



PCB REMEDIATION PLAN

RISK-BASED DISPOSAL AND CLEANUP

University of
Massachusetts

Dubois Library
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March 2010

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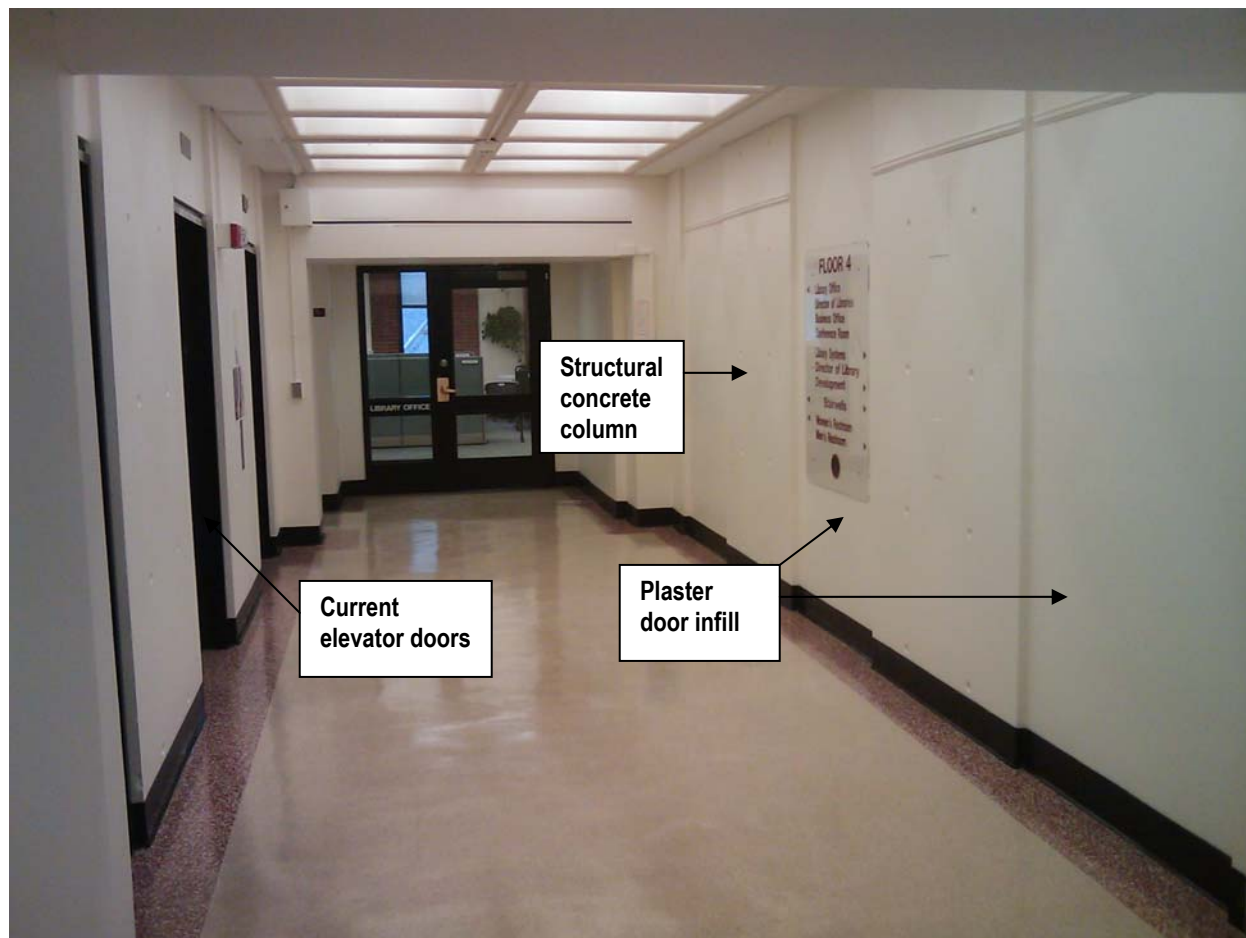
1. INTRODUCTION

1.1 CONCEPTUAL SITE MODEL

The Dubois Library is a 28 story building constructed in the early 1970's on the University of Massachusetts Amherst Campus. The upper two floors, floors 27 and 28, consist primarily of roof access, the elevator machine room, and mechanical and electrical equipment. The remaining floors are currently in use as a library including study areas, classrooms, computer terminals, and common areas.

Currently, UMass is in the planning, bidding, and scheduling stages for the completion of an elevator replacement project. The Dubois Library has six elevator shafts with five existing elevators. Under the current configuration, not all of the five elevators serve each of the 28 floors. As part of the elevator replacement project, the elevator lobbies are scheduled to be reconfigured so that each elevator serves each floor (the sixth elevator shaft is scheduled to remain unused). Elevator shaft openings, not currently serviced by one of the five elevators, were filled in with masonry block and a plaster overlay at the time of construction. These "In-fills" on each of the existing five elevator shafts are scheduled for removal during the replacement project.

A photograph of a typical elevator lobby is shown below.



Certain joint caulking used as part of standard construction practices for masonry buildings and concrete structures erected between the 1950's and late 1970's is known to have been manufactured with PCBs. PCBs were added to caulking for durability, resistance to degradation, and as a softener/plasticizer for application. The Dubois Library was constructed during the timeframe when this type of caulking was used. Production and use of PCBs was halted in the United States in the late 1970s.

In preparation for this project and based on the dates of construction, UMass identified caulking on structural concrete to masonry joints along the In-fills scheduled for removal as well on the plaster transoms located above existing elevator doors. As such, samples of the caulk were collected from the elevator lobby areas for PCB analysis. Analytical results indicated that the caulking contained PCBs at concentrations greater than 50 ppm and represented an unauthorized use under 40 CFR 761 (concentrations up to 93,400 ppm).

Based on these results, adjacent building materials were sampled to determine if migration of PCBs had occurred overtime. Due to the porous nature of concrete and other masonry surfaces, PCBs in caulking may penetrate into adjacent building materials during application or over time, may leach, and/or may be disturbed during renovations or other building work. Analytical results indicated that PCBs were present in building materials adjacent the caulked joints at distances of up to 13 inches with a decreasing concentration gradient with distance from the source material (caulking).

Under 40 CFR Part 761 and given the detected PCB concentrations (> 50 ppm), the building caulking, once removed, will be classified as a PCB Bulk Product Waste per 40 CFR 761.62 and as such managed accordingly. Adjacent building materials identified with detectable concentrations of PCB will be considered PCB Remediation Waste and managed in accordance with 40 CFR 761.61.

1.2 PLAN ORGANIZATION

This Remediation Plan is organized into the following three sections:

Section 2: Site Characterization

The site characterization provides a summary of the characterization data that have been collected to date by medium and delineates the nature and extent of PCBs.

Section 3: Remediation Plan

The remediation plan includes a discussion of the remedial objectives and cleanup levels, the remediation approach for PCB-affected media, a sequence/schedule of activities, a verification sampling approach, and a conceptual long term monitoring plan.

This remediation plan has been prepared so as to satisfy the requirements of 40 CFR 761.61(c) and includes a request relating to a risk-based disposal approach for encapsulating portions of the PCB containing building materials in the elevator lobbies that can not be removed due to structural building concerns.

Section 4: Schedule

A schedule for the proposed work is provided.

2. SITE CHARACTERIZATION

This section provides a discussion of the nature and extent of PCB-affected media at the Site.

2.1 SAMPLE COLLECTION AND LABORATORY ANALYSIS

2.1.1 Sample Collection

Samples of caulking, concrete, plaster, and masonry block were collected between April 23, 2009 and September 16, 2009 (by Tighe and Bond) and on November 27, 2009 by Woodard & Curran personnel. Concrete sampling was conducted in accordance with the USEPA Region I *Draft Standard Operating Procedure for Sampling Concrete in the Field* (December 1997). Other sampling (caulking, plaster, masonry block) was conducted using similar methods, ensuring a representative sample and limiting the potential for cross-contamination between sampling locations and adjacent building materials. Samples were collected in order to develop an understanding of PCB concentrations with distance from the caulked joints and to collect representative samples from the various media.

Surface wipe samples of painted structural concrete and plaster materials scheduled to remain in place and indoor air samples were collected on January 15, 2010 by Woodard & Curran. Surface wipe samples were collected in accordance with the standard wipe test method as described in 40 CFR 761.123. Indoor air samples were collected in accordance with USEPA Compendium Method TO-10A “*Determination of Pesticides and Polychlorinated Biphenyls In Ambient Air Using Low Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD)*”.

All samples were logged on a standard Chain-of-Custody (COC), and stored on ice for delivery to the laboratory. Sampling equipment was decontaminated between each sampling location with an anionic washing detergent/water solution followed by a water rinse and a final methanol rinse.

2.1.2 Laboratory Analysis

Characterization samples collected between April 2009 and September 2009, and the indoor air samples were analyzed by Alpha Analytical of Westborough, Massachusetts. Characterization samples and surface wipe samples collected in November 2009 and January 2010 were analyzed by Analytics Environmental Laboratory in Portsmouth, New Hampshire.

All bulk material samples, including caulk and building material samples, and surface wipe samples were extracted using USEPA Method 3540C (Soxhlet Extraction) and analyzed for PCBs using USEPA Method 8082. Indoor air samples were analyzed via USEPA Method TO-10A and 8270C for PCBs homologs.

Laboratory analytical data sheets and data validation summaries are included as Appendix A of this report. Summary tables of the analytical results are presented on Table 2-1 (Caulk samples), Table 2-2 (Building material samples – concrete, plaster, etc.), Table 2-3 (Surface wipe samples), and Table 2-4 (Indoor air samples).

2.1.3 Data Usability Assessment

A data quality assessment was conducted to evaluate the usability of the site characterization data. The results were validated by a review of sample custody, holding times, surrogates, method blanks, matrix spike/matrix spike duplicates, laboratory control samples, and field duplicates. The assessment was performed in general conformance

with USEPA Region I Guidelines and the Quality Control Guidelines. Summaries of the data validations are included in Appendix A.

One duplicate sample and one field equipment blank sample were collected and submitted to the laboratory as part of the QA/QC procedures associated with the sample collection. The results of the duplicate samples in comparison to their associated primary samples indicated that the relative percent differences were within the limits allowed by data acceptance criteria (RPD not greater than 50% for solid materials), signifying acceptable data precision. PCBs were not detected in the aqueous field equipment blank sample, indicating that no interferences were introduced during sample collection.

Accuracy of the analytical data was assessed by reviewing recoveries for matrix spikes (MS), matrix spike duplicates (MSD), surrogates, laboratory control samples (LCS) and laboratory control sample duplicates (LCSD). All MS/MSD analyses met acceptance criteria for relative percent difference with four exceptions. However, qualifications to the data were not applied due to the high Aroclor 1254 concentrations, which interfered with recoveries of the other Aroclors. The laboratory control samples met acceptance criteria. All PCB surrogate recoveries met acceptance criteria with the exception of samples 091609-01, 091609-03, and 091609-04. Qualifications to the data set were made as indicated on Table 2-2. The Aroclor 1242 result for sample 091609-04 was qualified "J" due to the RPD between column results exceeding the laboratory acceptance criteria.

Representativeness of the data was evaluated qualitatively utilizing site use information and sampling data. Consistent procedures and laboratory analysis of the data were achieved. Sample containers were packed on ice and were accompanied by complete chain of custody forms from the time of sample collection until laboratory delivery. All samples were analyzed within allowable holding times. Samples associated with analytical laboratory report L0905267 were received by the laboratory at 9 degrees Celsius; however, due to the stability of PCBs, no qualifications were applied to the data. The seven contingency samples analyzed based on the results of the primary characterization samples were qualified based on holding times. PCBs were not detected in the laboratory batch blank analysis, indicating that there were no interferences introduced at the laboratory during sample analysis.

The data packages were reviewed to ensure that all sample and associated quality assurance results were available. The completeness review indicated that all samples were analyzed and all quality control results were available to complete the data validation process.

Based on a review of the existing site data, the data adequately represents the materials tested, and the samples collected to date are considered usable for the purposes of characterizing PCB-affected media in accordance with 40 CFR Part 761.

2.2 RESULTS OF SITE CHARACTERIZATION

The results of the characterization are presented in the following sections by sample media.

2.2.1 Building Caulking

As part of this plan development, an estimate of the quantity, types, and locations of caulking was completed for the elevator lobby areas of the Dubois Library. The caulking was categorized based on the location and orientation of each joint. A summary of the caulking estimates is provided in Table 2-5 below.

Table 2-5
Estimate of the Quantity, Types, and Locations of Caulking
Dubois Library Elevator Lobby Area

Caulking Type and Estimated Quantity	Location Description
In-fills Scheduled For Removal (594 l.f.) 27 Locations	Horizontal Joints Plaster to Ceiling Concrete = 27 vertical joints, 4 feet in length = 108 l.f. Vertical Joints Plaster to Structural Concrete = 54 vertical joints, 9 feet in length = 486 l.f.
In-fills Scheduled to Remain (550 l.f.) 25 Locations (Unused shaft In-fills)	Horizontal Joints Plaster to Ceiling Concrete = 25 vertical joints, 4 feet in length = 100 l.f. Vertical Joints Plaster to Structural Concrete = 50 vertical joints, 9 feet in length = 450 l.f.
Transom Plaster Scheduled to Remain (430 l.f.) 59 locations (no transoms present on several floors)	Horizontal Joints Plaster to Ceiling Concrete = 59 vertical joints, 4 feet in length = 236 l.f. Vertical Joints Plaster to Structural Concrete = 108 vertical joints, 1.8 feet in length = 194 l.f.
Total Caulking = 1,574 linear feet	

Note: All quantities have been rounded (each joint length to the nearest 1 foot; linear feet of caulking to the nearest 1 foot). No caulking was observed at elevator openings where existing doors are present.

Four caulking samples were collected on April 23, 2009 and May 8, 2009 by Tighe and Bond personnel from the caulked joints between the structural concrete and the plaster/masonry block In-fills. Three of the four samples of caulking reported PCB concentrations ≥ 50 ppm (14,900 [floor 8], 28,900 [floor 26] and 93,400 ppm [floor 15]). The fourth sample collected from the basement detected a PCB concentration of 8.43 ppm. During a site walk on November 5, 2009, the basement caulking appeared visually different from the other floors (thinner skim coat of caulking over mortar; this area was also not finished with plaster or painted).



Based on the visual similarities between the caulking present on the in-fill joints and the transom plaster/concrete joints above existing elevator doorways, two samples of caulking were collected from the transom locations on November 27, 2009 by Woodard & Curran personnel. Analytical results from these sample indicated that the concentrations of PCBs were 6,820 mg/kg (4th floor) and 20,800 mg/kg (18th floor).

Based on these analytical results and field observations, which indicate that these samples are representative of caulking materials present on all but the basement level, caulking on the second through twenty-sixth floors contain PCBs at concentrations ≥ 50 parts per million (ppm) (no caulking is present on either the lower level or the entry level floors).

2.2.2 Adjacent Building Materials

Based on the reported concentrations of PCBs in caulking, characterization samples of adjacent building materials were collected to determine whether or not PCBs had leached from the caulk into the surrounding building materials, in this case plaster, masonry block, or structural concrete.

2.2.2.1 Plaster and Masonry Block In-fills To Be Removed

A total of 11 plaster and 5 masonry block samples from In-fills scheduled to be removed as part of the elevator replacement project were collected and submitted for analysis between April 23, 2009 and November 27, 2009 following the procedures described in Section 2.1.1. A summary of the concrete sample locations and results is presented on Table 2-2.

Two samples of plaster material were collected at a distance of 1 inch from the caulked joint between April 23, 2009 and September 16, 2009. The reported PCB concentrations in these samples were 44.86 and 34.12 mg/kg (a third sample collected from 0.5 inches from the caulked joint contained a reported PCB concentration of 1,240 mg/kg; however, due to suspected cross contamination with the caulking, the results of this sample are not included in the characterization discussion of the plaster materials). A third plaster sample was collected at a distance of 4 inches from the caulked joint and contained a PCB concentration of 29.20 mg/kg.

Based on these results, characterization sampling of plaster and masonry block materials was conducted on November 27, 2009 to evaluate PCB concentrations for waste disposal considerations. Five samples of plaster and masonry block were collected and submitted for analysis. These characterization samples were collected at a sample frequency of 1 sample per 120 l.f. of caulked joint at a distance of 4-5 inches from the corner of the concrete (based on approximately 594 l.f. of caulked joint). At each sample location, a contingency sample of both materials was collected from 12-13 inches from the caulked joint and placed on hold with the laboratory.

Analytical data from the characterization sampling indicate that PCBs at concentrations >1 ppm are present in all of the plaster materials designated for removal at distances up to 5 inches from the caulked joint with an average PCB concentration of 4.04 mg/kg. The PCB concentrations in four of the five underlying masonry block samples were <1 mg/kg (overlying plaster was removed prior to sample collection). Analytical results from the fifth masonry block sample indicated that PCB concentrations were 1.76 mg/kg.

Based on these results, two of the contingency plaster samples were selected for analysis. Analytical results from the contingency samples indicated that the PCB concentrations were 4.17 and 4.65 mg/kg (12-13 inches from the joint).

Overall, results of characterization sampling indicate that the concentration of PCBs decrease from 44.86 and 34.12 mg/kg within 1 inch of the caulked joint to an average of 4.04 mg/kg in plaster materials 4-5 inches from the caulked joint (5 samples). At a distance of 12-13 inches from the joint, analytical results indicate that PCBs are present in the plaster materials at concentrations of 4.17 and 4.65 mg/kg.

2.2.2.2 Plaster To Remain In Place (In-Fills and Transoms)

A total of 19 plaster samples from materials in the unused shaft In-fills and transom locations were collected and submitted for analysis between April 23, 2009 and November 27, 2009 following the procedures described in Section 2.1.1. A summary of the sample locations and results is presented on Table 2-2.

Four samples of plaster material were collected within 1 inch of the caulked joint between April 23, 2009 and September 16, 2009 with an average reported PCB concentration of 36.9 mg/kg. Analytical results from an

additional plaster sample collected at this time indicated that PCBs were present at a concentration of 0.74 mg/kg at a distance of 4 inches from the caulked joint.

Based on these results, 12 additional characterization samples were collected on November 27, 2009 to evaluate the lateral extent of PCB impacts. These characterization samples were collected at an approximate sample frequency of 1 sample per 80 l.f. of caulked joint at a distance of 6-7 inches from the corner of the concrete (based on approximately 980 l.f. of caulked joint). At each sample location, a contingency sample was collected from 12-13 inches from the caulked joint and placed on hold with the laboratory.

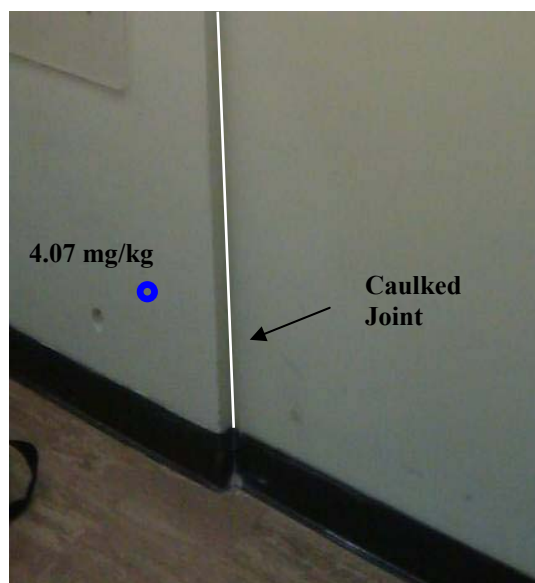
Analytical data from the characterization sampling indicate that PCBs at concentrations >1 ppm are present in all of the plaster materials scheduled to remain in place up to 7 inches from the caulked joint with an average PCB concentration of 4.26 mg/kg. Based on these results, two of the contingency samples were selected for analysis. Analytical results from the contingency samples indicated that the PCB concentrations were 4.70 and 5.09 mg/kg (12–13 inches from the joint).

Overall, results of the characterization sampling indicate that the concentration of PCBs in unused shaft and transom plaster materials decreased from 36.9 mg/kg at distances up to 1 inch from the joint (4 samples) to an average of 4.06 mg/kg in plaster located 6-7 inches from the caulked joint (12 samples). Analytical results indicate that the concentration of PCBs in plaster materials 12-13 inches from the joint were 4.70 and 5.09 mg/kg. These data are consistent with plaster samples collected in those areas scheduled to be removed (see Section 2.2.2.1).

2.2.2.3 Structural Concrete

A total of 25 structural concrete samples were collected and submitted for analysis between April 23, 2009 and November 27, 2009 following the procedures described in Section 2.1.1. Five concrete samples were also collected from concrete materials located 1 inch beneath the caulking to evaluate the extent of migration into the concrete. A summary of the concrete sample locations and results is presented on Table 2-2.

Analytical results from sampling events conducted between April 23, 2009 and September 16, 2009 indicated that PCB concentrations >1 mg/kg were present in concrete to a distance of 1 inch from the caulked joint with an average reported PCB concentration of 22.6 mg/kg. PCB concentrations in two samples collected from 6-7 inches from the caulked joint were <0.505 and 5.88 mg/kg. Beneath the caulked joint, the concentration of PCBs in concrete ranged from 6.75 mg/kg to 21.81 mg/kg with an average PCB concentration of 18.2 mg/kg (5 samples).



Location

Based on these results, additional characterization samples were collected on November 27, 2009. Fourteen characterization samples were collected at a sample frequency of 1 sample per 80 l.f. of caulked joint at a distance of 6-7 inches from the corner of the concrete (based on approximately 1,130 l.f. of caulked joint). At each sample location, a contingency sample was collected from 12-13 inches from the corner of the concrete and placed on hold with the laboratory. This characterization sampling frequency was developed given that these are interior locations and of similar construction reducing the likelihood of large variations in migration due to weathering or differing migration pathways.

Analytical data from the characterization sampling indicate that PCBs at concentrations >1 ppm are present in all of the structural concrete 6-7 inches from the corner of the structural in-fill (approximately 8-9 inches from the joint) with an average PCB concentration of 4.07 mg/kg. Based on these results, two of the contingency samples (12-13 inches) were submitted for analysis. The reported PCB concentration in both of these samples was 2.72 mg/kg.

Overall, analytical results indicated that PCB concentrations decrease from an average of 22.6 mg/kg in concrete ≤ 1 inch from the caulked joint (7 samples) to an average of 4.07 mg/kg in concrete 6-7 inches from the corner (15 samples), or approximately 8-9 inches from the caulked joint. At distances of 12-13 inches from the caulked joint, the reported PCB concentrations were 2.72 mg/kg in each of the two samples analyzed.

2.2.2.4 Ceiling Concrete

Two ceiling concrete samples were collected and submitted for analysis on November 27, 2009 following the procedures described in Section 2.1.1. In addition, one contingency sample at each location was collected of concrete materials 10-12 inches from the caulked joint and placed on hold with the analytical laboratory. A summary of the ceiling concrete sample locations and results is presented on Table 2-2.

Results of the characterization sampling indicated that the concentration of PCBs in one of the two samples was >1 mg/kg with reported concentrations of 0.924 and 2.96 mg/kg. Based on these results, one of the two contingency samples was analyzed and contained a reported PCB concentration of 2.69 mg/kg.

2.2.3 Painted Surfaces

Surface wipe samples were collected from painted masonry surfaces on the 4th, 15th, and 18th floors on January 15, 2010 adjacent to previously collected characterization samples in areas with PCB concentrations of >1 ppm. A total of six wipe samples were collected from painted structural concrete and plaster surfaces at distances of between 6 and 12 inches from the corner of the structural concrete or caulked joints as applicable.

Analytical results from five of the six samples indicated that PCBs were not present at concentrations above the laboratory's minimum reporting limit of 0.5 $\mu\text{g}/100\text{cm}^2$. Analytical results from the sixth sample (DL-18E4-PWS (7-11)-081 collected from in-fill plaster materials) indicated that PCBs were present at a concentration of 0.5 $\mu\text{g}/100\text{cm}^2$ (the minimum laboratory reporting limit).

2.2.4 Indoor Air

Indoor air samples were collected from the 4th, 15th, and 18th floor elevator lobbies on January 15, 2010 to evaluate potential PCB concentration in indoor air with source material (caulking) in place. Air samples were collected in accordance with USEPA Compendium Method TO-10A *"Determination of Pesticides and Polychlorinated Biphenyls In Ambient Air Using Low Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD)"* and submitted for laboratory analysis of PCB homologs.

At each of the sample locations a low volume PUF cartridge was connected to a personal air pump (SKC AIRCHEK Sampler) with flexible tubing. The cartridge was positioned between 3 and 5 feet above the floor using a telescoping stand and tubing in the approximate center of the selected lobbies.

To achieve the desired minimum laboratory reporting limit of 50 nanograms/ m^3 , samples were collected at an average flow rate of 2.6 L/min for approximately two hours (a summary of information for each of the three samples is presented on Table 2-4). The flow rates were set by the equipment rental supply company prior to delivery and verified and adjusted as needed in the field by Woodard & Curran personnel using a BIOS digital flow rate calibrator. Flow rates were monitored periodically throughout the sample collection period. At the end of the required sample

interval, the pumps were shut off and the cartridges placed in aluminum foil, labeled, and placed on ice for delivery to the analytical laboratory.

Analytical results from the indoor air sampling indicated that the total PCB homolog concentrations were 629, 442, and 580 nanograms per cubic meter (ng/m³) on the 4th, 15th, and 18th floors, respectively.

2.2.5 Characterization Summary

Results of the characterization sampling indicate that PCBs at concentrations greater than the unrestricted use cleanup level of 1 ppm were detected in the majority of the samples up to a distance of 13 inches from the caulked joints. Analytical results indicated that materials in direct contact with and immediately adjacent to (i.e., within 6 or 8 inches) contained PCBs at concentrations ranging from 0.74 to 50.3 ppm with an average of 21 ppm. Building materials greater than 6 or 8 inches from the caulked joints contained PCBs at concentrations ranging from <0.5 to 8.03 ppm with an average of 3.7 ppm indicating a decreasing concentration gradient with distance from the source material (PCB containing caulking).

As part of the characterization sampling, an evaluation of the Aroclors reported in each sample media was conducted. Analytical results indicated that Aroclor 1254 was present in the caulking materials sampled (the sample of caulking from the basement level also contained Aroclor 1248). Analytical results from the masonry block samples indicated that Aroclor 1242 was the only Aroclor present in the masonry block. All other samples collected by W&C were reported to contain Aroclor 1254 with only one other sample containing Aroclor 1242 (the plaster sample collected from elevator shaft 4 on the ninth floor). Results from the contingency samples collected indicated that Aroclor 1260 was also present in building materials. Aroclor 1260 had not been previously reported in samples collected; however, the laboratory indicated that it is likely that the presence of Aroclor 1260 in the initial samples could have been masked by the higher concentrations of Aroclor 1254.

Results of wipe testing indicate that PCBs were not present on building material surfaces located 6-12 inches from the caulked joint at concentrations above the minimum laboratory reporting limit of 0.5 µg/100cm². These areas are currently covered with a latex paint. Although PCB concentrations have been detected above EPA's unrestricted use level (1 ppm) in adjacent building materials, the results from the painted surface wipe samples indicated that PCBs were not available for transfer through direct contact (all PCB concentrations ≤0.5 µg/100cm³).

Concentrations of PCBs were detected in indoor air samples collected from three lobby areas ranging from 442 to 629 ng/m³. EPA has recently published guidance indoor air levels for schools (September 2009). In development of these levels, they have assumed an 8 hour school day over 180 days for adults or college-aged students. The guidance levels are 450 ng/m³ for adults and 600 ng/m³ for children 15 to 19 years of age. As indicated above, the concentrations detected in the recent samples were within or close to this range (442 to 629 ng/m³). However, the samples are from lobby areas, which are transient in nature and not continuously occupied or used for even short durations, such as classrooms; therefore, EPA's guidance levels are not directly applicable to the site-specific conditions.

To aid in understanding these indoor air levels in the context of their setting and for relative comparison purposes, action levels were derived using a health risk-based approach, following current USEPA risk assessment guidelines. The development of these levels are presented in Appendix B and were developed for both student and library staff scenarios. The level for the staff, who have a longer exposure duration relative to students, produced the most conservative action level, which was 1,180 ng/m³. As indicated above, the reported indoor air concentrations (442 to 629 ng/m³) were below this calculated action level.

Based on the characterization results, a remediation plan has been developed to address the detected concentrations of PCBs in the sampled media. This plan is presented in the following section.

Table 2-1
Summary of Caulking Sample Results
Dubois Library Elevator Replacement Project
Amherst, Massachusetts

Floor	In-Fill Number ¹	Sample ID	Reporting Limit	Aroclor 1248	Aroclor 1254	Total PCBs (mg/kg)
BSMT	NR	P-03	0.2	6.7	1.73	8.43
4	4	DL-4E4-TCS-075	298	ND	6,820	6,820
8	NR	P-08	500	ND	14,900	14,900
15	NR	CAULK-02	10000	ND	93,400	93,400
18	1	DL-18E1-TCK-028	696	ND	20,800	20,800
26	NR	P-05	500	ND	28,900	28,900

Notes:

1. In-fill number corresponds to the elevator shaft labeling observed during sample collection.

Moving from north to south, elevators 2, 1, and 6 were observed on the west side of the elevator lobbies and elevator shafts 3, 4, and 5 were observed on the east side of the elevator lobbies.

Samples denoted by a prefix of "DL" in the sample ID collected by W&C on November 27, 2009; All other samples collected by Tighe and Bond between April 23, 2009 and September 16, 2009.

NR = Not Recorded

ND = Analytical results below the minimum laboratory analytical reporting limit ("non-detect").

Analytical results exceeding applicable regulatory threshold in bold font.

Analytical results indicated that all other aroclors not shown were not detected in samples submitted.

Table 2-2
Summary of Building Materials Characterization Sample Results
Dubois Library Elevator Replacement Project
Amherst, Massachusetts

Floor	In-Fill Number ¹	Sample ID	Distance from Caulked Joint (inches)	Reporting Limit	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs (mg/kg)
Plaster Scheduled for Removal									
7	1	DL-7E1-CPS(4-5)-054	4-5	0.170	ND	ND	2.57	ND	2.57
15	2	P-01	0.5	21.200	ND	ND	1,240	ND	1240 ⁴
		DL-15E2-CPS(4-5)-030	4-5	0.330	ND	ND	6.00	ND	6.00
18	4	090409-06	1	2.080	36.3	ND	8.56	ND	44.86
		091609-02	4	0.519	29.2	ND	ND	ND	29.20
		DL-18E4-CPS(4-5)-020	4-5	0.170	ND	ND	2.77	ND	2.77
		DL-18E4-CPS(12-13)-019	12-13	0.170	ND	ND	2.5	1.67	4.17 J
21	4	090409-09	1	2.100	28.5	ND	5.62	ND	34.12
		DL-21E4-CPS(4-5)-010	4-5	0.170	ND	ND	2.73	ND	2.73
		DL-21E4-CPS(12-13)-009	12-13	0.017	ND	ND	2.73	1.92	4.65 J
24	4	DL-24E4-CPS(4-5)-003	4-5	0.360	ND	ND	6.11	ND	6.11
Masonry Block Scheduled For Removal									
7	1	DL-7E1-CMB(4-5)-056	4-5	0.033	0.88	ND	ND	ND	0.88
15	2	DL-15E2-CMB(4-5)-032	4-5	0.033	0.325	ND	ND	ND	0.325
18	4	DL-18E4-CMB(4-5)-022	4-5	0.033	0.594	ND	ND	ND	0.594 J
21	4	DL-21E4-CMB(4-5)-012	4-5	0.033	0.638	ND	ND	ND	0.638 J
24	4	DL-24E4-CMB(4-5)-005	4-5	0.160	1.76	ND	ND	ND	1.76 J
Plaster to Remain in Place (6th Shaft and Transom Locations)									
3	4	DL-3E4-CTP(6-7)-079	6-7	0.073	ND	ND	1.67	ND	1.67
4	4	DL-4E4-CTP(6-7)-074	6-7	0.200	ND	ND	3.82	ND	3.82
		DL-4E4-CTP(12-13)-073	12-13	0.200	ND	ND	3.30	1.79	5.09 J
4	6	DL-4E6-CPS(6-7)-060	6-7	0.360	ND	ND	5.32	ND	5.32
5	6	DL-5E6-CPS(6-7)-068	6-7	0.160	ND	ND	2.97	ND	2.97
6	3	DL-6E3-CTP(6-7)-064	6-7	0.073	ND	ND	1.82	ND	1.82
7	5	DL-7E5-CTP(6-7)-052	6-7	0.330	ND	ND	8.03	ND	8.03
9	4	DL-9E4-CTP(6-7)-048	6-7	0.036	1.07	ND	0.959	ND	2.03
10	4	DL-10E4-CTP(6-7)-046	6-7	0.200	ND	ND	4.65	ND	4.65
15	6	091609-04	4	0.530	0.74 J	ND	ND	ND	0.74 J
		DL-15E6-CPS(6-7)-038	6-7	0.360	ND	ND	4.81	ND	4.81
16	6	090409-03	1	2.100	16.2	ND	18.2	ND	34.4
18	4	DL-18E4-CTP(6-7)-027	6-7	0.200	ND	ND	4.64	ND	4.64
19	6	DL-19E6-CPS(6-7)-017	6-7	0.170	ND	ND	3.8	ND	3.8
22	6	090409-12	1	5.320	33.5	ND	16.8	ND	50.3
24	6	090409-15	1	2.080	20.6	ND	12.9	ND	33.5
		DL-24E6-CPS (6-7)-002	6-7	0.330	ND	ND	7.57	ND	7.57
		DL-24E6-CPS(12-13)-001	12-13	0.170	ND	ND	2.62	2.08	4.70 J
26	6	P-07	0.5	1.050	ND	ND	29.3	ND	29.3
Structural Concrete Samples to Remain in Place									
3	2	DL-3E2-CCS(6-7)-077	6-7 ²	0.160	ND	ND	4.33	ND	4.33 J
4	1	DL-4E1-CCS(6-7)-070	6-7 ²	0.170	ND	ND	4.29	ND	4.29
5	1	DL-5E1-CCS(6-7)-066	6-7 ²	0.170	ND	ND	3.30	ND	3.30
6	2	DL-6E2-CCS(6-7)-062	6-7 ²	0.170	ND	ND	3.26	ND	3.26
7	1	DL-7E1-CCS(6-7)-058	6-7 ²	0.330	ND	ND	6.63	ND	6.63
9	2	DL-9E2-CCS(6-7)-050	6-7 ²	0.160	ND	ND	4.03	ND	4.03
10	1	DL-10E1-CCS(6-7)-044	6-7 ²	0.160	ND	ND	2.66	ND	2.66
12	1	DL-12E1-CCS(6-7)-042	6-7 ²	0.330	ND	ND	5.15	ND	5.15

Table 2-2
Summary of Building Materials Characterization Sample Results
Dubois Library Elevator Replacement Project
Amherst, Massachusetts

Floor	In-Fill Number ¹	Sample ID	Distance from Caulked Joint (inches)	Reporting Limit	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs (mg/kg)
13	1	DL-13E1-CCS(6-7)-040	6-7 ²	0.160	ND	ND	4.13	ND	4.13 J
15	2	P-02	0.5	0.202	ND	ND	5.92	ND	5.92
		DL-15E2-CCS(6-7)-034	6-7 ²	0.170	ND	ND	3.16	ND	3.16
15	6	091609-03	6-7 ²	0.505	ND	ND	ND	ND	ND
16	6	090409-01	1	0.505	5.47	ND	7.25	ND	12.72
18	4	090409-04	1	2.020	8.8	ND	24.1	ND	32.9
		091609-01	6-7 ²	0.504	5.27 J	ND	0.61 J	ND	5.88 J
		DL-18E4-CCS(6-7)-024	6-7 ²	0.330	ND	ND	4.93	ND	4.93
		DL-18E4-CCS(12-13)-023	12-13	0.170	ND	ND	1.76	0.955	2.72 J
19	4	DL-19E4-CCS(6-7)-015	6-7 ²	0.170	ND	ND	2.44	ND	2.44
21	4	090409-07	1	1.010	7.02	ND	8.2	ND	15.22
		DL-21E4-CCS(6-7)-014	6-7 ²	0.160	ND	ND	2.74	ND	2.74
		DL-21E4-CCS(12-13)-013	12-13	0.160	ND	ND	1.63	1.09	2.72 J
22	6	090409-10	1	2.020	8.23	ND	17	ND	25.23
24	4	DL-24E4-CCS(6-7)-007	6-7 ²	0.150	ND	ND	3.93	ND	3.93
24	6	090409-13	1	2.000	10.4	ND	28.4	ND	38.8
26	6	P-06	0.5	1.010	ND	ND	27.6	ND	27.6
Structural Concrete Samples Collected Beneath the Joint (to Remain in Place)									
16	6	090409-02	1 ³	0.825	2.84	ND	3.91	ND	6.75
18	4	090409-05	1 ³	2.020	6.61	ND	15.2	ND	21.81
21	4	090409-08	1 ³	2.020	10.2	ND	26.8	ND	37
22	6	090409-11	1 ³	1.010	3.29	ND	5.06	ND	8.35
24	6	090409-14	1 ³	1.010	3.95	ND	12.9	ND	16.84
Ceiling Concrete Samples to Remain in Place									
4	1	DL-4E1-CCC(6-7)-072	6-7	0.033	ND	ND	0.924	ND	0.924
15	2	DL-15E2-CCC(6-7)-036	6-7	0.160	ND	ND	2.96	ND	2.96
		DL-15E2-CCC(10-12)-035	10-12	0.160	ND	ND	1.69	1.00	2.69 J

Notes:

1. In-fill number corresponds to the elevator shaft labeling observed during sample collection. Moving from north to south, elevators 2, 1, and 6 were observed on the west side of the elevator lobbies and elevator shafts 3, 4, and 5 were observed on the east side of the elevator lobbies.

2. Distance as measured from corner of structural concrete not the caulked joint.

3. Sample collected a distance of 1 inch diagonally (beneath) from the caulked joint.

4. Sample result considered not representative due to potential interferences from pieces of caulking in sample.

Samples denoted by a prefix of "DL" in the sample ID collected by W&C on November 27, 2009; All other samples collected by Tighe and Bond between April 23, 2009 and September 16, 2009.

J = Data qualified as "estimated" due to the Relative Percent Difference between sample columns or surrogate recoveries outside acceptance criteria or due to sample extraction performed outside allowable holding times.

ND = Analytical results reported below the applicable laboratory minimum reporting limit.

Analytical results exceeding applicable clean up levels in bold font.

Analytical results indicated that all other aroclors not shown were not detected in samples submitted.

Table 2-3
Summary of Surface Wipe Sample Results
Dubois Library Elevator Replacement Project
Amherst, Massachusetts

Floor	In-Fill Number ¹	Sample ID	Underlying Building Material	Adjacent Building Material Sample Result (mg/kg) ²	Reporting Limit (µg/100cm ²)	Total PCBs (µg/100cm ²)
4	1	DL-4E1-CWS(7-11)-086	Structural Concrete	4.29	0.5	<0.5
	6	DL-4E6-PWS(8-12)-087	In-fill Plaster	5.32	0.5	<0.5
15	2	DL-15E2-CWS(7-11)-083	Structural Concrete	3.16	0.5	<0.5
	6	DL-15E6-PWS(6-10)-084	In-fill Plaster	4.81	0.5	<0.5
18	4	DL-18E4-CWS(8-12)-080	Structural Concrete	4.93	0.5	<0.5
	4	DL-18E4-PWS(7-11)-081	In-fill Plaster	2.77	0.5	0.5

Notes:

1. In-fill number corresponds to the elevator shaft labeling observed during sample collection. Moving from north to south, elevators 2, 1, and 6 were observed on the west side of the elevator lobbies and elevator shafts 3, 4, and 5 were observed on the east side of the elevator lobbies.

2. Analytical results from adjacent building material samples collected from a distance of 4-5 inches or 6-7 inches from the caulked joint or corner of structural concrete as applicable.

