time Sampled: 940 am

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-39A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-39B

Date Sampled: 7/25/01

Time Sampled: 945 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T. J. Dunnahoe 10/02/01

Remarks:

Sample ID: HA-39B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-40A

Date Sampled: 7/25/01

Time Sampled: 950 am

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-40A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-40B

Date Sampled: 7/25/01

Time Sampled: 955 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T Dunnahoe 10/02/01

Remarks:

Sample ID: HA-40B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-41A

Date Sampled: 7/25/01

Time Sampled: 1005 am

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: 10/02/01

Remarks:

Sample ID: HA-41A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-41B

Date Sampled: 7/25/01

Time Sampled: 1010 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T Dunnahoe 10/02/01

Remarks:

Sample ID: HA-41B

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-42A

Date Sampled: 7/25/01

Time Sampled: 1015 am

Sampling Method: Hand Auger

Sample Depth: 6 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

Environmental Supervisor: T. J. Dunnahoe

Signature / Date: Dunnahoe 10/02/01

Remarks:

Sample ID: HA-42A

SOIL SAMPLING LOG

3TM INTERNATIONAL

Houston, Texas

Project Name: Crystal Springs

Site Name: Crystal Springs, MS

Location: 100 Pearl St.

Boring Number: HA-42B

Date Sampled: 7/25/01

Time Sampled: 1020 am

Sampling Method: Hand Auger

Sample Depth: 18 inches bgs

Type of Soil: silty Sand

Sample Matrix: Soil

Sample Analysis: PCB

Sample Container: 1 – 4 oz. GC

Sample Quantity Collected: 4 oz.

Preservative Used: Ice

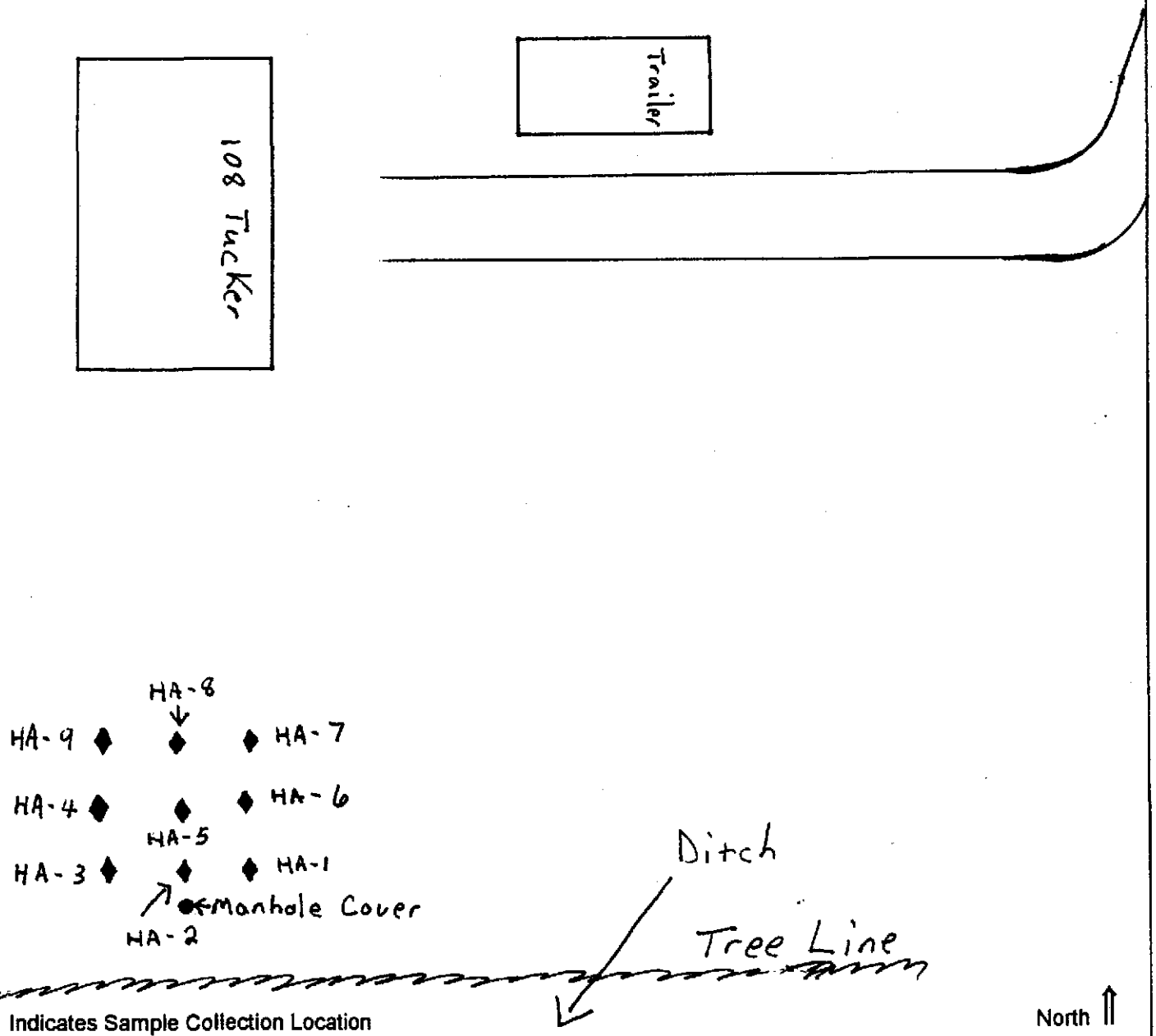
Environmental Supervisor: T. J. Dunnahoe

Signature / Date: T. Dunnahoe 10/02/01

Remarks:

Sample ID: HA-42B

Appendix B
Site Sketch Forms

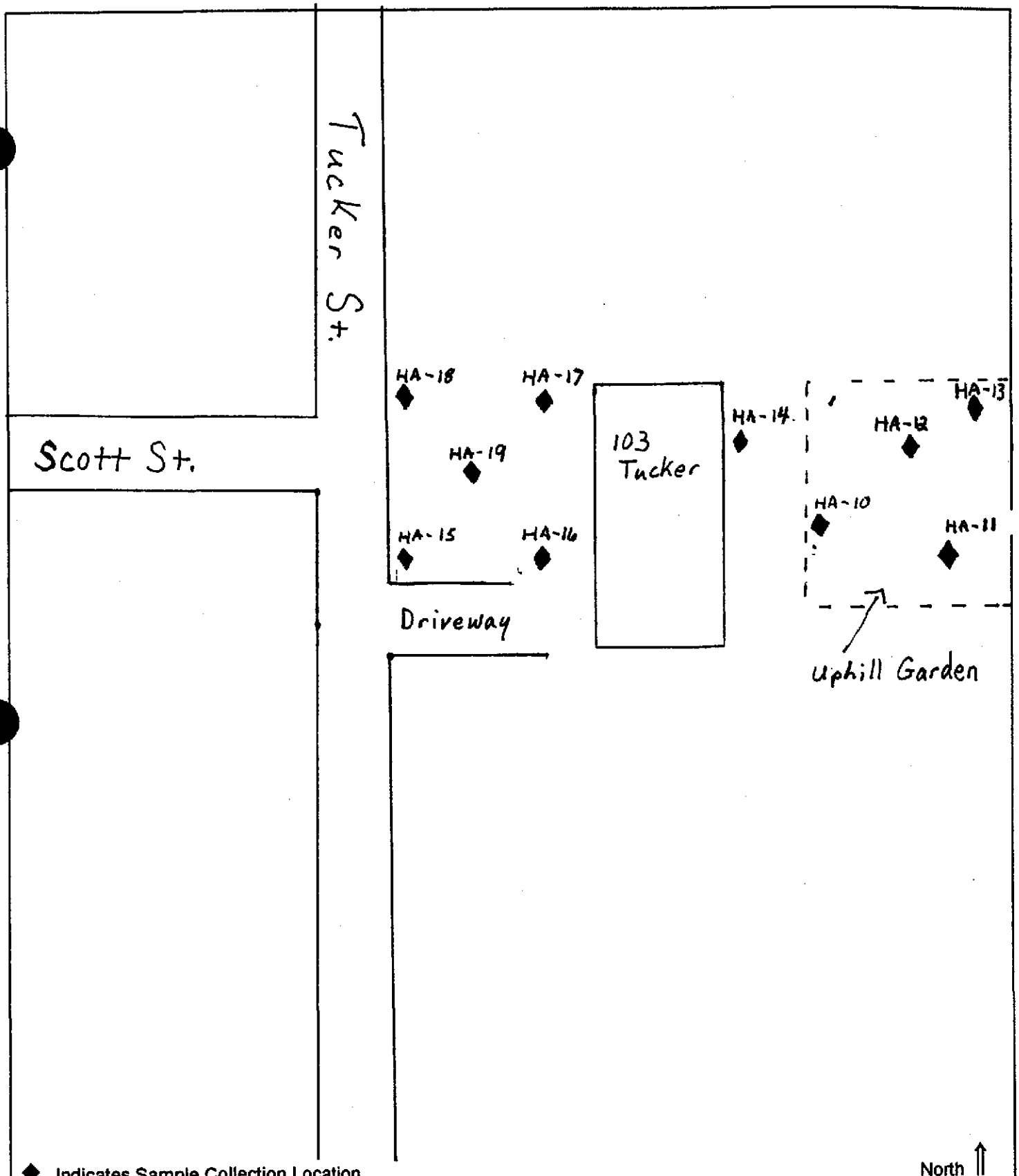


SAMPLE NUMBER: HA-1 through HA-9
SAMPLE COLLECTION LOCATION: 108 Tucker St.
SAMPLE COLLECTION DATE: 7/24/01

SITE SKETCH

(NOT TO SCALE)

3TM INTERNATIONAL, INC.
Houston, Texas

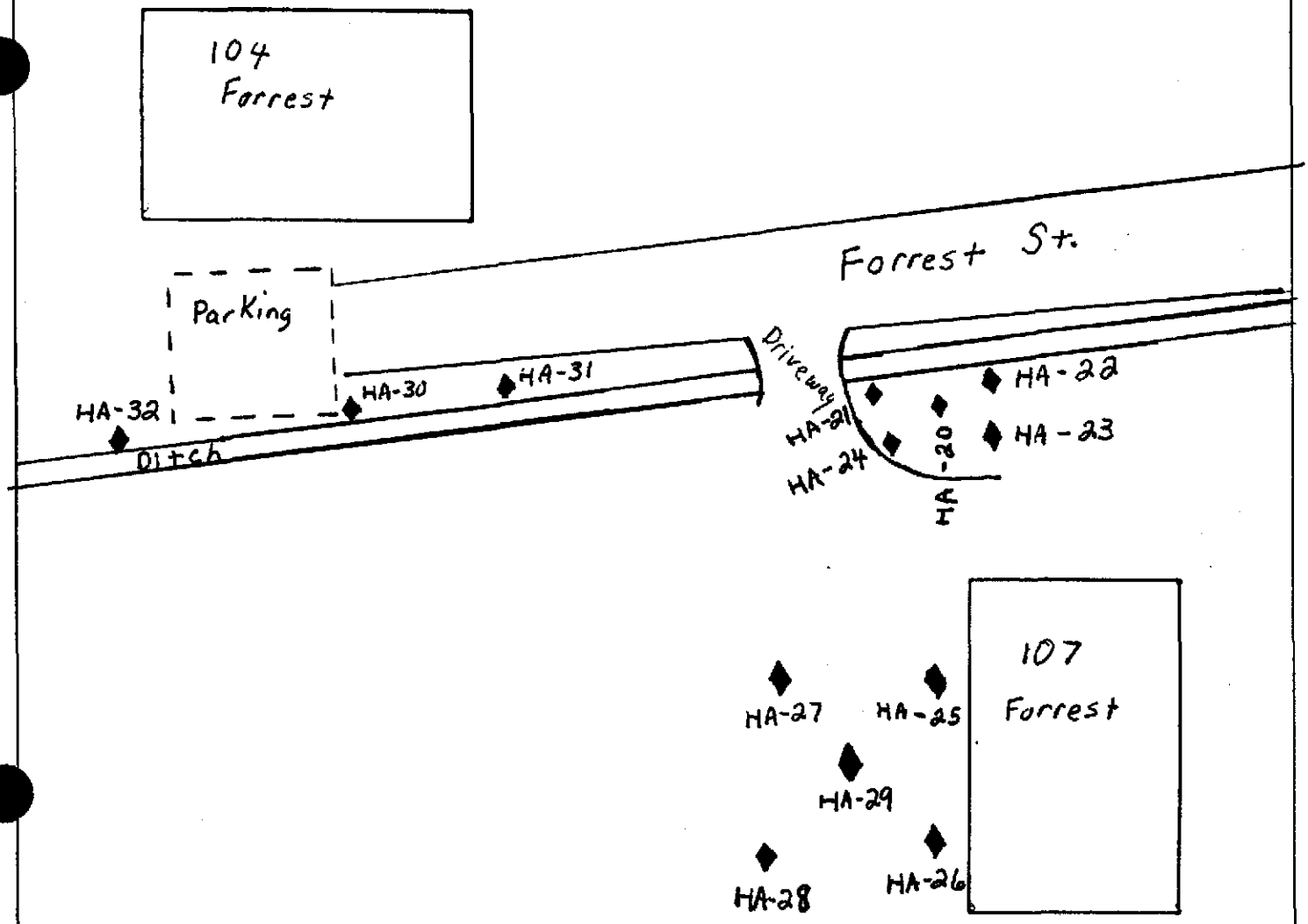


SAMPLE NUMBER: HA-10A&B through HA-19A&B
SAMPLE COLLECTION LOCATION: 103 Tucker
SAMPLE COLLECTION DATE: 7/24/01

SITE SKETCH

(NOT TO SCALE)

3TM INTERNATIONAL, INC.
Houston, Texas



◆ Indicates Sample Collection Location

North

SAMPLE NUMBER: HA-20 through HA-32
SAMPLE COLLECTION LOCATION: 104 & 107 Forrest St.
SAMPLE COLLECTION DATE: 7/24/01

SITE SKETCH

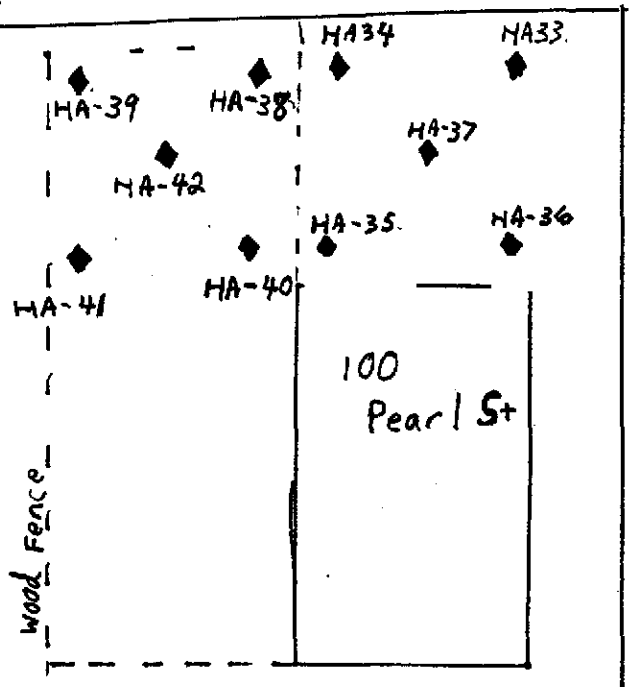
(NOT TO SCALE)

3TM INTERNATIONAL, INC.
Houston, Texas

Kuhlman Electric

Railroad

W. Railroad Ave.



Pearl St.

◆ Indicates Sample Collection Location

North

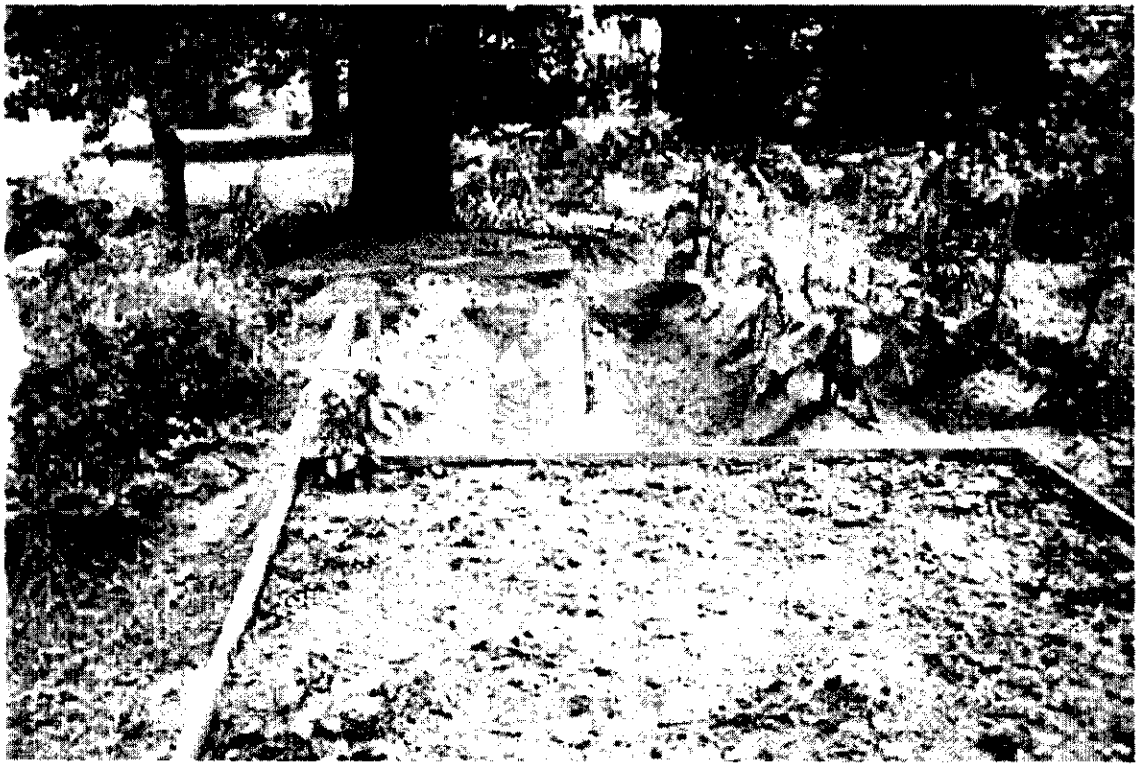
SAMPLE NUMBER: HA-33A&B through HA-42A&B
SAMPLE COLLECTION LOCATION: 100 Pearl St
SAMPLE COLLECTION DATE: 7/25/01

SITE SKETCH
(NOT TO SCALE)

3TM INTERNATIONAL, INC.
Houston, Texas

Appendix C
Site Photographs

Photograph 1: 108 Tucker Street. Samples HA-1 through HA-09. Samples were taken on a nine point grid which can be seen in the site sketch. Photograph was taken facing northwest.

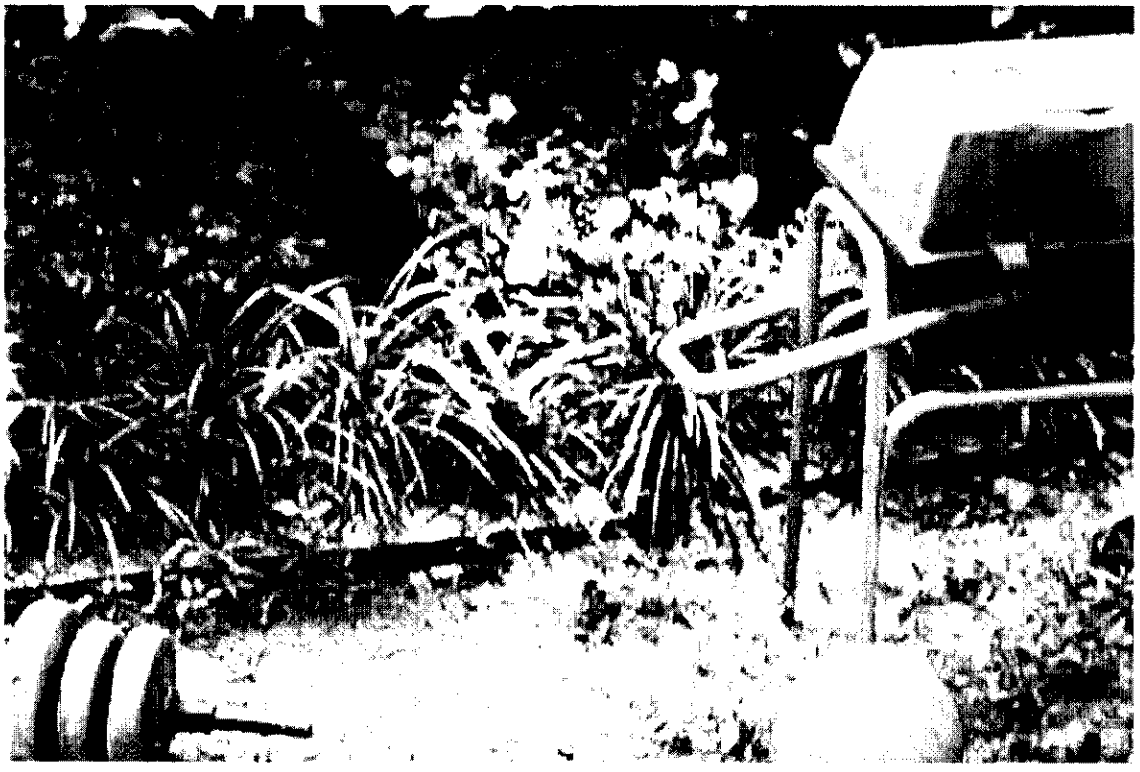


Photograph 2: 103 Tucker Street. Sample HA-10. Sample was taken in the garden uphill from the home. The garden is located in the rear of the home.

Photograph 3: 103 Tucker Street. Samples HA-11. Sample was taken in the garden uphill from the home. The garden is located in the rear of the home.

Photograph 4. 103 Tucker Street. Sample HA-12. Sample was taken in the garden uphill from the home. The garden is located in the rear of the home.

Photograph 5: 103 Tucker Street. Samples HA-13. Sample was taken in the garden uphill from the home. The garden is located in the rear of the home.



Photograph 6: 103 Tucker Street. Sample HA-14. Sample was taken in the rear of the home near the flowerbed.

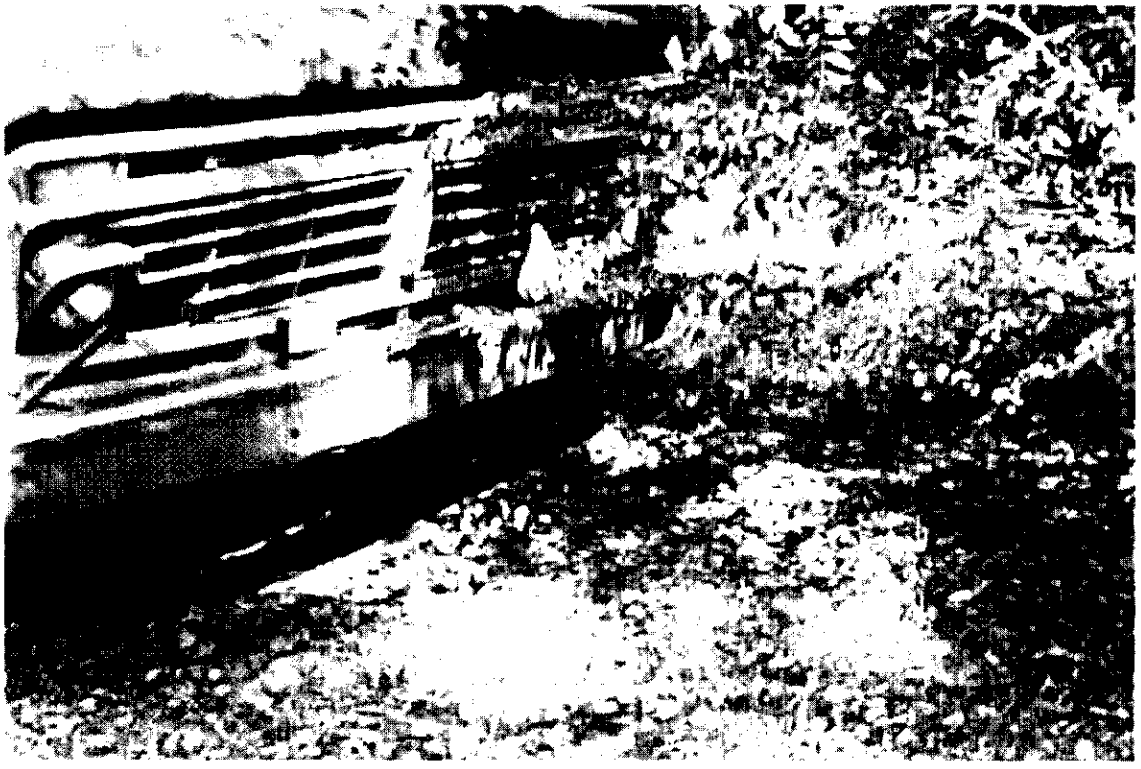
Photograph 7: 103 Tucker Street. Sample HA-15. Sample was taken at the edge of the flowerbed in the southwest corner of the property.