Analytical results based on reported concentration of Aroclor 1254. No other aroclors were detected in the samples submitted.

Table 2-4
Summary of Indoor Air Sample Results
Dubois Library Elevator Replacement Project
Amherst, Massachusetts

Floor	Air Sample	PCB Concentration (ng/cartridge)	Average Flow Rate (L/Minute)	Duration (minutes)	PCB Concentration (ng/m3)
4	DL-4E-IAS-088	198	2.6	121	629
15	DL-15E-IAS-085	146	2.6	127	442
18	DL-18E-IAS-082	193	2.6	128	580

Notes:

Air samples collected in accordance with USEPA Compendium Method TO-10A "Determination of Pesticides and Polychlorinated Biphenyls In Ambient Air Using Low Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD)" and submitted for laboratory analysis of PCBs homologs.

ng = nanograms

m³ = cubic meters

3. REMEDIATION PLAN

This remediation plan consists of two sections: a general overview of the activities is presented in Section 3.1 and a description of the remediation plan for each of the affected media is presented in Section 3.2. A written certification signed by the owner of the property is provided in Appendix C.

3.1 GENERAL OVERVIEW OF PROPOSED REMEDIATION

Based on the analytical data collected to date and the overall site model, a remediation plan has been developed. In summary, this plan is comprised of the following approaches for the remediation of PCB impacted building materials: 1) removal and off-site disposal of all PCB source material (caulking) in the elevator lobbies; 2) removal and off-site disposal of other PCB wastes scheduled for removal during the elevator replacement project; and 3) encapsulation of those building materials containing residual PCB concentrations scheduled to remain in place.

As noted in the previous section, those building materials not scheduled for removal during the elevator replacement project are not planned to be removed during the remediation phases of the project and instead are proposed to be contained behind a barrier or encapsulant to prevent direct contact with PCBs and/or potential migration effects to other media. The rationale for this decision is that the concrete columns are critical to the structural integrity of the building and removal of portions of this concrete is not recommended. The plaster infills of the transom and unused sixth shaft are also proposed to remain in place under the barrier/containment given the amount of incremental non-planned disruption that would be generated during the removal.

Through the removal of the source materials (caulking), removal of those PCB containing materials scheduled for removal (plaster), and the application of an encapsulant on surfaces that contain residual PCBs, the proposed remediation plan removes those PCB containing materials not authorized for continued use and restricts exposure pathways to residual PCBs, thereby, not posing an unreasonable risk of injury to health or the environment.

The major components of the plan include:

- Removal and off-site disposal of all PCB-containing caulking located within the elevator lobbies as PCB bulk product wastes in accordance with 40 CFR 761.62 (approximately 1,600 linear feet);
- Remediation of PCB impacted building materials in accordance with 40 CFR 761.61(c) *Risk Based Disposal*;
 - Off-site disposal of plaster overlays on in-fills scheduled for removal as PCB remediation wastes; Estimated volume = 2.5 cubic yards (27 in-fills);
 - No specific PCB disposal restrictions placed on the masonry block underlying the plaster in-fills at this time (to be verified through additional sampling);
 - Encapsulation of all plaster surfaces (unused shaft and transom locations) scheduled to remain in place and concrete surfaces along the return to the right angle of the concrete (i.e., to the first 90-degree corner approximately 2 inches for structural concrete and 12 inches for ceiling concrete) with an elastomeric acrylic coating; this coating will also be covered by either the final interior wall coating planned for the lobby and/or the metal frame associated with the new elevator doors; Estimated area = 2,000 square feet;
 - Final application of a paint/coating to all surfaces scheduled to remain in place throughout the lobby area (assumed PCB concentrations >1 ppm in select areas); planned to cover all surfaces as part of the final elevator lobby restoration;

- Recording a deed notice for the encapsulation remedial approach, as applicable; and
- Long-term monitoring of the elevator lobby area.

In order to evaluate the effectiveness the final lobby paint covering in encapsulating low concentrations of PCBs present in building materials, surface wipe samples were collected from existing painted lobby walls on January 15, 2010 as described in Section 2.2.3. Analytical results from the wipe sampling indicated that PCBs were not present at concentrations $> 0.5 \mu\text{g}/100\text{cm}^2$ in any of the samples.

A summary of the remediation approach is presented below by building materials.

Plaster and Masonry Block In-fills Scheduled For Removal

Analytical results indicate that PCB impacts $>1 \text{ mg/kg}$ are present in plaster materials to a distance of 13 inches from each of the caulked joints. Due to the relatively low volume of materials (approximately 2.5 cubic yards of plaster is scheduled for removal) and the project schedule, all plaster materials scheduled for removal will be disposed of as PCB remediation wastes.

Analytical results from characterization sampling of the masonry block indicate that PCB impacts $>1 \text{ ppm}$ are not present in the masonry block underlying the plaster overlay materials. As such, no PCB disposal restrictions apply to the block materials (additional verification testing will be performed during the work, as described in Section 3.2).

Plaster (In-Fill and Transom Locations) to Remain in Place

Analytical results indicate that concentrations of PCBs were $>1 \text{ ppm}$ up to distances of 13 inches from the caulked joints. Based on these results, the remediation plan proposes to encapsulate all plaster materials scheduled to remain in place (the unused elevator shaft and elevator transom locations) with an elastomeric coating.

Structural Concrete Columns

Analytical results indicate that the concentrations of PCBs were detected adjacent to the caulked joints and at concentrations $> 1 \text{ ppm}$ up to distances of 13 inches from the joint. Based on these results indicating a decreasing concentration gradient with distance from the joint and standard building coating application techniques, the remediation plan proposes to encapsulate all structural concrete surfaces to the corner of the columns (or within approximately 2 inches of the caulked joint) with an elastomeric coating (areas of higher concentrations of PCBs). All materials on the face of the structural concrete columns (those materials beyond the corner) are proposed to be encapsulated with a latex paint. Surface wipe testing of painted concrete materials between 6 and 12 inches from the corner of the concrete indicated that PCBs were not present at concentrations $> 0.5 \mu\text{g}/100\text{cm}^2$ in any of the samples.

Ceiling Concrete

Analytical results indicate that the concentrations of PCBs were $>1 \text{ ppm}$ to a distance of 10-12 inches from the caulked joint. Based on results indicating a decreasing concentration gradient with distance from the joint in structural concrete materials, the remediation plan proposes to encapsulate all structural concrete surfaces to the corner of the concrete ceiling (or within approximately 12 inches of the caulked joint) with an elastomeric coating. All remaining ceiling materials (those materials beyond the corner) are proposed to be encapsulated with a latex paint. Surface wipe testing of painted structural concrete materials between 6 and 12 inches from the corner of the concrete indicated that PCBs were not present at concentrations $> 0.5 \mu\text{g}/100\text{cm}^2$ in any of the samples.

Sampling and Analyses

Due to the potential for penetrating the masonry block using procedures consistent with the USEPA Region I *Draft Standard Operating Procedure for Sampling Concrete in the Field* (December 1997), chip samples of the masonry block will be collected for verification following plaster removal. Chip samples will be collected manually with hand tools. All surface wipe samples will be collected in accordance with the standard wipe test method as described in 40 CFR 761.123.

All samples will be logged on a standard Chain-of-Custody (COC), and stored on ice for delivery to the laboratory. Sampling equipment will be decontaminated between each sampling location with an anionic washing detergent/water solution followed by a water rinse and a final methanol rinse.

All bulk material and surface wipe samples will be extracted using USEPA Method 3540C (Soxhlet Extraction) and analyzed for PCBs using USEPA Method 8082.

3.2 REMEDIATION PLAN

The following sections provide the remediation plan proposed for the clean-up and disposal of each of the identified PCB-containing media at the Dubois Library.

3.2.1 Site Preparation and Controls

Prior to initiating the removal of any of the caulking or materials, the following site controls will be implemented:

- A Health & Safety Plan will be developed specific to the work activities. All workers will follow applicable Federal and State regulations regarding the work activities, including but not limited to OSHA regulations, fall protection standards, respiratory protection, ladder/scaffolding safety, personal protective equipment, etc.;
- Polyethylene containment will be constructed enclosing each lobby area prior to work in that lobby. The use of HEPA filtration will be incorporated to control dust and odors that are generated during the remediation activities (this containment will be maintained during the encapsulant cure time to control odors from the applications, as needed). A decontamination area for personnel and equipment will be erected at the containment exit point;
- Within the lobby containment, a second polyethylene containment will be constructed surrounding each of the removal areas. The use of HEPA filtration will be incorporated to establish negative pressure controls to control dust generated during the removal activities. Wet wiping and water misting will be used as a dust suppressant as appropriate;
- A means of providing ventilation to the containment areas will be established based on the planned project sequencing and access requirements for the elevator lobby areas and library spaces;
- Access to the active work areas will be controlled in a manner determined by the contractor to meet project requirements and access needs;
- All powered tools will be equipped with appropriate tool guards and dust/debris collection systems (i.e., HEPA filters). Wet wiping and vacuuming of all tools and equipment in the work area will be performed at the completion of the work activity;
- Air/dust monitoring will be conducted outside of the containment area during the active removal of caulking/concrete. To reduce dust levels and exposures to dust, a combination of engineered controls (e.g., work zone enclosures), equipment equipped with HEPA filters and dust controls, and personal protective

equipment (PPE – respirators) will be implemented as part of the work activities. Details of the air monitoring plan are included in Appendix D; and

- Additional notifications and plans required for the work activities will also be prepared and submitted for approval, as needed.

3.2.2 Caulking Removal

The following summarizes the activities to be conducted as part of this removal task:

- All work surfaces will be wetted to minimize dust during caulking removal;
- Caulking (estimated at 1,600 linear feet) will be removed from the joints using a combination of mechanical and physical means. A volume estimate for caulking to be removed as part of the elevator replacement project is approximately 3.0 cubic feet (equivalent to less than one 55-gallon drum). All removed caulking and rubber foam backer (if present) will be transported off-site and disposed of in accordance with 40 CFR 761.62 as bulk product waste (see Section 3.2.5).
- Upon the completion of the initial removal activities, the joints will be visually inspected for the presence of any residual caulking. Given that the caulking is visually apparent, this visual inspection will be the primary verification method for the caulking removal. If residual caulking is observed, then any residual caulking will be removed from the adjacent concrete using a combination of mechanical and physical means until the residual caulking has been removed to the maximum extent practical.

3.2.3 Plaster Scheduled to be Removed

Plaster overlay material covers the surfaces of the in-fill areas at a thickness of between $\frac{1}{2}$ and $\frac{3}{4}$ - inch. Underlying this plaster material is a row of masonry blocks. Analytical data collected to date indicates that PCBs greater than 1 ppm are present in the plaster materials to at least 13 inches of the caulked joints and that PCB impacts to the underlying masonry block are below the unrestricted use level of 1 ppm. The following summarizes the activities to be conducted as part of the removal of these materials from the 27 in-fill locations scheduled for removal:

- All plaster materials in the In-fills scheduled for removal will be removed using mechanical or hand tools to the maximum extent practical and segregated as PCB wastes;
- Assuming a 4-foot wide by 9-foot high In-fill and a plaster thickness of $\frac{3}{4}$ -inch, a total volume for the plaster from the 27 In-fills scheduled for removal is estimated at 2.5 cy.;
- Plaster will be transported off-site and disposed of in accordance with 40 CFR 761.61 as PCB remediation waste (see Section 3.2.5).
- The underlying masonry block will not be removed at this time given that the elevator shaft cannot be breached;
- Upon completion of the removal of plaster, one verification sample will be collected from the masonry block at each In-fill (an approximate sample frequency of one sample per 36 square feet based on a standard 9 ft. by 4 ft. In-fill). Verification sample locations will be selected using a random number generator. Verification samples will be collected using hand tools to collect chip samples of the material;

Analytical results from the masonry block samples will be evaluated to determine whether or not this task is complete as follows:

- Analytical results ≤ 1 ppm – Task complete; no disposal restrictions will apply to the masonry block.
- Analytical results > 1 ppm – Additional plaster removal to be conducted; if levels still exceed, then the masonry block will be disposed of as PCB Remediation Waste upon removal.

3.2.4 Encapsulation of Building Materials

As described in Section 2, building materials in direct contact with the caulking contain higher PCB concentrations (average of 21 ppm within 6 inches of the joint). At a distance of 6-7 inches from the joint, PCB concentrations decrease with average PCB concentrations of 4.07 mg/kg in structural concrete, 1.94 mg/kg in ceiling concrete, and 3.85 mg/kg in plaster.

For plaster materials on the unused elevator shaft and in transom locations and concrete materials out to the first 90-degree corner from the caulked joint, an elastomeric water based acrylic coating or equivalent product, will be applied to eliminate the direct exposure pathway and leaching transport pathway from residual PCBs in these building materials.

For structural and ceiling concrete materials beyond the 90-degree corner, a latex paint, or equivalent product, will be applied to eliminate the direct exposure pathway and leaching transport pathway from residual PCBs in these building materials.

The elimination of any exposure pathway mitigates both the potential for PCB transfer via direct contact and the material's potential as a source to other media/materials. Accordingly, there will be no resultant exposure to the residual levels of PCBs in the contained concrete/masonry. A periodic monitoring plan, including surface wipe samples, will be implemented to assess potential PCB concentrations on the exposed outer surfaces.

For materials with higher relative PCB concentrations a review of several different products and vendors that have been or potentially could be used for encapsulation of a PCB-contaminated vertical concrete surface was performed. These products ranged from epoxy-based coatings to elastomeric acrylic based coatings. Key components involved with the implementation of encapsulation as a remedial approach include: utilizing approved techniques for surface preparation (paint removal, cleaning the surface to remove all dirt and oils and scoring the surface for proper coating adhesion); selecting an encapsulation material suitable to site specific applications (interior work areas, numerous small work areas with multiple set-up requirements); and implementing a period of inspection or other monitoring (following application) to verify the coating's effectiveness and wear.

The specific protective coating proposed for this application is an elastomeric acrylic protective coating, such as Sikagard 550W. This product will be applied directly to the materials underlying the caulked joint, to plaster materials scheduled to remain in place, and to adjacent structural concrete building materials out to the first 90-degree structural corner (approximately 2 inches from the caulked joint for structural concrete and 12 inches from the caulked joint for ceiling concrete). The protective coating will be applied in two coats of contrasting colors for a total thickness of approximately 16 mils. A technical specification sheet for this product, including application procedures, is provided in Appendix E.

For structural concrete materials beyond the first 90-degree corner from the caulked joint, surface wipe testing of existing painted surfaces (commercially available latex paint) indicated that a commercially available paint will be

effective at containing these lower concentrations of PCBs. The specific paint to be used for this application has not been selected at this time, but a standard commercially available paint is proposed to be used.

The following describes the proposed remedial activities for these building conditions:

- Prior to application of the protective coating, all surfaces will be prepared so that they are dry, clean and sound;
- Two coats in contrasting colors of an elastomeric acrylic coating will be directly applied to the building joint and adjacent building materials as follows:
 - Structural Concrete Surfaces (In-fill and transom locations) – To the corner of the structural concrete (approximately 2 inches from the caulked joint) for a total of 190 sq. ft. along 1,130 l.f. of building joint;
 - Ceiling Concrete Surfaces – To the corner of the ceiling concrete (approximately 12 inches from the caulked joint) for a total of 445 sq. ft. along 445 l.f. of building joint;
 - In-Fill materials Scheduled to Remain (unused shaft locations) – All plaster materials within the in-fill for a total of 900 sq. ft. in 25 in-fill locations; and
 - Transom Plaster – All plaster materials within the transoms for a total of 425 sq. ft. within 59 transom locations.

In total, approximately 2,000 sq. ft. of surfaces will be encapsulated with the elastomeric coating (Note: the linear footages noted above do not match the linear footages of caulking provided in Table 2-5 due to the encapsulation of materials on both sides of the footages included in Table 2-5);

- Baseline bulk samples are not proposed to be collected prior to encapsulation of the adjacent surfaces. The available data set shows consistent analytical results within each of the building materials proposed for encapsulation. Existing data collected within 1 inch of the caulked joint indicates the following:
 - Structural Concrete – Twelve concrete samples were collected from directly beneath or within 1 inch of the caulked joints. Analytical results indicate the concentration of PCBs ranged from 5.92 to 38.8 mg/kg; and
 - Plaster – Nineteen plaster samples were collected from plaster proposed to be encapsulated. Analytical results indicate that the concentration of PCBs ranged from between 29.3 and 50.3 mg/kg in plaster within 1 inch of the caulked joint to 4.70 and 5.09 mg/kg in plaster 12-13 inches from the caulked joint.

Based on these data, additional baseline data to determine PCB concentrations in building materials proposed to be encapsulated is not warranted;

- The polyethylene containment for the elevator lobby areas will be used to control access to the work area and to control vapors from the encapsulation during and following application. The containment will be maintained until the cure time has elapsed or no odors are present, as needed;

- All generated waste material (dust, PPE, application tools, etc.) will be containerized in an appropriate waste container for subsequent off-site disposal. Personal protective equipment will be wet wiped and containerized for off-site disposal.
- As part of the final lobby restoration activities (following elevator replacement work), a final coat of commercially available paint will be applied to all surfaces within the lobby area as a final coating;
- Baseline verification wipe samples of the encapsulated surfaces will be collected following application at a sample frequency of 1 sample per lobby area. This will result in the collection of 24 verification wipe samples for a sample frequency of 1 sample per 85 square feet of encapsulated surface. The specific surface for the verification wipe sample will be selected based on maintaining a sample ratio equivalent to the ratio of square footages to be encapsulated for each of the surfaces;
- Analytical results from the wipe samples of the painted surfaces will be evaluated to determine whether or not this task is complete as follows:
 - Analytical results $\leq 1 \mu\text{g}/100 \text{ cm}^2$ – Task complete.
 - Analytical results $> 1 \mu\text{g}/100 \text{ cm}^2$ – Additional application of the coating may be required and additional testing at off-set locations.

3.2.5 Storage and Disposal

The following activities will be completed with regard to the proper storage and disposal of PCB wastes:

- All PCB containing caulk and foam backer rod (where present) will be designated for disposal as PCB Bulk Product Waste in accordance with 40 CFR 761.62;
- All PCB impacted building materials removed will be designated for disposal as PCB Remediation Waste in accordance with 40 CFR 761.61;
- Secure, lined, and covered waste containers (roll-off or equivalent) or 55-gallon DOT-approved steel containers will be staged for the collection of PCB wastes generated during the work activities in accordance with 40 CFR 761.65;
- Waste materials will be placed in a temporary lined container (cubic yard box, drum, or similar container) at the point of generation and transferred from the containment area to the waste containers along a designated route following the completion of each phase of activity in each elevator lobby (i.e., following caulking and plaster removal and then following encapsulant application);
- All containers will be properly labeled and marked in accordance with 40 CFR 761.40;
- Upon completion of the work or when a container is considered full, PCB bulk product wastes and PCB remediation wastes will be transported under manifest off-site for disposal at a non-hazardous waste landfill such as Waste Management's Turnkey Landfill in Rochester, New Hampshire or equivalent; and
- Copies of all manifests, waste shipment records, and certificates of disposal will be collected and provided as part of the final report to EPA.

3.2.6 Site Restoration

Following completion of the removal activities and verification that the cleanup levels have been met or the risk-based approach applied, the containment established around an individual in-fill will be removed, site controls will be dismantled, and all wastes will be transported off-site for proper disposal. Access to each elevator lobby will be restored following completion of remedial activities in the specific lobby. Caulking will be installed in building joints scheduled to remain in place (unused shaft in-fill and transom locations). As indicated above, following completion of the elevator replacement project each lobby will be painted with a commercially available paint.

3.2.7 Recordkeeping and Documentation

Following completion of the work activities, records and documents per 40 CFR Part 761 will be generated and maintained at one location. These documents will be made available to EPA upon request. A final report documenting the completion of the work activities and including but not limited to a description of the work activities, verification analytical results, volumes of disposed materials, and waste disposal documentation will be prepared and submitted to EPA.

It is understood that at the end of the useful life of the building, all areas containing residual concentrations of PCBs will be managed and disposed of properly. A deed restriction notifying of the presence of PCBs in concrete within the exterior building walls will be placed on the property, if required, until all PCBs in excess of clean up levels are removed from the building.

3.2.8 Conceptual Long-Term Maintenance and Monitoring Plan

Building materials within the elevator lobbies have been identified as containing residual concentrations of PCBs. Removal of structural and ceiling concrete materials is not feasible without potentially creating structural risk to the building and elevator lobby areas. Given that the structural concrete can not be removed, the additional removal of portions of plaster in-fills and transom plaster beyond those areas included in the elevator replacement project (e.g., the unused shaft) is not warranted nor do the benefits outweigh the costs of these activities.

Based on these findings, UMass has proposed a remedial plan under 40 CFR 761.61(c). This approach removes the source material and utilizes a physical barrier (an elastomeric acrylic coating system followed by new caulk installation and the application of new coating/paint across the entire lobby area) to eliminate the direct contact exposure pathway and migration to additional building materials. Upon completion of the remedial actions, the impacted concrete would not be accessible to direct exposure or migration to surrounding building materials. In addition, following completion of the elevator replacement project, elevator door frames will be installed over structural concrete surfaces at the former caulked joint. Each of these will provide additional barriers for the elimination of the two exposure pathways. By eliminating these pathways, there is no resultant exposure to the residual PCBs in these materials.

Following the completion of the remediation activities described above, a long-term maintenance and monitoring plan (MMP) will be developed and implemented. The main components of the plan are as follows:

- Visual inspections – At the frequency described in the plan, visual inspections of random areas within the elevator lobby, including those areas where the protective coating was applied and caulking was re-applied, will be conducted. The inspection will focus on the exposed surfaces (caulking, coating, paint, etc.) and look for cracks and wear points or any observations of the underlying acrylic coating or paint;

- Wipe Sampling – At the frequency described in the plan, surface wipe samples will be collected from the encapsulated surfaces. One wipe sample will be collected from 25% of the lobby areas. The selected lobby's sample locations will be based on the results of the visual inspections (areas of wear, cracks, or underlying coating appearance) or if no suspect areas are identified from randomly selected locations. Wipe samples will be collected following the standard wipe test procedures described in 40 CFR 761.123;
- Indoor Air Sampling – At the frequency described in the plan, indoor air samples will be collected from a subset of the lobby areas (three randomly selected lobbies will be chosen). Air samples will be collected in accordance with USEPA Compendium Method TO-10A *"Determination of Pesticides and Polychlorinated Biphenyls In Ambient Air Using Low Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD)"* and submitted for laboratory analysis of PCBs homologs.
- Annual Reporting – A report documenting the findings of the visual inspections and wipe testing will be prepared and submitted to EPA. The monitoring results from each inspection/sampling event will be evaluated and a frequency for subsequent monitoring events will be proposed for the upcoming year;
- Corrective Actions – If results of the annual sampling indicate PCB concentrations in excess of the project-specific action levels (to be set in the plan), corrective measures shall be taken. These measures may include the additional application of the protective coating or barriers;
- Maintenance Guidelines and Procedures – To prevent potential exposure to maintenance and facility personnel, guidelines and procedures will be developed and implemented for any work being conducted in the elevator lobby areas. These guidelines and procedures will detail communications procedures, worker protection requirements, and worker training requirements to be conducted for maintenance or other activities in the elevator lobby areas that may involve areas of known PCBs remaining under the containment barriers (for example, the hanging of signs or decorations on the walls).

The details of the MMP will be developed following completion of the remedial activities described in Sections 3.2.1 through 3.2.6. The results of the verification testing and inspections will be used to develop the details of the plan. The MMP will be provided to EPA under a separate submittal following the completion of the remedial activities.

4. SCHEDULE

Remediation activities will be conducted following approval of this plan and in accordance with the overall elevator replacement project schedule. The elevator replacement project is in the process of public bidding with an anticipated award of the contract in April 2010.

Based on the anticipated schedule, the elevator replacement project is anticipated to be conducted over a two year period. Remediation activities will be an initial component of the work and be performed on each floor sequentially (or in groups of floors) to minimize disruption to the students and library staff. This approach will also allow the remediation contractor to adjust or refine the approach for removal and encapsulation based on the results of each subsequent lobby area. Following remediation of the lobby areas, the elevators re planned to be replaced one shaft at a time.

APPENDIX A: LABORATORY DATA AND VALIDATION SUMMARIES

DUBOIS LIBRARY - PROJECT SUMMARY

Analytics Environmental Laboratory Job Numbers: 65535

A modified Tier II validation was performed on the data. The criteria detailed below were used to qualify the data. Raw data were not used to verify the results reported by the laboratory.

Samples were received at 3.0-4.1 degrees Celsius. No qualifications will be applied.

PCBs:

All polychlorinated biphenyl compound (PCB) samples were extracted 3 days beyond the technical holding time. Detected and non-detected results for all PCBs in all samples will be estimated (J/UJ) since extraction holding time criteria were exceeded. All PCB samples were analyzed within technical holding time. No further qualifications will be applied.

All PCB surrogates met acceptance criteria. No qualifications will be applied.

The PCB method blanks were non-detect (ND) for all target analytes. No qualifications will be applied.

No PCB field blank samples were submitted with this analytical package. No qualifications will be applied.

PCB matrix spike/matrix spike duplicate (MS/MSD) performed on sample DL-24E6-CPS(12-13)-001 (65535-1) met acceptance criteria with the following exceptions:

LAB ID	SAMPLE ID	PCB-1016 (%) MS/MS/MSD/MSD	PCB-1260 (%) MS/MS/MSD/MSD	QUALIFIER
65535-1	DL-24E6-CPS(12-13)- 001	384/438/470/422	-443/-348/-416/-443	None, high PCB-1254 & PCB-1260 in sample interfered with PCB-1016 & PCB-1260

The PCB laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) met acceptance criteria. No qualifications will be applied.

No PCB field duplicate samples were submitted with this analytical package. No qualifications will be applied.

The RPD between the column results for all detected PCBs met acceptance criteria. No qualifications will be applied.

All samples were analyzed at 5-fold dilutions due to the high concentration of PCBs present in the samples. Elevated quantitation limits are reported in these samples as a result of the dilutions performed.

Data Check, Inc.
P.O. Box 29
81 Meaderboro Road
New Durham, NH 03855

Gloria J. Switalski:
President



Date: 01/06/10

DUBOIS LIBRARY - PROJECT SUMMARY

Analytics Environmental Laboratory Job Numbers: 65436

A modified Tier II validation was performed on the data. The criteria detailed below were used to qualify the data. Raw data were not used to verify the results reported by the laboratory.

Samples were received at 3.0-4.1 degrees Celsius. No qualifications will be applied.

PCBs:

All polychlorinated biphenyl compound (PCB) samples were extracted and analyzed within technical holding times. No qualifications will be applied.

All PCB surrogates met acceptance criteria (40%-130%) or were diluted out with the following exception:

LAB ID	SAMPLE ID	TCX (%/%)	DCB (%/%)	QUALIFIER
65436-26	DL-9E2-CCS(6-7)-050	OK/141	OK/OK	None, only one out

TCX = tetrachloro-m-xylene DCB = decachlorobiphenyl

The PCB method blanks were non-detect (ND) for all target analytes. No qualifications will be applied.

The PCB field blank sample DL-QEB-080 (65436-42) was ND. No qualifications will be applied.

PCB matrix spike/matrix spike duplicate (MS/MSD) performed on samples DL-18E4-CMB(4-5)-022 (65436-11), DL-7E1-CCS(6-7)-058 (65436-30), and DL-4E1-CCS(6-7)-070 (65436-36) met acceptance criteria with the following exceptions:

LAB ID	SAMPLE ID	PCB-1016 (%) MS/MS/MSD/MSD	PCB-1260 (%) MS/MS/MSD/MSD	QUALIFIER
65436-11	DL-18E4-CMB(4-5)-022	270/438/259/958	OK/OK/OK/OK	None, high PCB-1242 in sample interfered with PCB-1016
65436-30	DL-7E1-CCS(6-7)-058	1488/1271/737/645	1387/1158/1209/1039	None, high PCB-1254 in sample interfered with PCB-1016 & PCB-1260
65436-36	DL-4E1-CCS(6-7)-070	1014/801/607/473	1933/1421/705/1308	None, high PCB-1254 in sample interfered with PCB-1016 & PCB-1260

The PCB laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) met acceptance criteria. No qualifications will be applied.

PCB field duplicate samples DL-18E4-CCS(6-7)-024 (65436-12)/DL-18E4-QCCS(6-7)-025 (65436-13) met acceptance criteria. No qualifications will be applied.

The RPD between the column results for all detected PCBs met acceptance criteria ($\leq 25\%$) with the following exceptions:

LAB ID	SAMPLE ID	PCB	RPD	QUALIFIER
65436-3	DL-24E4-CMB(4-5)-005	1242	27.5	J
65436-6	DL-21E4-CMB(4-5)-012	1242	34.3	J
65436-11	DL-18E4-CMB(4-5)-022	1242	38.3	J
65436-21	DL-13E1-CCS(6-7)-040	1254	27.8	J
65436-40	DL-3E2-CCS(6-7)-077	1254	33.8	J

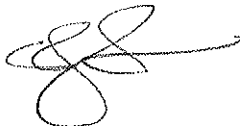
All but seven of the samples were analyzed at dilutions due to the high concentration of PCBs present in the samples. Elevated quantitation limits are reported in these samples as a result of the dilutions performed.

DUBOIS LIBRARY - PROJECT SUMMARY

Analytics Environmental Laboratory Job Numbers: 65436

Data Check, Inc.
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81 Meaderboro Road
New Durham, NH 03855

Gloria J. Switalski:
President



Date: 12/10/2009

UMASS DUBOIS LIBRARY SURFACE WIPE SAMPLES - PROJECT SUMMARY

Analytics Environmental Laboratory Job Number: 65762

A modified Tier II validation was performed on the data. The criteria detailed below were used to qualify the data. Raw data were not used to verify the results reported by the laboratory.

Samples were received at 4.0 degrees Celsius. No qualifications will be applied.

PCBs:

All polychlorinated biphenyl compound (PCB) samples were extracted and analyzed within technical holding times. No qualifications will be applied.

All PCB surrogates met acceptance criteria. No qualifications will be applied.

The PCB method blanks were non-detect (ND) for all target analytes. No qualifications will be applied.

No PCB field blank samples were submitted with this analytical package. No qualifications will be applied.

No PCB matrix spike/matrix spike duplicate (MS/MSD) were performed since these were wipe samples. No qualifications will be applied.

The PCB laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) met acceptance criteria. No qualifications will be applied.

No PCB field duplicate samples were submitted with this analytical package. No qualifications will be applied.

The RPD between the column results for all detected PCBs met acceptance criteria. No qualifications will be applied.

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81 Meaderboro Road
New Durham, NH 03855

Gloria J. Switalski:
President



Date: 01/21/2010

UMASS DUBOIS LIBRARY - PROJECT SUMMARY

Alpha Analytical Job Number: L1000822

A modified Tier II validation was performed on the data. The criteria detailed below were used to qualify the data. Raw data were not used to verify the results reported by the laboratory.

Samples were received at 3.0 degrees Celsius. No qualifications will be applied.

PCB Homologs:

All polychlorinated biphenyl compound (PCB) homolog samples were extracted and analyzed within technical holding times. No qualifications will be applied.

All PCB homolog surrogates met acceptance criteria. No qualifications will be applied.

The PCB homolog method blanks were non-detect (ND) for all target analytes. No qualifications will be applied.

No PCB homolog field blank samples were submitted with this analytical package. No qualifications will be applied.

No PCB homolog matrix spike/matrix spike duplicate (MS/MSD) was performed since these were air samples. No qualifications will be applied.

The PCB homolog laboratory control sample (LCS) met acceptance criteria. No qualifications will be applied.

No PCB homolog field duplicate samples were submitted with this analytical package. No qualifications will be applied.

Data Check, Inc.
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81 Meaderboro Road
New Durham, NH 03855

Gloria J. Switalski:
President



Date:

1/26/2010

DUBOIS LIBRARY INITIAL CHARACTERIZATION DATA - PROJECT SUMMARY

Alpha Analytical Job Number: L0905267, L0906084, L0912388, L0913028

A modified Tier II validation was performed on the data. The criteria detailed below were used to qualify the data. Raw data were not used to verify the results reported by the laboratory.

No chains-of-custody (COCs) were provided for sample delivery groups (SDGs) L0906084, L0912388, and L0913028. Field sample IDs, collection dates, and collection times could not be verified for the samples associated with these SDGs.

Samples were received at 3, 3.5, 3.9, and 9 degrees Celsius. Although some samples were received at greater than 6 degrees Celsius, PCBs have been shown to be stable indefinitely. No qualifications will be applied.

PCBs:

All polychlorinated biphenyl compound (PCB) samples were extracted and analyzed within technical holding times. No qualifications will be applied.

All PCB surrogates met acceptance criteria (30%-150%) or were diluted out with the following exceptions:

LAB ID	SAMPLE ID	TCX (%/%)	DCB (%/%)	QUALIFIER
L0913028-01	091609-01	164/173	OK/OK	J, Aroclor 1242& 1254
L0913028-03	091609-03	186/206	OK/OK	None, sample ND
L0913028-04	091609-04	184/198	OK/OK	J, Aroclor 1242

TCX = 2,4,5,6-tetrachloro-m-xylene

DCB = decachlorobiphenyl

The PCB method blanks were non-detect (ND) for all target analytes. No qualifications will be applied.

No PCB field blank samples were submitted with these analytical packages. No qualifications will be applied.

No PCB matrix spike/matrix spike duplicate (MS/MSD) data were provided with these analytical packages. No qualifications will be applied.

The PCB laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) met acceptance criteria. No qualifications will be applied.

No PCB field duplicate samples were submitted with these analytical packages. No qualifications will be applied.

The RPD between the column results for Aroclor 1242 in sample 091609-04 (L0913028-04) was flagged "P" by the laboratory to indicate the dual column relative percent difference (RPD) was above laboratory acceptance criteria. The Aroclor 1242 result in sample 091609-04 (L0913028-04) will be qualified as estimated (J) due to high dual column RPD.

All but one of the samples were analyzed at dilutions due to the high concentration of PCBs present in the samples or due to sample matrix. Elevated quantitation limits are reported in these samples as a result of the dilutions performed.

Data Check, Inc.
P.O. Box 29
81 Meaderboro Road
New Durham, NH 03855

Gloria J. Switalski:
President



Date:

02/27/2010

December 7, 2009

Mr. Jeff Hamel
Woodard & Curran
35 NE Business Center Suite 180
Andover MA 01810

**RE: Analytical Results Case Narrative
Analytics # 65436
UMass Dubois Library Proj# 222955**

Dear Mr. Hamel;

Enclosed please find the analytical results for samples submitted for the above-mentioned project. The attached Cover Page lists the sample IDs, Lab tracking numbers and collection dates for the samples included in this deliverable.

Samples were analyzed Polychlorinated Biphenyls (PCBs) by EPA Method 8082.

Unless otherwise noted in the Non-conformance Summary listed below, all of the quality control (QC) criteria including initial calibration, calibration verification, surrogate recovery, holding time and method accuracy/precision for these analyses were within acceptable limits.

This Level II data package has been assembled in the following order:

- Case Narrative/Non-Conformance Summary
- Sample Log Sheet - Cover Page
- PCB Form 1 Data Sheet for Samples and Blanks
- Chromatograms
- PCB Form 10 Confirmation Results
- PCB Form 3 MS/MSD (LCS) Recoveries
- Chain of Custody (COC) Forms

QC NON CONFORMANCE SUMMARY

Sample Receipt:

No exceptions.

PCBs by EPA Method 8082:

All samples except 65436-6, 65436-11, 65436-17, 65436-25, 65436-29, 65436-37 and 65436-42 were analyzed dilutions due to concentrations of PCBs detected in the samples.

Sample 65436-26 had high recovery for surrogate Decachlorobiphenyl (DCB) on column#1. The secondary surrogate TCX was in control. Column#2 was in control for both surrogates. Results were reported without qualification.

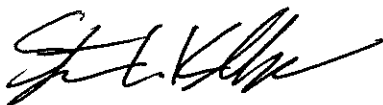
The MS/MSD analyzed on sample 65436-11 had high recoveries and RPDs for PCB 1016 due to the presence of PCB 1242 in the parent sample. The laboratory control samples (L11309PSOX/LD11309PSOX) were in control for all analytes. Results were reported without qualification.

The MS/MSD analyzed on sample 65436-36 had high recoveries for PCB 1016 and PCB 1260 due to the presence of PCB 1254 in the parent sample. The laboratory control samples (L12019PSOX/LD12019PSOX) were in control for all analytes. Results were reported without qualification.

The MS/MSD analyzed on sample 65436-30 had high recoveries for PCB 1016 and PCB 1260 due to the presence of PCB 1254 in the parent sample. The laboratory control samples (L11309PSOX2/LD11309PSOX2) were in control for all analytes. Results were reported without qualification.

If you have any questions on this data submittal, please do not hesitate to contact me.

Sincerely,
ANALYTICS Environmental Laboratory, LLC



Stephen Knollmeyer
Laboratory Director

Mr. Jeff Hamel
Woodard & Curran
35 NE Business Center Suite 180
Andover MA 01810

Report Number: 65436

Revision: Rev. 0

Re: UMass Dubois Library

222955

Enclosed are the results of the analyses on your sample(s). Samples were received on 30 November 2009 and analyzed for the tests listed below. Samples were received in acceptable condition, with the exceptions noted below or on the chain of custody. These results pertain to samples as received by the laboratory and for the analytical tests requested on the chain of custody. The results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. Please see individual reports for specific methodologies and references.

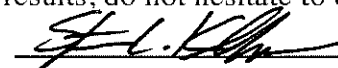
<u>Lab Number</u>	<u>Sample Date</u>	<u>Station Location</u>	<u>Analysis</u>	<u>Comments</u>
65436-1	11/27/09	DL-24E6-CPS(6-7)-002	EPA 8082 (PCBs only)	
65436-2	11/27/09	DL-24E4-CPS(4-5)-003	EPA 8082 (PCBs only)	
65436-3	11/27/09	DL-24E4-CMB(4-5)-005	EPA 8082 (PCBs only)	
65436-4	11/27/09	DL-24E4-CCS(6-7)-007	EPA 8082 (PCBs only)	
65436-5	11/27/09	DL-21E4-CPS(4-5)-010	EPA 8082 (PCBs only)	
65436-6	11/27/09	DL-21E4-CMB(4-5)-012	EPA 8082 (PCBs only)	
65436-7	11/27/09	DL-21E4-CCS(6-7)-014	EPA 8082 (PCBs only)	
65436-8	11/27/09	DL-19E4-CCS(6-7)-015	EPA 8082 (PCBs only)	
65436-9	11/27/09	DL-19E6-CPS(6-7)-017	EPA 8082 (PCBs only)	
65436-10	11/27/09	DL-18E4-CPS(4-5)-020	EPA 8082 (PCBs only)	
65436-11	11/27/09	DL-18E4-CMB(4-5)-022	EPA 8082 (PCBs only)	

Sample Receipt Exceptions: None

Analytics Environmental Laboratory is certified by the states of New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, New York, Virginia, Maryland, and is validated by the U.S. Navy (NFESC). A list of actual certified parameters is available upon request.

If you have any further question on the analytical methods or these results, do not hesitate to call.

Authorized signature



Stephen L. Knollmeyer Lab. Director

Date

12/7/2009

This report shall not be reproduced, except in full, without the written consent of Analytics Environmental Laboratory, LLC.