Photograph 8: 103 Tucker Street. Samples HA-16 through HA-19. Samples were taken in the front yard at this address. Sample locations may be seen on the site sketch form.

Photograph 9: 107 Forrest Street. Samples HA-20 through HA-24. Samples were taken in a five-point grid around the Kuhlman sample point DP-848.

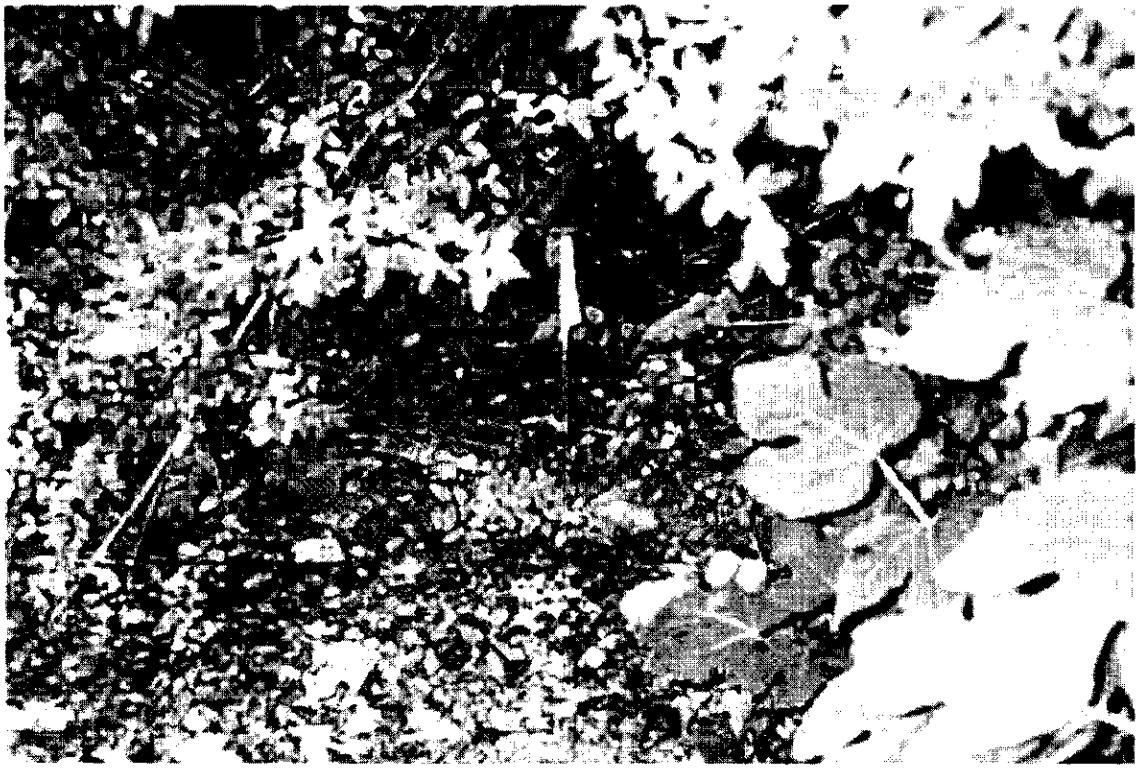
Photograph 10: 107 Forrest Street. Samples HA-25 and HA-26. Sample HA-25 is in the foreground and HA-26 is in the background.

Photograph 11: 107 Forrest Street. Samples HA-27 and HA-28. Samples were taken near the truck parked in the yard.

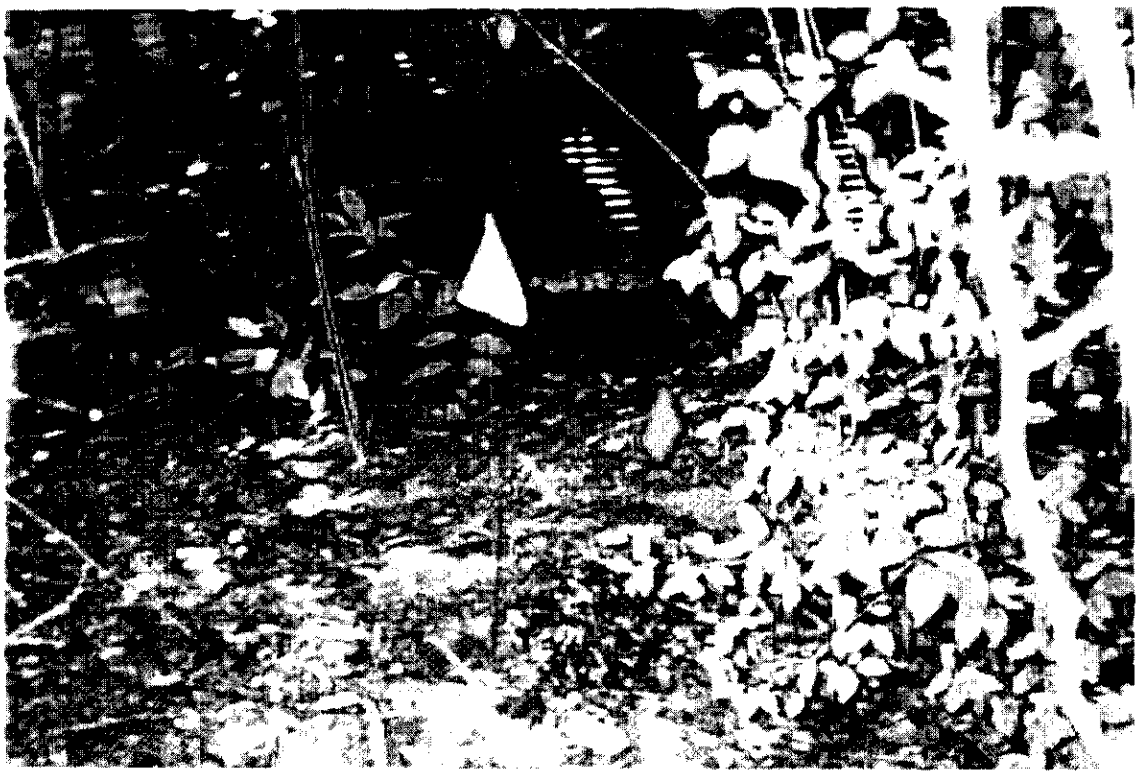


Photograph 12: 107 Forrest Street. Sample HA-29. Sample was taken directly in front of the truck parked in the yard.

Photograph 13: 104 Forrest Street. Sample HA-30. Sample was taken adjacent to the Kuhlman sample point DP-820.



Photograph 14: 104 Forrest Street. Sample HA-31. Sample was taken adjacent to the Kuhlman sample point DP-821.



Photograph 15: 104 Forrest Street. Sample HA-32. Sample was taken near the Kuhlman sample point DP-818.

Photograph 16: 100 Pearl Street. Samples HA-33 through HA-35. Samples were taken in a five-point grid, in the front yard on the east side of the property. Sample locations may be seen on the site sketch form.

Photograph 17: 100 Pearl Street. Samples HA-36 through HA-42. Samples were taken in a five-point grid pattern in the back yard. Sample locations may be seen on the site sketch form.

Appendix D
Complete Xenco Laboratories
Analytical Testing Results

Analytical Report 212983

for

3TM International

Project Manager: Randy Horsak

Project Name : PCB

3TM-DNA-10200-03

October 2, 2001

11381 Meadowglen, Suite L Houston, TX 77082 Ph:(281) 589-0692 Fax:(281) 589-0695

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America

XENCO Laboratories

October 2, 2001

Project Manager: Randy Horsak
3TM International
1500 South Dairy Ashford, Suite 225
Houston , TX 77077

Reference: XENCO Report No: 212983
Project Name : PCB
Project Address: Crystal Springs

Randy Horsak :

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Chain of Custody Numbered 212983 . All results being reported under this Chain of Custody apply to the samples analyzed and properly identified with a Laboratory ID number.

All the results for the quality control samples were reviewed. Also, all parameters for data reduction and validation were reviewed. In view of this, we are able to release the analytical data for this report within acceptance criteria for accuracy, precision, completeness or properly flagged.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in COC No. 212983 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Eddie L. Clemons, II
QA/QC Manager

☐ 11381 Meadowglen, Suite L Houston TX 77082 281-589-0692
☐ 5309 Wurzbach Road, Suite 104, San Antonio, TX 78238 210-509-33
☐ 11078 Morrison Ln, Suite D, Dallas, TX 75229 972-481-9999

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

On-LINE Help & Technical Services at www.XENCO.com

Company COC No:

Work Order No: 120584

Company	3TM International	Phone	281 497 1230
Project Name	PCB ☐ Previously done at XENCO	Project ID	3TM-DNA-10200-03
Location	Crystal Springs		
Project Manager (PM)	Randy Horsak	Project Director (PD)	
Fax Results to	☒ PM and / or	Fax	281 497-1676
Invoice to	☐ Accounting ☒ Include Invoice with Final Report Attn PM ☐ Invoice must have a P.O Bill to:		
Quote No.		P.O No	☐ Call for a P.O.
Special DLs	(RR I RR II DW QAPP See Lab PM Call Proj. PM)		
Specifications			
Sampler Name	TJ Dunnahoe	Signature	TJ Dunnahoe

Lab Only: 212983-H

TAT: 5h 12h 20h 24h 48h 3d 5d 7d 14d 21d Standard TAT is 10 Working Days unless otherwise agreed in writing. But often reported in 5-7 Working Days

Lab Only Additions: From: / Rcv by: / Date

	Sample ID	Sampling Date	Time	Depth ft" in" m	Matrix A P S W	Composite	Grab	# Containers	Container Size	Type	Preservatives
1	HA - 1	7/24/01	915	18"	S		X	1	4oz	GC	Ice
2	HA - 2		925				X				
3	HA - 3		935				X				
4	HA - 4		945	↓			X				
5	HA - 5A		955	6"			X				
6	HA - 6		1000	18"			X				
7	HA - 7		1015				X				
8	HA - 8		1025				X				
9	HA - 9		1035	↓			X				
10	HA - 5B	↓	1045	18"	↓		X	↓	↓	↓	↓

BTEX by 8021 / 8260 / 602 / 624 / Other
BTEX-MTBE by 8021 / 8260 / 602 / 624 / Other
TPH by TX1005 / 418.1 / 1664 / 8015GRO / 8015DRO / FLPRO
PAHs by 8270 / 8100 / 8310
METALS by 6020 / 8RCRA / Tot Pb / TCLP_8 / 13PP / 23TAL List
VOAs by 8260 / 624 / BTEX MTBE / PPs / TCLP / See List / Call PM
SVOAs by 8270 / 625 / PAHs / BN&A / TCLP / PPs / See List / Call PM
PCB

TAT 5h 12h 20h 24h 48h 3d 5d 7d(10d) 14d 21d
Addn: PAH above mg/L W. mg/Kg S Highest Hit
Hold Analysis

Remarks

Call PM for Specifications

Call PM

Relinquished by (Initials and Sign.)	Date & Time	Relinquished to (Initials and Sign.)	Date & Time
1 TJ Dunnahoe TJD	7/26/01 915		
2			
3		Lab: Jack Sears	7/26/01 9:1

Total Containers per COC: Cooler Temp:

Rush TATs Fax Due: Final Fax Due:

Final Report Data Package Due Date:

Rush Charges are Pre-Approved upon Requesting them. All Terms Apply

Preservatives - Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), NaOH+Asbc Acid (NAA), ZnAc+NaOH (ZA), (Cool,<4C) (C4), None (N), See Label (SL), Other (O) _____

SIZE: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (V), 1L (1), 500ml (.5), Tedlar Bag (B), Wipe (W), Other _____ **TYPE** Glass Amb (GA), Glass Clear (GC), Plastic (P), Other (O) _____

XENCO Laboratories

☐ 11381 Meadowglen, Suite L, Houston TX 77082 281-589-0692
☐ 5309 Wurzbach Road Suite 104, San Antonio, TX 78238 210-509-333
☐ 11078 Morrison Ln, Suite D, Dallas, TX 75229 972-481-9999