Mr. Jeff Hamel
Woodard & Curran
35 NE Business Center Suite 180
Andover MA 01810**Report Number: 65436****Revision: Rev. 0****Re: UMass Dubois Library****222955**

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<u>Lab Number</u>	<u>Sample Date</u>	<u>Station Location</u>	<u>Analysis</u>	<u>Comments</u>
65436-12	11/27/09	DL-18E4-CCS(6-7)-024	EPA 8082 (PCBs only)	
65436-13	11/27/09	DL-18E4-QCCS(6-7)-025	EPA 8082 (PCBs only)	
65436-14	11/27/09	DL-18E4-CTP(6-7)-027	EPA 8082 (PCBs only)	
65436-15	11/27/09	DL-18E1-TCK-028	EPA 8082 (PCBs only)	
65436-16	11/27/09	DL-15E2-CPS(4-5)-030	EPA 8082 (PCBs only)	
65436-17	11/27/09	DL-15E2-CMB(4-5)-032	EPA 8082 (PCBs only)	
65436-18	11/27/09	DL-15E2-CCS(6-7)-034	EPA 8082 (PCBs only)	
65436-19	11/27/09	DL-15E2-CCC(6-7)-036	EPA 8082 (PCBs only)	
65436-20	11/27/09	DL-15E6-CPS(6-7)-038	EPA 8082 (PCBs only)	
65436-21	11/27/09	DL-13E1-CCS(6-7)-040	EPA 8082 (PCBs only)	
65436-22	11/27/09	DL-12E1-CCS(6-7)-042	EPA 8082 (PCBs only)	

Sample Receipt Exceptions: None

Analytics Environmental Laboratory is certified by the states of New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, New York, Virginia, Maryland, and is validated by the U.S. Navy (NFESC). A list of actual certified parameters is available upon request.

If you have any further question on the analytical methods or these results, do not hesitate to call.

Authorized signature


Stephen L. Knollmeyer Lab. Director

Date

12/7/2009

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Woodard & Curran
35 NE Business Center Suite 180
Andover MA 01810

Report Number: 65436

Revision: Rev. 0

Re: UMass Dubois Library

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<u>Lab Number</u>	<u>Sample Date</u>	<u>Station Location</u>	<u>Analysis</u>	<u>Comments</u>
65436-23	11/27/09	DL-10E1-CCS(6-7)-044	EPA 8082 (PCBs only)	
65436-24	11/27/09	DL-10E4-CTP(6-7)-046	EPA 8082 (PCBs only)	
65436-25	11/27/09	DL-9E4-CTP(6-7)-048	EPA 8082 (PCBs only)	
65436-26	11/27/09	DL-9E2-CCS(6-7)-050	EPA 8082 (PCBs only)	
65436-27	11/27/09	DL-7E5-CTP(6-7)-052	EPA 8082 (PCBs only)	
65436-28	11/27/09	DL-7E1-CPS(4-5)-054	EPA 8082 (PCBs only)	
65436-29	11/27/09	DL-7E1-CMB(4-5)-056	EPA 8082 (PCBs only)	
65436-30	11/27/09	DL-7E1-CCS(6-7)-058	EPA 8082 (PCBs only)	
65436-31	11/27/09	DL-4E6-CPS(6-7)-060	EPA 8082 (PCBs only)	
65436-32	11/27/09	DL-6E2-CCS(6-7)-062	EPA 8082 (PCBs only)	
65436-33	11/27/09	DL-6E3-CTP(6-7)-064	EPA 8082 (PCBs only)	

Sample Receipt Exceptions: None

Analytics Environmental Laboratory is certified by the states of New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, New York, Virginia, Maryland, and is validated by the U.S. Navy (NFESC). A list of actual certified parameters is available upon request.

If you have any further question on the analytical methods or these results, do not hesitate to call.

Authorized signature


Stephen L. Knollmeyer Lab. Director

Date

12/7/2009

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35 NE Business Center Suite 180
Andover MA 01810

Report Number: 65436

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Re: UMass Dubois Library

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<u>Lab Number</u>	<u>Sample Date</u>	<u>Station Location</u>	<u>Analysis</u>	<u>Comments</u>
65436-34	11/27/09	DL-5E1-CCS(6-7)-066	EPA 8082 (PCBs only)	
65436-35	11/27/09	DL-5E6-CPS(6-7)-068	EPA 8082 (PCBs only)	
65436-36	11/27/09	DL-4E1-CCS(6-7)-070	EPA 8082 (PCBs only)	
65436-37	11/27/09	DL-4E1-CCC(6-7)-072	EPA 8082 (PCBs only)	
65436-38	11/27/09	DL-4E4-CTP(6-7)-074	EPA 8082 (PCBs only)	
65436-39	11/27/09	DL-4E4-TCS-075	EPA 8082 (PCBs only)	
65436-40	11/27/09	DL-3E2-CCS(6-7)-077	EPA 8082 (PCBs only)	
65436-41	11/27/09	DL-3E4-CTP(6-7)-079	EPA 8082 (PCBs only)	
65436-42	11/27/09	DL-QEB-080	EPA 8082 (PCBs only)	

Sample Receipt Exceptions: None

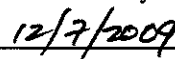
Analytics Environmental Laboratory is certified by the states of New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, New York, Virginia, Maryland, and is validated by the U.S. Navy (NFESC). A list of actual certified parameters is available upon request.

If you have any further question on the analytical methods or these results, do not hesitate to call.

Authorized signature


Stephen L. Knollmeyer Lab. Director

Date


12/7/2009

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Surrogate Compound Limits

	Matrix: Units:	Aqueous % Recovery	Solid % Recovery	Method
Volatile Organic Compounds - Drinking Water				
1,4-Difluorobenzene		70-130		EPA 524.2
Bromofluorobenzene		70-130		
1,2-Dichlorobenzene-d4		70-130		
Volatile Organic Compounds				
1,2-Dichloroethane-d4		70-120	70-120	EPA 624/8260B
Toluene-d8		85-120	85-120	
Bromofluorobenzene		75-120	75-120	
Semi-Volatile Organic Compounds				
2-Fluorophenol		20-110	35-105	EPA 625/8270C
d5-Phenol		15-110	40-100	
d5-nitrobenzene		40-110	35-100	
2-Fluorobiphenyl		50-110	45-105	
2,4,6-Tribromophenol		40-110	40-125	
d14-p-terphenyl		50-130	30-125	
PAH's by SIM				
d5-nitrobenzene		21-110	35-110	EPA 8270C
2-Fluorobiphenyl		36-121	45-105	
d14-p-terphenyl		33-141	30-125	
Pesticides and PCBs				
2,4,5,6-Tetrachloro-m-xylene (TCX)		46-122	40-130	EPA 608/8082
Decachlorobiphenyl (DCB)		40-135	40-130	
Herbicides				
Dichloroacetic acid (DCAA0		30-150	30-150	
Gasoline Range Organics/TPH Gasoline				
Trifluorotoluene TFT (FID)		60-140	60-140	MEDEP 4217/EPA 8015
Bromofluorobenzene (BFB) (FID)		60-140	60-140	
Trifluorotoluene TFT (PID)		60-140	60-140	
Bromofluorobenzene (BFB) (PID)		60-140	60-140	
Diesel Range Organics/TPH Diesel				
m-terphenyl		60-140	60-140	MEDEP 4125/EPA 8015/CT ETPH

PCB DATA SUMMARIES

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December 7, 2009

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: Lab QC

Lab Sample ID: B11309PSOX
Matrix: Soil
Percent Solid: N/A
Dilution Factor: 1.0
Collection Date:
Lab Receipt Date:
Extraction Date: 11/30/09
Analysis Date: 12/03/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	103	%
Decachlorobiphenyl	97	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

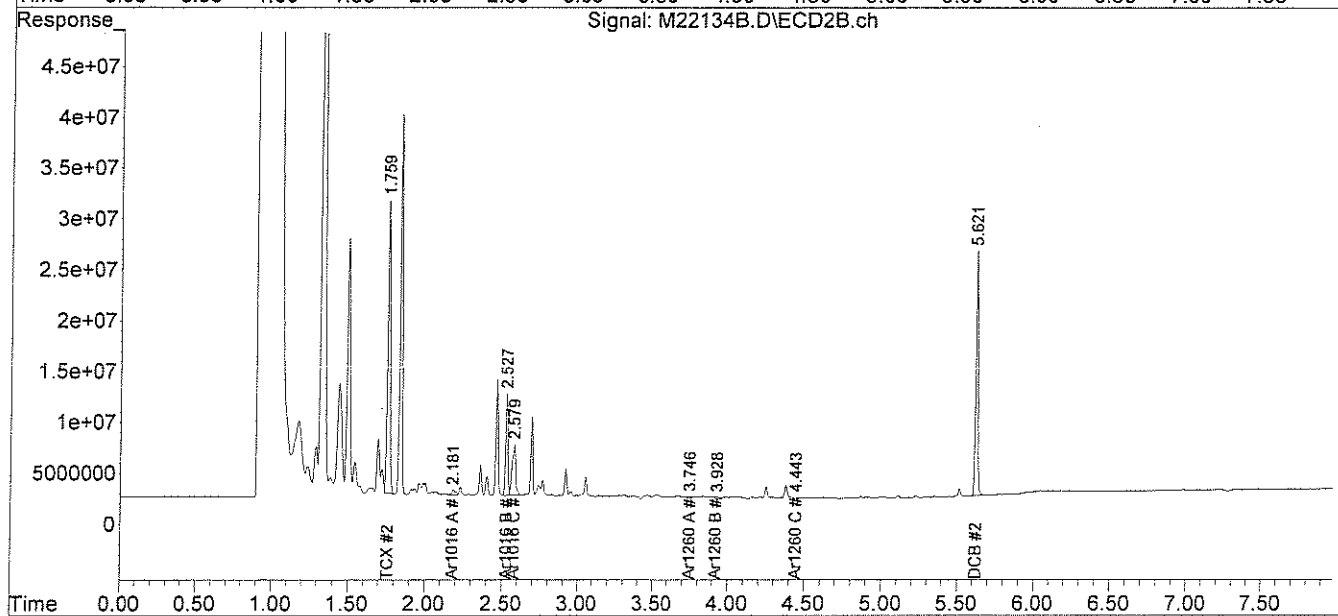
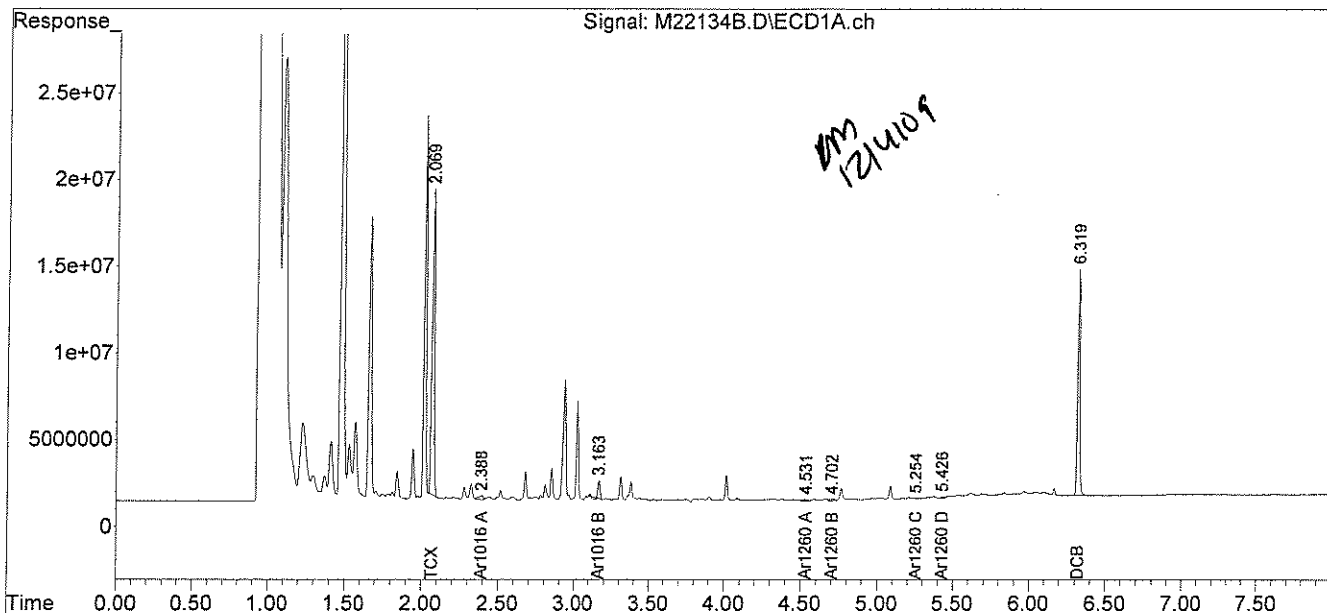
COMMENTS: Results are expressed on a dry weight basis.

Data Path : C:\msdchem\1\DATA\120209-M\
Data File : M22134B.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 3 Dec 2009 7:26 pm
Operator : RM
Sample : B11309PSOX,,A/C
Misc : SOIL
ALS Vial : 2 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 07:45:33 2009
Quant Method : C:\msdchem\1\METHODS\PCB11249.M
Quant Title : Aroclor 1016/1260
QLast Update : Tue Nov 24 16:14:04 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

✓
12.04.09



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December 7, 2009

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: Lab QC

Lab Sample ID: B12019PSOX
Matrix: Soil
Percent Solid: N/A
Dilution Factor: 1.0
Collection Date:
Lab Receipt Date:
Extraction Date: 12/01/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	100	%
Decachlorobiphenyl	99	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

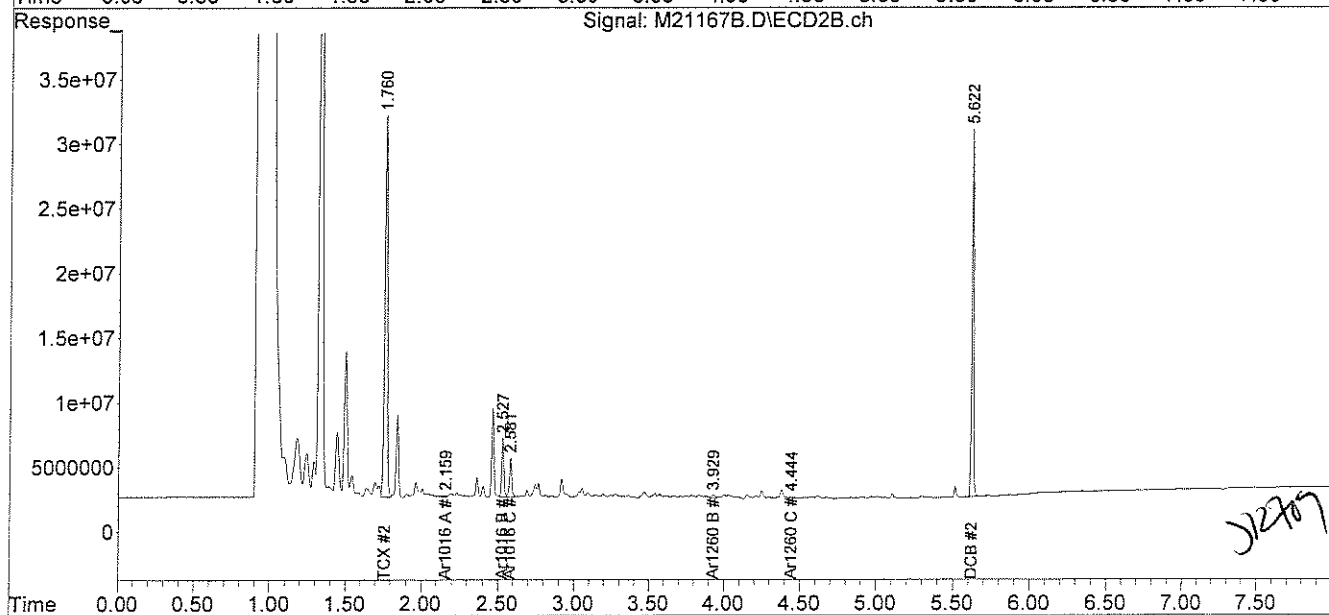
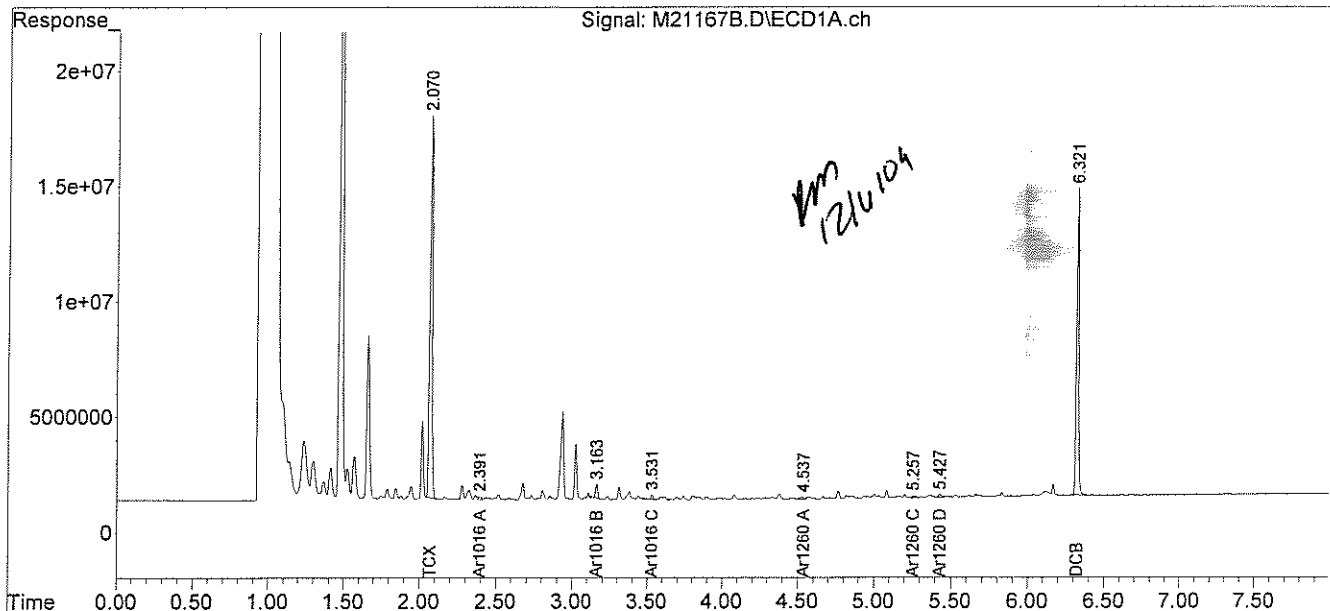
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21167B.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 12:29 pm
Operator : RM
Sample : B12019PSOX,,A/C
Misc : SOIL
ALS Vial : 27 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 07:44:42 2009
Quant Method : C:\msdchem\1\METHODS\PCB11249.M
Quant Title : Aroclor 1016/1260
QLast Update : Tue Nov 24 16:14:05 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: Lab QC

Lab Sample ID: B12029PW
Matrix: Aqueous
Percent Solid: N/A
Dilution Factor: 1.0
Collection Date:
Lab Receipt Date:
Extraction Date: 12/02/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/L}$	Results $\mu\text{g/L}$
PCB-1016	0.2	U
PCB-1221	0.2	U
PCB-1232	0.2	U
PCB-1242	0.2	U
PCB-1248	0.2	U
PCB-1254	0.2	U
PCB-1260	0.2	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	80	%
Decachlorobiphenyl	84	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

COMMENTS:

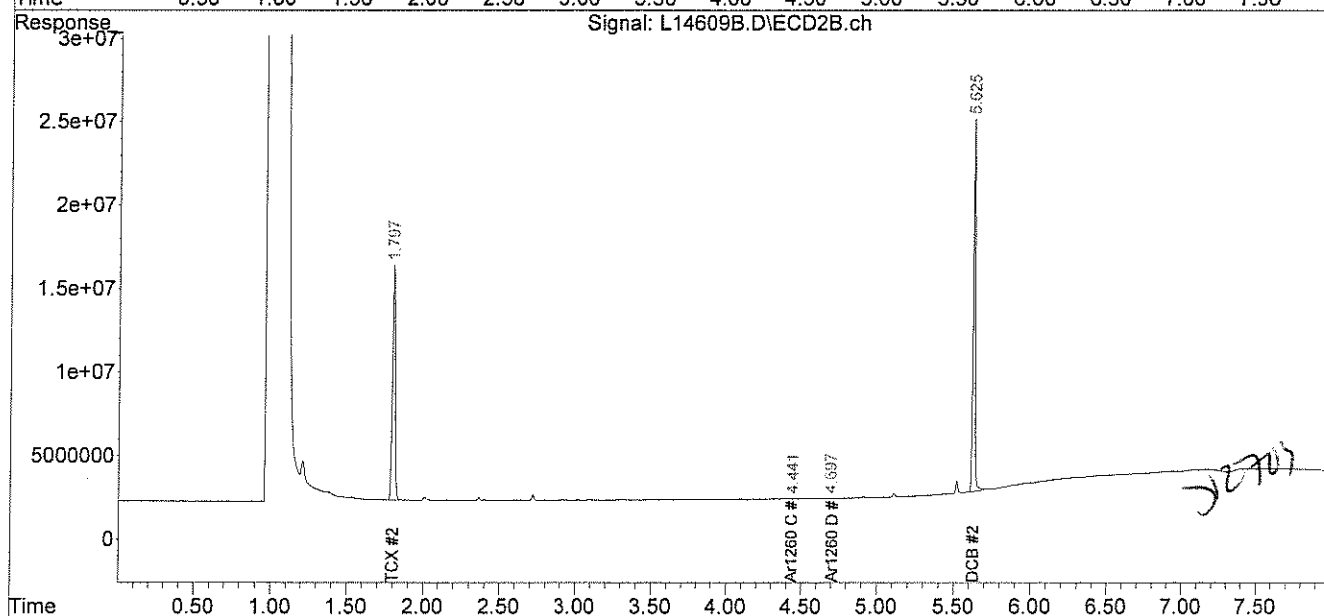
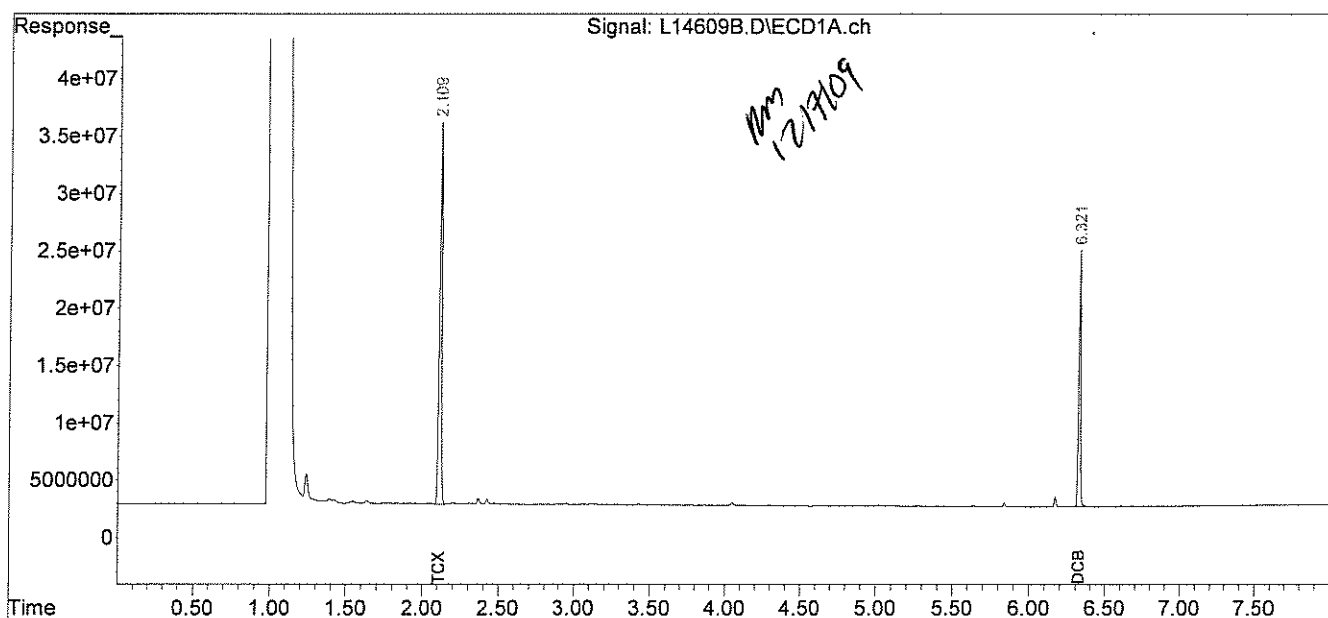
PCB Report

Authorized signature 

Data Path : C:\msdchem\1\DATA\120309-L\
Data File : L14609B.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 09 2:23 pm
Operator : RM
Sample : B12029PW
Misc :
ALS Vial : 11 Sample Multiplier: 1

Integration File signal 1: PCBINT.E
Integration File signal 2: PCBINT2.E
Quant Time: Dec 07 15:30:32 2009
Quant Method : C:\msdchem\1\METHODS\PB12029.M
Quant Title : Aroclor 1016/1260
QLast Update : Thu Dec 03 15:02:24 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 3 ul
Signal #1 Phase : DB-1701 Widebore Signal #2 Phase: DB-5 Widebore
Signal #1 Info : 0.53 mm , 1.0um f Signal #2 Info : 0.53 mm, 1.5um film



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SAMPLE DATA

CLIENT SAMPLE ID
Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: Lab QC

Lab Sample ID: B12029PW RR
Matrix: Soil
Percent Solid: N/A
Dilution Factor: 1.0
Collection Date:
Lab Receipt Date:
Extraction Date: 12/02/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	84	%
Decachlorobiphenyl	89	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

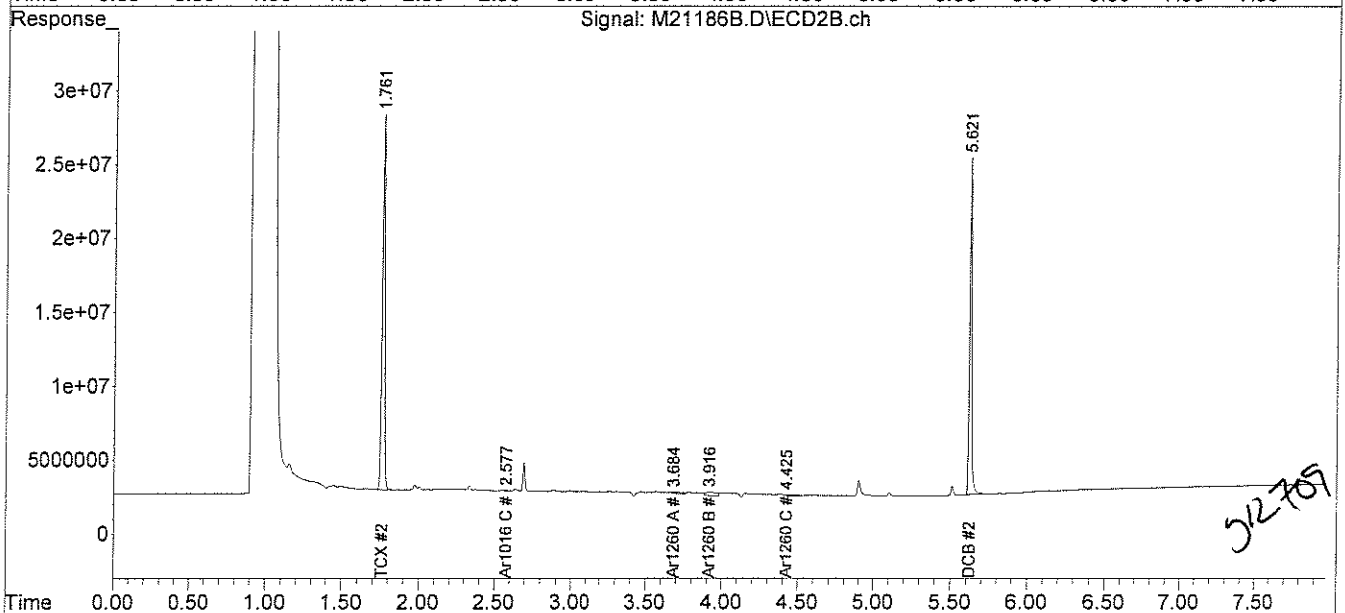
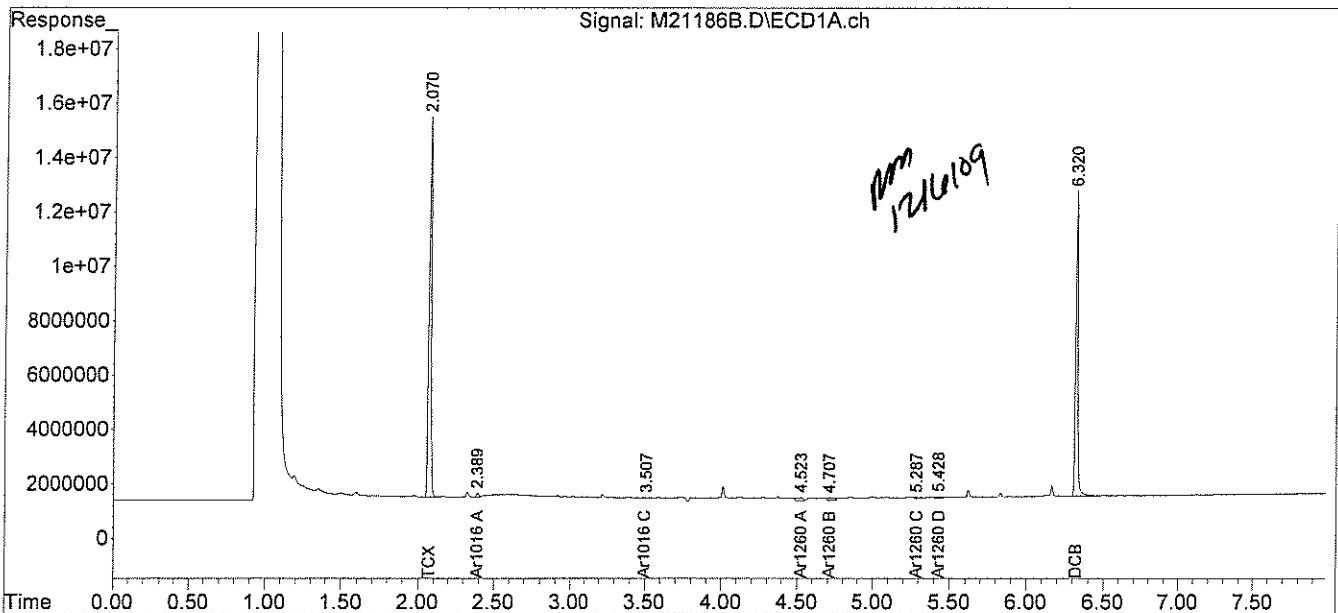
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

Data Path : C:\msdchem\1\DATA\120409-M\
 Data File : M21186B.D
 Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
 Acq On : 4 Dec 2009 4:34 pm
 Operator : RM
 Sample : B12029PW,RR
 Misc :
 ALS Vial : 39 Sample Multiplier: 1

Integration File signal 1: events.e
 Integration File signal 2: events2.e
 Quant Time: Dec 04 22:18:32 2009
 Quant Method : C:\msdchem\1\METHODS\PCB11249.M
 Quant Title : Aroclor 1016/1260
 QLast Update : Tue Nov 24 16:14:04 2009
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal #1 Phase : Signal #2 Phase:
 Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: Lab QC

Lab Sample ID: B11309PSOX2
Matrix: Soil
Percent Solid: N/A
Dilution Factor: 1.0
Collection Date:
Lab Receipt Date:
Extraction Date: 11/30/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	96	%
Decachlorobiphenyl	108	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

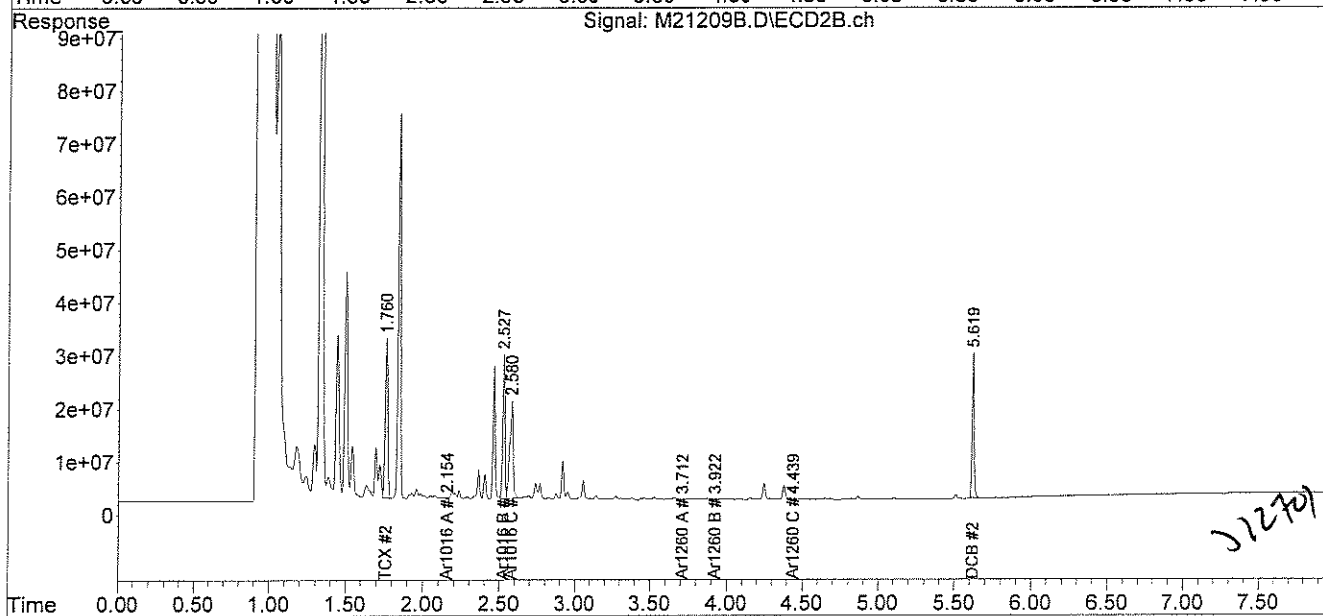
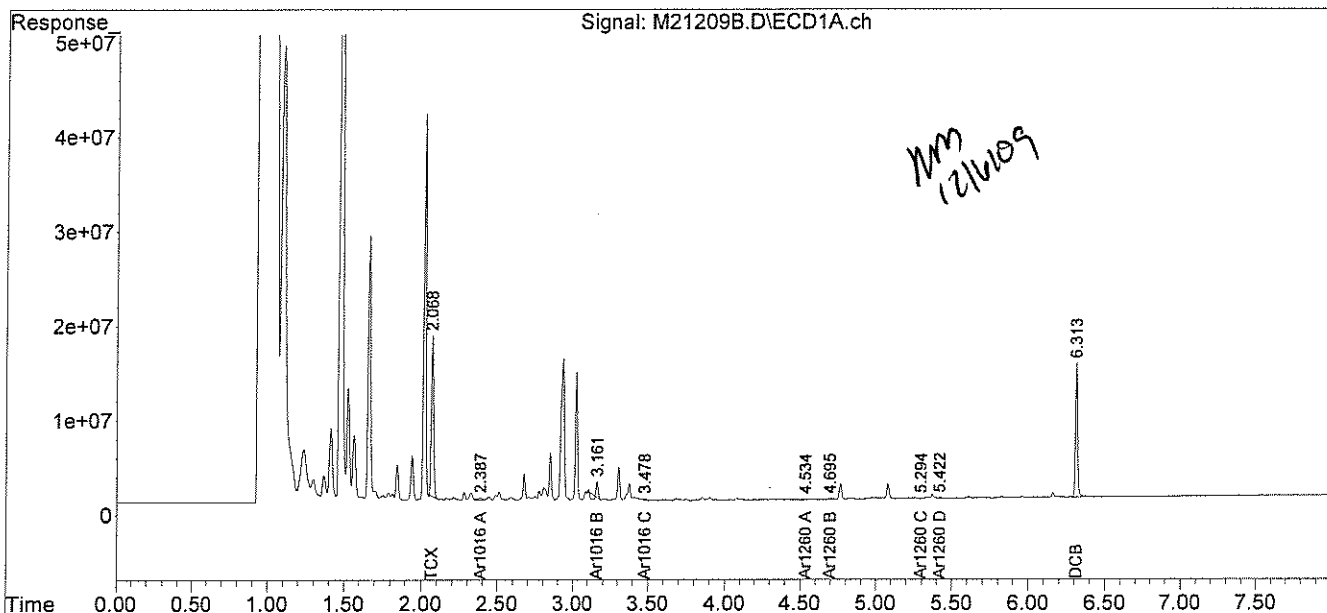
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21209B.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 8:26 pm
Operator : RM
Sample : B11309PSOX2,,A/C
Misc : SOIL
ALS Vial : 61 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 22:24:47 2009
Quant Method : C:\msdchem\1\METHODS\PCB11249.M
Quant Title : Aroclor 1016/1260
QLast Update : Tue Nov 24 16:14:04 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: Lab QC

Lab Sample ID: B12029PAS
Matrix: Soil
Percent Solid: N/A
Dilution Factor: 1.0
Collection Date:
Lab Receipt Date:
Extraction Date: 12/02/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	91	%
Decachlorobiphenyl	91	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

Data Path : C:\msdchem\1\DATA\120709-M\

Data File : M21243B.D

Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch

Acq On : 7 Dec 2009 9:33 am

Operator : RM

Sample : B12029PAS,,A/C

Misc : SOIL

ALS Vial : 2 Sample Multiplier: 1

Integration File signal 1: events.e

Integration File signal 2: events2.e

Quant Time: Dec 07 12:30:56 2009

Quant Method : C:\msdchem\1\METHODS\PCB11249.M

Quant Title : Aroclor 1016/1260

QLast Update : Tue Nov 24 16:14:04 2009

Response via : Initial Calibration

Integrator: ChemStation

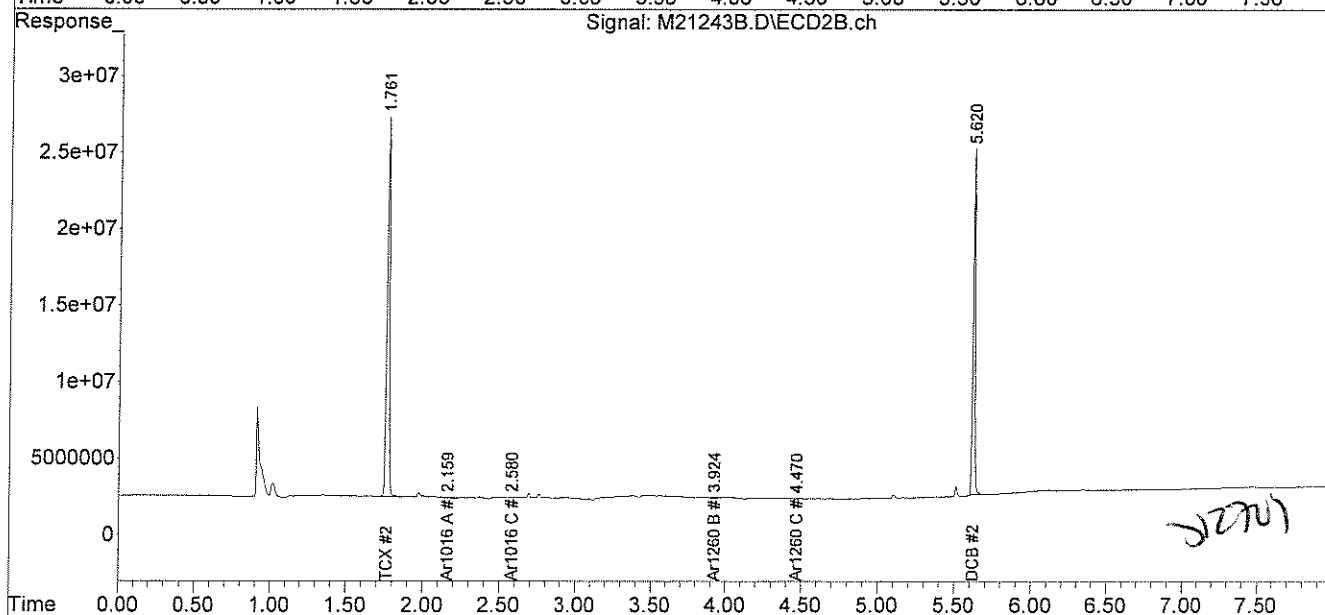
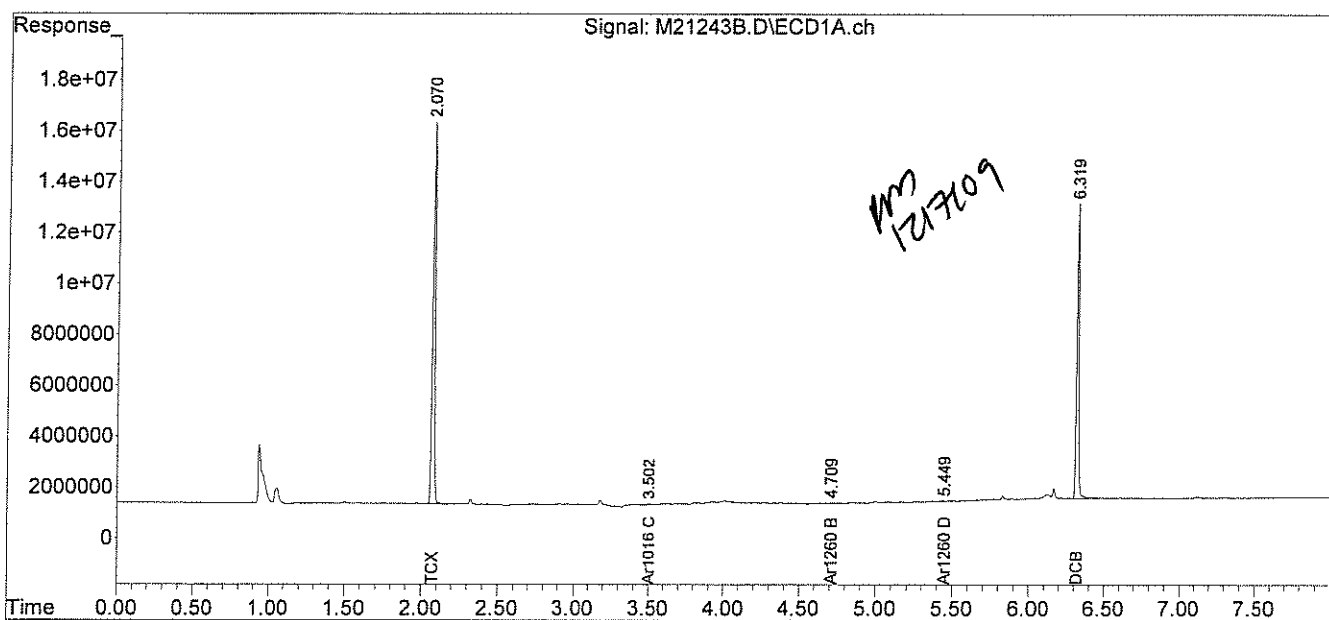
Volume Inj. :

Signal #1 Phase :

Signal #2 Phase:

Signal #1 Info :

Signal #2 Info :



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December 7, 2009

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-24E6-CPS(6-7)-002

Lab Sample ID: 65436-1
Matrix: Solid
Percent Solid: 94
Dilution Factor: 10
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	330	U
PCB-1221	330	U
PCB-1232	330	U
PCB-1242	330	U
PCB-1248	330	U
PCB-1254	330	7570
PCB-1260	330	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	119	%
Decachlorobiphenyl	114	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-1,1:10,,A/C

Column ID: 0.25 mm

Data File: M21188.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 10.0

Column ID: 0.25 mm

Column #1		Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	7573	7422	2.0	

Column to be used to flag RPD values greater than QC limit of 40%

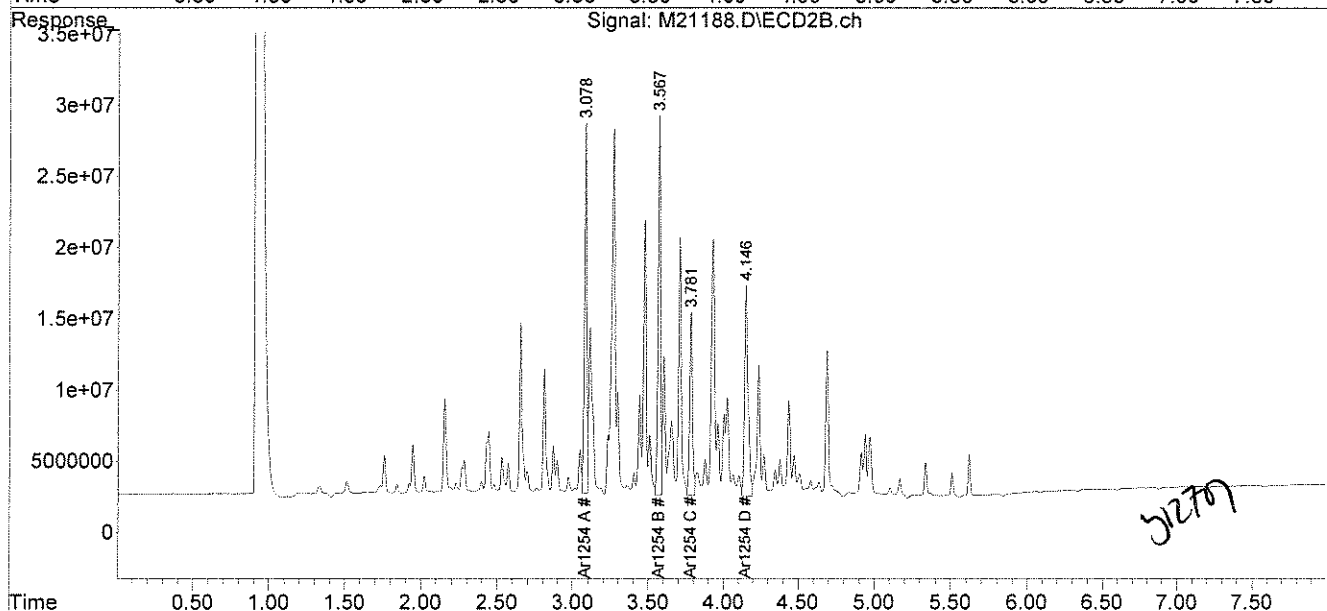
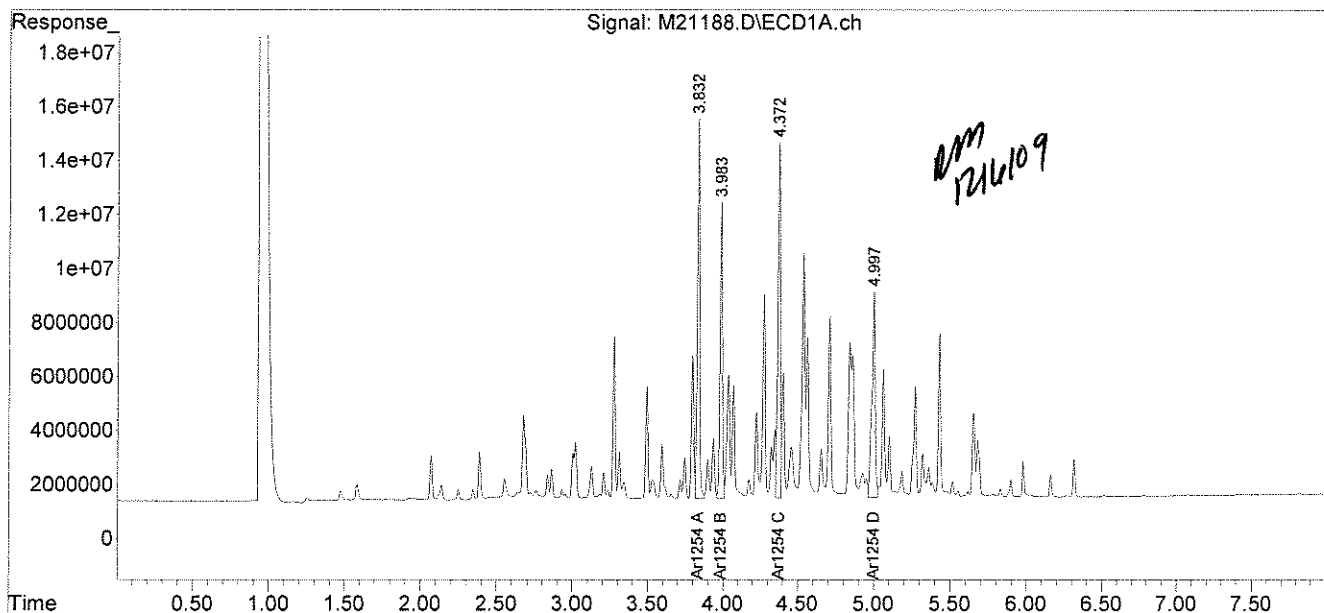
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21188.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 4:54 pm
Operator : RM
Sample : 65436-1,1:10,,A/C
Misc : SOIL
ALS Vial : 41 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 22:20:02 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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December 7, 2009

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-24E4-CPS(4-5)-003

Lab Sample ID: 65436-2
Matrix: Solid
Percent Solid: 94
Dilution Factor: 11
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	360	U
PCB-1221	360	U
PCB-1232	360	U
PCB-1242	360	U
PCB-1248	360	U
PCB-1254	360	6110
PCB-1260	360	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	114	%
Decachlorobiphenyl	112	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-2,1:10,,A/C

Column ID: 0.25 mm

Data File: M21190.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 10.5

Column ID: 0.25 mm

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	6111	5973	2.3	

Column to be used to flag RPD values greater than QC limit of 40%

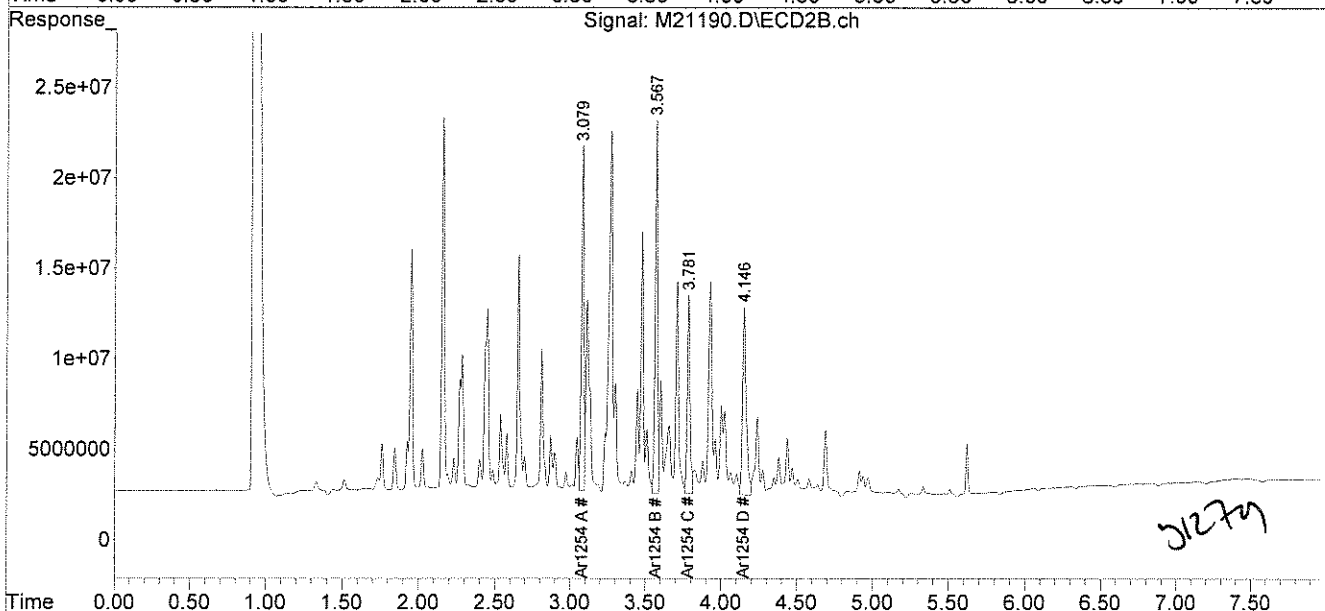
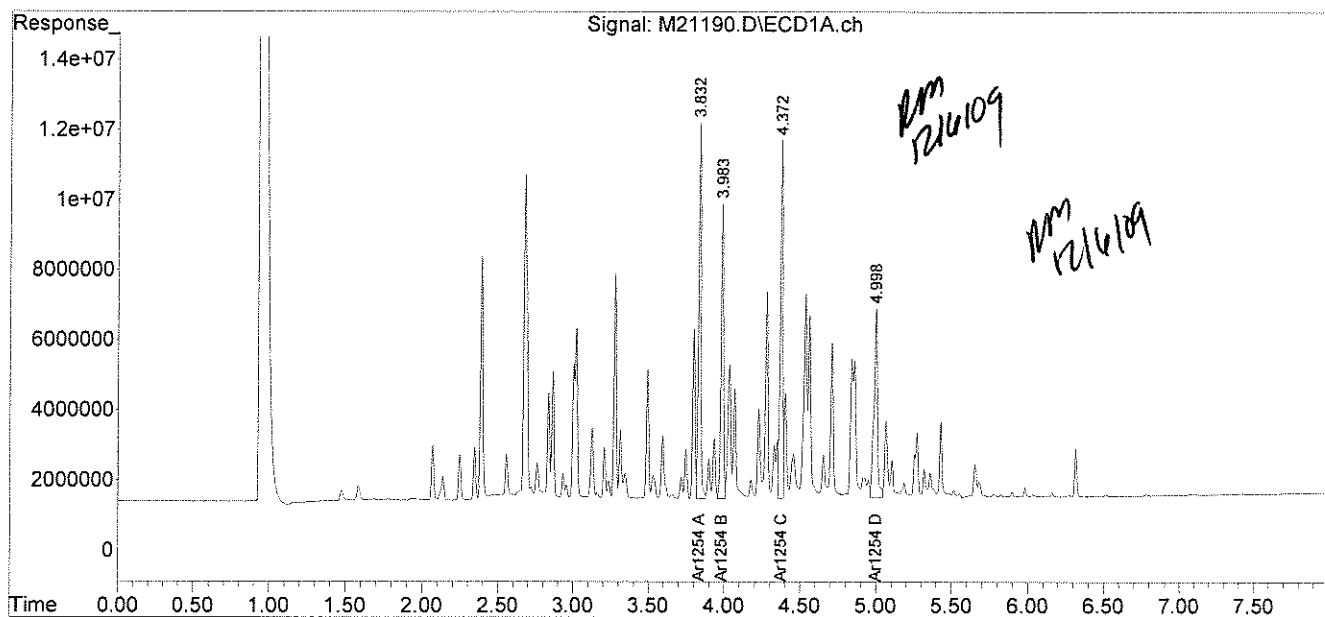
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21190.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 5:14 pm
Operator : RM
Sample : 65436-2,1:10,,A/C
Misc : SOIL
ALS Vial : 43 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 22:20:06 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase :
Signal #1 Info :
Signal #2 Phase :
Signal #2 Info :



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December 7, 2009

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-24E4-CMB(4-5)-005

Lab Sample ID: 65436-3
Matrix: Solid
Percent Solid: 99
Dilution Factor: 4.7
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	160	U
PCB-1221	160	U
PCB-1232	160	U
PCB-1242	160	1760
PCB-1248	160	U
PCB-1254	160	U
PCB-1260	160	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	101	%
Decachlorobiphenyl	104	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-3,1:5,,A/C

Column ID: 0.25 mm

Data File: M21253.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 4.7

Column ID: 0.25 mm

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1242	1762	1336	27.5

Column to be used to flag RPD values greater than QC limit of 40%

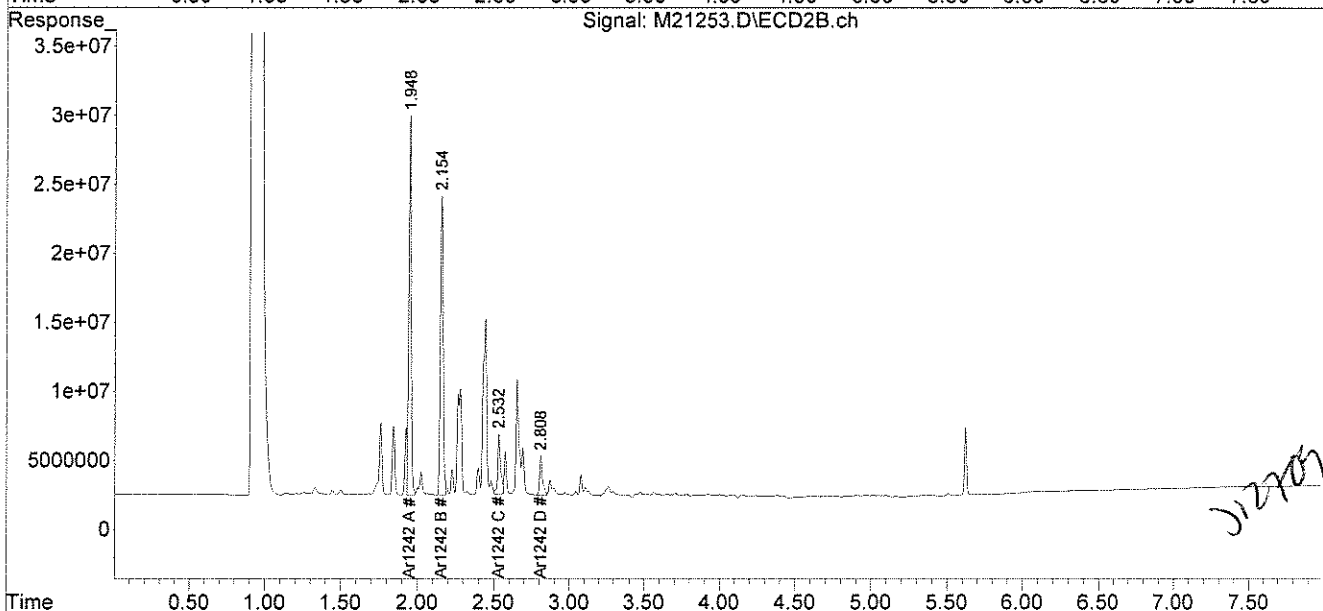
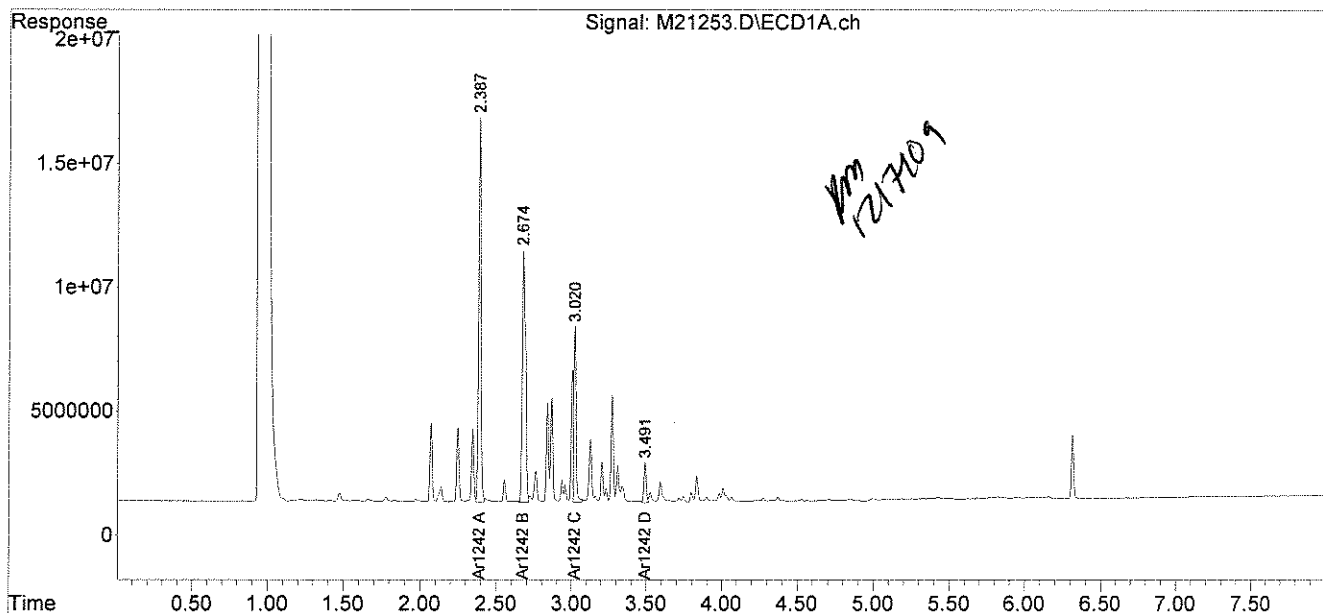
* Values outside QC limits

Comments: _____

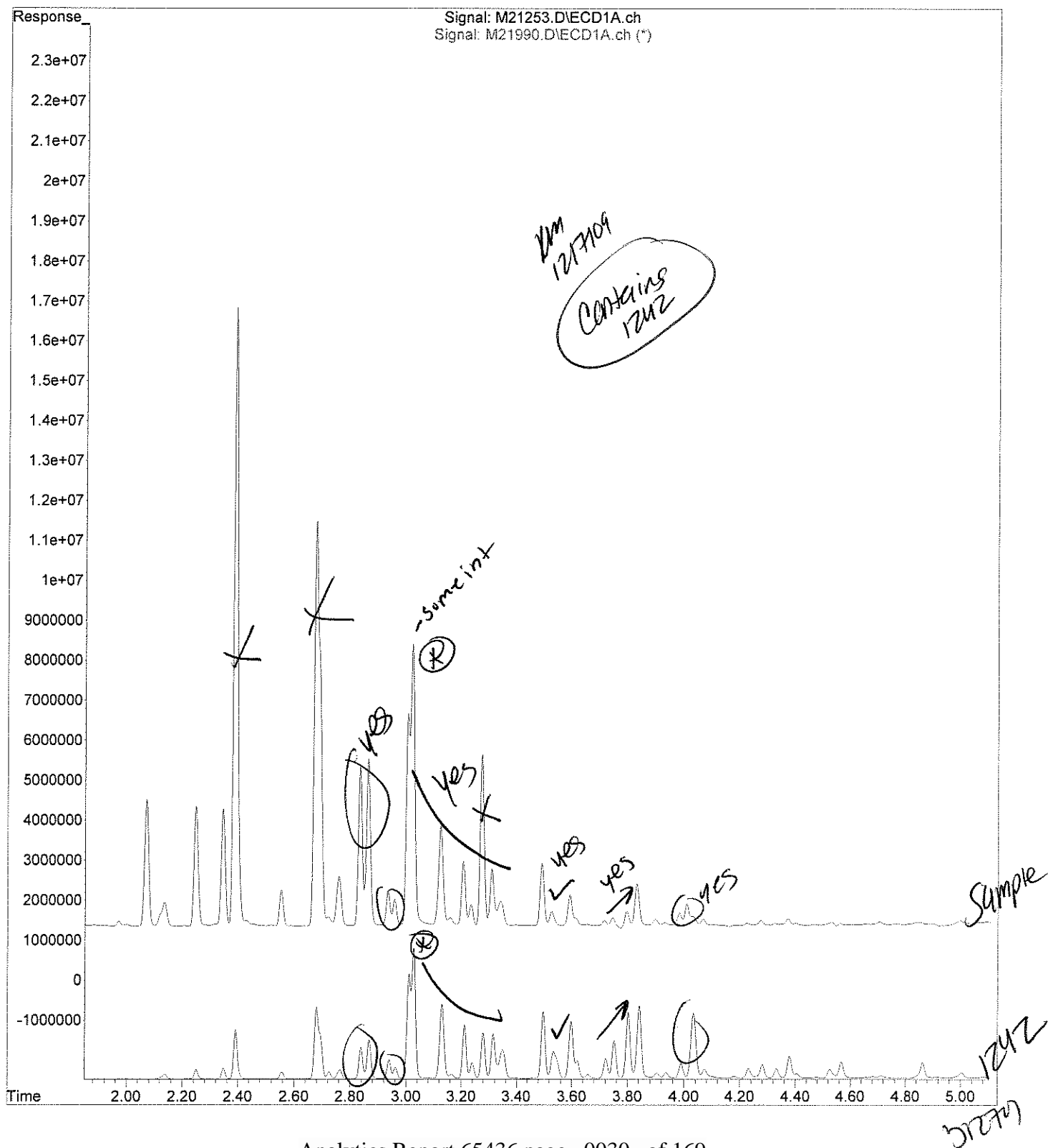
Data Path : C:\msdchem\1\DATA\120709-M\
Data File : M21253.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Dec 2009 11:19 am
Operator : RM
Sample : 65436-3,1:5,,A/C
Misc : SOIL
ALS Vial : 12 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 13:04:22 2009
Quant Method : C:\msdchem\1\METHODS\42SP11249.M
Quant Title : AR 1242
QLast Update : Fri Dec 04 12:29:23 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



File : C:\msdchem\1\DATA\120709-M\M21253.D
Operator : RM
Acquired : 7 Dec 2009 11:19 am using AcqMethod PCB.M
Instrument : Instrument M
Sample Name: 65436-3,1:5,,A/C
Misc Info : SOIL
Vial Number: 12



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-24E4-CCS(6-7)-007

Lab Sample ID: 65436-4
Matrix: Solid
Percent Solid: 99
Dilution Factor: 4.6
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	150	U
PCB-1221	150	U
PCB-1232	150	U
PCB-1242	150	U
PCB-1248	150	U
PCB-1254	150	3930
PCB-1260	150	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	113	%
Decachlorobiphenyl	121	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-4,1:5,,A/C

Column ID: 0.25 mm

Data File: M21193.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 4.6

Column ID: 0.25 mm

Column #1		Column #2		RPD	#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1254	3934	3669		7.0	

Column to be used to flag RPD values greater than QC limit of 40%

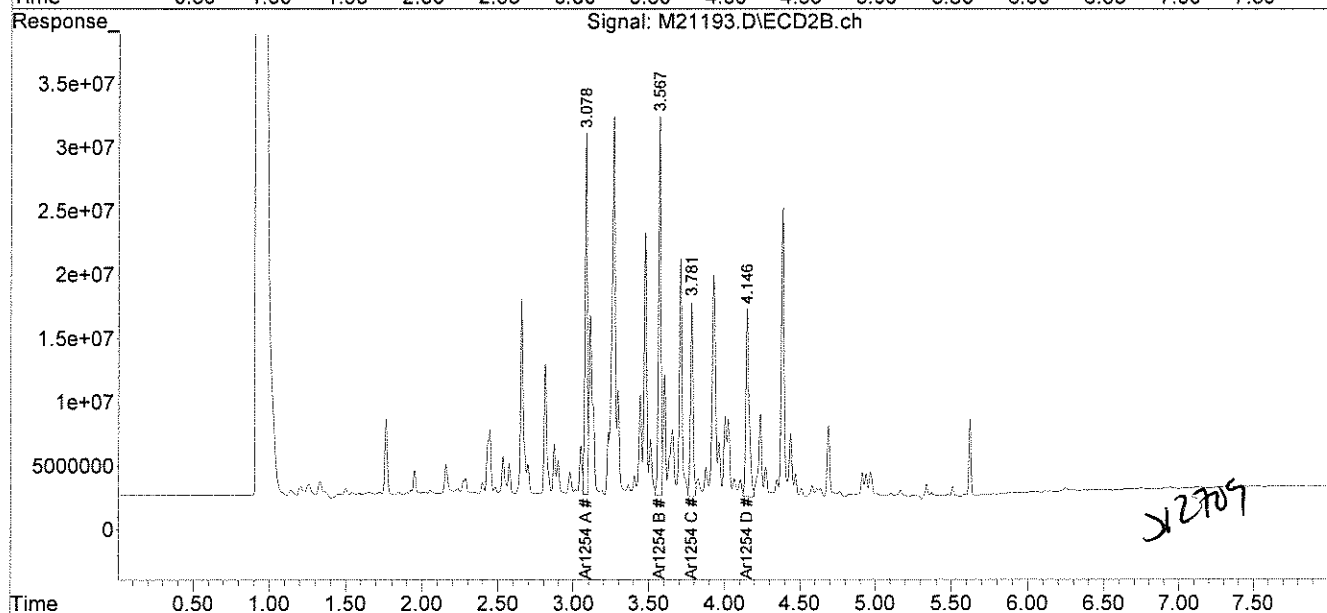
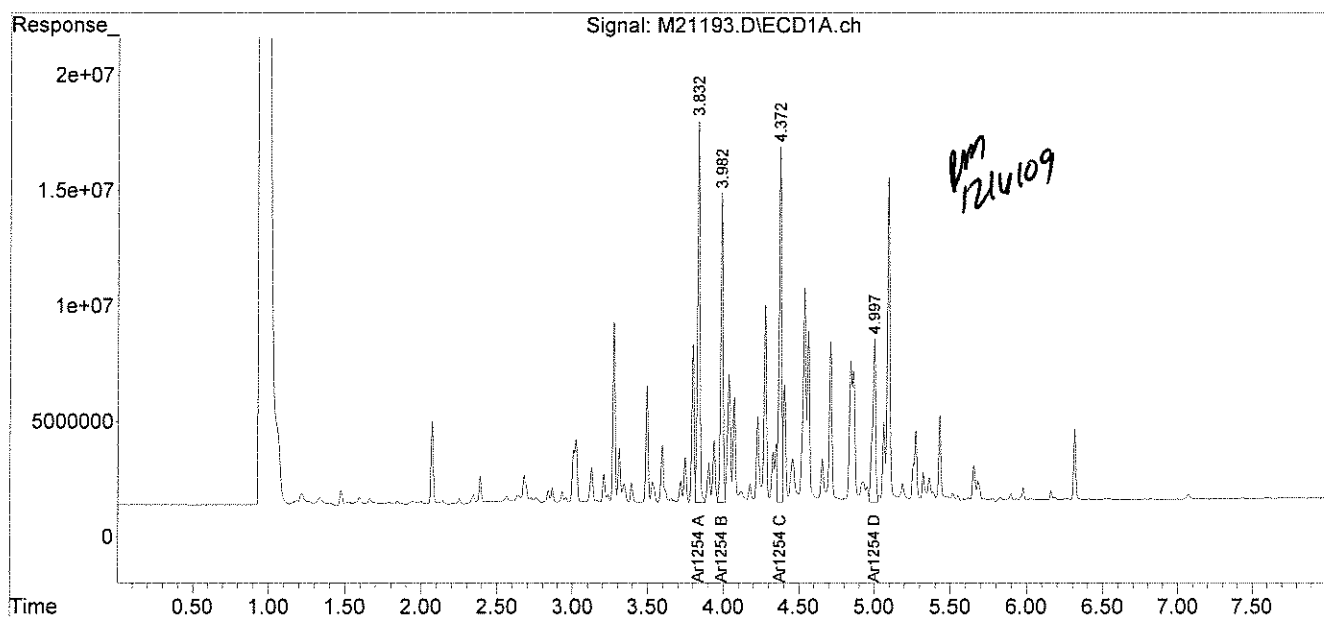
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21193.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 5:44 pm
Operator : RM
Sample : 65436-4,1:5,,A/C
Misc : SOIL
ALS Vial : 46 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 22:20:12 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-21E4-CPS(4-5)-010

Lab Sample ID: 65436-5
Matrix: Solid
Percent Solid: 95
Dilution Factor: 5
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	170	U
PCB-1221	170	U
PCB-1232	170	U
PCB-1242	170	U
PCB-1248	170	U
PCB-1254	170	2730
PCB-1260	170	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	99	%
Decachlorobiphenyl	102	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-5,1:5,,A/C

Column ID: 0.25 mm

Data File: M21194.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 5.3

Column ID: 0.25 mm

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	2734	2629	3.9	

Column to be used to flag RPD values greater than QC limit of 40%

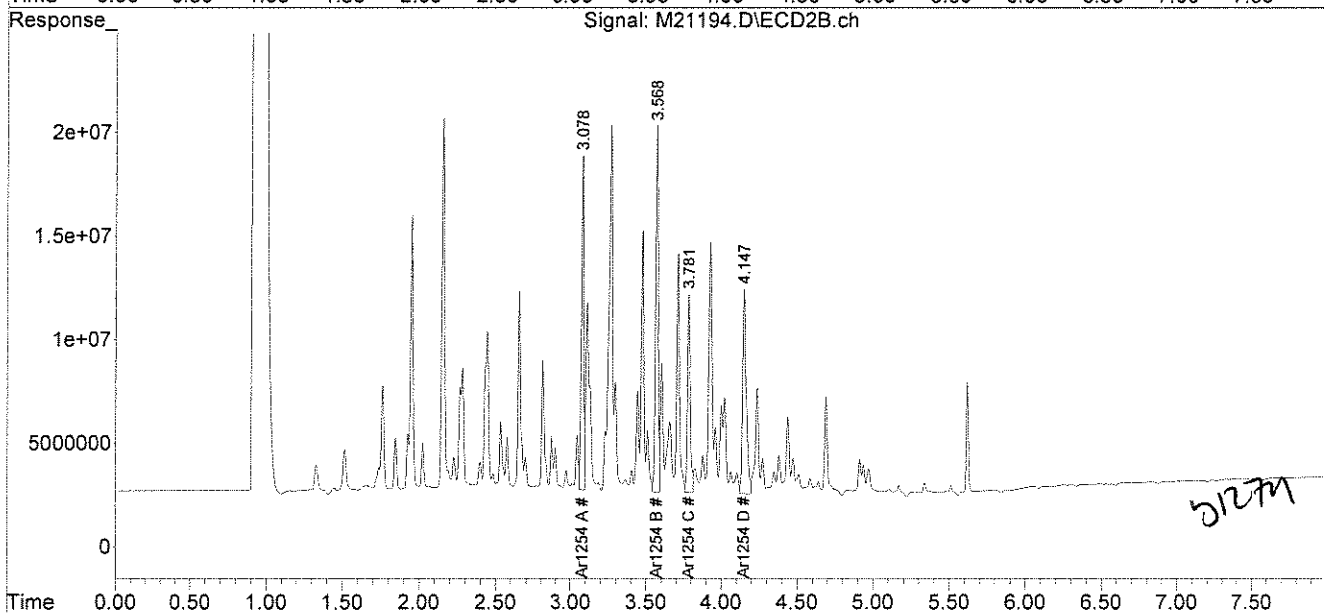
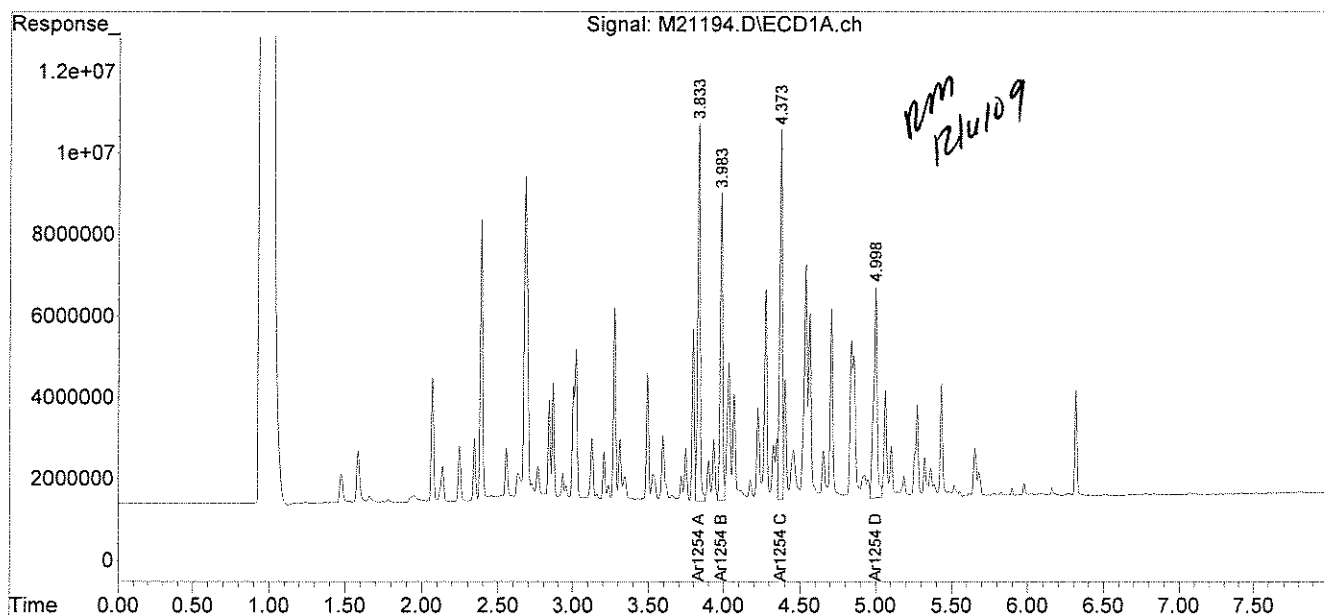
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21194.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 5:55 pm
Operator : RM
Sample : 65436-5,1:5,,A/C
Misc : SOIL
ALS Vial : 47 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 22:20:14 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-21E4-CMB(4-5)-012

Lab Sample ID: 65436-6
Matrix: Solid
Percent Solid: 98
Dilution Factor: 1.0
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/03/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	638
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	90	%
Decachlorobiphenyl	86	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-6,,A/C
Column ID: 0.25 mm	Data File: M22150.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 1.0
Column ID: 0.25 mm	

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1242	638	451	34.3

Column to be used to flag RPD values greater than QC limit of 40%

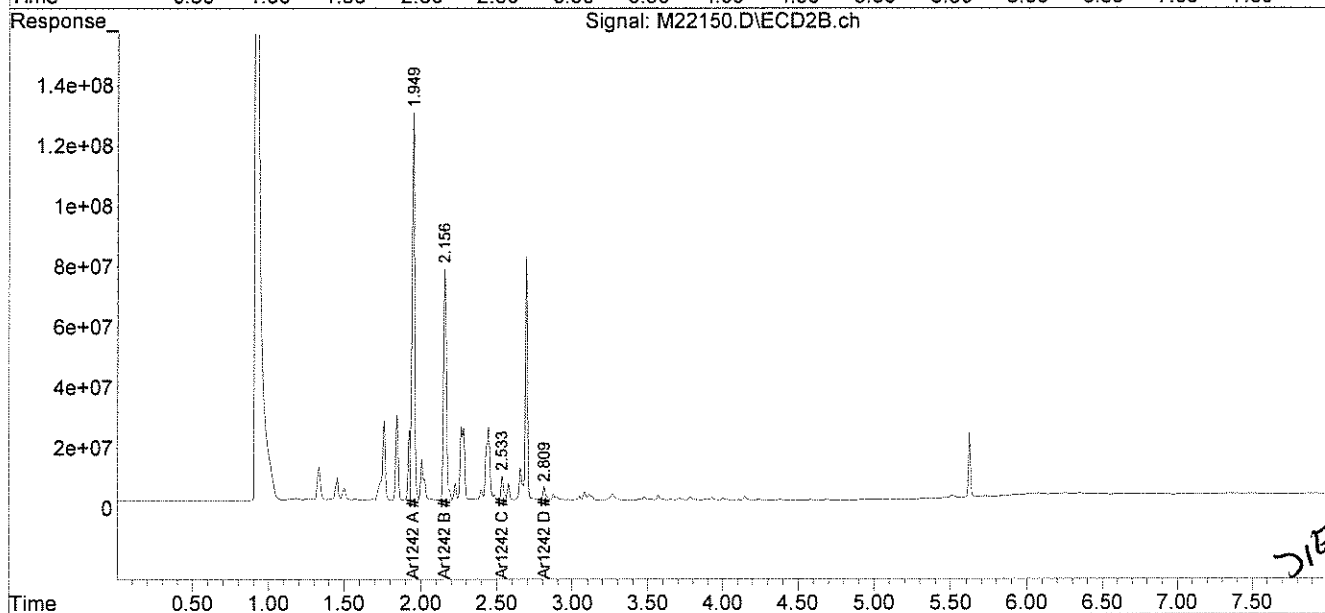
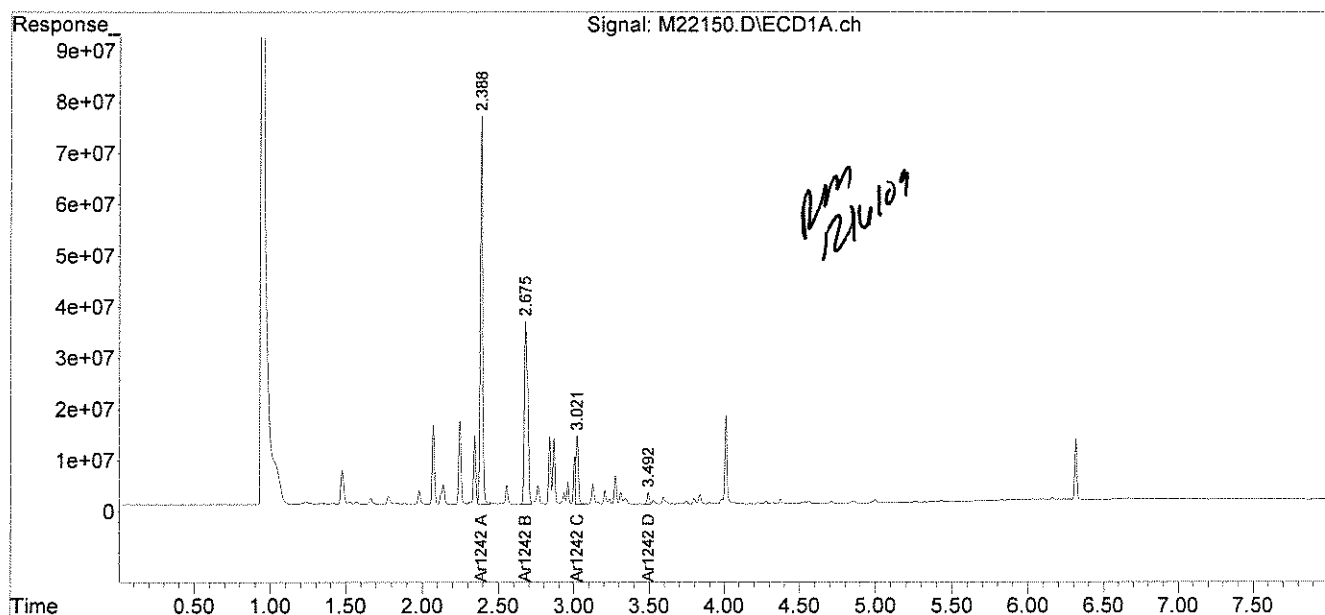
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120209-M\
Data File : M22150.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 3 Dec 2009 10:08 pm
Operator : RM
Sample : 65436-6,,A/C
Misc : SOIL
ALS Vial : 18 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 14:19:10 2009
Quant Method : C:\msdchem\1\METHODS\42SP11249.M
Quant Title : AR 1242
QLast Update : Fri Dec 04 12:29:23 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-21E4-CCS(6-7)-014