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

On-LINE Help & Technical Services at www.XENCO.com

Company COC No:

Work Order No: 120581

Company: 3TM International	Phone: 281 497 1230	Lab Only: 212983-H	Lab Only Additions
Project Name: PCB ☐ Previously done at XENCO	Project ID:	TAT: 5h 12h 20h 24h 48h 3d 5d 7d 14d 21d Standard TAT is 10 Working Days unless otherwise agreed in writing. But often reported in 5-7 Working Days	
Location: Crystal Springs			
Project Manager (PM): Randy Horsak	Project Director (PD):		
Fax Results to: ☒PM and / or	Fax: 281 497 1676		
Invoice to: ☐ Accounting ☒ Include Invoice with Final Report Attn PM ☐ Invoice must have a P.O Bill to:			
Quote No.	P.O No ☐ Call for a P.O.		
Special DLs (RR I RR II DW QAPP See Lab PM Call Proj. PM)			
Specifications			
Sampler Name: TJ Dunnahoe Signature: TJDunnahoe			

	Sample ID	Sampling Date	Time	Depth ft' in" m	Matrix A P S W	Composite	Grab	# Containers	Container Size	Type	Preservatives	BTEX by 8021 8260 602 624 Other	BTEX-MTBE by 8021 8260 602 624 Other	TPH by TX1005 418 1664 8015GRO 8015DRO TURRO	PAHs by 8270 8100 8310	METALS by 6020 8RCRA Tot Pb TCLP_8 13PP 23TAL List	VOAs by 8260 624 BTEX MTBE PPs TCLP See List Call PM	SVOAs by 8270 625 PAHs BN&A TCLP PPs See List Call PM	PCB	TAT 5h 12h 20h 24h 48h 3d 5d 7d 10d 14d 21d	Addn: PAH above mg/L W. mg/Kg S Highest Hit	Hold Analysis	Remarks	Rcv by: From: Date	Rcv by: From: Date	Rcv by: From: Date	
1	HA - 10A	7/24/01	1115	6"	S		X	1	4oz	GC	Ice								X				Call PM for Specifications				1
2	HA - 10B		1130	18"			X												X				Call PM				2
3	HA - 11A		1145	6"			X												X								3
4	HA - 11B		1155	18"			X												X								4
5	HA - 12A		1200	6"			X												X								5
6	HA - 12B		1205	18"			X												X								6
7	HA - 13A		1210	6"			X												X								7
8	HA - 13B		1215	18"			X												X								8
9	HA - 14A		1225	6"			X												X								9
10	HA - 14B		1230	18"			X												X								10

Relinquished by (Initials and Sign.)	Date & Time	Relinquished to (Initials and Sign.)	Date & Time	
1 TJDunnahoe TJD	7/26/01 915			Total Containers per COC: Cooler Temp:
2				Rush TATs Fax Due: Final Fax Due:
3		Lab.: Ann L. Sims	7/26/01 9:15	Final Report Data Package Due Date:
				Rush Charges are Pre-Approved upon Requesting them. All Terms Apply

Preservatives - Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), NaOH+Asbc Acid (NAA), ZnAc+NaOH (ZA), (Cool.<4C) (C4), None (N), See Label (SL), Other (O) _____

SIZE 4oz (4), 8oz (8), 32oz (32), 40ml VOA (V), 1L (1), 500ml (.5), Tedlar Bag (B), Wipe (W), Other _____ **TYPE** Glass Amb (GA), Glass Clear (GC), Plastic (P), Other (O) _____

☐ 11381 Meadowglen, Suite L, Houston TX 77082 281-589-0692
☐ 5309 Wurzbach Road, Suite 104, San Antonio, TX 78238 210-509-333
☐ 11078 Morrison Ln, Suite D, Dallas, TX 75229 972-481-9999

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

On-LINE Help & Technical Services at www.XENCO.com

Company COC No:

Work Order No: 120582

Company	3TM International	Phone	281 497 1230
Project Name	PCB ☐ Previously done at XENCO	Project ID	3TM-DNA-10200-03
Location	Crystal Springs		
Project Manager (PM)	Randy Horsak	Project Director (PD)	
Fax Results to	☒ PM and / or	Fax	

Invoice to ☐ Accounting ☒ Include Invoice with Final Report Attn PM ☐ Invoice must have a P.O Bill to:

Quote No. | P.O No | ☐ Call for a P.O.

Special DLs (RR I RR II DW QAPP See Lab PM Call Proj. PM)

Specifications

Sampler Name TJ Dunnahoe Signature TJDunnahoe

Lab Only: 212983-1

TAT: 5h 12h 20h 24h 48h 3d 5d 7d 14d 21d Standard TAT is 10 Working Days unless otherwise agreed in writing. But often reported in 5-7 Working Days

Lab Only Additions: From: / Rcv by: / Date

	Sample ID	Sampling Date	Time	Depth ft in m	Matrix A P S W	Composite	Grab	# Containers	Container Size	Type	Preservatives	BTEX by 8021 8260 602 624 Other	BTEX-MTBE by 8021 8260 602 624 Other	TPH by TX1005 418 1664 8015GRO 8015DRO FLPRO	PAHs by 8270 8100 8310	METALS by 6020 8RCRA Tot Pb TCLP_8 13PP 23TAL List	VOAs by 8260 624 BTEX MTBE PPs TCLP See List Call PM	SVOAs by 8270 625 PAHs BN&A TCLP PPs See List Call PM	PCB	TAT 5h 12h 20h 24h 48h 3d 5d 7d (10) 14d 21d	Addn: PAH above mg/L W. mg/Kg S Highest Hit	Hold Analysis	Remarks
1	HA-15A	7/24/01	1235	6"	S		X	1	4oz	GL	Ice								X				Call PM
2	HA-15B		1240	18"			X												X				
3	HA-16A		1245	6"			X												X				
4	HA-16B		1250	18"			X												X				
5	HA-17A		1255	6"			X												X				
6	HA-17B		1300	18"			X												X				
7	HA-18A		1305	6"			X												X				
8	HA-18B		1315	18"			X												X				
9	HA-19A		1320	6"			X												X				
10	HA-19B		1325	18"			X												X				

Relinquished by (Initials and Sign.)	Date & Time	Relinquished to (Initials and Sign.)	Date & Time
1 TJDunnahoe TJD	7/26/01 915		
2			
3		Lab: Linda Sears	7/26/01 9:11

Total Containers per COC: Cooler Temp:

Rush TATs Fax Due: Final Fax Due:

Final Report Data Package Due Date:

Rush Charges are Pre-Approved upon Requesting them. All Terms Apply

Preservatives - Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), NaOH+Asbc Acid (NAA), ZnAc+NaOH (ZA), (Cool,<4C) (C4), None (N), See Label (SL), Other (O) _____

SIZE: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (V), 1L (1), 500ml (.5), Tedlar Bag (B), Wipe (W), Other _____ **TYPE** Glass Amb (GA), Glass Clear (GC), Plastic (P), Other (O) _____

☐ 11381 Meadowglen, Suite L, Houston TX 77082 281-589-0692
☐ 5309 Wurzbach Road, Suite 104, San Antonio, TX 78238 210-509-3334
☐ 11078 Morrison Ln, Suite D, Dallas, TX 75229 972-481-9999

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD
On-LINE Help & Technical Services at www.XENCO.com

Company COC No:

Work Order No: 120578

Company 3TM International	**Phone** 281 497 1230	**Lab Only:** 212983-H	**Lab Only Additions**
Project Name PCB ☐ Previously done at XENCO	**Project ID** 3TM-DNA-10200-03	**TAT:** 5h 12h 20h 24h 48h 3d 5d 7d 14d 21d Standard TAT is 10 Working Days unless otherwise agreed in writing. But often reported in 5-7 Working Days	From: Rcv by: Date
Location Crystal Springs			From: Rcv by: Date
Project Manager (PM) Randy Horsak	**Project Director (PD)**		From: Rcv by: Date
Fax Results to ☒ PM and / or	**Fax** 281 497 1676		
Invoice to ☐ Accounting ☒ Include Invoice with Final Report Attn PM ☐ Invoice must have a P.O Bill to:			
Quote No.	**P.O No** ☐ Call for a P.O.		
Special DLs (RR I RR II DW QAPP See Lab PM Call Proj. PM)			
Specifications			
Sampler Name TJ Dunnahoe **Signature** TJDunnahoe			

	Sample ID	Sampling Date	Time	Depth ft" In" m	Matrix A P S W	Composite	Grab	# Containers	Container Size	Type	Preservatives	BTEX by 8021 8260 602 624 Other	BTEX-MTBE by 8021 8260 602 624 Other	TPH by TX1005 418 1664 8015GRO 8015DRO FLPRO	PAHs by 8270 8100 8310	METALS by 6020 8RCRA Tot Pb TCLP_8 13PP 23TAL List	VOAs by 8260 624 BTEX MTBE PPs TCLP See List Call PM	SVOAs by 8270 625 PAHs BN&A TCLP PPs See List Call PM	PCB	TAT 5h 12h 20h 24h 48h 3d 5d 7d (10d) 14d 21d	Addn: PAH above mg/L W. mg/Kg S Highest Hit	Hold Analysis	Remarks
1	HA - 20	7/24/01	1435	6"	S		X	1	4oz	GC	Ice								X				Call PM For Specifications
2	HA - 21		1440				X												X				Call PM
3	HA - 22		1445				X												X				
4	HA - 23		1450				X												X				
5	HA - 24		1455				X												X				
6	HA - 25		1500				X												X				
7	HA - 26		1505				X												X				
8	HA - 27		1510				X												X				
9	HA - 28		1515				X												X				
10	HA - 29	↓	1520	↓	↓		X	↓	↓	↓	↓								X				

	Relinquished by (Initials and Sign.)	Date & Time	Relinquished to (Initials and Sign.)	Date & Time
1	TJDunnahoe TJD	7/26/01 9:15		
2				
3			Lab: Jack Seng	7/26/01 9:15

Total Containers per COC: Cooler Temp:

Rush TATs Fax Due: Final Fax Due:

Final Report Data Package Due Date:

Rush Charges are Pre-Approved upon Requesting them. All Terms Apply

Preservatives - Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), NaOH+Asbc Acid (NAA), ZnAc+NaOH (ZA), (Cool,<4C) (C4), None (N), See Label (SL), Other (O) _____

SIZE: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (V), 1L (1), 500ml (.5), Tedlar Bag (B), Wipe (W), Other _____ **TYPE** Glass Amb (GA), Glass Clear (GC), Plastic (P), Other (O) _____

☐ 11381 Meadowglen, Suite L, Houston TX 77082 281-589-0692
☐ 5309 Wurzbach Road, Suite 104, San Antonio, TX 78238 210-509-3334
☐ 11078 Morrison Ln, Suite D, Dallas, TX 75229 972-481-9999

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

On-LINE Help & Technical Services at www.XENCO.com

Company COC No:

Work Order No: 120579

Company: 3TM International	Phone: 281 497 1230	Lab Only: 212983-H	Lab Only Additions
Project Name: PCB ☐ Previously done at XENCO	Project ID: 3TM-DNA-10200-03	TAT: 5h 12h 20h 24h 48h 3d 5d 7d 14d 21d Standard TAT is 10 Working Days unless otherwise agreed in writing. But often reported in 5-7 Working Days	
Location: Crystal Springs			
Project Manager (PM): Rendy Horsak	Project Director (PD):		
Fax Results to: ☒ PM and / or	Fax: 281 497 11676		
Invoice to: ☐ Accounting ☒ Include Invoice with Final Report Attn PM ☐ Invoice must have a P.O Bill to:			
Quote No.	P.O No ☐ Call for a P.O.		
Special DLs (RR I RR II DW QAPP See Lab PM Call Proj. PM)			
Specifications			
Sampler Name: TJ Dunnahoe	Signature: TJDunnahoe		