Lab Sample ID: 65436-7
Matrix: Solid
Percent Solid: 99
Dilution Factor: 4.8
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	160	U
PCB-1221	160	U
PCB-1232	160	U
PCB-1242	160	U
PCB-1248	160	U
PCB-1254	160	2740
PCB-1260	160	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	103	%
Decachlorobiphenyl	119	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-7,1:5,,A/C

Column ID: 0.25 mm

Data File: M21195.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 4.8

Column ID: 0.25 mm

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1254	2742	2384	14.0

Column to be used to flag RPD values greater than QC limit of 40%

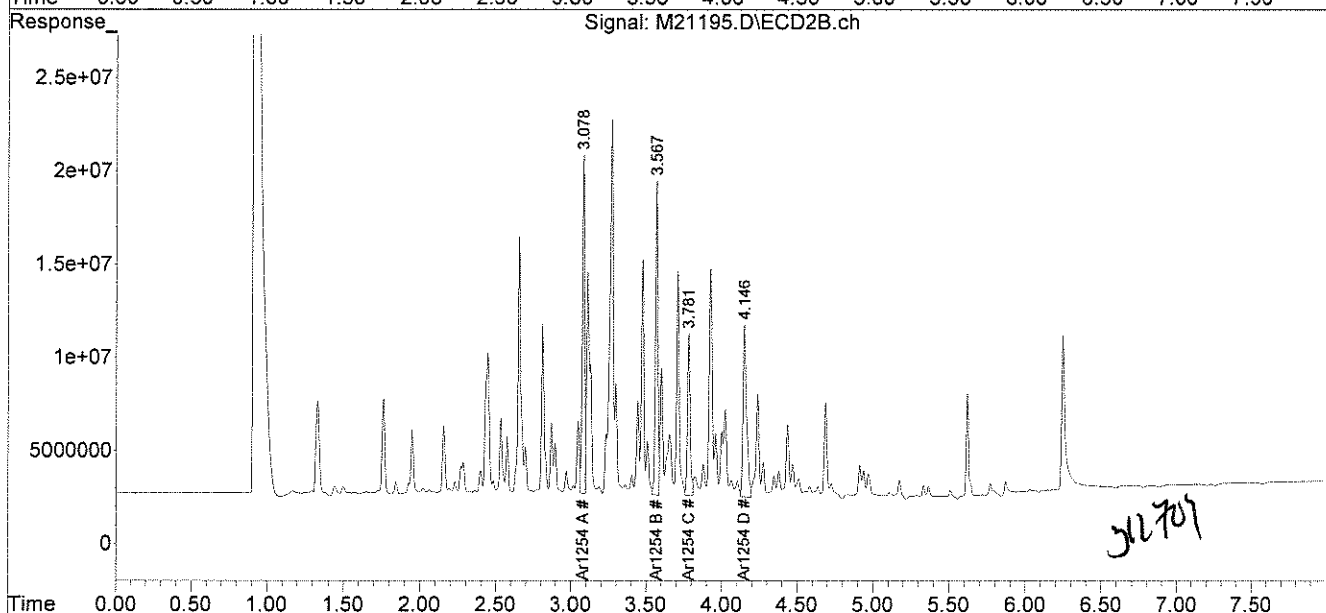
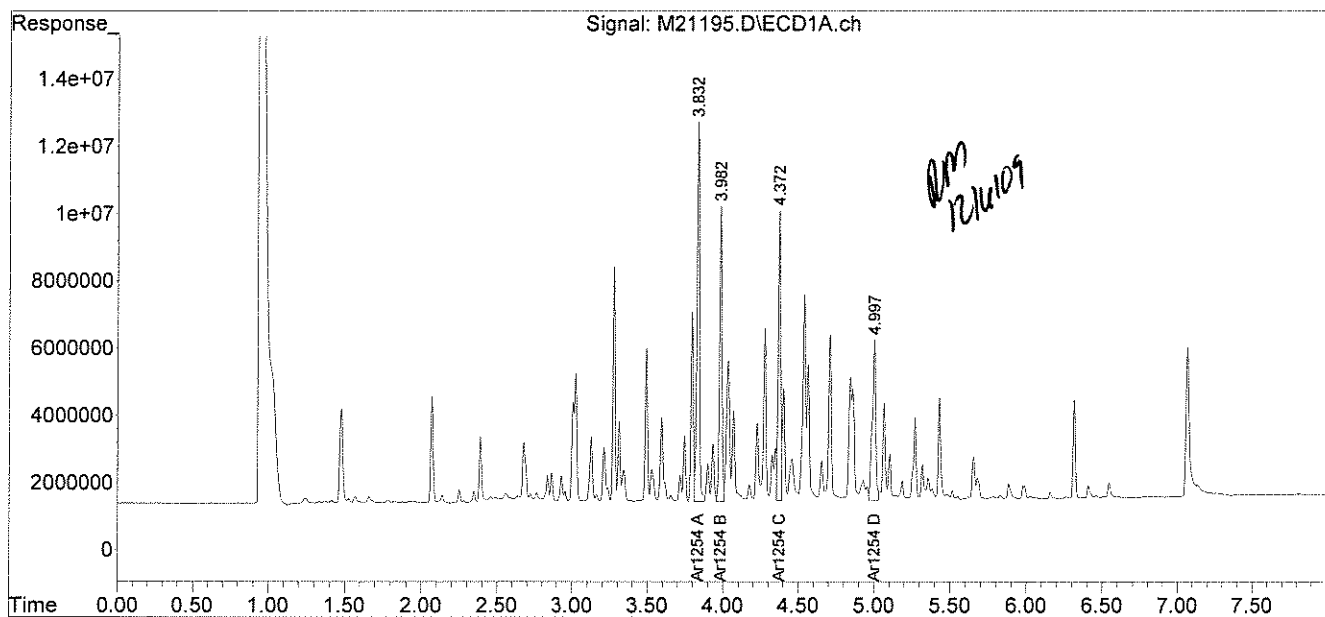
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21195.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 6:05 pm
Operator : RM
Sample : 65436-7,1:5,,A/C
Misc : SOIL
ALS Vial : 48 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 22:20:16 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-19E4-CCS(6-7)-015

Lab Sample ID: 65436-8
Matrix: Solid
Percent Solid: 99
Dilution Factor: 5.0
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	170	U
PCB-1221	170	U
PCB-1232	170	U
PCB-1242	170	U
PCB-1248	170	U
PCB-1254	170	2440
PCB-1260	170	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	112	%
Decachlorobiphenyl	115	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-8,1:5,,A/C
Column ID: 0.25 mm	Data File: M21192.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 5.0
Column ID: 0.25 mm	

Column #1		Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	2436	2373	2.6	

Column to be used to flag RPD values greater than QC limit of 40%

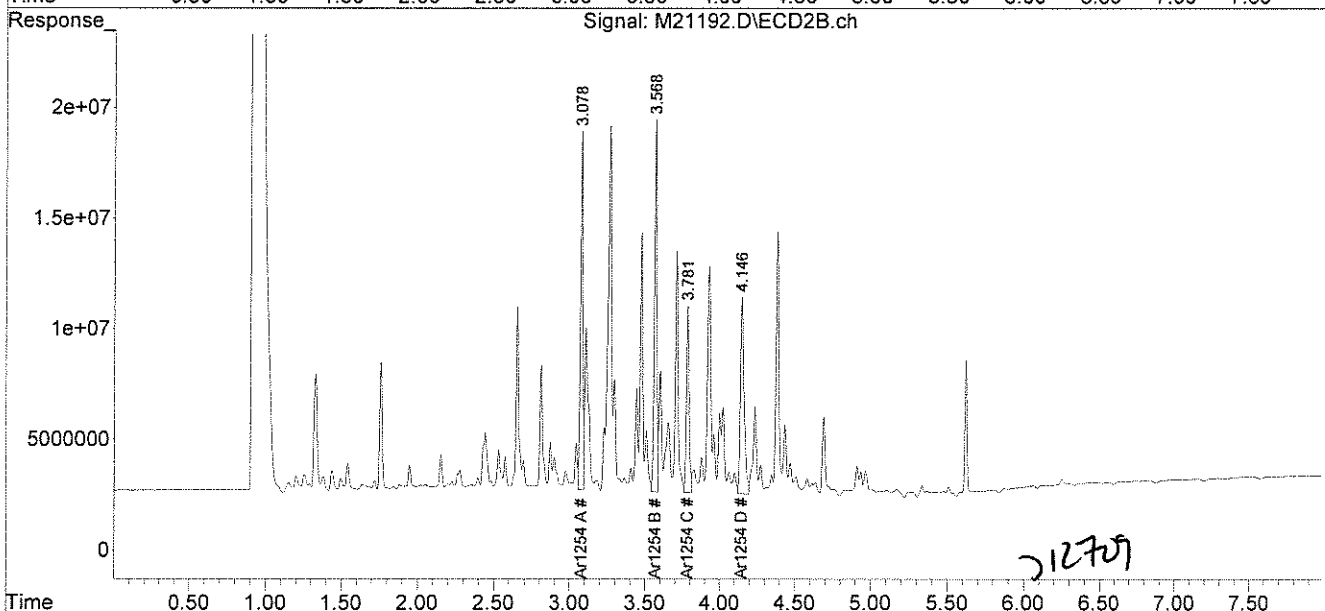
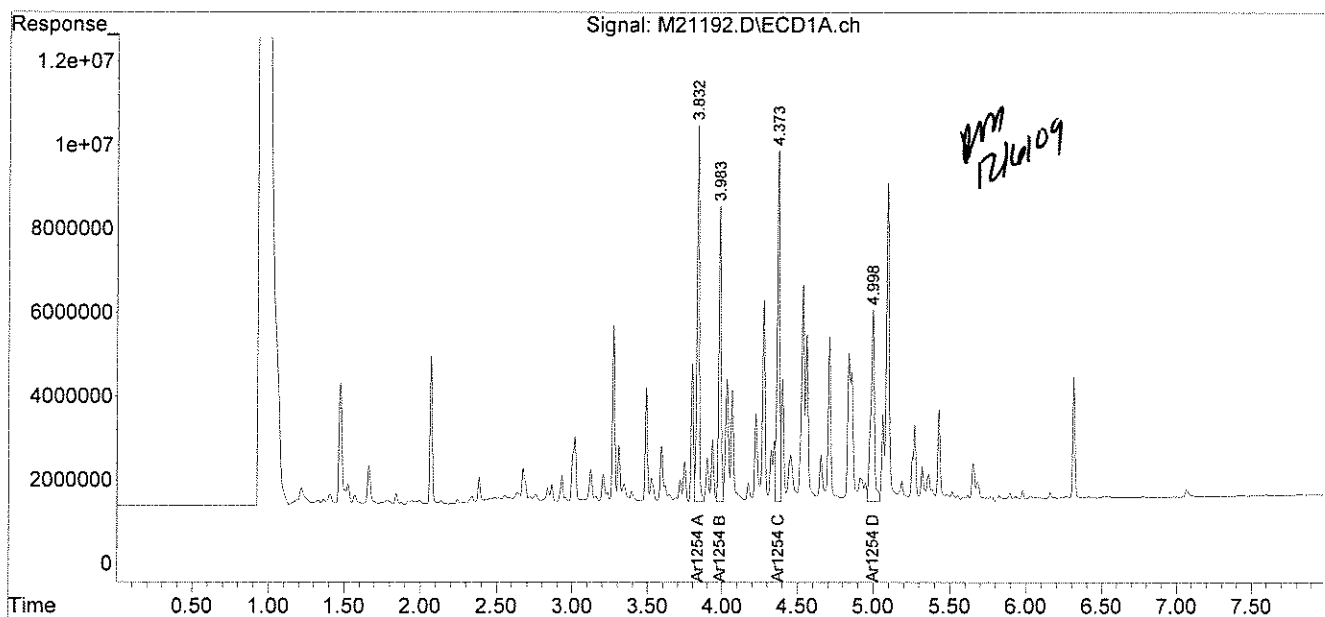
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21192.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 5:34 pm
Operator : RM
Sample : 65436-8,1:5,,A/C
Misc : SOIL
ALS Vial : 45 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 22:20:10 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-19E6-CPS(6-7)-017

Lab Sample ID: 65436-9
Matrix: Solid
Percent Solid: 94
Dilution Factor: 5
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	170	U
PCB-1221	170	U
PCB-1232	170	U
PCB-1242	170	U
PCB-1248	170	U
PCB-1254	170	3800
PCB-1260	170	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	103	%
Decachlorobiphenyl	106	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-9,1:5,,A/C
Column ID: 0.25 mm	Data File: M21199.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 5.1
Column ID: 0.25 mm	

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1254	3803	3735	1.8

Column to be used to flag RPD values greater than QC limit of 40%

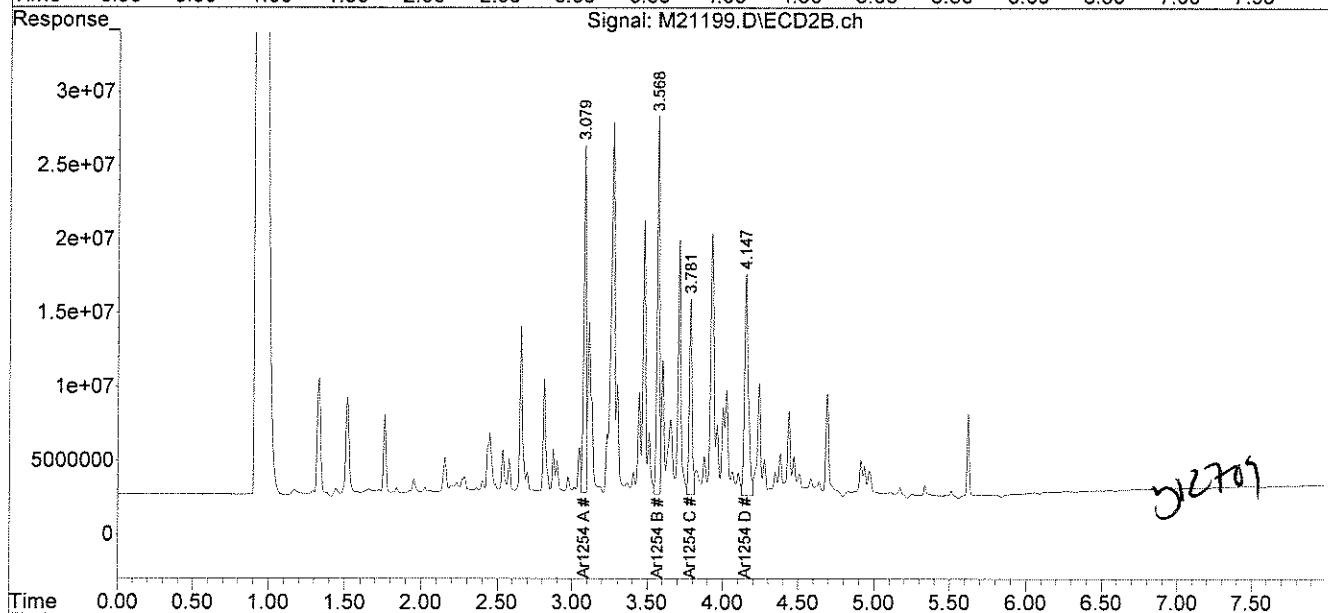
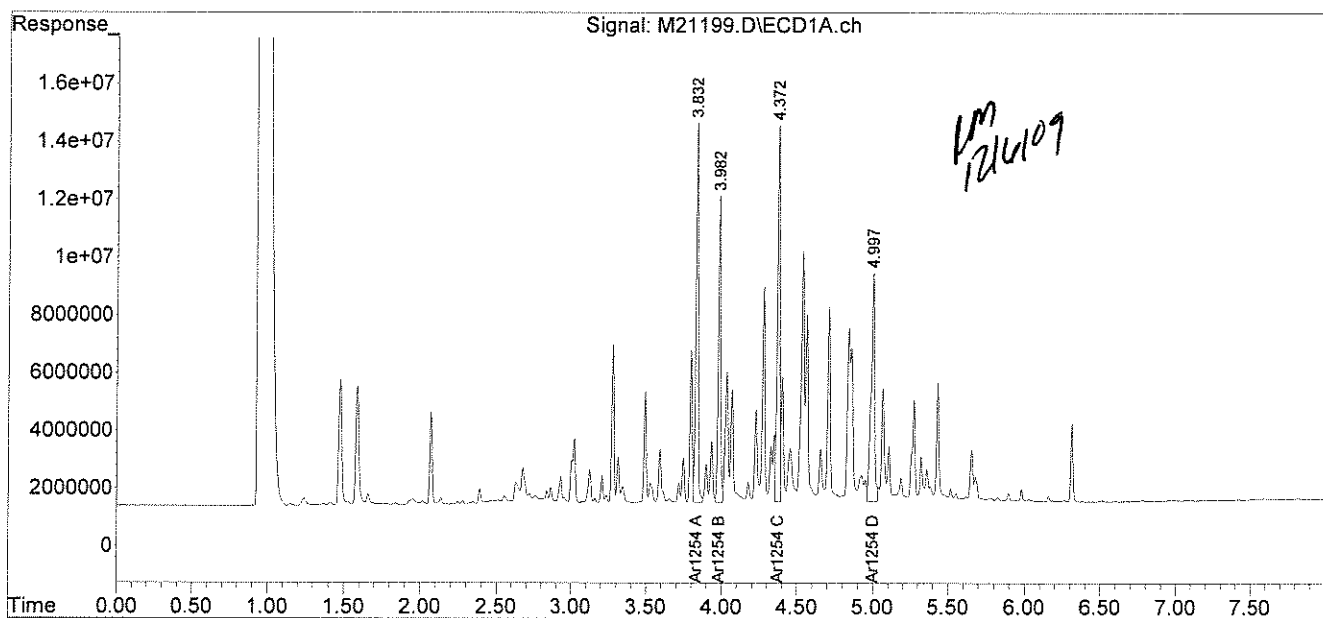
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21199.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 6:45 pm
Operator : RM
Sample : 65436-9,1:5,,A/C
Misc : SOIL
ALS Vial : 52 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 22:20:24 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID
Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-18E4-CPS(4-5)-020

Lab Sample ID: 65436-10
Matrix: Solid
Percent Solid: 94
Dilution Factor: 5
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	170	U
PCB-1221	170	U
PCB-1232	170	U
PCB-1242	170	U
PCB-1248	170	U
PCB-1254	170	2770
PCB-1260	170	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	93	%
Decachlorobiphenyl	98	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-10,1:5,,A/C

Column ID: 0.25 mm

Data File: M21198.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 5.3

Column ID: 0.25 mm

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1254	2767	2652	4.2

Column to be used to flag RPD values greater than QC limit of 40%

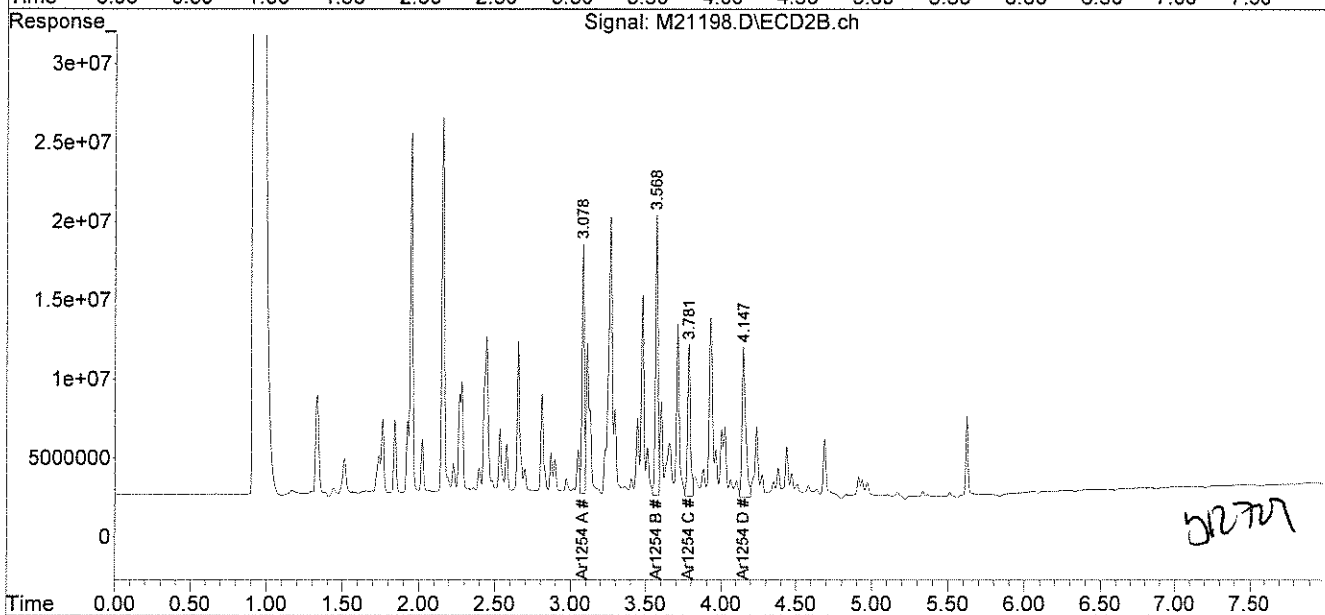
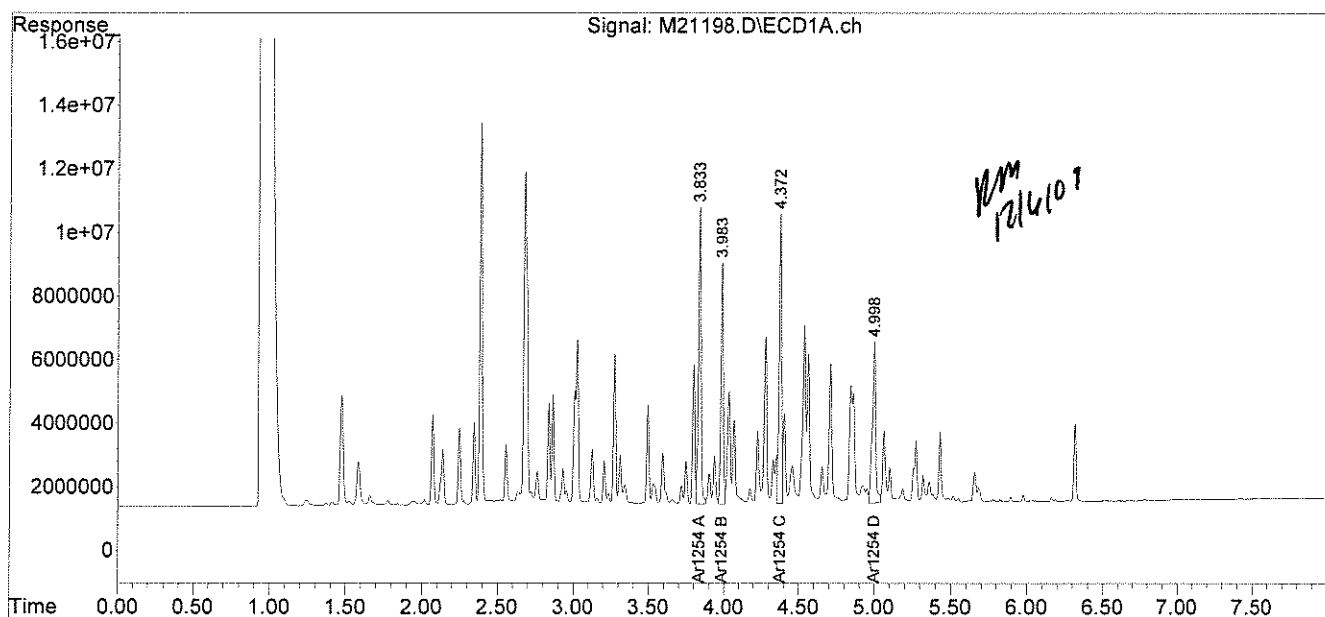
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21198.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 6:35 pm
Operator : RM
Sample : 65436-10,1:5,,A/C
Misc : SOIL
ALS Vial : 51 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 22:20:22 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-18E4-CMB(4-5)-022

Lab Sample ID: 65436-11
Matrix: Solid
Percent Solid: 98
Dilution Factor: 1.0
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/03/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	594
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	95	%
Decachlorobiphenyl	92	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-11,,A/C
Column ID: 0.25 mm	Data File: M22156.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 1.0
Column ID: 0.25 mm	

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1242	403	594	38.3

Column to be used to flag RPD values greater than QC limit of 40%

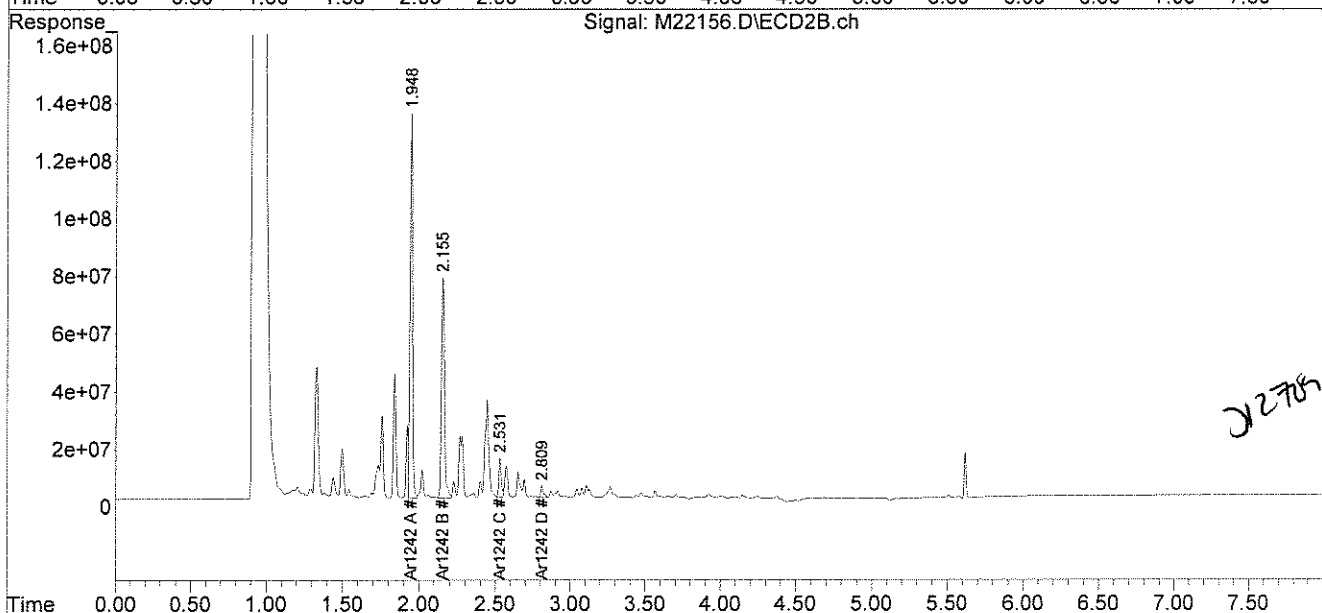
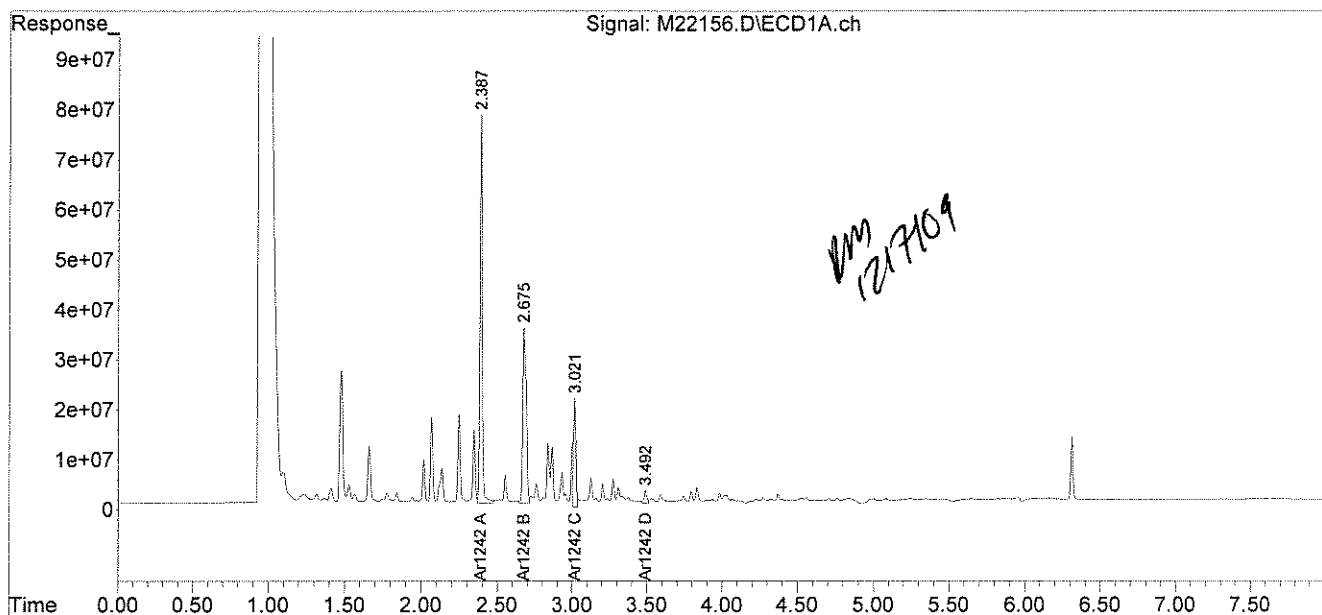
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120209-M\
Data File : M22156.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 3 Dec 2009 11:08 pm
Operator : RM
Sample : 65436-11,,A/C
Misc : SOIL
ALS Vial : 24 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 09:55:38 2009
Quant Method : C:\msdchem\1\METHODS\42SP11249.M
Quant Title : AR 1242
QLast Update : Fri Dec 04 12:29:23 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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December 7, 2009

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-18E4-CCS(6-7)-024

Lab Sample ID: 65436-12
Matrix: Solid
Percent Solid: 99
Dilution Factor: 10
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	330	U
PCB-1221	330	U
PCB-1232	330	U
PCB-1242	330	U
PCB-1248	330	U
PCB-1254	330	4930
PCB-1260	330	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	115	%
Decachlorobiphenyl	121	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-12,1:10,,A/C
Column ID: 0.25 mm	Data File: M21246.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 9.7
Column ID: 0.25 mm	

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1254	4930	3856	24.4

Column to be used to flag RPD values greater than QC limit of 40%

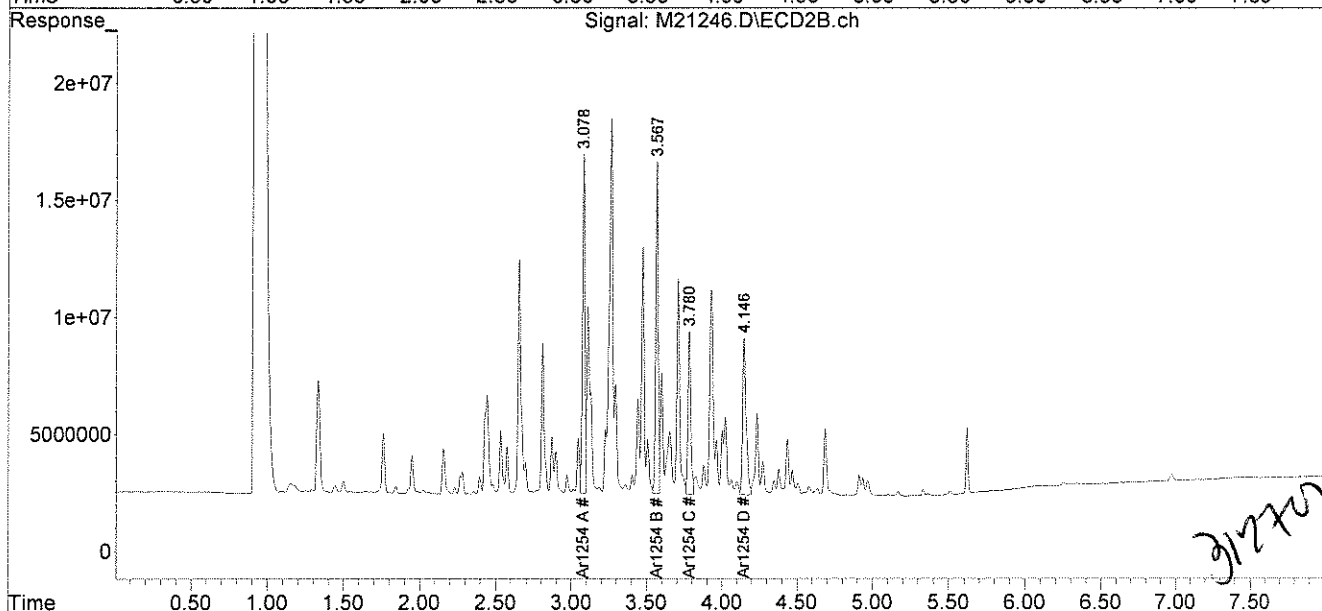
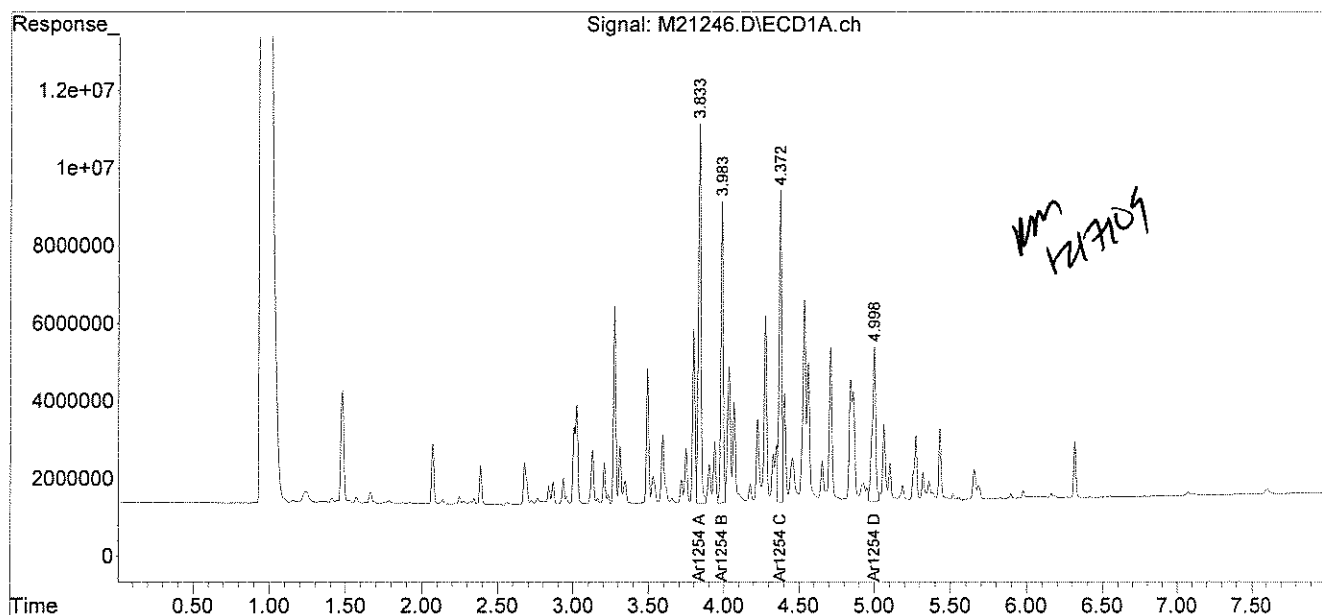
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120709-M\
Data File : M21246.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Dec 2009 10:08 am
Operator : RM
Sample : 65436-12,1:10,,A/C
Misc : SOIL
ALS Vial : 5 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 12:32:06 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-18E4-QCCS(6-7)-025

Lab Sample ID: 65436-13
Matrix: Solid
Percent Solid: 99
Dilution Factor: 10
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	330	U
PCB-1221	330	U
PCB-1232	330	U
PCB-1242	330	U
PCB-1248	330	U
PCB-1254	330	6280
PCB-1260	330	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	117	%
Decachlorobiphenyl	120	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-13,1:10,,A/C
Column ID: 0.25 mm	Data File: M21248.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 9.6
Column ID: 0.25 mm	

Column #1		Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	6283	4996	22.8	

Column to be used to flag RPD values greater than QC limit of 40%

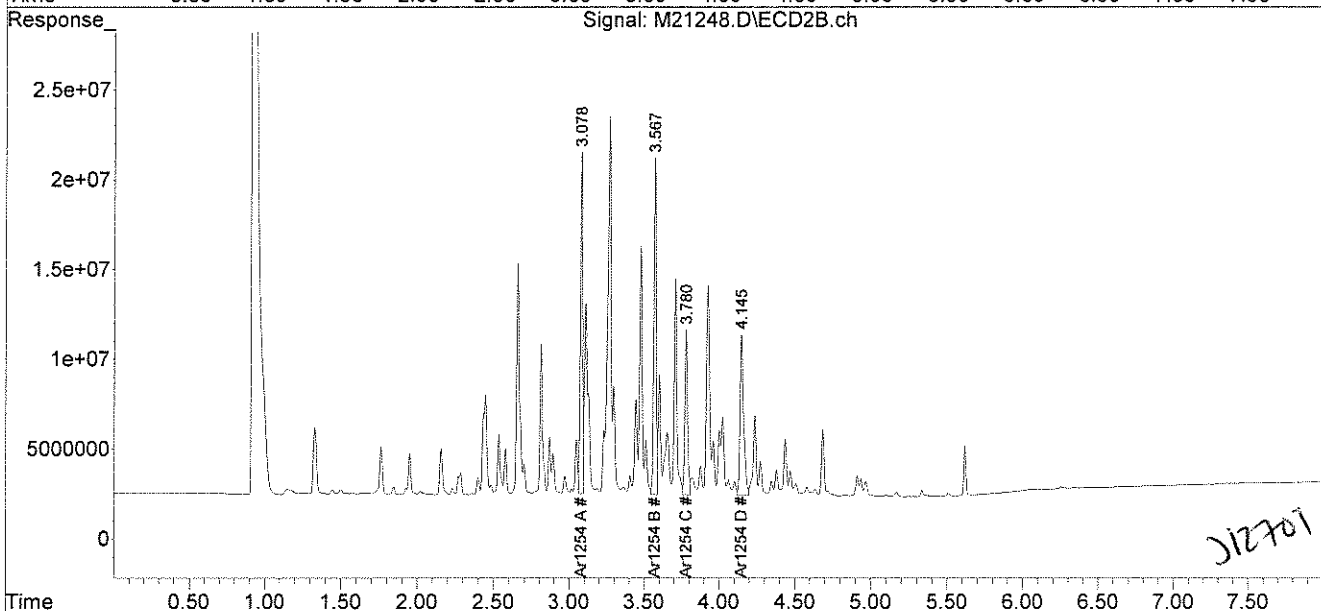
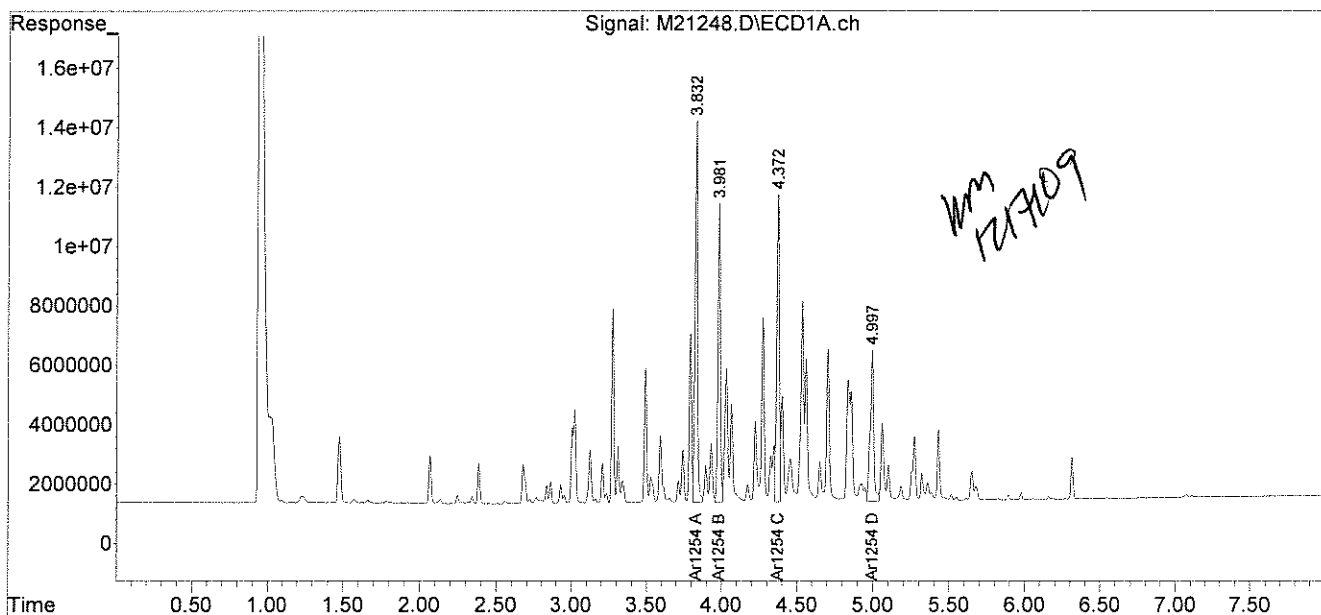
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120709-M\
Data File : M21248.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Dec 2009 10:28 am
Operator : RM
Sample : 65436-13,1:10,,A/C
Misc : SOIL
ALS Vial : 7 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 12:32:10 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-18E4-CTP(6-7)-027

Lab Sample ID: 65436-14
Matrix: Solid
Percent Solid: 89
Dilution Factor: 6
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	200	U
PCB-1221	200	U
PCB-1232	200	U
PCB-1242	200	U
PCB-1248	200	U
PCB-1254	200	4640
PCB-1260	200	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	114	%
Decachlorobiphenyl	116	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-14,1:5,,A/C
Column ID: 0.25 mm	Data File: M21258.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 5.5
Column ID: 0.25 mm	

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	4635	3808	19.6	

Column to be used to flag RPD values greater than QC limit of 40%

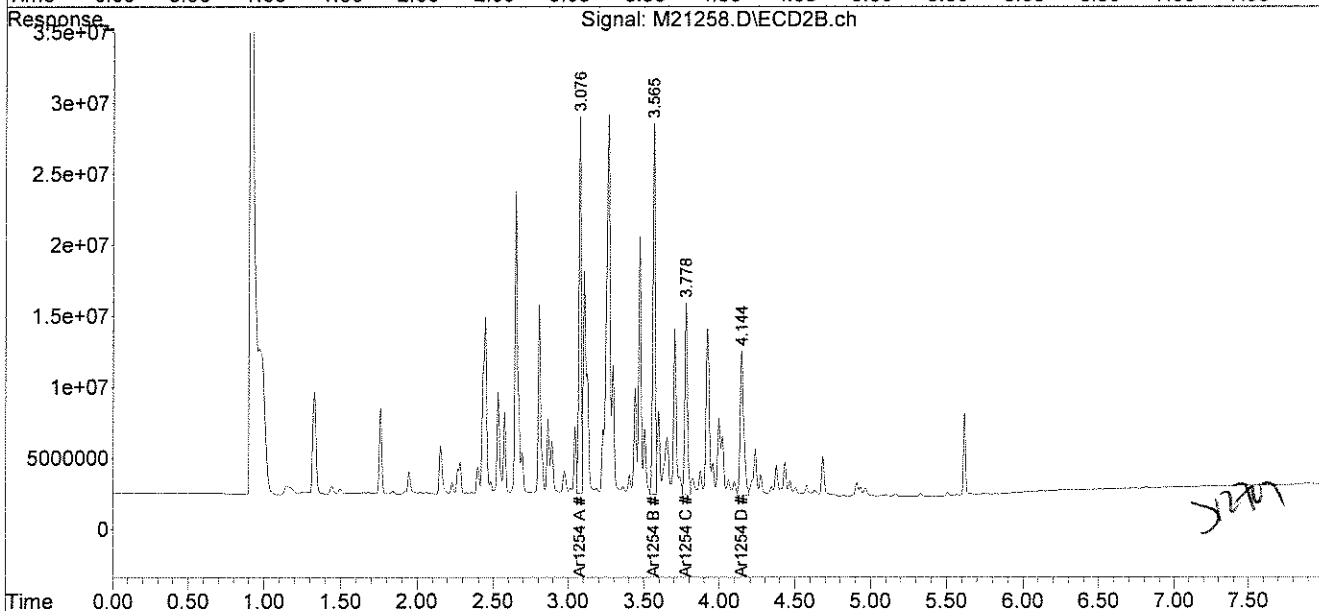
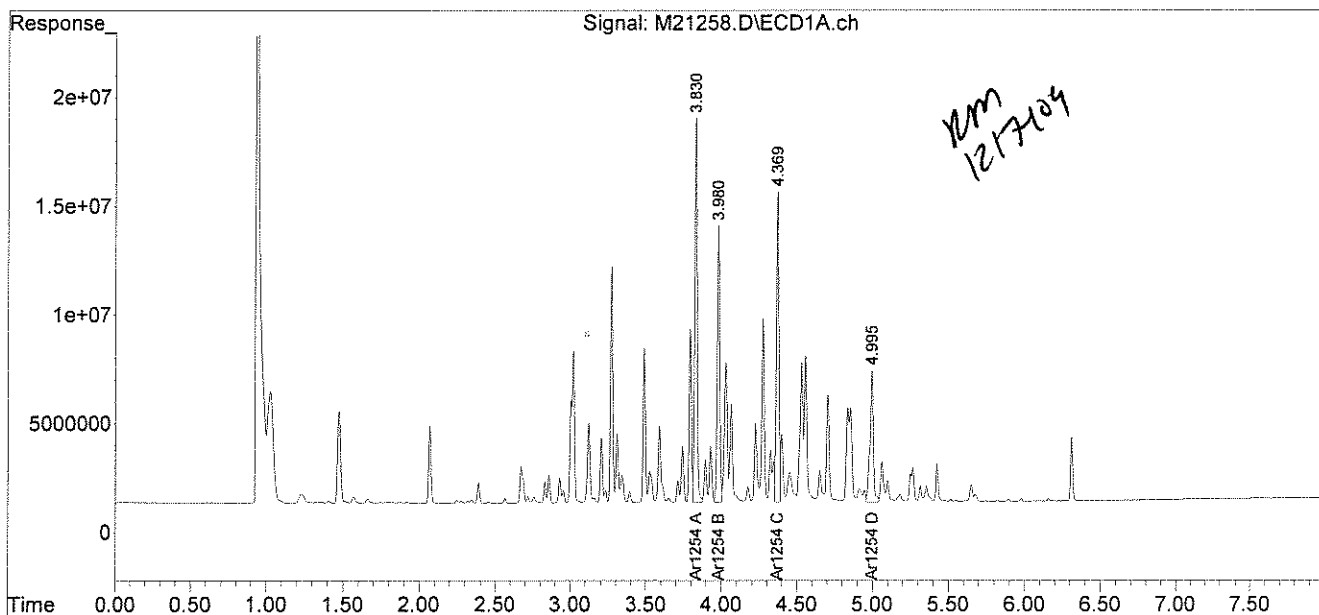
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120709-M\
Data File : M21258.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Dec 2009 12:09 pm
Operator : RM
Sample : 65436-14,1:5,,A/C
Misc : SOIL
ALS Vial : 17 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 12:32:30 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-18E1-TCK-028

Lab Sample ID: 65436-15
Matrix: Solid
Percent Solid: 100
Dilution Factor: 21100
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	696000	U
PCB-1221	696000	U
PCB-1232	696000	U
PCB-1242	696000	U
PCB-1248	696000	U
PCB-1254	696000	20800000
PCB-1260	696000	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.
* The surrogates were diluted out.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-15,1:2000,,A/C
Column ID: 0.25 mm	Data File: M21244.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 21130.8
Column ID: 0.25 mm	

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	20847134	19795110	5.2	

Column to be used to flag RPD values greater than QC limit of 40%

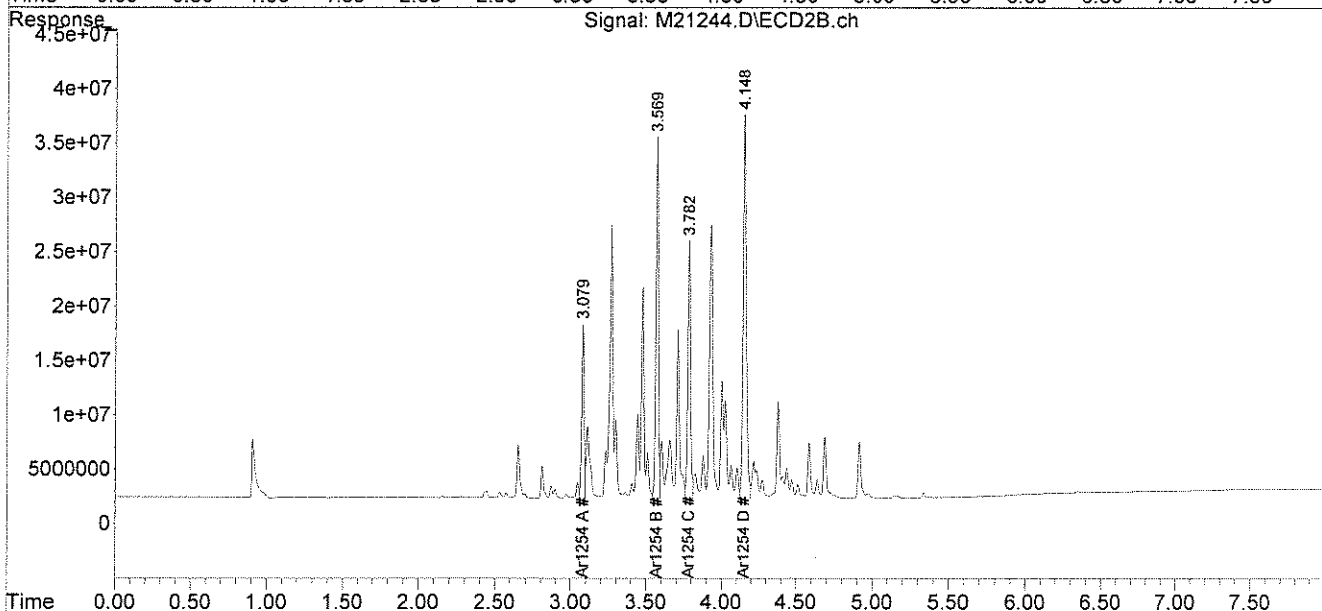
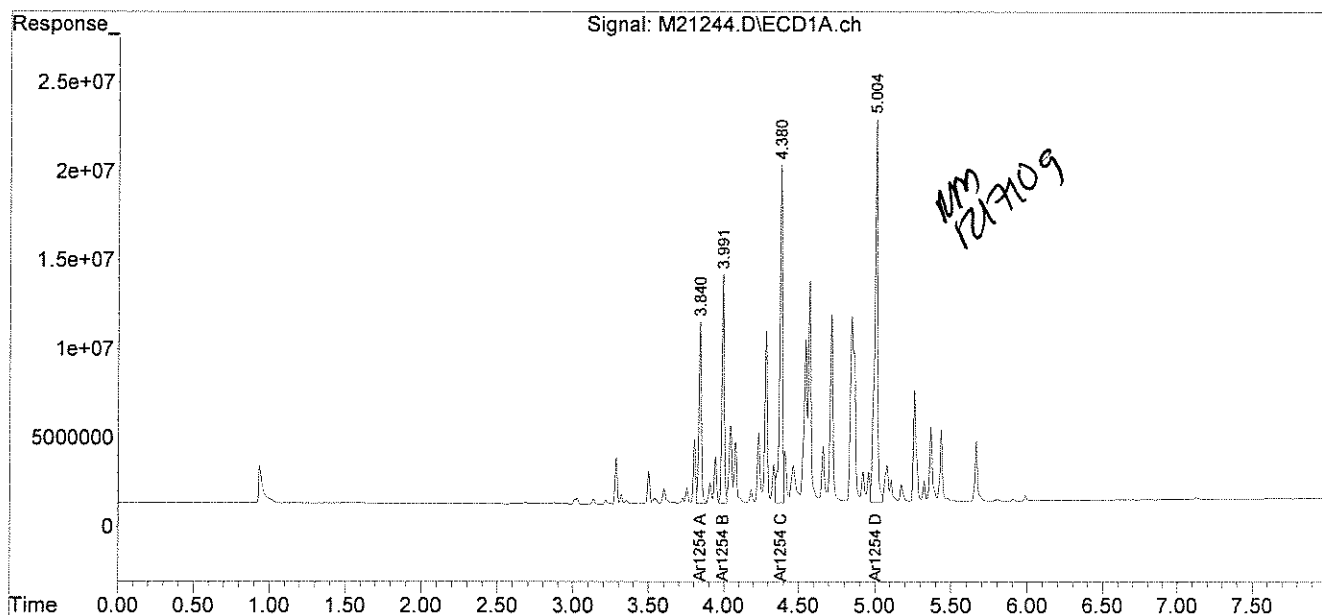
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120709-M\
Data File : M21244.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Dec 2009 9:48 am
Operator : RM
Sample : 65436-15,1:2000,,A/C
Misc : SOIL
ALS Vial : 3 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 12:32:02 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID
Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-15E2-CPS(4-5)-030

Lab Sample ID: 65436-16
Matrix: Solid
Percent Solid: 93
Dilution Factor: 10
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	330	U
PCB-1221	330	U
PCB-1232	330	U
PCB-1242	330	U
PCB-1248	330	U
PCB-1254	330	6000
PCB-1260	330	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	120	%
Decachlorobiphenyl	121	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-16,1:10,,A/C
Column ID: 0.25 mm	Data File: M21250.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 10.0
Column ID: 0.25 mm	

Column #1		Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	6000	5555	7.7	

Column to be used to flag RPD values greater than QC limit of 40%

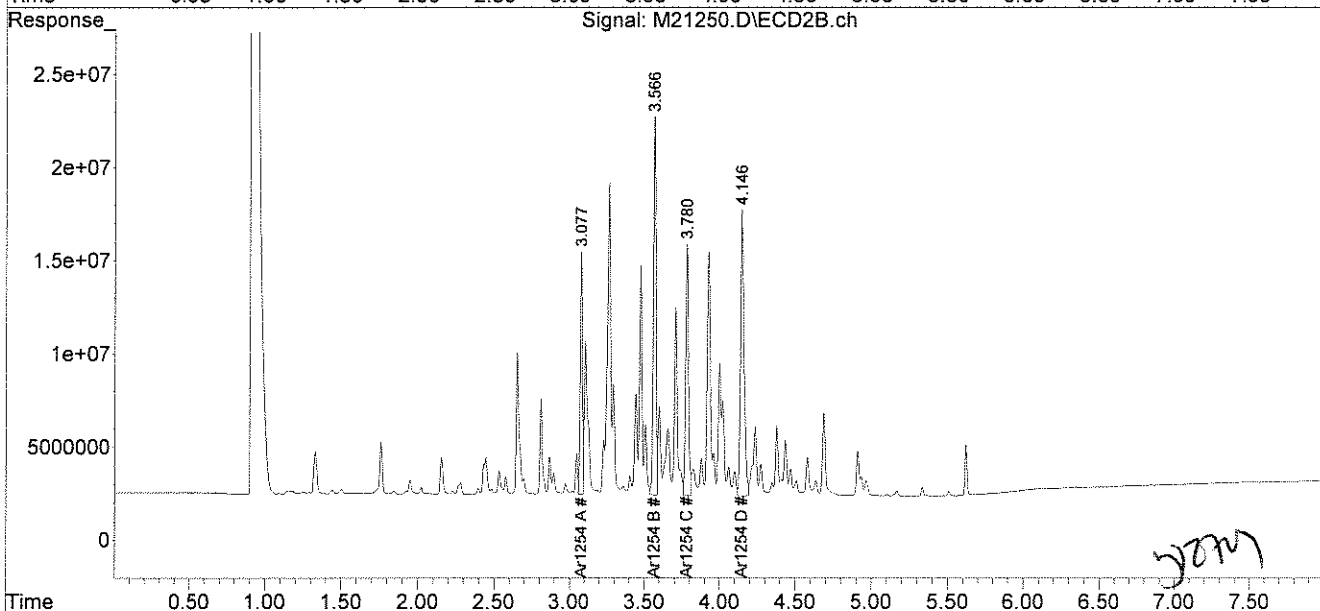
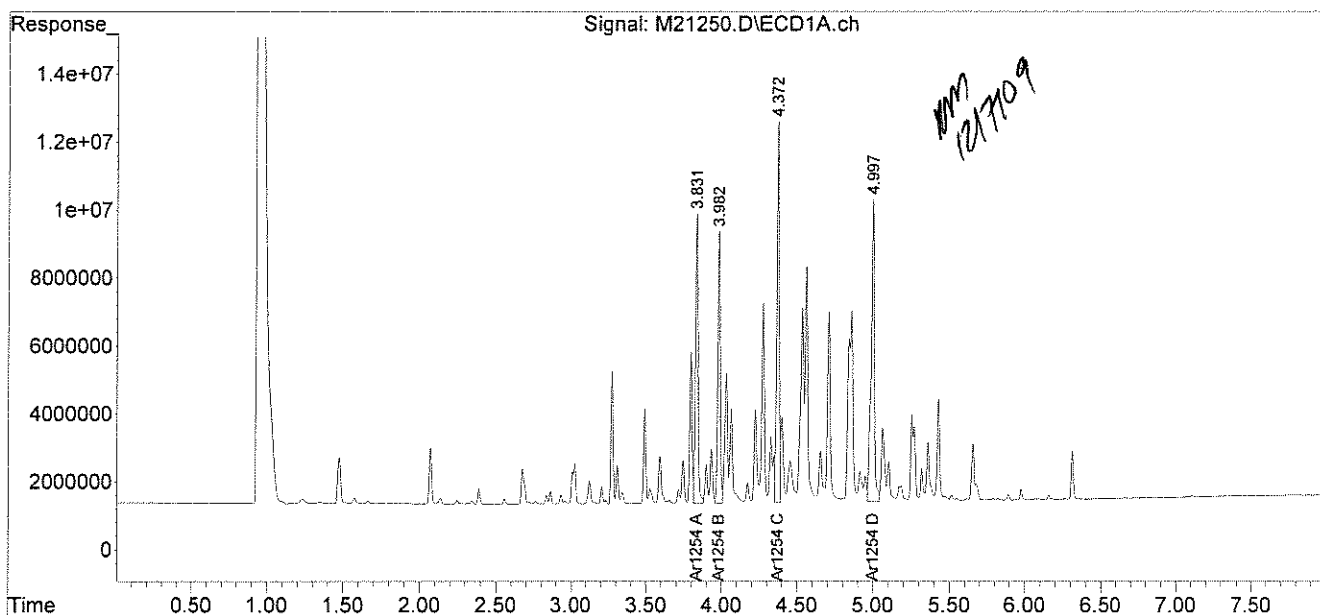
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120709-M\
Data File : M21250.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Dec 2009 10:48 am
Operator : RM
Sample : 65436-16,1:10,,A/C
Misc : SOIL
ALS Vial : 9 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 12:32:14 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-15E2-CMB(4-5)-032

Lab Sample ID: 65436-17
Matrix: Solid
Percent Solid: 97
Dilution Factor: 1.0
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	325
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	93	%
Decachlorobiphenyl	95	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-17,,A/C

Column ID: 0.25 mm

Data File: M21224.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 1.0

Column ID: 0.25 mm

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1242	325	271	18.1

Column to be used to flag RPD values greater than QC limit of 40%

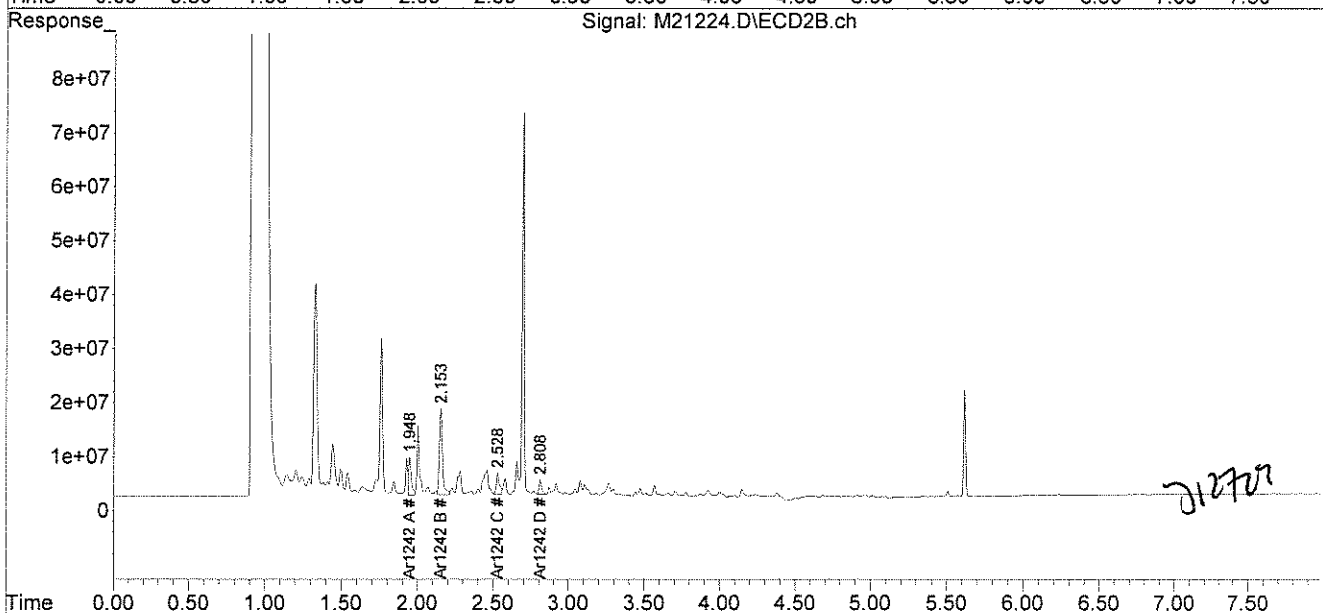
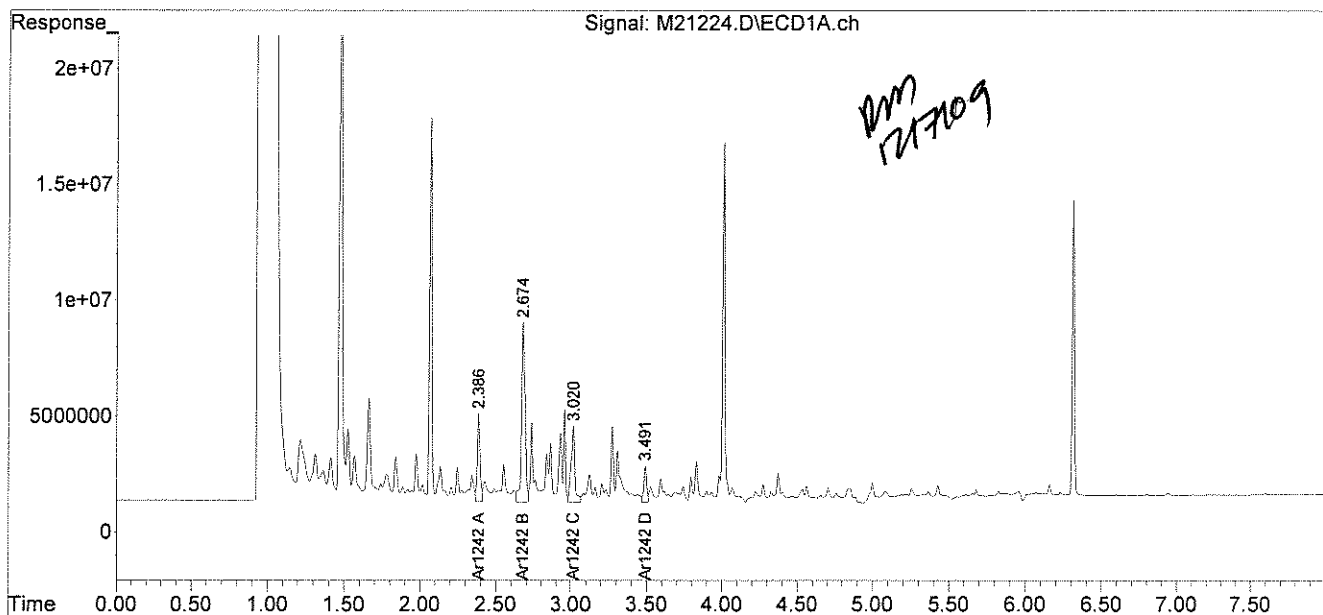
* Values outside QC limits

Comments: _____

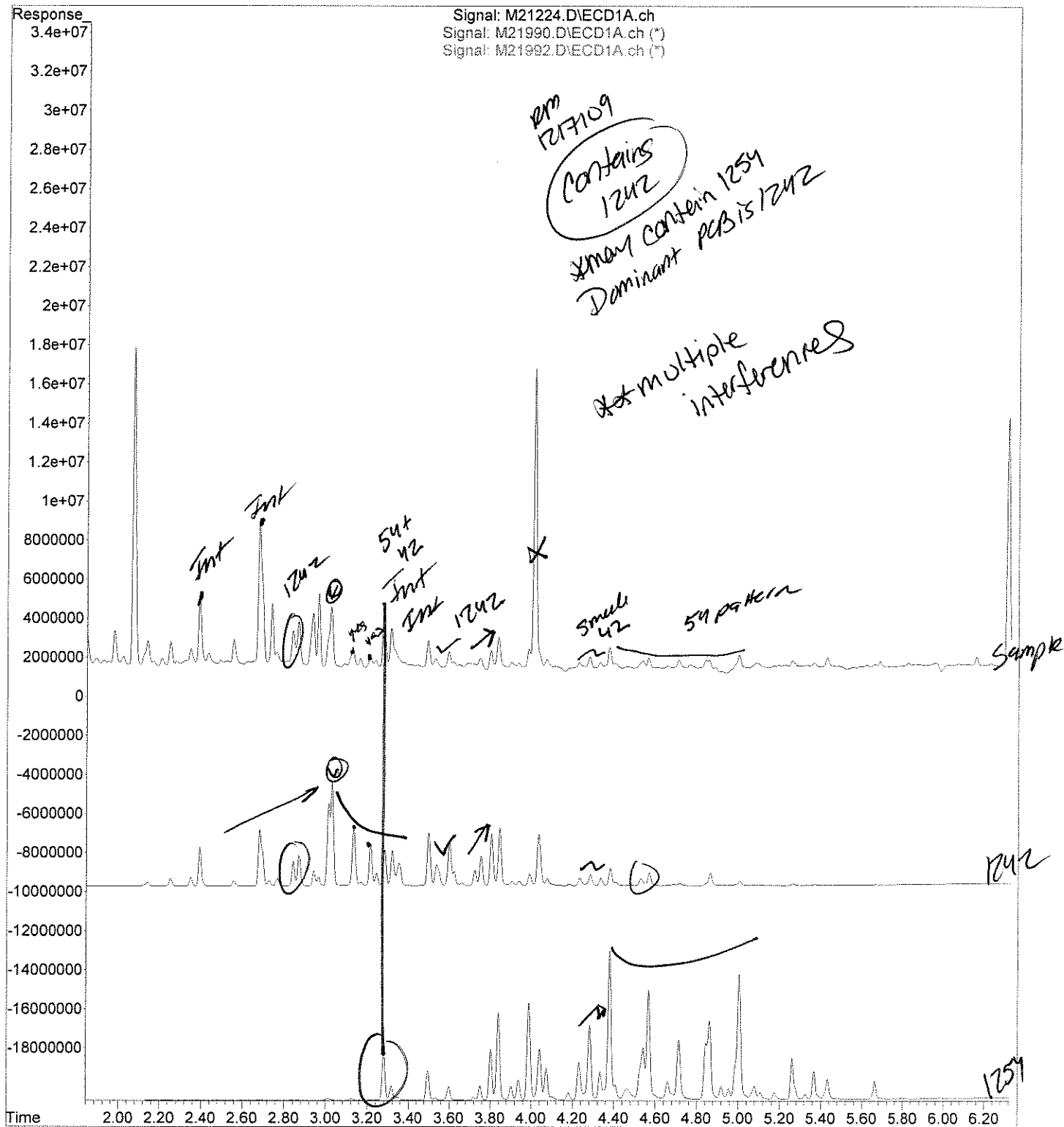
Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21224.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 10:57 pm
Operator : RM
Sample : 65436-17,,A/C
Misc : SOIL
ALS Vial : 76 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 11:33:32 2009
Quant Method : C:\msdchem\1\METHODS\42SP11249.M
Quant Title : AR 1242
QLast Update : Fri Dec 04 12:29:23 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



File : C:\msdchem\1\DATA\120409-M\M21224.D
Operator : RM
Acquired : 4 Dec 2009 10:57 pm using AcqMethod PCB.M
Instrument : Instrument M
Sample Name: 65436-17,,A/C
Misc Info : SOIL
Vial Number: 76



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-15E2-CCS(6-7)-034

Lab Sample ID: 65436-18
Matrix: Solid
Percent Solid: 99
Dilution Factor: 5.0
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	170	U
PCB-1221	170	U
PCB-1232	170	U
PCB-1242	170	U
PCB-1248	170	U
PCB-1254	170	3160
PCB-1260	170	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	107	%
Decachlorobiphenyl	116	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-18,1:5,,A/C
Column ID: 0.25 mm	Data File: M21259.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 5.0
Column ID: 0.25 mm	

Column #1		Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	3163	2522	22.5	

Column to be used to flag RPD values greater than QC limit of 40%

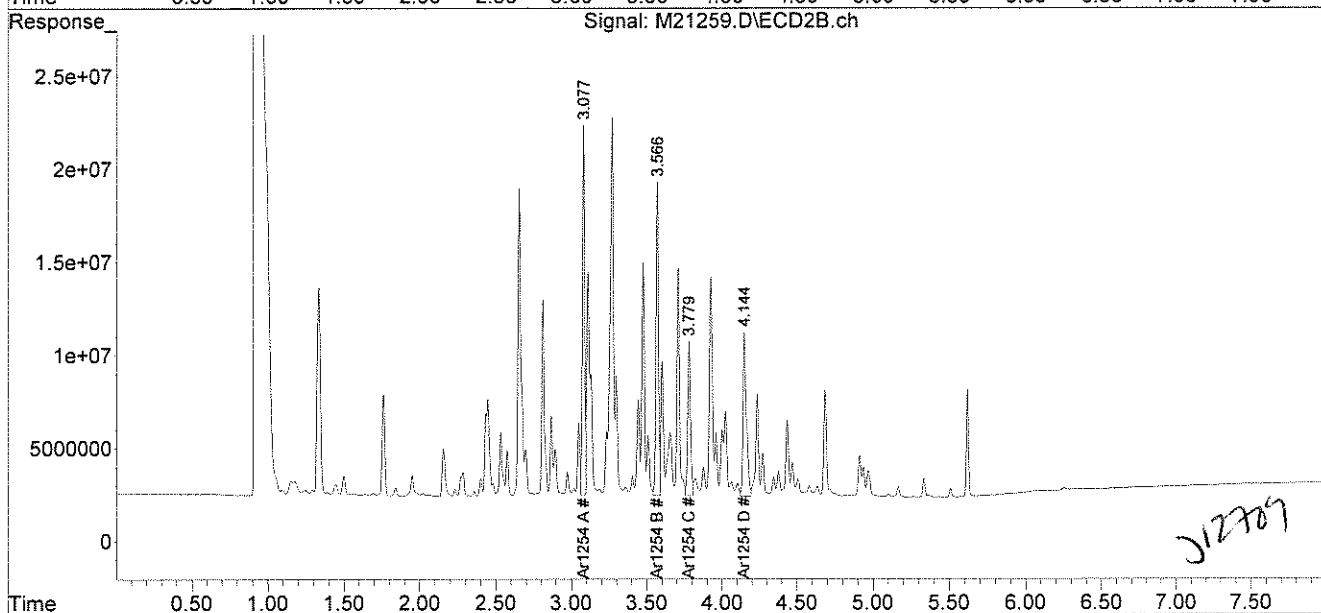
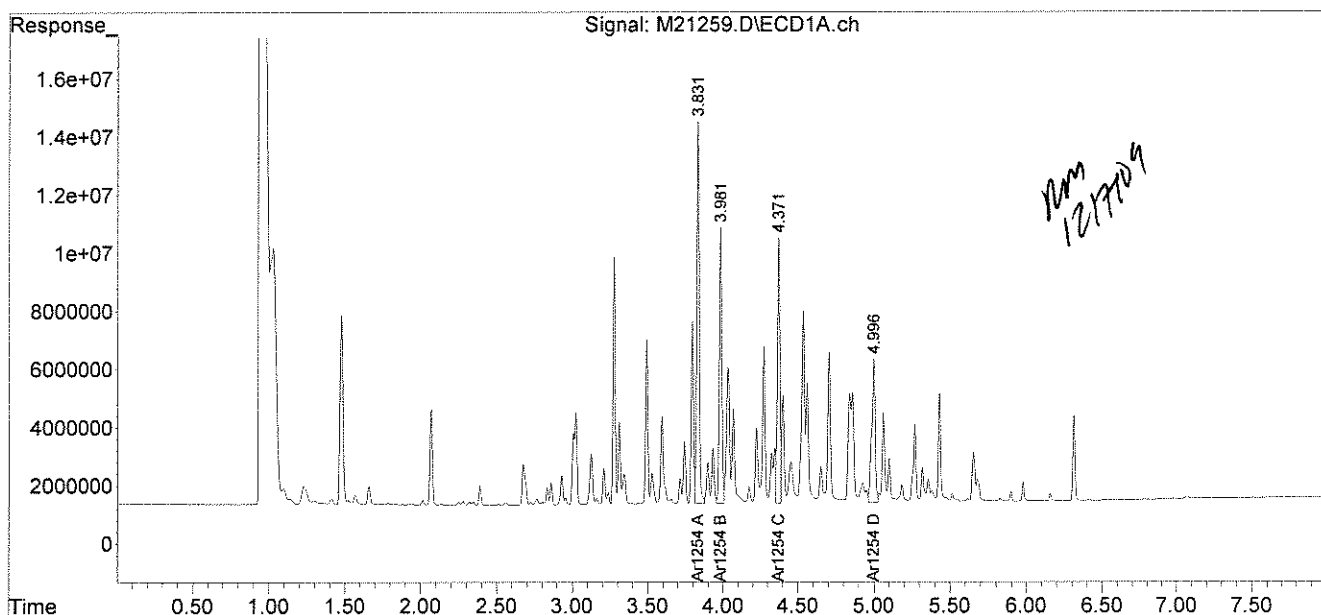
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120709-M\
Data File : M21259.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Dec 2009 12:19 pm
Operator : RM
Sample : 65436-18,1:5,,A/C
Misc : SOIL
ALS Vial : 18 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 12:32:32 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-15E2-CCC(6-7)-036

Lab Sample ID: 65436-19
Matrix: Solid
Percent Solid: 99
Dilution Factor: 4.7
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	160	U
PCB-1221	160	U
PCB-1232	160	U
PCB-1242	160	U
PCB-1248	160	U
PCB-1254	160	2960
PCB-1260	160	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	118	%
Decachlorobiphenyl	125	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-19,1:5,,A/C