	Sample ID	Sampling Date	Time	Depth ft/in* m	Matrix A P S W	Composite	Grab	# Containers	Container Size	Type	Preservatives	BTEX by 8021 8260 602 624 Other	BTEX-MTBE by 8021 8260 602 624 Other	TPH by TX1005 418 1664 8015GRO 8015DRO FI PRO	PAHs by 8270 8100 8310	METALS by 6020 8RCRA Tot Pb TCLP_8 13PP 23TAL List	VOAs by 8260 624 BTEX MTBE PPs TCLP See List Call PM	SVOAs by 8270 625 PAHs BN&A TCLP PPs See List Call PM	PCB	TAT 5h 12h 20h 24h 48h 3d 5d 7d 10d 14d 21d	Addn: PAH above mg/L W, mg/Kg S Highest Hit	Hold Analysis	Remarks
1	HA-30	7/24/01	1525	6"	S		X	1	4oz	GC	Ice								/				Call PM for Specifications
2	HA-31	↓	1530	↓			X												/				
3	HA-32	↓	1535	↓			X												/				
4	HA-33A	7/25/01	825	6"			X												/				
5	HA-33B		830	18"			X												/				
6	HA-34A		835	6"			X												/				
7	HA-34B		840	18"			X												/				
8	HA-35A		845	6"			X												/				
9	HA-35B		855	18"			X												/				
10	HA-36A	↓	910	6"	↓		X	↓	↓	↓	↓								/				

Relinquished by (Initials and Sign.)	Date & Time	Relinquished to (Initials and Sign.)	Date & Time
1 TJDunnahoe TJD	7/26/01 915		
2			
3		Lab: Angela K. Seay	7/26/01 9:15

Total Containers per COC: Cooler Temp:

Rush TATs Fax Due: Final Fax Due:

Final Report Data Package Due Date:

Rush Charges are Pre-Approved upon Requesting them. All Terms Apply

Preservatives - Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), NaOH+Asbc Acid (NAA), ZnAc+NaOH (ZA), (Cool,<4C) (C4), None (N), See Label (SL), Other (O) _____

SIZE: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (V), 1L (1), 500ml (.5), Tedlar Bag (B), Wipe (W), Other _____ **TYPE** Glass Amb (GA), Glass Clear (GC), Plastic (P), Other (O) _____

XENCO Laboratories

☐ 11381 Meadowglen, Suite L, Houston TX 77082 281-589-0692
☐ 5309 Wurzbach Road, Suite 104, San Antonio, TX 78238 210-509-3334
☐ 11078 Morrison Ln, Suite D, Dallas, TX 75229 972-481-9999

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD
On-LINE Help & Technical Services at www.XENCO.com

Company COC No:

Work Order No: 120580

Company: 3TM International	Phone: 281 497 1230	Lab Only: 212983-1	Lab Only Additions
Project Name: PCB ☐ Previously done at XENCO	Project ID: 3TM-DNA-10200-03	TAT: 5h 12h 20h 24h 48h 3d 5d 7d 14d 21d Standard TAT is 10 Working Days unless otherwise agreed in writing. But often reported in 5-7 Working Days	From: Rcv by: Date
Location: Crystal Springs			From: Rcv by: Date
Project Manager (PM): Randy Horsak	Project Director (PD):		From: Rcv by: Date
Fax Results to: ☒ PM and / or	Fax: 281 497 1676		
Invoice to: ☐ Accounting ☒ Include Invoice with Final Report Attn PM ☐ Invoice must have a P.O Bill to:			
Quote No.	P.O No ☐ Call for a P.O.		
Special DLs (RR I RR II DW QAPP See Lab PM Call Proj. PM)			
Specifications			
Sampler Name: TJ Dunnahoe	Signature: TJDunnahoe		

	Sample ID	Sampling Date	Time	Depth ft" In" m	Matrix A P S W	Composite	Grab	# Containers	Container Size	Type	Preservatives	BTEX by 8021 8260 602 624 Other	BTEX-MTBE by 8021 8260 602 624 Other	TPH by TX1005 418 1664 8015GRO 8015DRO FLPRO	PAHs by 8270 8100 8310	METALS by 6020 8RCRA Tot Pb TCLP_8 13PP 23TAL List	VOAs by 8260 624 BTEX MTBE PPs TCLP See List Call PM	SVOAs by 8270 625 PAHs BN&A TCLP PPs See List Call PM	PCB	TAT 5h 12h 20h 24h 48h 3d 5d 7d (10d) 14d 21d	Addn: PAH above mg/L W. mg/Kg S Highest Hit	Hold Analysis	Remarks
1	HA 36-B	7/25/01	~~915~~ 915	18"	S		X	1	4oz	GC	Ice								X				Call PM For Specifications
2	HA-37A		920	6"			X												X				Call PM
3	HA-37B		925	18"			X												X				
4	HA-38A		930	6"			X												X				
5	HA-38B		935	18"			X												X				
6	HA-39A		940	6"			X												X				
7	HA-39B		945	18"			X												X				
8	HA-40A		950	6"			X												X				
9	HA-40B		955	18"			X												X				
10	HA-41A	↓	1005	6"	↓		X	↓	↓	↓	↓								X				

Relinquished by (Initials and Sign.)	Date & Time	Relinquished to (Initials and Sign.)	Date & Time	
1 TJDunnahoe TJD	7/26/01 915			Total Containers per COC: Cooler Temp:
2				Rush TATs Fax Due: Final Fax Due:
3		Lab.: Ken Seery	7/26/01 9:15	Final Report Data Package Due Date: Rush Charges are Pre-Approved upon Requesting them. All Terms Apply

Preservatives - Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), NaOH+Asbc Acid (NAA), ZnAc+NaOH (ZA), (Cool,<4C) (C4), None (N), See Label (SL), Other (O) _____

SIZE: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (V), 1L (1), 500ml (.5), Tedlar Bag (B), Wipe (W), Other _____ **TYPE** Glass Amb (GA), Glass Clear (GC), Plastic (P), Other (O) _____

XENCO Laboratories

☐ 11381 Meadowglen, Suite L, Houston TX 77082 281-589-0692
☐ 5309 Wurzbach Road, Suite 104, San Antonio, TX 78238 210-509-3334
☐ 11078 Morrison Ln, Suite D, Dallas TX 75229 972-481-9999

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD
On-LINE Help & Technical Services at www.XENCO.com

Company COC No:

Work Order No: 120577

Company 3TM International	**Phone** 281 497 1230	**Lab Only:** 212983-H	**Lab Only Additions**
Project Name PCB ☐ Previously done at XENCO	**Project ID** 3TM-DNA-10200-03	**TAT:** 5h 12h 20h 24h 48h 3d 5d 7d 14d 21d Standard TAT is 10 Working Days unless otherwise agreed in writing. But often reported in 5-7 Working Days	From: Rcv by: Date
Location Crystal Springs			From: Rcv by: Date
Project Manager (PM) Randy Horsak	**Project Director (PD)**		From: Rcv by: Date
Fax Results to ☐PM and / or	**Fax** 281 497 1676		
Invoice to ☐ Accounting ☒ Include Invoice with Final Report Attn PM ☐ Invoice must have a P.O Bill to:			
Quote No.	**P.O No** ☐ Call for a P.O.		
Special DLs (RR I RR II DW QAPP See Lab PM Call Proj. PM)			
Specifications			
Sampler Name TJ Dunnahoe	Signature TJDunnahoe		

	Sample ID	Sampling Date	Time	Depth (ft/in)	Matrix (A P S W)	Composite	Grab	# Containers	Container Size	Type	Preservatives
1	HA-41B	7/25/01	1010	18"	S		X	1	4oz	GC	Ice
2	HA-42A	↓	1015	6"	↓		X	↓	↓	↓	↓
3	HA-42B	↓	1020	18"	↓		X	↓	↓	↓	↓
4											
5											
6											
7											
8											
9											
10											

BTEX by 8021 / 8260 / 602 / 624 / Other
BTEX-MTBE by 8021 / 8260 / 602 / 624 / Other
TPH by TX1005 / 418.1 / 1664 / 8015GRO / 8015DRO / FUPRO
PAHs by 8270 / 8100 / 8310
METALS by 6020 / 8RCRA / Tot Pb / TCLP_8 / 13PP / 23TAL / List
VOAs by 8260 / 624 / BTEX / MTBE / PPs / TCLP / See List / Call PM
SVOAs by 8270 / 625 / PAHs / BN&A / TCLP / PPs / See List / Call PM
PCB
TAT 5h / 12h / 20h / 24h / 48h / 3d / 5d / 7d / <7d> / 14d / 21d
Addn: PAH above / mg/L W, mg/Kg S / Highest Hit
Hold Analysis

Remarks
Call PM For Specifications
Call PM
↓

Relinquished by (Initials and Sign.)	Date & Time	Relinquished to (Initials and Sign.)	Date & Time
1 TJDunnahoe TJD	7/26/01 915		
2			
3		Lab: Mark Sims	7/26/01 9:15

Total Containers per COC: Cooler Temp:
Rush TATs Fax Due: Final Fax Due:
Final Report Data Package Due Date:
Rush Charges are Pre-Approved upon Requesting them. All Terms Apply

Preservatives - Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), NaOH+Asbc Acid (NAA), ZnAc+NaOH (ZA), (Cool,<4C) (C4), None (N), See Label (SL), Other (O) _____

SIZE: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (V), 1L (1), 500ml (.5), Tedlar Bag (B), Wipe (W), Other _____ **TYPE** Glass Amb (GA), Glass Clear (GC), Plastic (P), Other (O) _____

Certificate of Analysis Summary 212983

3TM International, Houston , TX

Project Name: PCB

Project ID: 3TM-DNA-10200-03
Project Manager: Randy Horsak
Site: Crystal Springs

Date Received in Lab: Thu Jul-26-01 09:15 AM
Date Report Faxed: thu Aug-02-01
XENCO Contact: Brent Barron, II

Analysis Requested	*Lab ID :*	212983-001		212983-002		212983-003		212983-004		212983-005		212983-006	
	Field ID :	HA-1		HA-2		HA-3		HA-4		HA-5A		HA-6	
	Depth :	18 In		18 In		18 In		18 In		6 In		18 In	
	Matrix :	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	Sampled :	Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001	
PCBs by EPA 8082	*Analyzed :*	Jul-30-2001		Jul-30-2001		Jul-30-2001		Jul-30-2001		Jul-30-2001		Jul-30-2001	
	Units :	ug/kg	RL	ug/kg	RL	ug/kg	RL	ug/kg	RL	ug/kg	RL	ug/kg	RL
PCB-1016		BRL	833	BRL	417	BRL	417	BRL	417	BRL	333	BRL	1670
PCB-1221		BRL	833	BRL	417	BRL	417	BRL	417	BRL	333	BRL	1670
PCB-1232		BRL	833	BRL	417	BRL	417	BRL	417	BRL	333	BRL	1670
PCB-1242		BRL	833	BRL	417	BRL	417	BRL	417	BRL	333	BRL	1670
PCB-1248		BRL	833	BRL	417	BRL	417	BRL	417	BRL	333	BRL	1670
PCB-1254		BRL	833	BRL	417	BRL	417	BRL	417	BRL	333	BRL	1670
PCB-1260		9160	833	3340	417	5610	417	5020	417	2120	333	, 16900	1670

BRL = Below Reporting Limits, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, D = Analyte Reported from Dilution Analysis, E= Estimated Concentration

Eddie L. Clemons, II
QA/QC Director

Certificate of Analysis Summary 212983

3TM International, Houston , TX

Project Name: PCB

Project ID: 3TM-DNA-10200-03
Project Manager: Randy Horsak
Site: Crystal Springs

Date Received in Lab: Thu Jul-26-01 09:15 AM
Date Report Faxed: thu Aug-02-01
XENCO Contact: Brent Barron, II

Analysis Requested	*Lab ID :*	212983-007		212983-008		212983-009		212983-010		212983-011		212983-012	
	Field ID :	HA-7		HA-8		HA-9		HA-5B		HA-10A		HA-10B	
	Depth :	18 In		18 In		18 In		18 In		6 In		18 In	
	Matrix :	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	Sampled :	Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001	
PCBs by EPA 8082	*Analyzed :*	Jul-30-2001		Jul-31-2001		Jul-31-2001		Jul-31-2001		Jul-30-2001		Jul-30-2001	
	Units :	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
			RL		RL		RL		RL		RL		RL
PCB-1016		BRL	417	BRL	333	BRL	333	BRL	333	BRL	16.7	BRL	16.7
PCB-1221		BRL	417	BRL	333	BRL	333	BRL	333	BRL	16.7	BRL	16.7
PCB-1232		BRL	417	BRL	333	BRL	333	BRL	333	BRL	16.7	BRL	16.7
PCB-1242		BRL	417	BRL	333	BRL	333	BRL	333	BRL	16.7	BRL	16.7
PCB-1248		BRL	417	BRL	333	BRL	333	BRL	333	BRL	16.7	BRL	16.7
PCB-1254		BRL	417	BRL	333	BRL	333	BRL	333	BRL	16.7	BRL	16.7
PCB-1260		2850	417	1480	333	2370	333	2070	333	BRL	16.7	BRL	16.7