Column ID: 0.25 mm

Data File: M21260.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 4.7

Column ID: 0.25 mm

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1254	2955	2725	8.1

Column to be used to flag RPD values greater than QC limit of 40%

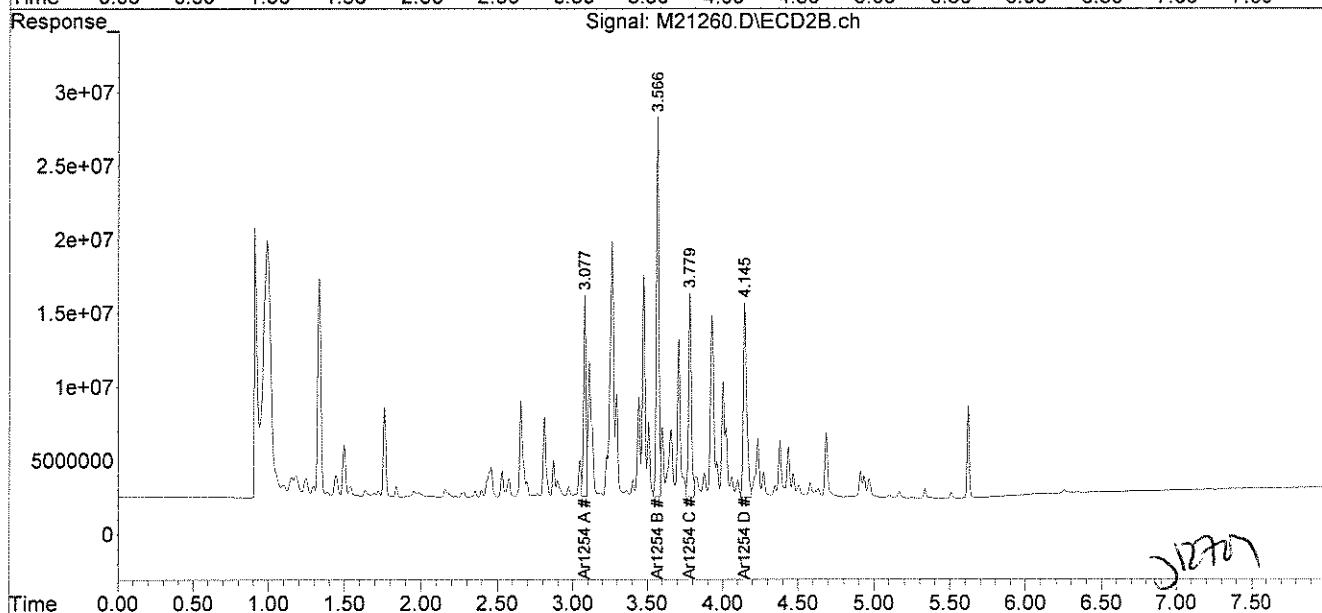
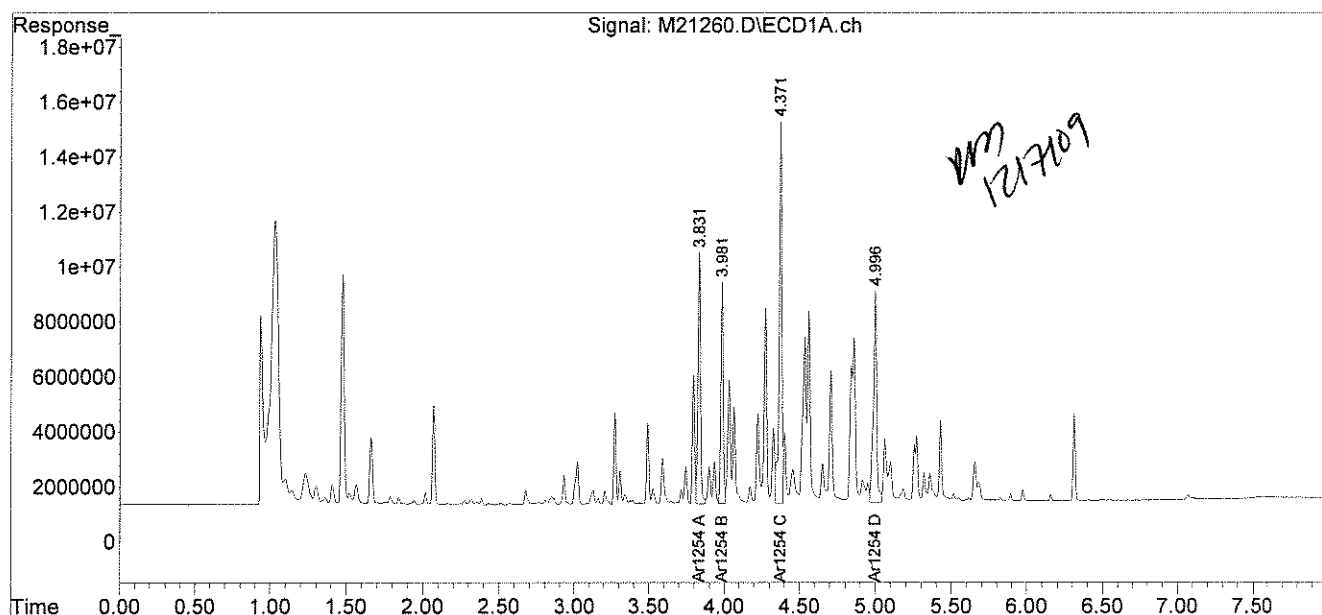
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120709-M\
Data File : M21260.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Dec 2009 12:29 pm
Operator : RM
Sample : 65436-19,1:5,,A/C
Misc : SOIL
ALS Vial : 19 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 13:27:39 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:29 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID
Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-15E6-CPS(6-7)-038

Lab Sample ID: 65436-20
Matrix: Solid
Percent Solid: 93
Dilution Factor: 11
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	360	U
PCB-1221	360	U
PCB-1232	360	U
PCB-1242	360	U
PCB-1248	360	U
PCB-1254	360	4810
PCB-1260	360	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	119	%
Decachlorobiphenyl	121	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-20,1:10,,A/C

Column ID: 0.25 mm

Data File: M21249.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 10.7

Column ID: 0.25 mm

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	4813	3972	19.1	

Column to be used to flag RPD values greater than QC limit of 40%

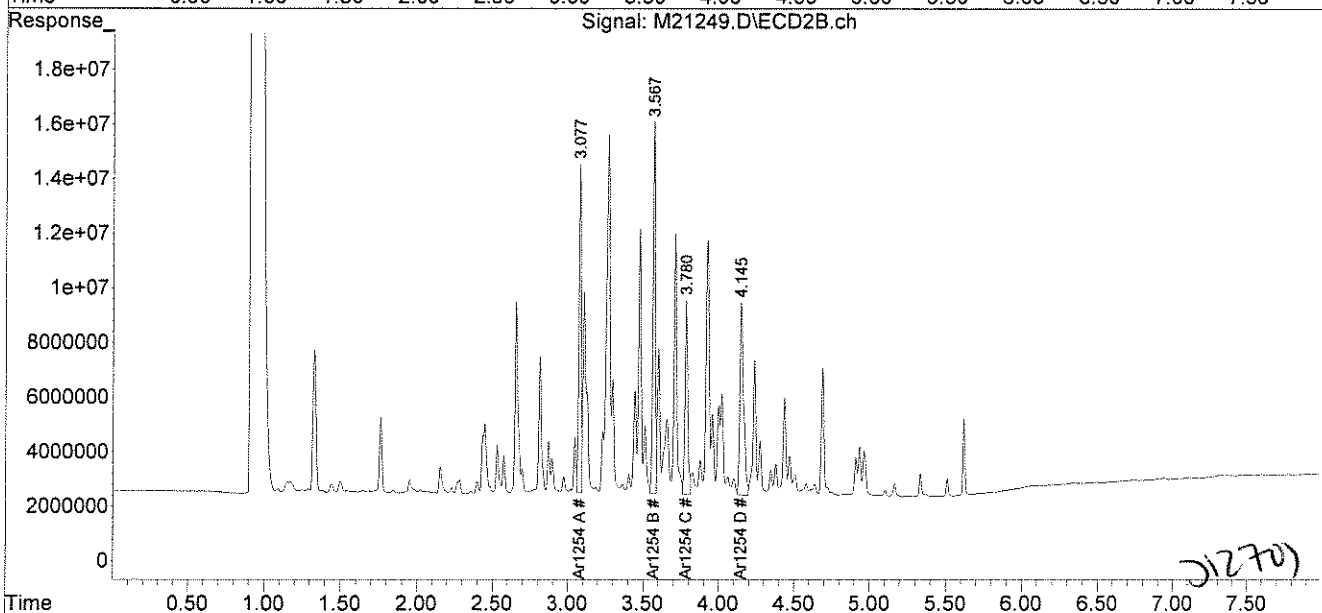
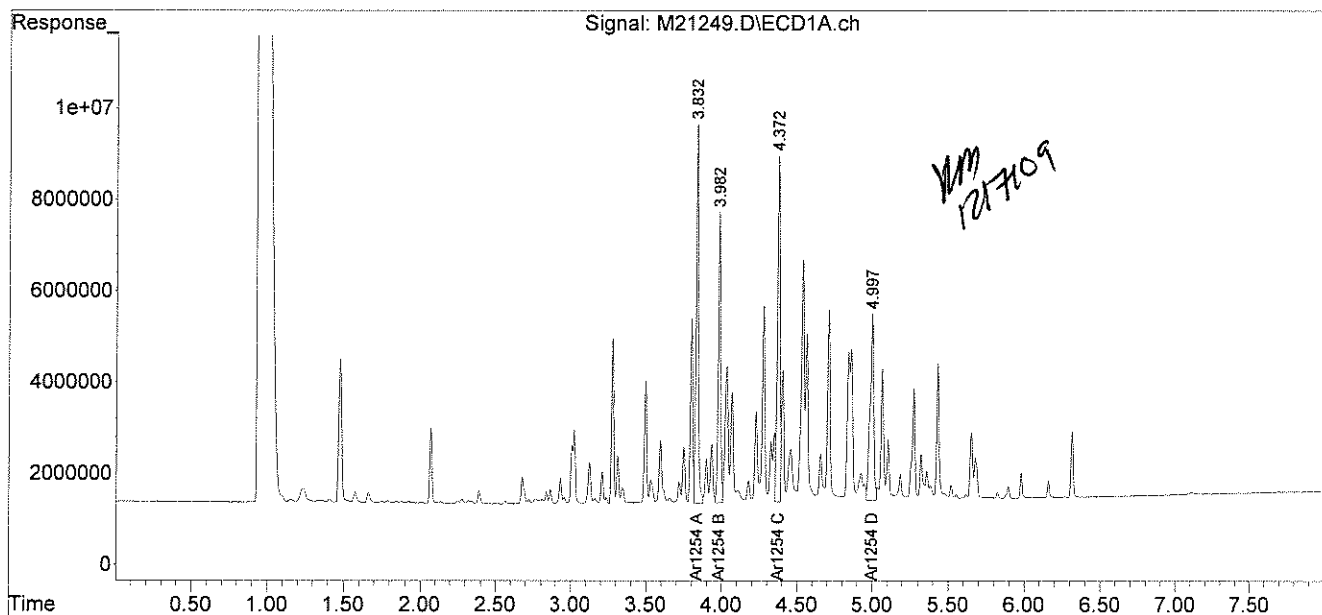
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120709-M\
Data File : M21249.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Dec 2009 10:38 am
Operator : RM
Sample : 65436-20,1:10,,A/C
Misc : SOIL
ALS Vial : 8 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 12:32:12 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID
Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-13E1-CCS(6-7)-040

Lab Sample ID: 65436-21
Matrix: Solid
Percent Solid: 99
Dilution Factor: 4.9
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/07/09


PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	160	U
PCB-1221	160	U
PCB-1232	160	U
PCB-1242	160	U
PCB-1248	160	U
PCB-1254	160	4130
PCB-1260	160	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	117	%
Decachlorobiphenyl	123	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.



PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-21,1:5,,A/C

Column ID: 0.25 mm

Data File: M21261.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 4.9

Column ID: 0.25 mm

Column #1		Column #2		RPD	#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1254	4133	3125		27.8	

Column to be used to flag RPD values greater than QC limit of 40%

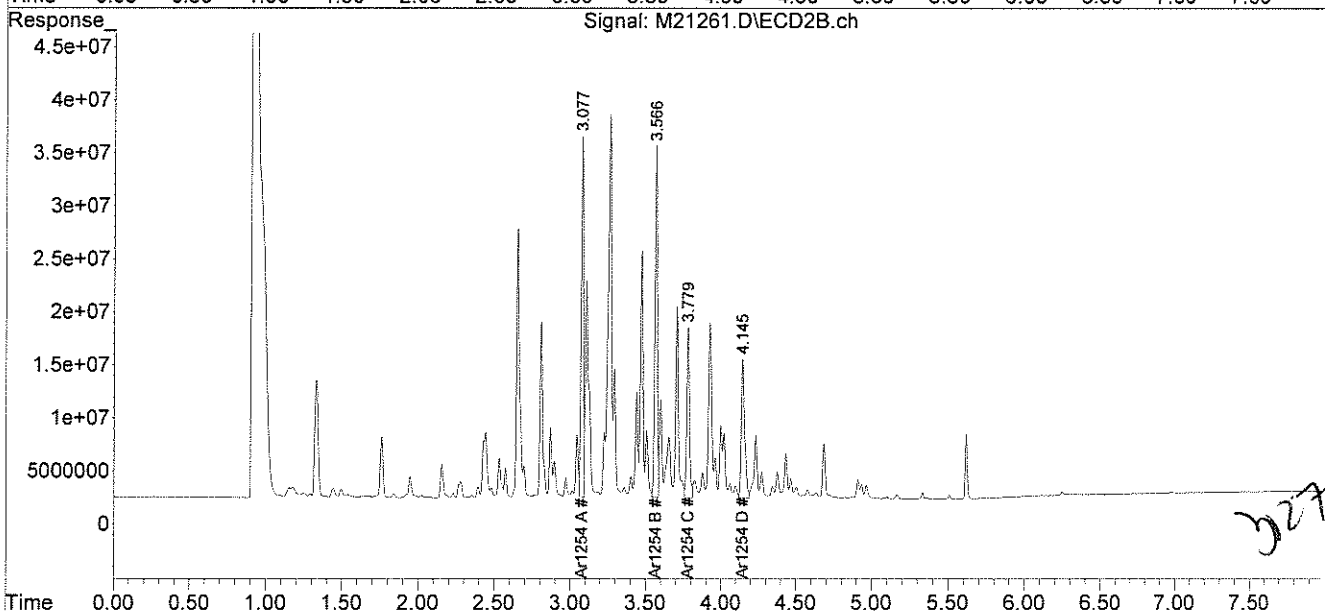
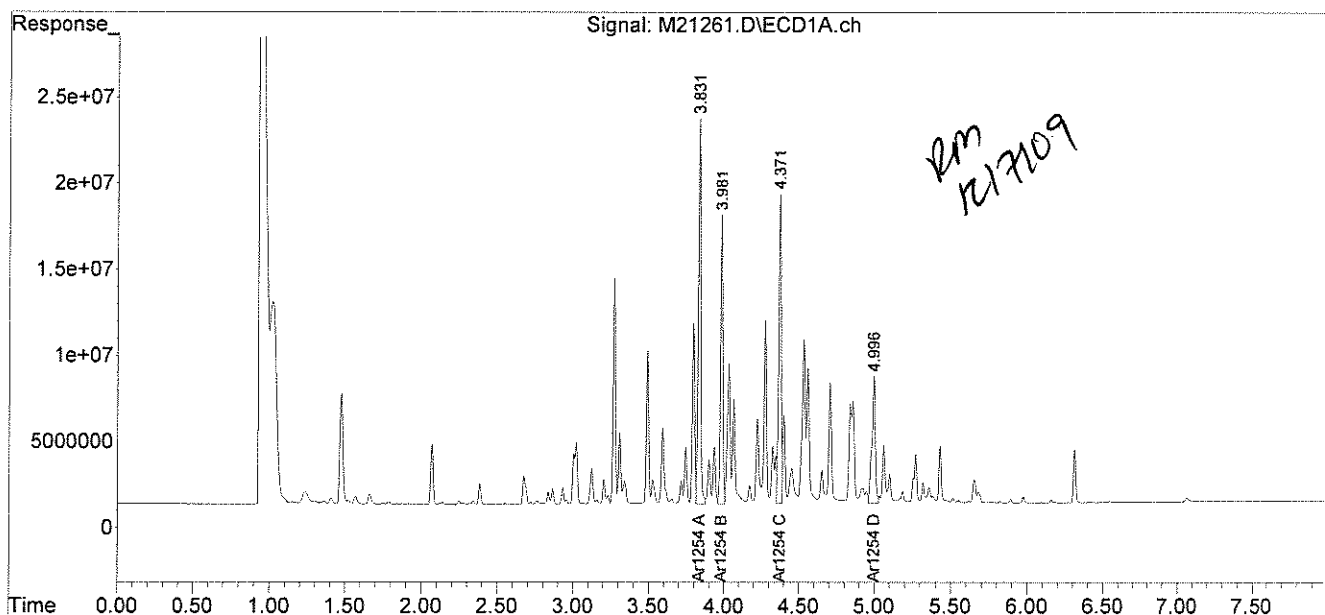
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120709-M\
 Data File : M21261.D
 Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
 Acq On : 7 Dec 2009 12:39 pm
 Operator : RM
 Sample : 65436-21,1:5,,A/C
 Misc : SOIL
 ALS Vial : 20 Sample Multiplier: 1

Integration File signal 1: events.e
 Integration File signal 2: events2.e
 Quant Time: Dec 07 13:27:43 2009
 Quant Method : C:\msdchem\1\METHODS\54SP11249.M
 Quant Title :
 QLast Update : Wed Nov 25 15:04:29 2009
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal #1 Phase : Signal #2 Phase:
 Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID
Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-12E1-CCS(6-7)-042

Lab Sample ID: 65436-22
Matrix: Solid
Percent Solid: 99
Dilution Factor: 10
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	330	U
PCB-1221	330	U
PCB-1232	330	U
PCB-1242	330	U
PCB-1248	330	U
PCB-1254	330	5150
PCB-1260	330	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	122	%
Decachlorobiphenyl	126	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-22,1:10,,A/C
Column ID: 0.25 mm	Data File: M21252.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 9.9
Column ID: 0.25 mm	

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1254	5150	4211	20.1

Column to be used to flag RPD values greater than QC limit of 40%

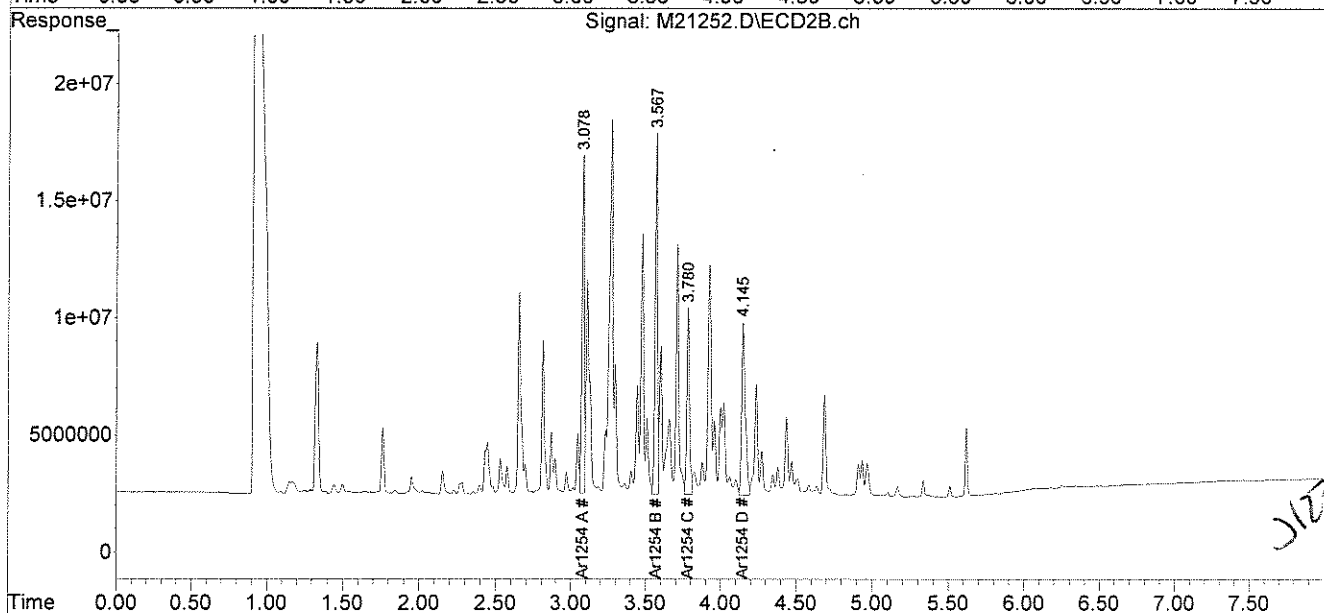
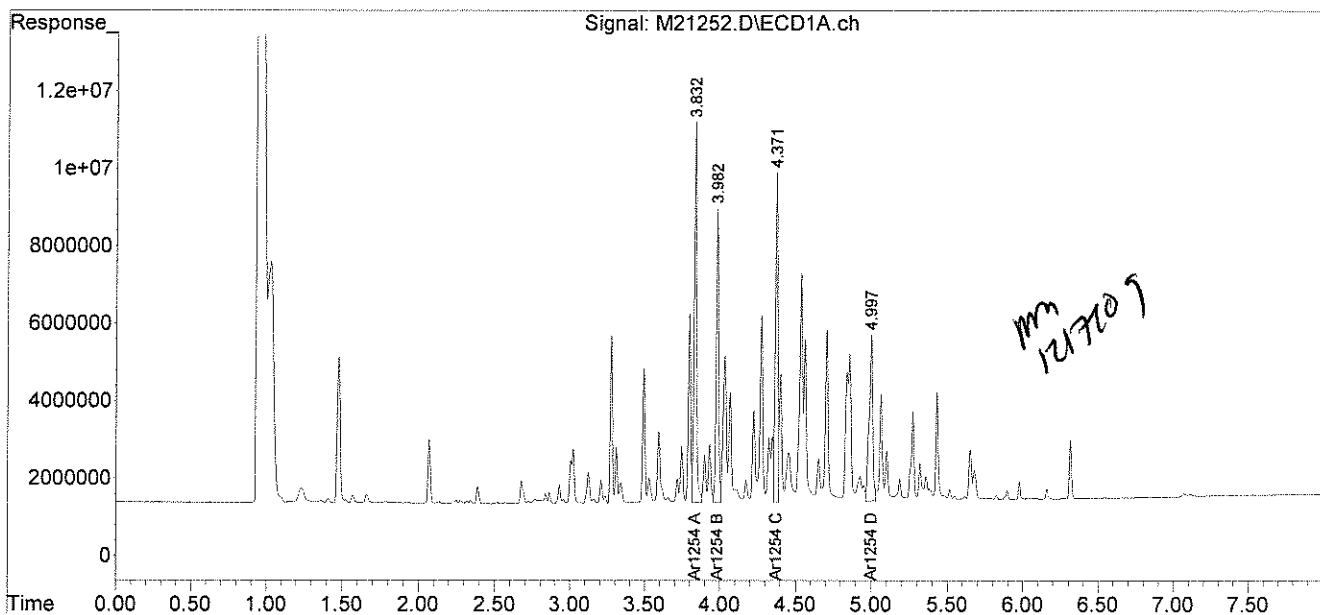
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120709-M\
Data File : M21252.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Dec 2009 11:08 am
Operator : RM
Sample : 65436-22, ~~1-5~~, A/C
Misc : SOIL
ALS Vial : 11 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 12:32:18 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID
Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-10E1-CCS(6-7)-044

Lab Sample ID: 65436-23
Matrix: Solid
Percent Solid: 99
Dilution Factor: 4.9
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	160	U
PCB-1221	160	U
PCB-1232	160	U
PCB-1242	160	U
PCB-1248	160	U
PCB-1254	160	2660
PCB-1260	160	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	124	%
Decachlorobiphenyl	128	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-23,1:5,,A/C
Column ID: 0.25 mm	Data File: M21257.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 4.9
Column ID: 0.25 mm	

Column #1		Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	2656	2309	13.9	

Column to be used to flag RPD values greater than QC limit of 40%

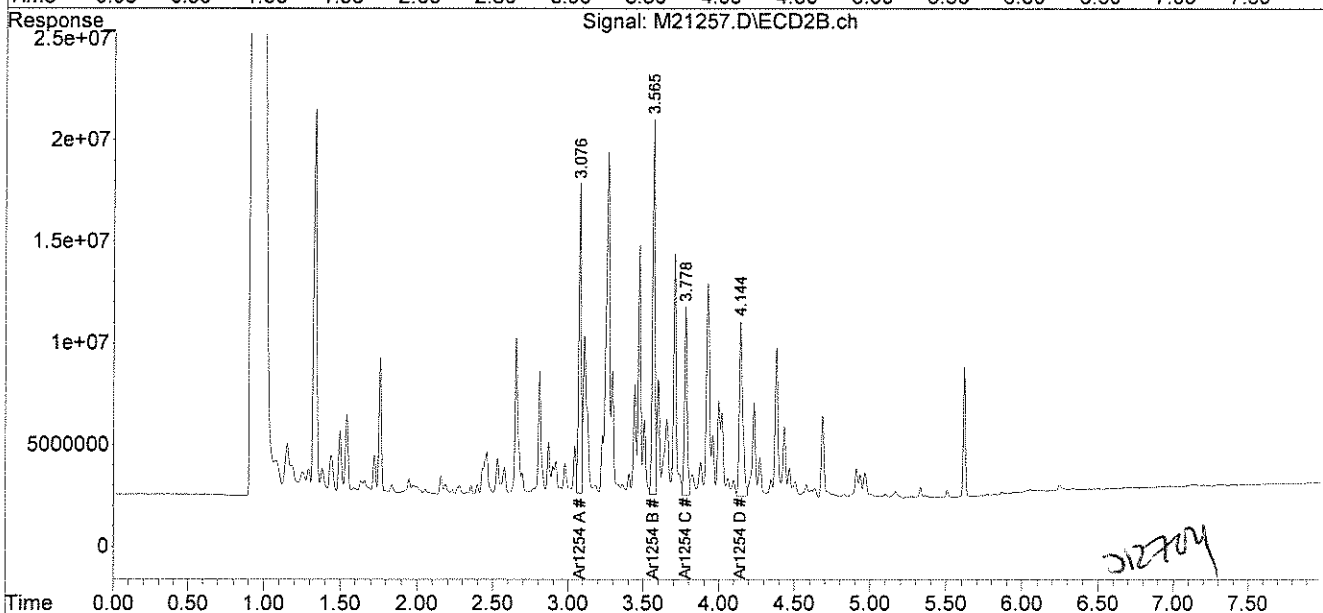
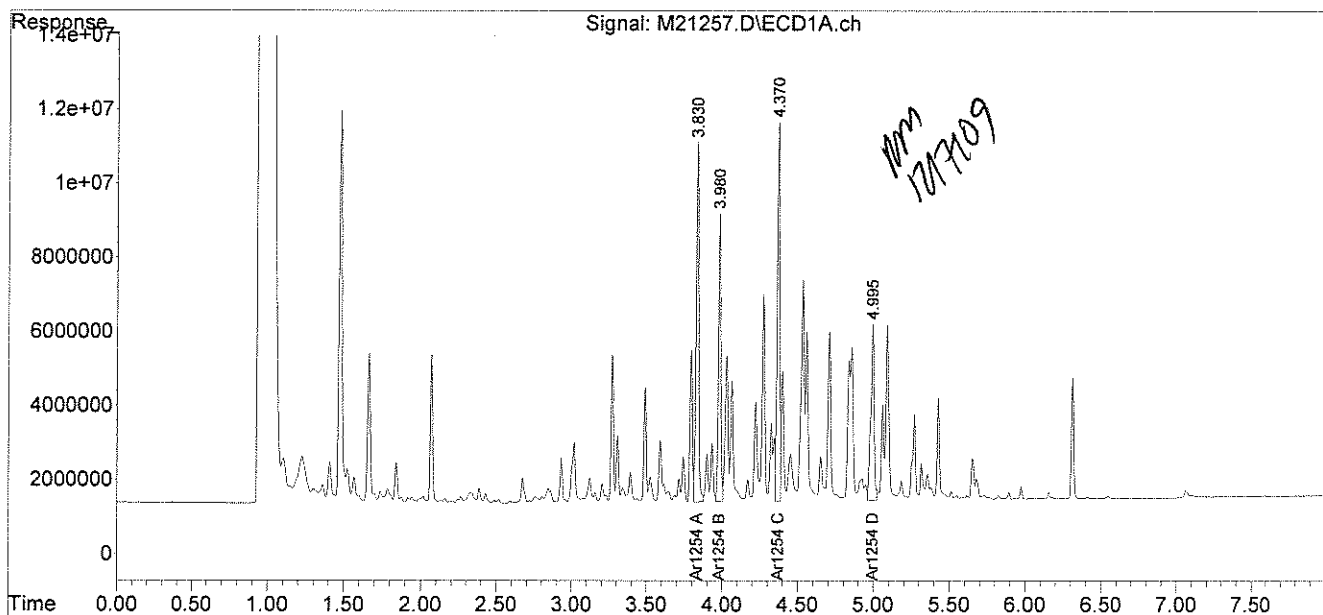
* Values outside QC limits

Comments: _____

5. Data Path : C:\msdchem\1\DATA\120709-M\
Data File : M21257.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Dec 2009 11:59 am
Operator : RM
Sample : 65436-23,1:5,,A/C
Misc : SOIL
ALS Vial : 16 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 13:13:18 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:29 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID
Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-10E4-CTP(6-7)-046

Lab Sample ID: 65436-24
Matrix: Solid
Percent Solid: 86
Dilution Factor: 6
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	200	U
PCB-1221	200	U
PCB-1232	200	U
PCB-1242	200	U
PCB-1248	200	U
PCB-1254	200	4650
PCB-1260	200	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	102	%
Decachlorobiphenyl	101	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-24,1:5,,A/C
Column ID: 0.25 mm	Data File: M21255.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 5.8
Column ID: 0.25 mm	

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1254	4649	3987	15.4

Column to be used to flag RPD values greater than QC limit of 40%

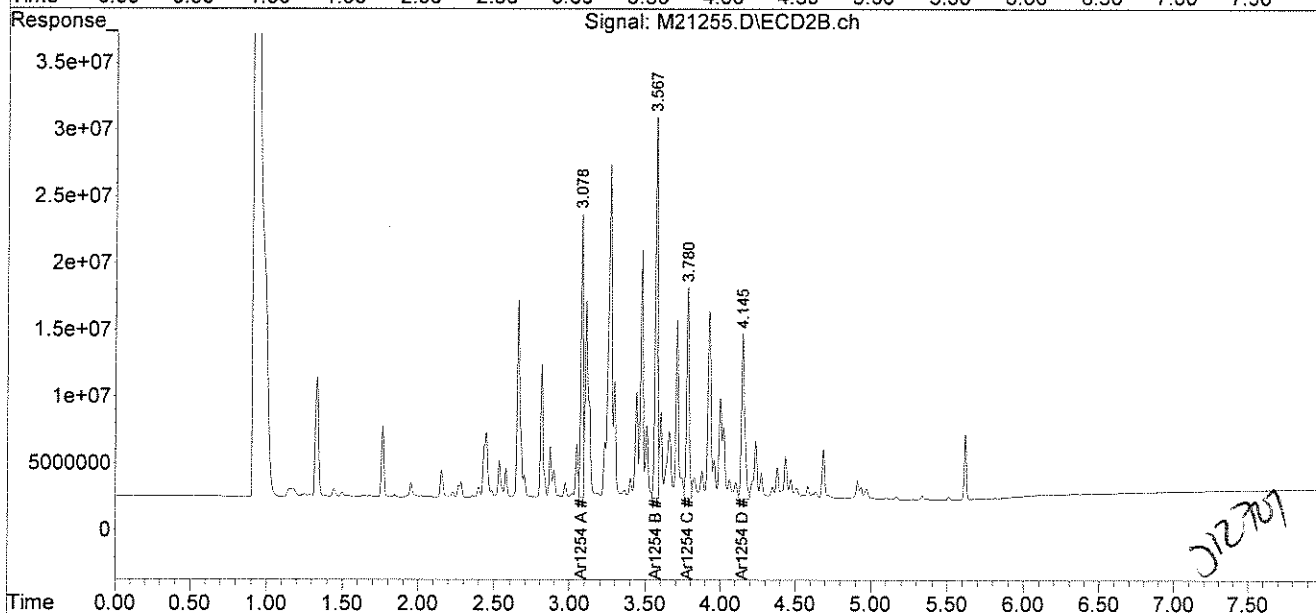
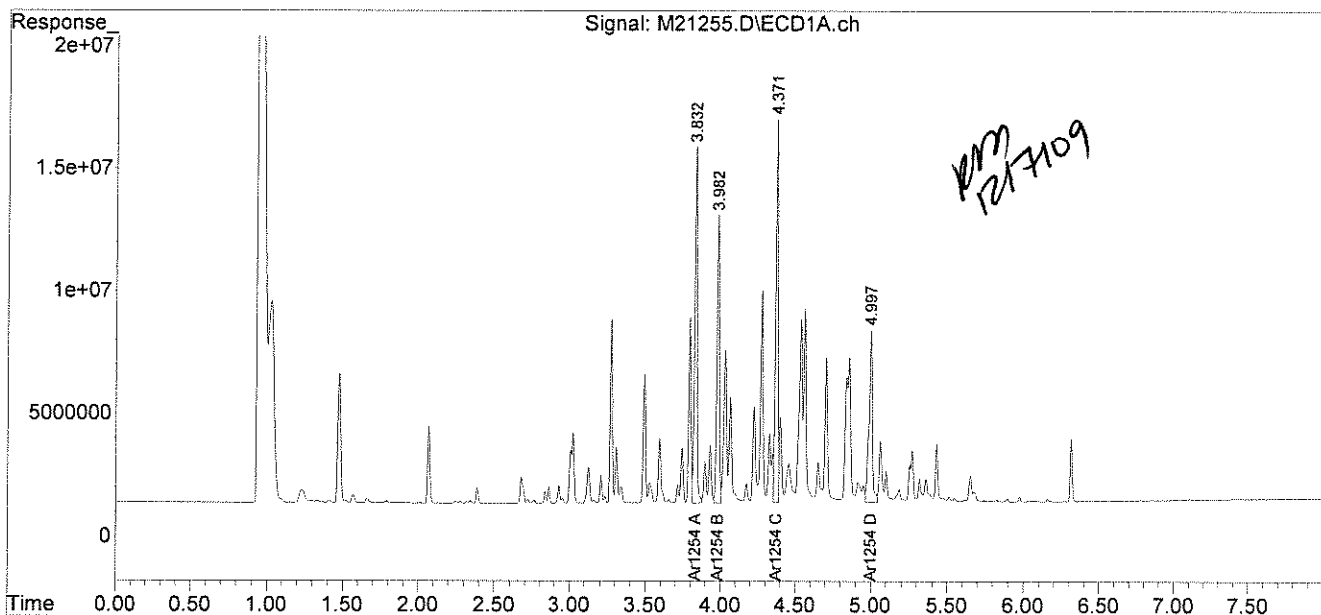
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120709-M\
Data File : M21255.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Dec 2009 11:39 am
Operator : RM
Sample : 65436-24,1:5,,A/C
Misc : SOIL
ALS Vial : 14 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 12:32:24 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID
Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-9E4-CTP(6-7)-048

Lab Sample ID: 65436-25
Matrix: Solid
Percent Solid: 86
Dilution Factor: 1.1
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	36	U
PCB-1221	36	U
PCB-1232	36	U
PCB-1242	36	1070
PCB-1248	36	U
PCB-1254	36	959
PCB-1260	36	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	90	%
Decachlorobiphenyl	88	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-25,,A/C
Column ID: 0.25 mm	Data File: M21214.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 1.1
Column ID: 0.25 mm	

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1242	1072	1073	0.1

Column to be used to flag RPD values greater than QC limit of 40%

* Values outside QC limits

Comments: _____

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-25,,A/C
Column ID: 0.25 mm	Data File: M21214.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 1.1
Column ID: 0.25 mm	

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1254	940	959	2.0

Column to be used to flag RPD values greater than QC limit of 40%

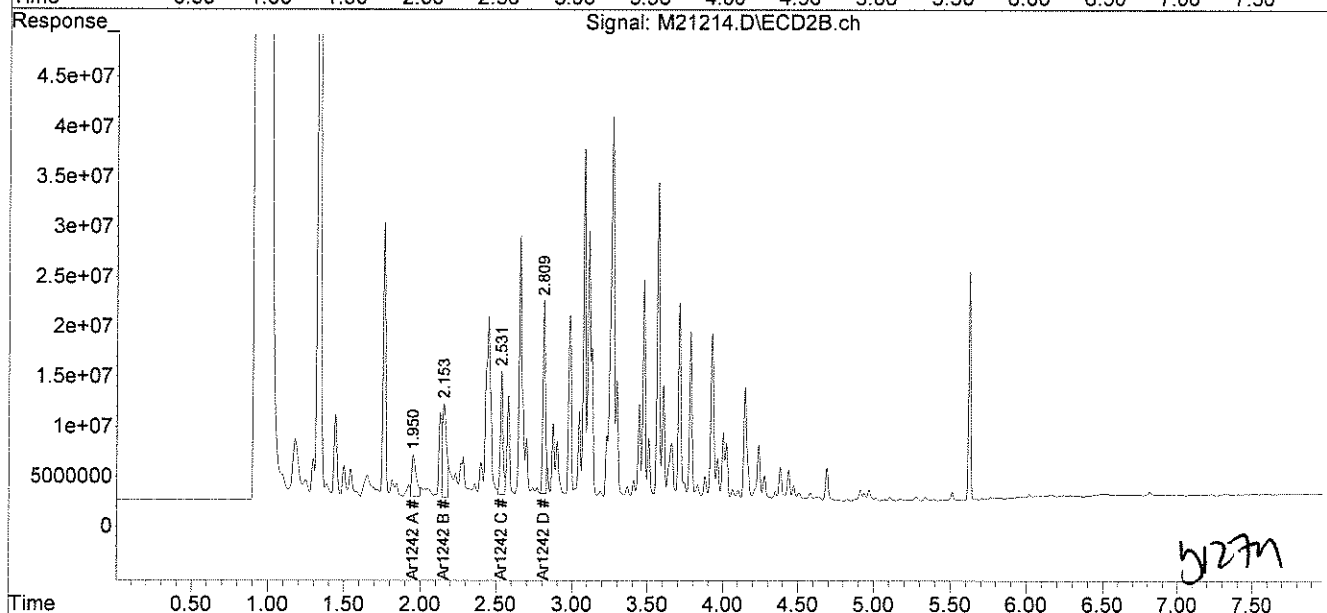
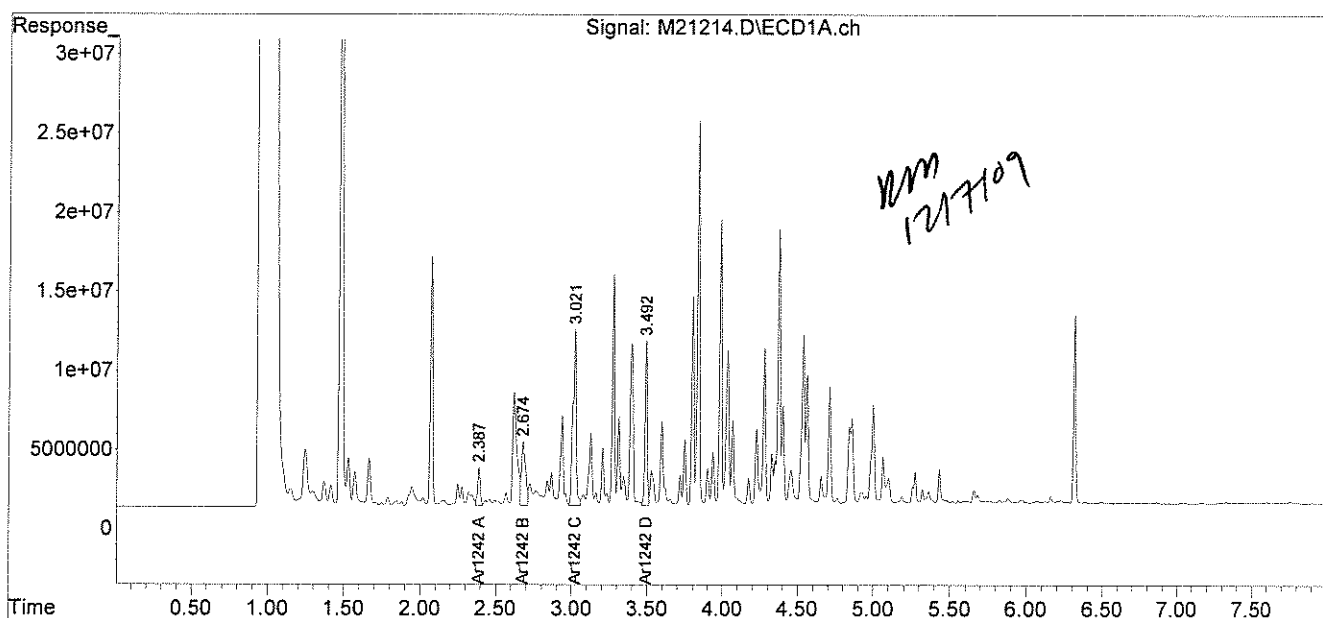
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21214.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 9:16 pm
Operator : RM
Sample : 65436-25,,A/C
Misc : SOIL
ALS Vial : 66 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 11:21:10 2009
Quant Method : C:\msdchem\1\METHODS\42SP11249.M
Quant Title : AR 1242
QLast Update : Fri Dec 04 12:29:23 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-9E2-CCS(6-7)-050