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Eddie L. Clemons, II
QA/QC Director

XENCO Laboratories

Certificate of Analysis Summary 212983

3TM International, Houston , TX

Project Name: PCB

Project ID: 3TM-DNA-10200-03
Project Manager: Randy Horsak
Site: Crystal Springs

Date Received in Lab: Thu Jul-26-01 09:15 AM
Date Report Faxed: thu Aug-02-01
XENCO Contact: Brent Barron, II

Analysis Requested	*Lab ID :*	212983-013		212983-014		212983-015		212983-016		212983-017		212983-018	
	Field ID :	HA-11A		HA-11B		HA-12A		HA-12B		HA-13A		HA-13B	
	Depth :	6 In		18 In		6 In		18 In		6 In		18 In	
	Matrix :	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	Sampled :	Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001	
PCBs by EPA 8082	*Analyzed :*	Jul-30-2001		Jul-30-2001		Jul-30-2001		Jul-30-2001		Jul-30-2001		Jul-31-2001	
	Units :	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
			RL		RL		RL		RL		RL		RL
PCB-1016		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1221		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1232		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1242		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1248		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1254		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1260		BRL	16.7	BRL	16.7	26.1	16.7	BRL	16.7	BRL	16.7	51.9	16.7

BRL = Below Reporting Limits, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
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Eddie L. Clemons, II
QA/QC Director

Certificate of Analysis Summary 212983

3TM International, Houston , TX

Project Name: PCB

Project ID: 3TM-DNA-10200-03
Project Manager: Randy Horsak
Site: Crystal Springs

Date Received in Lab: Thu Jul-26-01 09:15 AM
Date Report Faxed: thu Aug-02-01
XENCO Contact: Brent Barron, II

Analysis Requested	*Lab ID :* / *Field ID :* / *Depth :* / *Matrix :* / *Sampled :*	212983-019 HA-14A 6 In SOLID Jul-24-2001		212983-020 HA-14B 18 In SOLID Jul-24-2001		212983-021 HA-15A 6 In SOLID Jul-24-2001		212983-022 HA-15B 18 In SOLID Jul-24-2001		212983-023 HA-16A 6 In SOLID Jul-24-2001		212983-024 HA-16B 18 In SOLID Jul-24-2001	
PCBs by EPA 8082	*Analyzed :* / *Units :*	Jul-31-2001 ug/kg	RL	Jul-29-2001 ug/kg	RL	Jul-29-2001 ug/kg	RL	Jul-29-2001 ug/kg	RL	Jul-29-2001 ug/kg	RL	Jul-29-2001 ug/kg	RL
PCB-1016		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1221		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1232		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1242		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1248		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1254		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1260		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7

BRL = Below Reporting Limits, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, D = Analyte Reported from Dilution Analysis, E= Estimated Concentration

Eddie L. Clemons, II
QA/QC Director

XENCO Laboratories

Certificate of Analysis Summary 212983

3TM International, Houston , TX

Project Name: PCB

Project ID: 3TM-DNA-10200-03
Project Manager: Randy Horsak
Site: Crystal Springs

Date Received in Lab: Thu Jul-26-01 09:15 AM
Date Report Faxed: thu Aug-02-01
XENCO Contact: Brent Barron, II

Analysis Requested	*Lab ID :*	212983-025		212983-026		212983-027		212983-028		212983-029		212983-030	
	Field ID :	HA-17A		HA-17B		HA-18A		HA-18B		HA-19A		HA-19B	
	Depth :	6 In		18 In		6 In		18 In		6 In		18 In	
	Matrix :	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	Sampled :	Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001	
PCBs by EPA 8082	*Analyzed :*	Jul-29-2001		Jul-29-2001		Jul-29-2001		Jul-29-2001		Jul-29-2001		Jul-29-2001	
	Units :	ug/kg	RL	ug/kg	RL	ug/kg	RL	ug/kg	RL	ug/kg	RL	ug/kg	RL
PCB-1016		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1221		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1232		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1242		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1248		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1254		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1260		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7

BRL = Below Reporting Limits, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, D = Analyte Reported from Dilution Analysis, E= Estimated Concentration

Eddie L. Clemons, II
QA/QC Director

Certificate of Analysis Summary 212983

3TM International, Houston , TX

Project Name: PCB

Project ID: 3TM-DNA-10200-03
Project Manager: Randy Horsak
Site: Crystal Springs

Date Received in Lab: Thu Jul-26-01 09:15 AM
Date Report Faxed: thu Aug-02-01
XENCO Contact: Brent Barron, II

Analysis Requested	*Lab ID :*	212983-031		212983-032		212983-033		212983-034		212983-035		212983-036	
	Field ID :	HA-20		HA-21		HA-22		HA-23		HA-24		HA-25	
	Depth :	6 In		6 In		6 In		6 In		6 In		6 In	
	Matrix :	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	Sampled :	Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001	
PCBs by EPA 8082	*Analyzed :*	Jul-30-2001		Jul-31-2001		Jul-31-2001		Jul-31-2001		Jul-31-2001		Jul-31-2001	
	Units :	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
			RL		RL		RL		RL		RL		RL
PCB-1016		BRL	417	BRL	1670	BRL	1670	BRL	667	BRL	167	BRL	16.7
PCB-1221		BRL	417	BRL	1670	BRL	1670	BRL	667	BRL	167	BRL	16.7
PCB-1232		BRL	417	BRL	1670	BRL	1670	BRL	667	BRL	167	BRL	16.7
PCB-1242		BRL	417	BRL	1670	BRL	1670	BRL	667	BRL	167	BRL	16.7
PCB-1248		BRL	417	BRL	1670	BRL	1670	BRL	667	BRL	167	BRL	16.7
PCB-1254		BRL	417	BRL	1670	BRL	1670	BRL	667	BRL	167	BRL	16.7
PCB-1260		4450	417	18700	1670	20000	1670	4630	667	1510	167	162	16.7

BRL = Below Reporting Limits, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA =Not Applicable
N = See Narrative, D = Analyte Reported from Dilution Analysis, E= Estimated Concentration

Eddie L. Clemons, II
QA/QC Director

Certificate of Analysis Summary 212983

3TM International, Houston , TX

Project Name: PCB

Project ID: 3TM-DNA-10200-03
Project Manager: Randy Horsak
Site: Crystal Springs

Date Received in Lab: Thu Jul-26-01 09:15 AM
Date Report Faxed: thu Aug-02-01
XENCO Contact: Brent Barron, II

Analysis Requested	*Lab ID :*	212983-037		212983-038		212983-039		212983-040		212983-041		212983-042	
	Field ID :	HA-26		HA-27		HA-28		HA-29		HA-30		HA-31	
	Depth :	6 In		6 In		6 In		6 In		6 In		6 In	
	Matrix :	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	Sampled :	Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001		Jul-24-2001	
PCBs by EPA 8082	*Analyzed :*	Jul-31-2001		Jul-31-2001		Jul-31-2001		Jul-31-2001		Aug-01-2001		Aug-01-2001	
	Units :	ug/kg	RL	ug/kg	RL	ug/kg	RL	ug/kg	RL	ug/kg	RL	ug/kg	RL
PCB-1016		BRL	16.7	BRL	500	BRL	333	BRL	16.7	BRL	6670	BRL	333
PCB-1221		BRL	16.7	BRL	500	BRL	333	BRL	16.7	BRL	6670	BRL	333
PCB-1232		BRL	16.7	BRL	500	BRL	333	BRL	16.7	BRL	6670	BRL	333
PCB-1242		BRL	16.7	BRL	500	BRL	333	BRL	16.7	BRL	6670	BRL	333
PCB-1248		BRL	16.7	BRL	500	BRL	333	BRL	16.7	BRL	6670	BRL	333
PCB-1254		BRL	16.7	BRL	500	BRL	333	BRL	16.7	BRL	6670	BRL	333
PCB-1260		BRL	16.7	3310	500	2260	333	359	16.7	108000	6670	1710	333

BRL = Below Reporting Limits, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, D = Analyte Reported from Dilution Analysis, E= Estimated Concentration

Eddie L. Clemons, II
QA/QC Director

XENCO Laboratories

Certificate of Analysis Summary 212983

3TM International, Houston , TX

Project Name: PCB

Project ID: 3TM-DNA-10200-03
Project Manager: Randy Horsak
Site: Crystal Springs

Date Received in Lab: Thu Jul-26-01 09:15 AM
Date Report Faxed: thu Aug-02-01
XENCO Contact: Brent Barron, II

Analysis Requested	*Lab ID :*	212983-043		212983-044		212983-045		212983-046		212983-047		212983-048	
	Field ID :	HA-32		HA-33A		HA-33B		HA-34A		HA-34B		HA-35A	
	Depth :	6 In		6 In		18 In		6 In		18 In		6 In	
	Matrix :	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	Sampled :	Jul-24-2001		Jul-25-2001		Jul-25-2001		Jul-25-2001		Jul-25-2001		Jul-25-2001	
PCBs by EPA 8082	*Analyzed :*	Aug-01-2001		Jul-31-2001		Jul-31-2001		Jul-31-2001		Jul-31-2001		Jul-31-2001	
	Units :	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
			RL		RL		RL		RL		RL		RL
PCB-1016		BRL	1170	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1221		BRL	1170	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1232		BRL	1170	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1242		BRL	1170	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1248		BRL	1170	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1254		BRL	1170	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1260		9920	1170	210	16.7	BRL	16.7	300	16.7	BRL	16.7	BRL	16.7

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N = See Narrative, D = Analyte Reported from Dilution Analysis, E= Estimated Concentration

Eddie L. Clemons, II
QA/QC Director

Certificate of Analysis Summary 212983

3TM International, Houston , TX

Project Name: PCB

Project ID: 3TM-DNA-10200-03
Project Manager: Randy Horsak
Site: Crystal Springs

Date Received in Lab: Thu Jul-26-01 09:15 AM
Date Report Faxed: thu Aug-02-01
XENCO Contact: Brent Barron, II

Analysis Requested	*Lab ID :* / *Field ID :* / *Depth :* / *Matrix :* / *Sampled :*	212983-049 HA-35B 18 In SOLID Jul-25-2001		212983-050 HA-36A 6 In SOLID Jul-25-2001		212983-051 HA-36B 18 In SOLID Jul-25-2001		212983-052 HA-37A 6 In SOLID Jul-25-2001		212983-053 HA-37B 18 In SOLID Jul-25-2001		212983-054 HA-38A 6 In SOLID Jul-25-2001	
PCBs by EPA 8082	*Analyzed :* / *Units :*	Jul-31-2001 ug/kg	RL	Jul-31-2001 ug/kg	RL	Aug-01-2001 ug/kg	RL	Aug-01-2001 ug/kg	RL	Aug-01-2001 ug/kg	RL	Aug-01-2001 ug/kg	RL
PCB-1016		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1221		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1232		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1242		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1248		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1254		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1260		BRL	16.7	17.0	16.7	BRL	16.7	69.6	16.7	BRL	16.7	130	16.7

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N = See Narrative, D = Analyte Reported from Dilution Analysis, E= Estimated Concentration

Eddie L. Clemons, II
QA/QC Director

Certificate of Analysis Summary 212983

3TM International, Houston , TX

Project Name: PCB

Project ID: 3TM-DNA-10200-03
Project Manager: Randy Horsak
Site: Crystal Springs

Date Received in Lab: Thu Jul-26-01 09:15 AM
Date Report Faxed: thu Aug-02-01
XENCO Contact: Brent Barron, II

Analysis Requested	*Lab ID :*	212983-055		212983-056		212983-057		212983-058		212983-059		212983-060	
	Field ID :	HA-38B		HA-39A		HA-39B		HA-40A		HA-40B		HA-41A	
	Depth :	18 In		6 In		18 In		6 In		18 In		6 In	
	Matrix :	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	Sampled :	Jul-25-2001		Jul-25-2001		Jul-25-2001		Jul-25-2001		Jul-25-2001		Jul-25-2001	
PCBs by EPA 8082	*Analyzed :*	Aug-01-2001		Aug-01-2001		Aug-01-2001		Aug-01-2001		Aug-01-2001		Aug-01-2001	
	Units :	ug/kg	RL	ug/kg	RL	ug/kg	RL	ug/kg	RL	ug/kg	RL	ug/kg	RL
PCB-1016		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1221		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1232		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1242		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1248		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1254		BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7	BRL	16.7
PCB-1260		BRL	16.7	33.8	16.7	BRL	16.7	142	16.7	BRL	16.7	44.6	16.7

BRL = Below Reporting Limits, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, D = Analyte Reported from Dilution Analysis, E= Estimated Concentration

Eddie L. Clemons, II
QA/QC Director

XENCO Laboratories

Certificate of Analysis Summary 212983

3TM International, Houston , TX

Project Name: PCB

Project ID: 3TM-DNA-10200-03
Project Manager: Randy Horsak
Site: Crystal Springs

Date Received in Lab: Thu Jul-26-01 09:15 AM
Date Report Faxed: thu Aug-02-01
XENCO Contact: Brent Barron, II

Analysis Requested	*Lab ID :*	212983-061		212983-062		212983-063				
	Field ID :	HA-41B		HA-42A		HA-42B				
	Depth :	18 In		6 In		18 In				
	Matrix :	SOLID		SOLID		SOLID				
	Sampled :	Jul-25-2001		Jul-25-2001		Jul-25-2001				
PCBs by EPA 8082	*Analyzed :*	Aug-01-2001		Aug-01-2001		Aug-01-2001				
	Units :	ug/kg		ug/kg		ug/kg				
			RL		RL		RL			
PCB-1016		BRL	16.7	BRL	16.7	BRL	16.7			
PCB-1221		BRL	16.7	BRL	16.7	BRL	16.7			
PCB-1232		BRL	16.7	BRL	16.7	BRL	16.7			
PCB-1242		BRL	16.7	BRL	16.7	BRL	16.7			
PCB-1248		BRL	16.7	BRL	16.7	BRL	16.7			
PCB-1254		BRL	16.7	BRL	16.7	BRL	16.7			
PCB-1260		157	16.7	157	16.7	BRL	16.7			

BRL = Below Reporting Limits, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, D = Analyte Reported from Dilution Analysis, E= Estimated Concentration

Eddie L. Clemons, II
QA/QC Director

Form 3 - [redacted]S / MSD Recoveries

Xenco Laboratories

Project Name: PCB

Report Date: Tue 02-Oct-01

Work Order # 212983

Project ID: 3TM-DNA-10200-03

Lab Batch ID: 604723 **QC- Sample ID:** 212983-021 **Matrix:** Solid

Reporting Units: ug/kg

PCBs by EPA 8082 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
PCB 1016/1260	<16.7	333.333	338	0	333.333	335	0	200.0	56-121	20	

Lab Batch ID: 604725 **QC- Sample ID:** 212983-011 **Matrix:** Solid

Reporting Units: ug/kg

PCBs by EPA 8082 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
PCB 1016/1260	<16.7	333.333	342	0	333.333	334	0	200.0	56-121	20	

Lab Batch ID: 604757 **QC- Sample ID:** 212983-063 **Matrix:** Solid

Reporting Units: ug/kg

PCBs by EPA 8082 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
PCB 1016/1260	<16.7	333.333	333	0	333.333	330	0	200.0	56-121	20	

Lab Batch ID: 604759 **QC- Sample ID:** 212983-047 **Matrix:** Solid

Reporting Units: ug/kg

PCBs by EPA 8082 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
PCB 1016/1260	<16.7	333.333	334	0	333.333	335	0	200.0	56-121	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*(D-G)/(D+G)

Matrix Spike Duplicate Percent Recovery [F] = 100*(F-A)/E
All Results are based on MDL and validated for QC purposes

XENCO Laboratories

BS / BSD Recoveries

Project Name PCB

Work Order #: 212983

Report Date Tue 02-Oct-01

Project ID: 3TM-DNA-10200-03

Lab Batch ID: 604723 **Sample:** 341482-1-BLK **Batch #:** 1 **Matrix:** Solid

Units: ug/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

PCBs by EPA 8082 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
PCB 1016/1260	<16.7	333	299	89.7	333	325	.0	200.0	56-121	20	

Lab Batch ID: 604725 **Sample:** 341485-1-BLK **Batch #:** 1 **Matrix:** Solid

Units: ug/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

PCBs by EPA 8082 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
PCB 1016/1260	<16.7	333	317	95.1	333	316	.0	200.0	56-121	20	

Lab Batch ID: 604757 **Sample:** 341505-1-BLK **Batch #:** 1 **Matrix:** Solid

Units: ug/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

PCBs by EPA 8082 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
PCB 1016/1260	<16.7	333	337	101.0	333	345	.0	200.0	56-121	20	

Lab Batch ID: 604759 **Sample:** 341507-1-BLK **Batch #:** 1 **Matrix:** Solid

Units: ug/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

PCBs by EPA 8082 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
PCB 1016/1260	<16.7	333	358	107.3	333	346	.0	200.0	56-121	20	

Relative Percent Difference RPD = 200*|(D-G)/(D+G)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Appendix E
Complete Midwest Research Institute Analytical Testing Results

Report for Dioxins and Furans in Soil Samples

Letter Report

For
3TM International, Inc.
1500 S. Dairy Ashford
Suite 190
Houston, Texas 77077-3858

MRI Project No. 310226.1.002

October 15, 2001

October 15, 2001

Mr. Randy Horsak
3TM International, Inc.
1500S. Dairy Ashford
Suite 190
Houston, TX 77077-3858

Subject: MRI Project No. 310226.1.002 Revision 1, "Report for Dioxins and Furans in Soil Samples"

Dear Mr. Horsak:

Midwest Research Institute (MRI) has completed the analysis of the soil samples submitted by your organization. The samples were analyzed for the 2,3,7,8-substituted polychlorinated dibenzo-*p*-dioxins and dibenzofurans (PCDD/PCDF) by USEPA Method 8290. This report briefly describes the methods used to prepare and analyze the samples and presents the results of the PCDD/PCDF from analysis of the provided samples.

1. Sample Receipt

Six samples were received at MRI on August 17, 2001, from XENCO Laboratories. The check-in paperwork is provided as Attachment 1 to this report. The samples were in good condition and are described below.

Field ID	MRI ID	Description	Percent Moisture
HA1	01000726	Soil	16.1
HA6	01000727	Soil	20.8
HA21	01000728	Soil	9.52
HA22	01000729	Soil	6.40
HA30	01000730	Soil	17.9
HA32	01000731	Soil	26.6

2. Sample Preparation

A percent moisture determination was performed on this sample by mixing thoroughly and aliquoting a 5 g subsample into a vial and drying in an oven at 110°C overnight. The percent moisture data were used to determine the amount of wet weight material necessary to extract 10 g of dry weight. These samples were prepared in one sample batch.

Extraction and Solvent Exchange—A subsample of the homogenized "wet" sample equivalent to 10 g on a dry weight basis was weighed to the nearest 0.0001 g and placed in a Soxhlet extractor. The sample was mixed with 75 ± 5 g of pre-cleaned quartz sand, fortified with $^{13}C_{12}$-labeled dioxin and furan internal quantitation standards (IQS), and extracted with toluene in a Soxhlet extractor equipped with a Dean-Stark adapter. Following extraction, each sample extract was concentrated and fortified with a $^{37}Cl_4$-labeled dioxin cleanup standard and put through a series of cleanup procedures described in EPA Method 8290.

Extract Clean-up and Concentration—Extracts were partitioned against concentrated sulfuric acid in a separatory funnel to remove co-extracted interferences and were subjected to an acidified silica gel column designed for samples with a high organic content. After this cleanup, each extract was filtered through a 0.45-micron filter and concentrated to approximately 12 mL in hexane.

Each extract was processed using an automated system (Fluid Management Systems Inc. Power-Prep™) for the remainder of cleanup. The system processed the extract through three disposable columns including a multi-layer (acid/base/neutral) silica column, a multi-layer (acid/base/neutral) alumina column, and an AX-21 carbon column.

Following elution, the PCDD/PCDF fractions were concentrated and fortified with 10 µL of a solution containing two $^{13}C_{12}$-labeled dioxin isomers in tridecane and then concentrated to a final volume of 10 µL. Once the extracts had concentrated to the final volume, they were transferred to autosampler vials for analysis.

3. HRGC/HRMS Analysis

Analysis was performed on an Autospec Ultima high-resolution mass spectrometer operated at a resolution of > 10,000. Samples were analyzed using a 60-meter DB-5 ms fused silica column under conditions that were specific for separating 2,3,7,8-TCDF and 2,3,7,8-TCDD from all other TCDF/TCDD isomers. All Method 8290 criteria were met for initial and daily calibration and for isomer resolution.

Data reduction procedures were conducted using the Opusquan HRMS data system. Concentrations of native PCDD/PCDF were calculated using the isotope dilution methodology described in the Method 8290. $^{13}C_{12}$-labeled analogs of the target analytes are added to the samples prior to extraction. Each of the target analytes with the

exception of 1,2,3,7,8,9-HxCDD and OCDF have a corresponding labeled analog. 1,2,3,7,8,9-HxCDD and OCDF use alternate labeled analogs. The recoveries of the labeled analogs are used in the isotope dilution calculation of the native analyte concentrations. Therefore, the results presented are recovery corrected for the labeled analog performance.

4. Summary Results

Results for your sample are presented in picograms per gram (pg/g) dry-weight in Table 1. 2,3,7,8-substituted PCDD/PCDF analytes are reported if the peaks meet qualitative ratio criteria and if the peak meets the criteria of being greater than 2.5:1 signal-to-noise (s/n). If no peak is observed greater than 2.5:1 s/n, the result is reported as not detected ("U") at the noise-based detection level. If the peak fails to meet the ratio criteria but is above the s/n criteria, the peak is considered an interference and is reported as not detected ("U") at the level of interference and flagged with an "E." The "E" flag is used to identify the peak as an estimated maximum possible concentration or EMPC.

Results for the samples are presented in toxic equivalency quotient (TEQ) picograms per gram (pg/g) or nanograms per kilogram (ng/kg) dry-weight in Table 2. Each of the target analytes has a toxic equivalency factor (TEF). The toxic equivalency quotient (TEQ) is the sum of the concentration or detection limit for each target analyte multiplied by the corresponding World Health Organization (WHO) TEF (Van den Berg et. al., 1998). The TEQ assumes a concentration value of zero (0) for non-detected analytes and is reflective only for dioxins and furans that are definitively found in the sample.

5. Quality Control

Each sample is spiked with labeled analogs (IQS and cleanup) during the preparation. The percent recoveries for the samples and QC samples are presented in Table 3. The percent recovery objective is 25% to 150% for all labeled analogs and was met for all dioxin/furan analogs.

The samples were prepared and analyzed in one batch. The following quality control samples were prepared with the batch of samples.

- Method Blank: 50 to 100 g of pre-extracted quartz sand, fortified with $^{13}C_{12}$-labeled dioxin/furan IQS solutions, cleanup standards, and recovery standards. The blank is used to establish the background levels of the target analytes arising from laboratory operations. The method blank is processed through all steps in the procedure along with the samples. Ideally, the method blank should not contain target analytes above the lowest calibration standard (i.e., 0.5 ng/mL for tetra PCDD/PCDF). The method blank for this batch did have low-level detections of the target analytes, but at levels below the low calibration standard and the levels of these analytes found in the blank are much

less than the levels found in the associated samples. Therefore, the method blank analyses are considered acceptable.

- Laboratory Control Sample (LCS): The LCS results are summarized in Table 4. The LCS is the same as the method blank but is also fortified with native dioxin/furan and PCB analytes at known levels. The LCS is used to demonstrate accuracy of individual analytes in individual batches and also ongoing precision data for batches run over time. The LCS is processed through all steps in the procedure along with the samples. The LCS analysis is compared against limits of 75% to 125% recovery. All compounds met this recovery objective.

We appreciate the opportunity to provide these sample analyses. If you have any questions regarding the data presented, please do not hesitate to contact me at (816)-753-7600, Extension 1626, or via e-mail at jpalausky@mriresearch.org.

Sincerely,

MIDWEST RESEARCH INSTITUTE

Joseph A. Palausky
Principal Chemist

Approved by:

for Thomas M. Sack, Ph.D.
Director
Chemical Sciences Division

Table 1. PCDD/PCDF in Soil (pg/g dry weight)

	MRI ID	310226 MB	310226 LCS	01000726	01000727	01000728	01000729	01000730	01000731
	Field ID	MB	LCS	HA1	HA6	HA21	HA22	HA30	HA32
	File	H01J04-2-9	H01I20-2-11	H01I20-2-15	H01I20-2-16	H01I20-2-17	H01I20-2-18	H01I20-2-19	H01I20-2-20
	Weight* (g)	10.0	10.0	10.19	10.03	10.06	10.89	10.25	10.24
Analyte	%Moisture	NA	NA	16.1	20.8	9.52	6.40	17.9	26.6
2,3,7,8-TCDF		U(0.158 E)	19.5	6.14	9.83	19.8	13.0	112	7.06
2,3,7,8-TCDD		U(0.276 E)	15.2	0.534	0.348	3.63	0.506	2.20	1.32
1,2,3,7,8-PeCDF		U(0.645 E)	120	3.57	6.53	11.8	6.85	52.4	4.03
2,3,4,7,8-PeCDF		U(0.628 E)	98.0	12.4	15.8	34.7	20.9	147	13.9
1,2,3,7,8-PeCDD		1.04	111	2.76	1.78	14.0	2.15	13.9	5.07
1,2,3,4,7,8-HxCDF		0.656	103	32.1	45.6	80.4	58.7	258	31.4
1,2,3,6,7,8-HxCDF		0.747	93.0	10.0	12.0	26.4	14.2	80.7	10.3
2,3,4,6,7,8-HxCDF		1.24	101	11.2	11.0	32.4	14.4	88.1	13.6
1,2,3,7,8,9-HxCDF		1.40	87.5	3.05	3.83	7.52	4.86	20.2	3.24
1,2,3,4,7,8-HxCDD		0.885	105	10.1	3.68	18.2	3.11	23.8	5.93
1,2,3,6,7,8-HxCDD		U(0.602 E)	91.0	11.7	8.54	47.2	7.73	80.5	16.5
1,2,3,7,8,9-HxCDD		U(0.821 E)	87.5	4.33	2.97	16.6	2.72	22.8	5.41
1,2,3,4,6,7,8-HpCDF		2.32	90.0	293	250	883	222	1840	401
1,2,3,4,7,8,9-HpCDF		U(1.19 E)	103	14.5	19.6	35.2	27.0	119	13.3
1,2,3,4,6,7,8-HpCDD		1.78	105	169	98.4	404	86.4	787	146
OCDF		7.46	151	162	177	429	224	1450	214
OCDD		9.06	209	5840 C	3600	4820 C	2260	5440 C	3990

Table 2. Toxic Equivalency Quotient for PCDD/PCDF in Soil (I-TEQ[1] pg/g dry weight)

		MRI ID	310226 MB	01000726	01000727	01000728	01000729	01000730	01000731
		Field ID	MB	HA1	HA6	HA21	HA22	HA30	HA32
		File	H01J04-2-9	H01I20-2-15	H01I20-2-16	H01I20-2-17	H01I20-2-18	H01I20-2-19	H01I20-2-20
		Weight* (g)	10.0	10.19	10.03	10.06	10.89	10.25	10.24
Analyte	TEF[1]	%Moisture	NA	16.1	20.8	9.52	6.40	17.9	26.6
2,3,7,8-TCDF	0.1		0	0.614	0.983	1.98	1.30	11.2	0.706
2,3,7,8-TCDD	1		0	0.534	0.348	3.63	0.506	2.20	1.32
1,2,3,7,8-PeCDF	0.05		0	0.179	0.326	0.59	0.342	2.62	0.202
2,3,4,7,8-PeCDF	0.5		0	6.20	7.90	17.4	10.5	73.5	6.95
1,2,3,7,8-PeCDD	1		1.04	2.76	1.78	14.0	2.15	13.9	5.07
1,2,3,4,7,8-HxCDF	0.1		0.0656	3.21	4.56	8.04	5.87	25.8	3.14
1,2,3,6,7,8-HxCDF	0.1		0.0747	1.00	1.20	2.64	1.42	8.07	1.03
2,3,4,6,7,8-HxCDF	0.1		0.124	1.12	1.10	3.24	1.44	8.81	1.36
1,2,3,7,8,9-HxCDF	0.1		0.140	0.305	0.383	0.752	0.486	2.02	0.324
1,2,3,4,7,8-HxCDD	0.1		0.0885	1.01	0.368	1.82	0.311	2.38	0.593
1,2,3,6,7,8-HxCDD	0.1		0	1.17	0.854	4.72	0.773	8.05	1.65
1,2,3,7,8,9-HxCDD	0.1		0	0.433	0.297	1.66	0.272	2.28	0.541
1,2,3,4,6,7,8-HpCDF	0.01		0.0232	2.93	2.50	8.83	2.22	18.4	4.01
1,2,3,4,7,8,9-HpCDF	0.01		0	0.145	0.196	0.352	0.270	1.19	0.133
1,2,3,4,6,7,8-HpCDD	0.01		0.0178	1.69	0.984	4.04	0.864	7.87	1.46
OCDF	0.0001		0.000746	0.0162	0.0177	0.0429	0.0224	0.145	0.0214
OCDD	0.0001		0.000906	0.584	0.360	0.482	0.226	0.544	0.399
Total TEQ (pg/g dry weight)			**1.58**	**23.9**	**24.2**	**74.2**	**28.9**	**189**	**28.9**

[1] International Toxic Equivalency Quotient

[2] World Health Organization (WHO) Toxic Equivalency Factor (Van den Berg et. al., 1998)

Table 3. PCDD/PCDF Recoveries in Soil (%)

	MRI ID	310226 MB	310226 LCS	01000726	01000727	01000728	01000729	01000730	01000731		Relative
	Field ID	MB	LCS	HA1	HA6	HA21	HA22	HA30	HA32		Standard
Surrogate	File	H01J04-2-9	H01120-2-11	H01120-2-15	H01120-2-16	H01120-2-17	H01120-2-18	H01120-2-19	H01120-2-20	Average[1]	Deviation
13C-2,3,7,8-TCDF		66.9	74.7	64.9	79.1	86.9	74.4	61.9	83.5	75.1	13
13C-2,3,7,8-TCDD		56.2	68.3	59.6	72.7	80.7	68.5	56.6	77.3	69.2	14
13C-1,2,3,7,8-PeCDF		62.7	76.3	65.4	75.2	85.8	70.2	62.4	83.6	73.8	13
13C-2,3,4,7,8-PeCDF		68.8	85.8	72.5	82.3	95.3	73.6	68.2	90.8	80.5	14
13C-1,2,3,7,8-PeCDD		49.6	73.6	62.6	72.1	82.6	67.6	59.2	80.0	70.7	13
13C-1,2,3,4,7,8-HxCDF		60.9	69.5	60.8	70.7	81.4	63.3	56.2	71.3	67.3	13
13C-1,2,3,6,7,8-HxCDF		71.9	82.0	68.8	79.2	89.9	71.4	62.1	83.6	75.8	14
13C-2,3,4,6,7,8-HxCDF		65.0	73.1	61.2	72.0	79.8	62.2	55.6	71.1	67.0	13
13C-1,2,3,7,8,9-HxCDF		67.8	78.4	65.2	76.8	89.7	68.9	61.4	79.6	73.6	14
13C-1,2,3,4,7,8-HxCDD		57.1	75.1	61.1	72.3	81.2	63.0	55.9	75.3	68.1	14
13C-1,2,3,6,7,8-HxCDD		70.1	94.7	85.8	98.8	111	88.7	77.4	102	93.9	13
13C-1,2,3,4,6,7,8-HpCDF		74.8	81.3	67.9	80.0	90.1	69.2	62.7	84.9	75.8	14
13C-1,2,3,4,7,8,9-HpCDF		66.7	60.3	51.9	61.4	72.2	52.2	46.8	68.2	58.8	17
13C-1,2,3,4,6,7,8-HpCDD		65.0	77.0	67.8	79.2	89.2	67.4	61.9	84.5	75.0	14
13C-OCDD		57.0	54.1	51.0	59.9	68.6	46.4	44.2	69.5	56.6	20
Cleanup											
37Cl-2,3,7,8-TCDD		61.0	71.7	62.0	73.4	78.2	69.2	55.7	79.1	69.6	13

[1] Average of sample results excluding method blanks.

Table 4. Lab Control Spike Results

PCDD/PCDF	Test Conc. (pg/g)	310226 LCS H01I20-2-11 (pg/g)	Recovery %	Status
2,3,7,8-TCDF	20	19.5	97.5	Pass
2,3,7,8-TCDD	20	15.2	76.0	Pass
1,2,3,7,8-PeCDF	100	120	120	Pass
2,3,4,7,8-PeCDF	100	98.0	98.0	Pass
1,2,3,7,8-PeCDD	100	111	111	Pass
1,2,3,4,7,8-HxCDF	100	103	103	Pass
1,2,3,6,7,8-HxCDF	100	93.0	93.0	Pass
2,3,4,6,7,8-HxCDF	100	101	101	Pass
1,2,3,7,8,9-HxCDF	100	87.5	87.5	Pass
1,2,3,4,7,8-HxCDD	100	105	105	Pass
1,2,3,6,7,8-HxCDD	100	91.0	91.0	Pass
1,2,3,7,8,9-HxCDD	100	87.5	87.5	Pass
1,2,3,4,6,7,8-HpCDF	100	90.0	90.0	Pass
1,2,3,4,7,8,9-HpCDF	100	103	103	Pass
1,2,3,4,6,7,8-HpCDD	100	105	105	Pass
OCDF	200	151	75.5	Pass
OCDD	200	209	105	Pass
13C-IQS	(pg/g)	(pg/g)	%	Status
13C-2,3,7,8-TCDF	200	150	74.7	Pass
13C-2,3,7,8-TCDD	200	137	68.3	Pass
13C-1,2,3,7,8-PeCDF	200	153	76.3	Pass
13C-2,3,4,7,8-PeCDF	200	172	85.8	Pass
13C-1,2,3,7,8-PeCDD	200	147	73.6	Pass
13C-1,2,3,4,7,8-HxCDF	200	139	69.5	Pass
13C-1,2,3,6,7,8-HxCDF	200	164	82.0	Pass
13C-2,3,4,6,7,8-HxCDF	200	146	73.1	Pass
13C-1,2,3,7,8,9-HxCDF	200	157	78.4	Pass
13C-1,2,3,4,7,8-HxCDD	200	151	75.1	Pass
13C-1,2,3,6,7,8-HxCDD	200	190	94.7	Pass
13C-1,2,3,4,6,7,8-HpCDF	200	163	81.3	Pass
13C-1,2,3,4,7,8,9-HpCDF	200	121	60.3	Pass
13C-1,2,3,4,6,7,8-HpCDD	200	154	77.0	Pass
13C-OCDD	400	217	54.1	Pass
Cleanup				
37Cl-2,3,7,8-TCDD	20	14.4	71.7	Pass

Attachment 1
Sample Receipt

XENCO Laboratories

REQUEST FOR ADDITIONS / CORRECTIONS FORM

☐ 11381 Meadowglen, Suite L Houston, TX 77082 - 281-589-0692 - Fax: 281-589-1006
☐ 11078 Morrison Ln, Suite D Dallas, TX 75229 - 972-481-9999 - Fax: 972-481-9998
☐ 5309 Wurzbach Rd., Suite 104 San Antonio, TX 78238 - 210-509-3334 - Fax: 210-509-3333

This form is a supplement to
CDC No: 212933 A B C D E
Page 1 of 1

This information should be taken from the original COC.

Contractor: 3TM International Phone ( )
Project Name: PCB
Project I.D. No.: 3TM-DNA-10200-03
Project Manager: Randy Horsak
Project Location: Crystal Springs

☑ ADDITION
☐ CORRECTION
☐ CANCELLATION
☐ NO ADDITION
☐ ON HOLD

Requested by: Randy Horsak Date:

Lab ID	Field ID	Date/Time	Depth	Matrix	Sample Description	High Res. Dioxins 8290 By JP	N.T.E.	N.T.E.	N.T.E.	N.T.E.	TAT
-001	HA1	7/24/01 9:15	18"	S		X					ASAP
-006	HA6	" " 10:00	18"	S		X					24 hrs
-032	HA21	" " 11:40	6"	S		X					48 hrs
-033	HA22	" " 11:45	6"	S		X					3 days
-041	HA30	7/24/01	6"	S		X					5 days
-043	HA32	7/24/01	6"	S		X					Other ____

Remarks:

COMMENTS: Send TO: MRI
425 Volker ~~Rd~~ BLVD
Kansas City, Mo 64110-2299
(816) 753-7600
Attn: Joe Palausky

*Samples received 8-17-01 / 10:30 AM [signature]

Add Taken By: Dan # 810226.1.001 D/T: Order # 0108005