Lab Sample ID: 65436-26
Matrix: Solid
Percent Solid: 99
Dilution Factor: 4.8
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	160	U
PCB-1221	160	U
PCB-1232	160	U
PCB-1242	160	U
PCB-1248	160	U
PCB-1254	160	4030
PCB-1260	160	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	113 %	
Decachlorobiphenyl	119 %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-26,1:5,,A/C

Column ID: 0.25 mm

Data File: M21256.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 4.8

Column ID: 0.25 mm

COMPOUND	Column #1	Column #2		
	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	4031	3320	19.3	

Column to be used to flag RPD values greater than QC limit of 40%

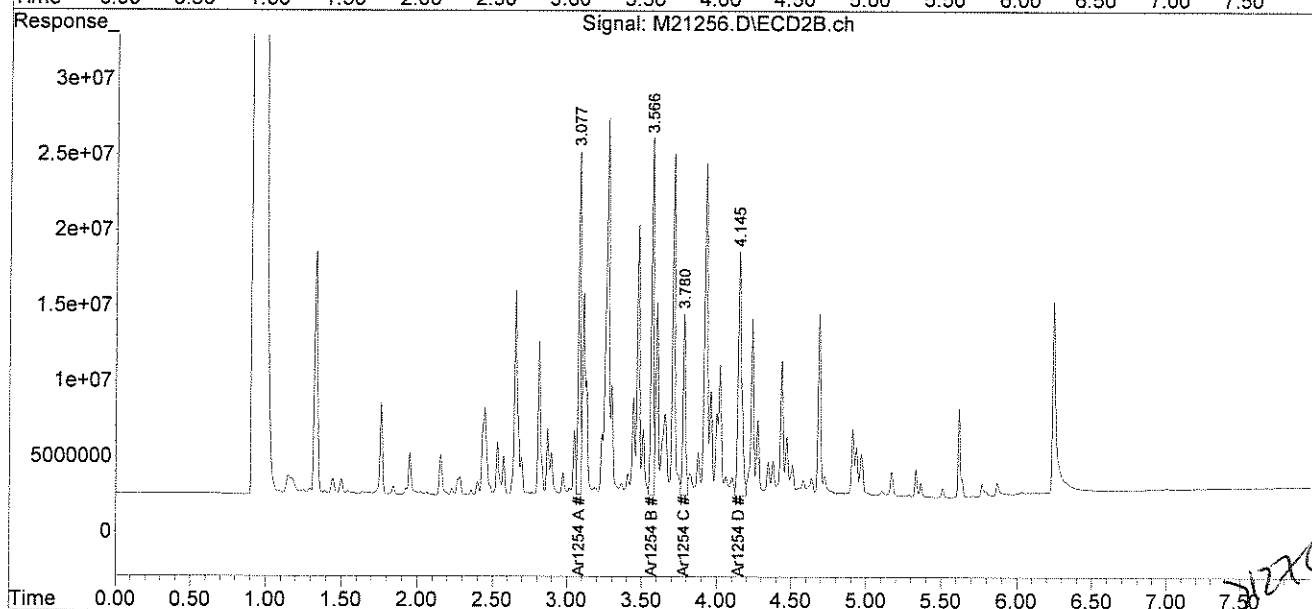
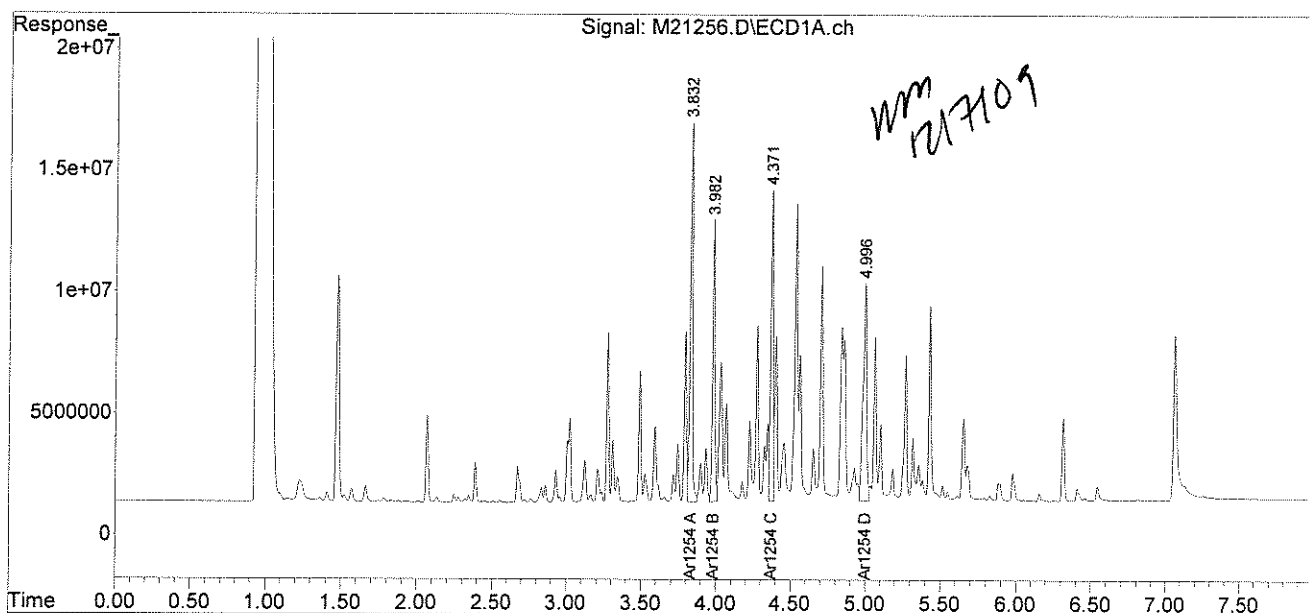
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120709-M\
Data File : M21256.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Dec 2009 11:49 am
Operator : RM
Sample : 65436-26,1:5,,A/C
Misc : SOIL
ALS Vial : 15 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 12:32:26 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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December 7, 2009

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-7E5-CTP(6-7)-052

Lab Sample ID: 65436-27
Matrix: Solid
Percent Solid: 93
Dilution Factor: 10
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	330	U
PCB-1221	330	U
PCB-1232	330	U
PCB-1242	330	U
PCB-1248	330	U
PCB-1254	330	8030
PCB-1260	330	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	119	%
Decachlorobiphenyl	123	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-27,1:10,,A/C

Column ID: 0.25 mm

Data File: M21251.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 10.3

Column ID: 0.25 mm

Column #1		Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	8027	6742	17.4	

Column to be used to flag RPD values greater than QC limit of 40%

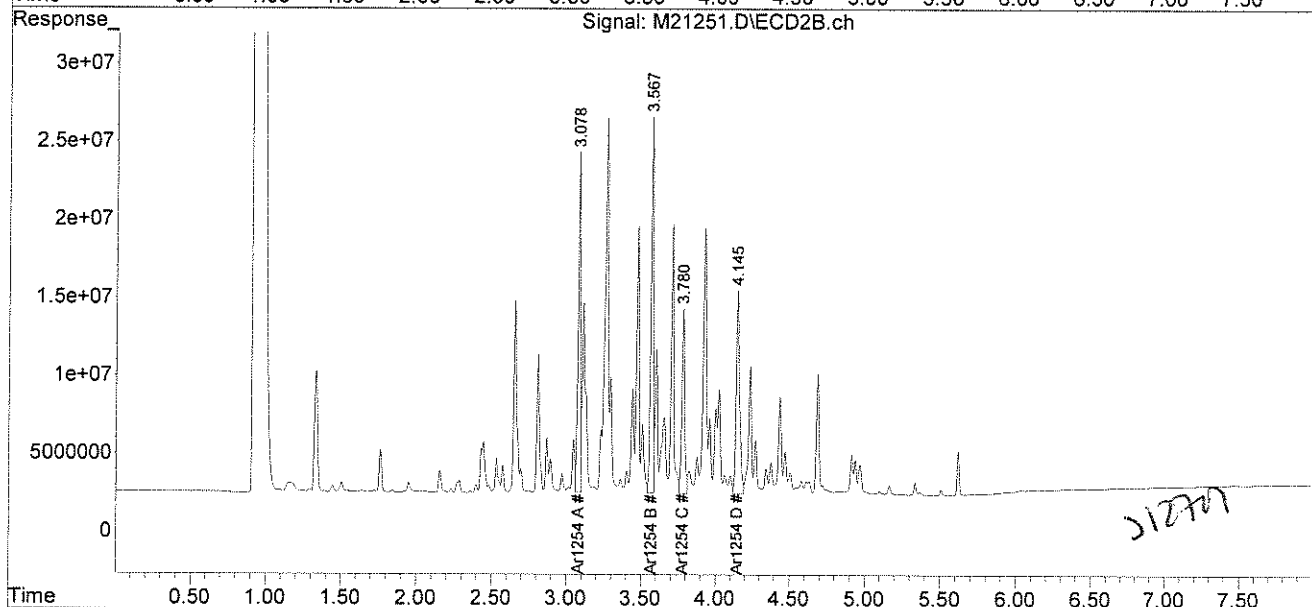
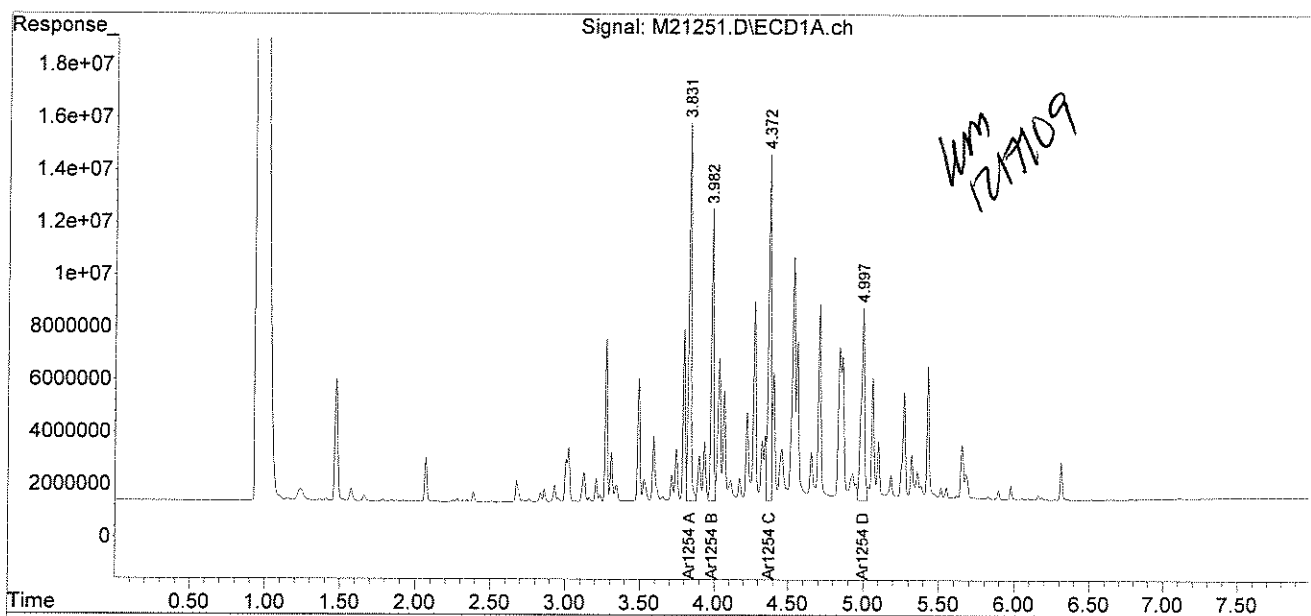
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120709-M\
Data File : M21251.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Dec 2009 10:58 am
Operator : RM
Sample : 65436-27, ^{1.10}1-5, A/C
Misc : SOIL
ALS Vial : 10 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 12:32:16 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase :
Signal #1 Info :
Signal #2 Phase :
Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-7E1-CPS(4-5)-054

Lab Sample ID: 65436-28
Matrix: Solid
Percent Solid: 95
Dilution Factor: 5.0
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	170	U
PCB-1221	170	U
PCB-1232	170	U
PCB-1242	170	U
PCB-1248	170	U
PCB-1254	170	2570
PCB-1260	170	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	105 %	
Decachlorobiphenyl	110 %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-28,1:5,,A/C

Column ID: 0.25 mm

Data File: M21254.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 5.0

Column ID: 0.25 mm

COMPOUND	Column #1	Column #2		
	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	2570	2024	23.8	

Column to be used to flag RPD values greater than QC limit of 40%

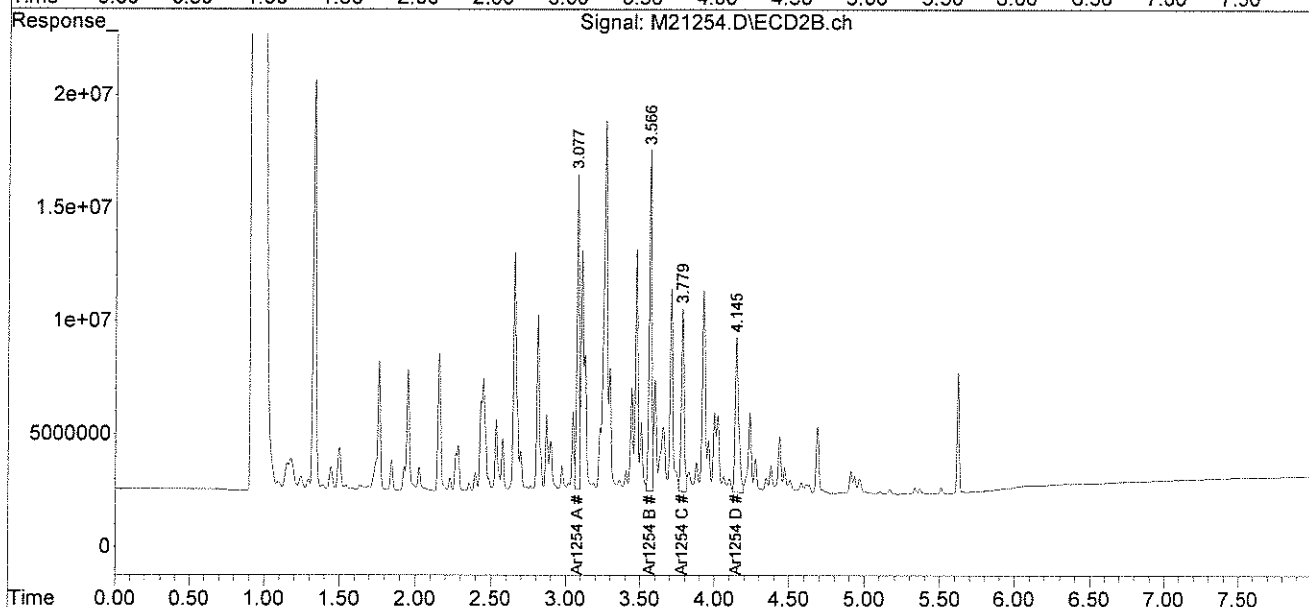
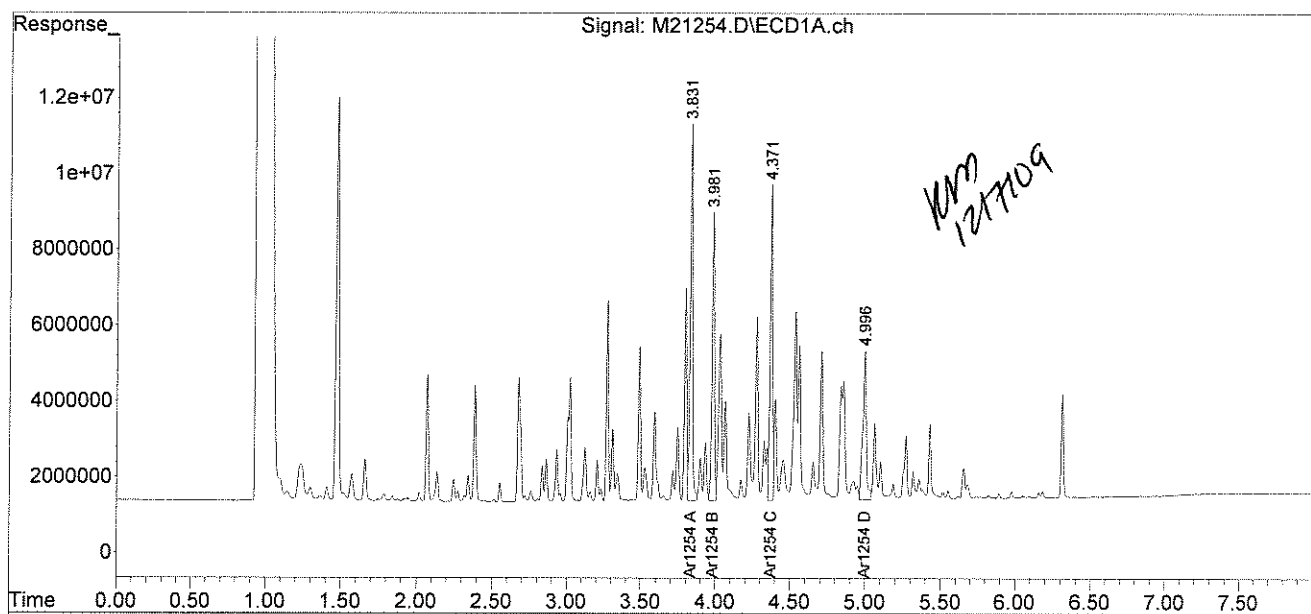
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120709-M\
Data File : M21254.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Dec 2009 11:29 am
Operator : RM
Sample : 65436-28,1:5,,A/C
Misc : SOIL
ALS Vial : 13 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 12:32:22 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-7E1-CMB(4-5)-056

Lab Sample ID: 65436-29
Matrix: Solid
Percent Solid: 98
Dilution Factor: 1.0
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	880
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	88	%
Decachlorobiphenyl	90	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-29,,A/C
Column ID: 0.25 mm	Data File: M21218.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 1.0
Column ID: 0.25 mm	

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1242	880	782	11.8

Column to be used to flag RPD values greater than QC limit of 40%

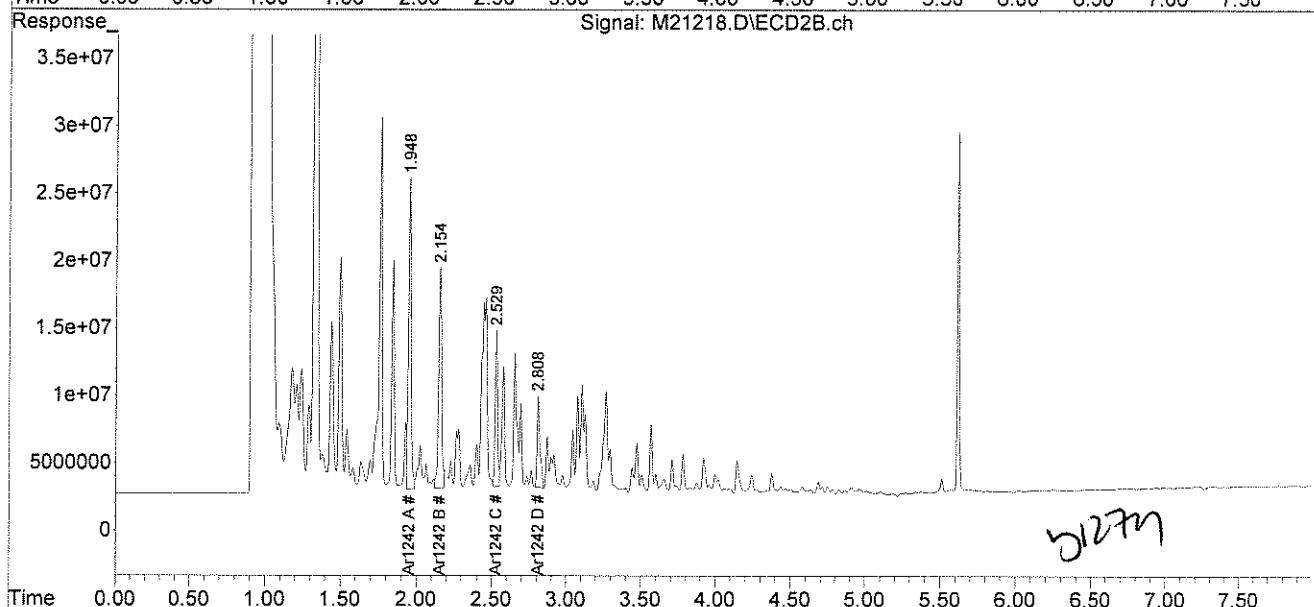
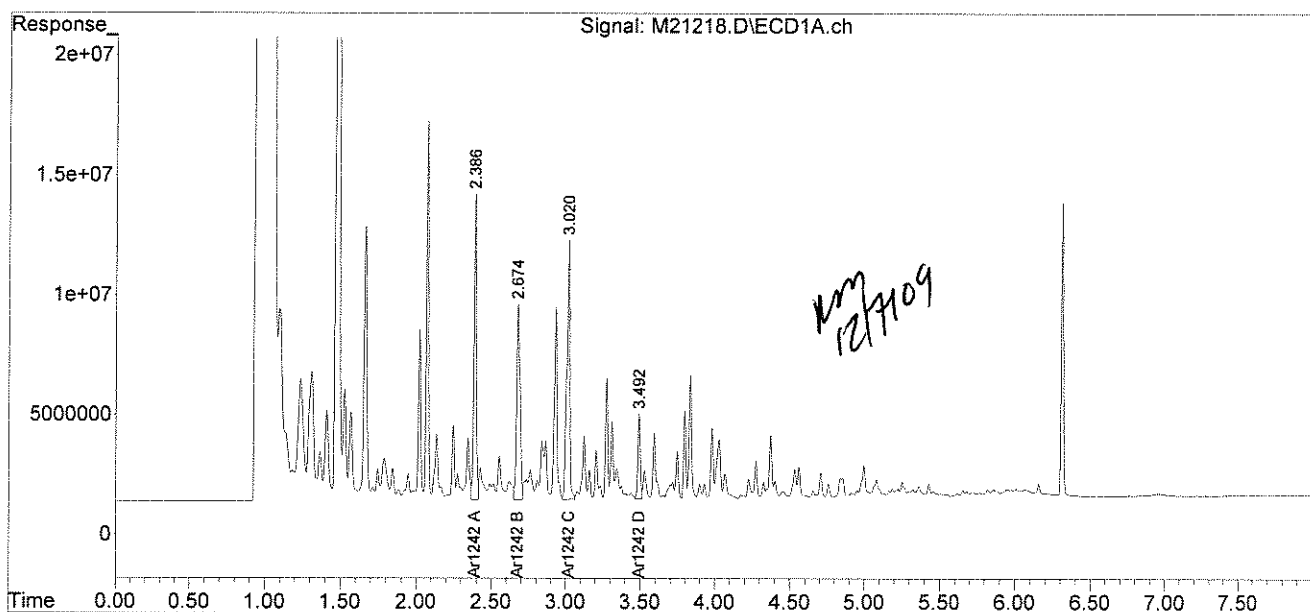
* Values outside QC limits

Comments: _____

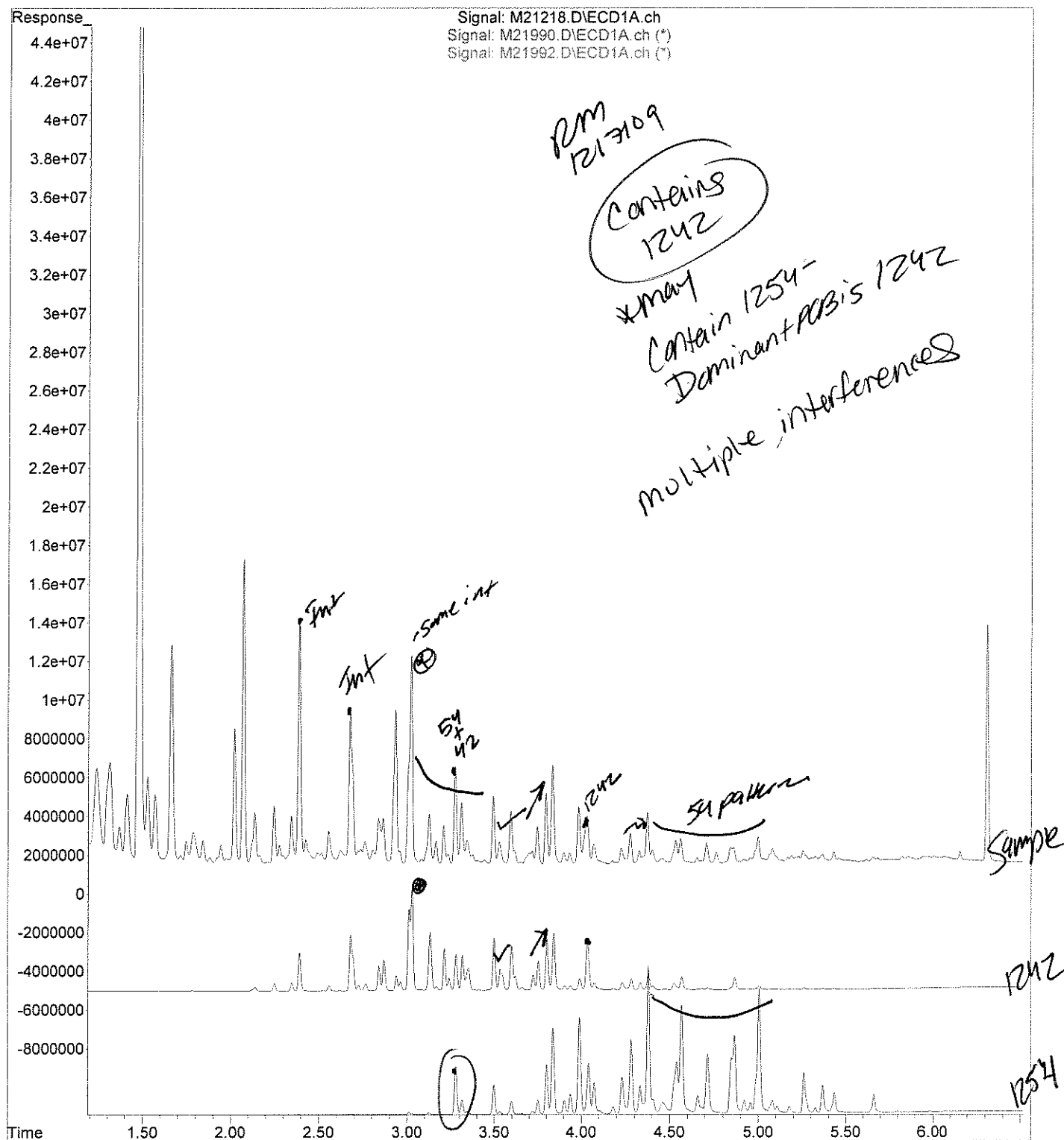
Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21218.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 9:56 pm
Operator : RM
Sample : 65436-29,,A/C
Misc : SOIL
ALS Vial : 70 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 11:26:36 2009
Quant Method : C:\msdchem\1\METHODS\42SP11249.M
Quant Title : AR 1242
QLast Update : Fri Dec 04 12:29:23 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



File : C:\msdchem\1\DATA\120409-M\M21218.D
Operator : RM
Acquired : 4 Dec 2009 9:56 pm using AcqMethod PCB.M
Instrument : Instrument M
Sample Name: 65436-29,,A/C
Misc Info : SOIL
Vial Number: 70



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-7E1-CCS(6-7)-058

Lab Sample ID: 65436-30
Matrix: Solid
Percent Solid: 99
Dilution Factor: 10
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 11/30/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	330	U
PCB-1221	330	U
PCB-1232	330	U
PCB-1242	330	U
PCB-1248	330	U
PCB-1254	330	6630
PCB-1260	330	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	126	%
Decachlorobiphenyl	127	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

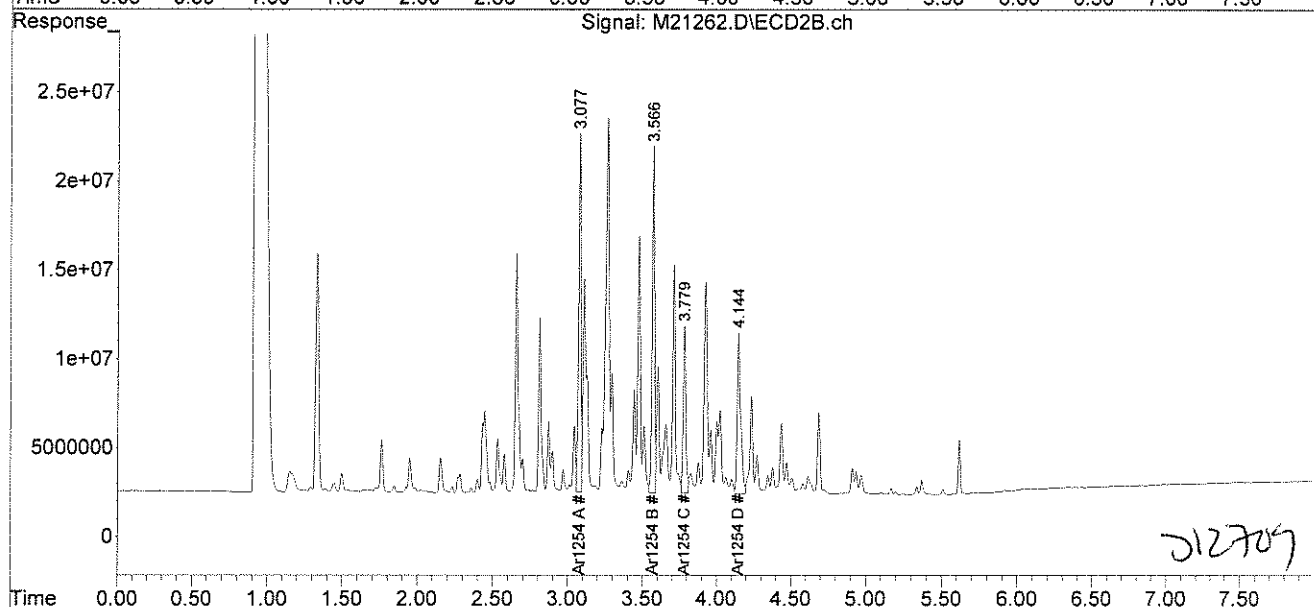
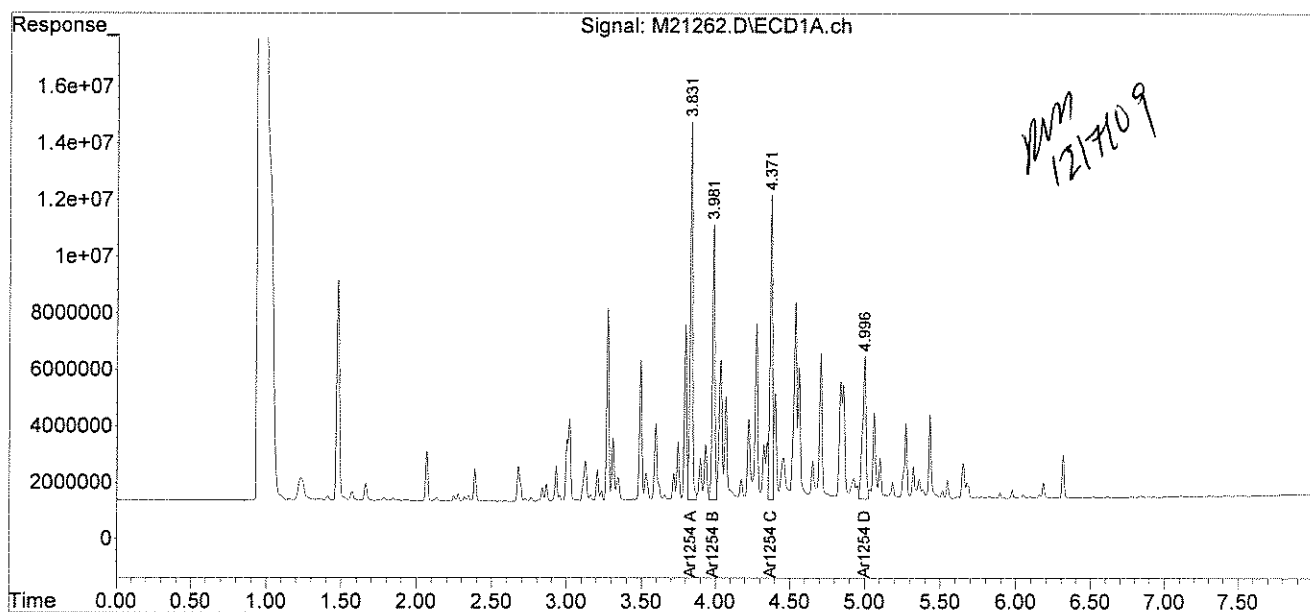
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

Data Path : C:\msdchem\1\DATA\120709-M\
Data File : M21262.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Dec 2009 12:49 pm
Operator : RM
Sample : 65436-30,1:10,,A/C
Misc : SOIL
ALS Vial : 21 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 13:27:48 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:29 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-30,1:10,,A/C

Column ID: 0.25 mm

Data File: M21262.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 10.0

Column ID: 0.25 mm

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	6626	5402	20.3	

Column to be used to flag RPD values greater than QC limit of 40%

* Values outside QC limits

Comments: _____

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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-4E6-CPS(6-7)-060

Lab Sample ID: 65436-31
Matrix: Solid
Percent Solid: 93
Dilution Factor: 11
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/01/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	360	U
PCB-1221	360	U
PCB-1232	360	U
PCB-1242	360	U
PCB-1248	360	U
PCB-1254	360	5320
PCB-1260	360	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	117 %	
Decachlorobiphenyl	112 %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-31,1:10,,A/C

Column ID: 0.25 mm

Data File: M21191.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 10.6

Column ID: 0.25 mm

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1254	5318	5188	2.5

Column to be used to flag RPD values greater than QC limit of 40%

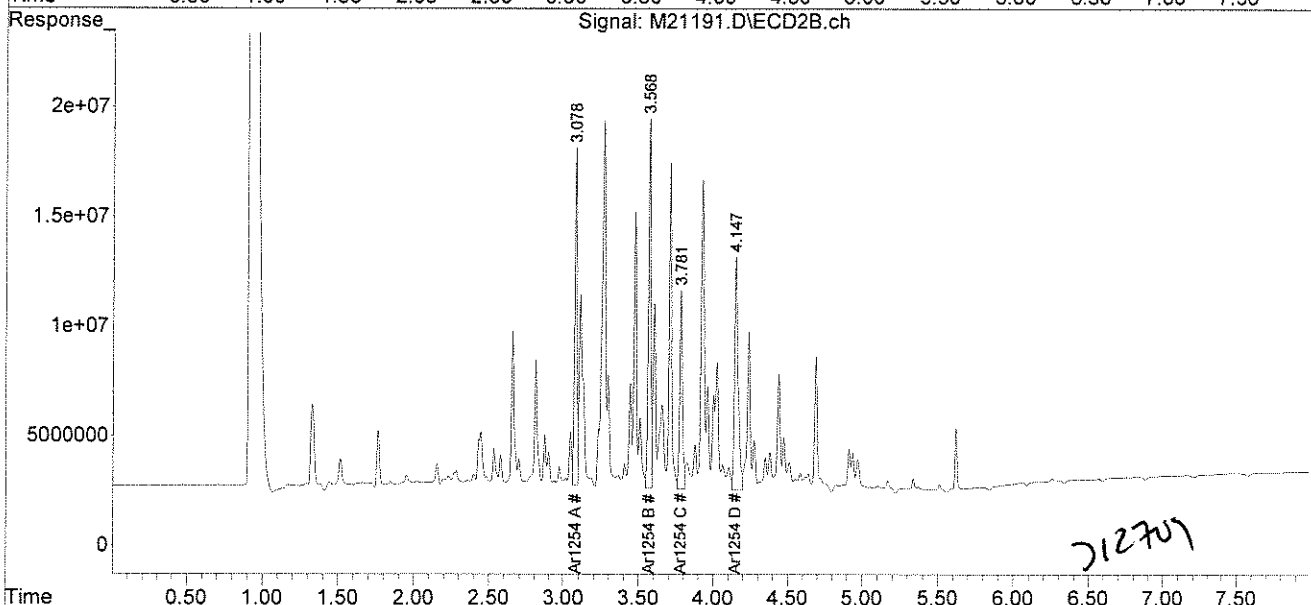
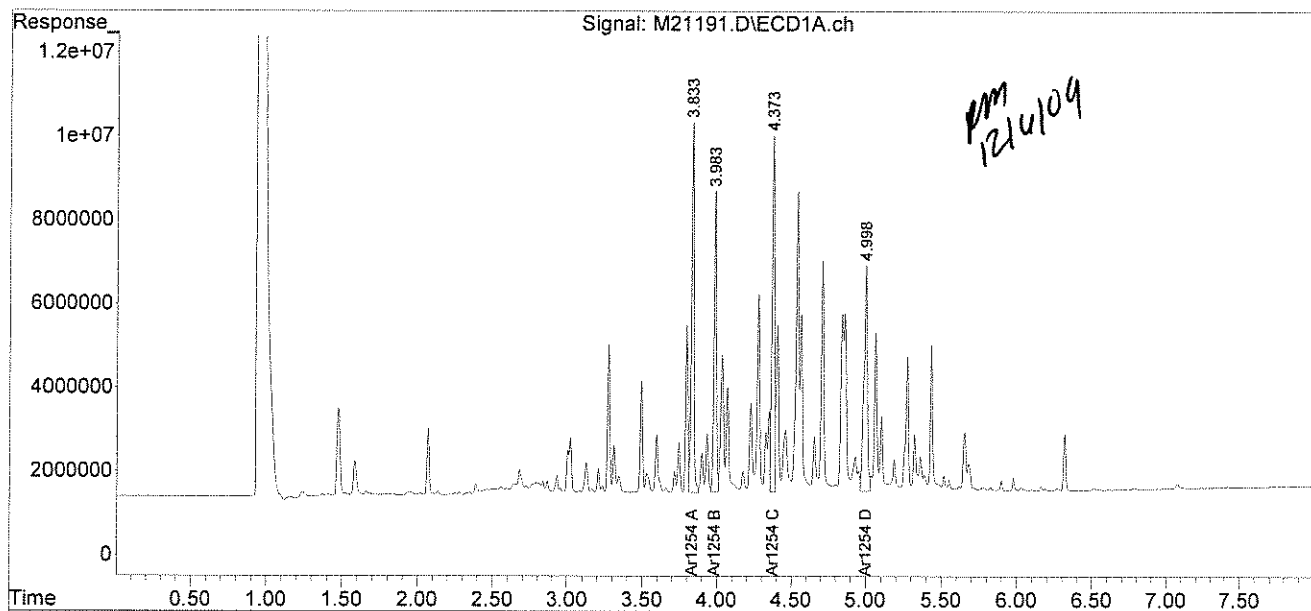
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
 Data File : M21191.D
 Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
 Acq On : 4 Dec 2009 5:24 pm
 Operator : RM
 Sample : 65436-31,1:10,,A/C
 Misc : SOIL
 ALS Vial : 44 Sample Multiplier: 1

Integration File signal 1: events.e
 Integration File signal 2: events2.e
 Quant Time: Dec 04 22:20:08 2009
 Quant Method : C:\msdchem\1\METHODS\54SP11249.M
 Quant Title :
 QLast Update : Wed Nov 25 15:04:28 2009
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal #1 Phase : Signal #2 Phase:
 Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-6E2-CCS(6-7)-062

Lab Sample ID: 65436-32
Matrix: Solid
Percent Solid: 99
Dilution Factor: 5.0
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/01/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	170	U
PCB-1221	170	U
PCB-1232	170	U
PCB-1242	170	U
PCB-1248	170	U
PCB-1254	170	3260
PCB-1260	170	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	102	%
Decachlorobiphenyl	106	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-32,1:5,,A/C

Column ID: 0.25 mm

Data File: M21197.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 5.0

Column ID: 0.25 mm

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	3258	2662	20.1	

Column to be used to flag RPD values greater than QC limit of 40%

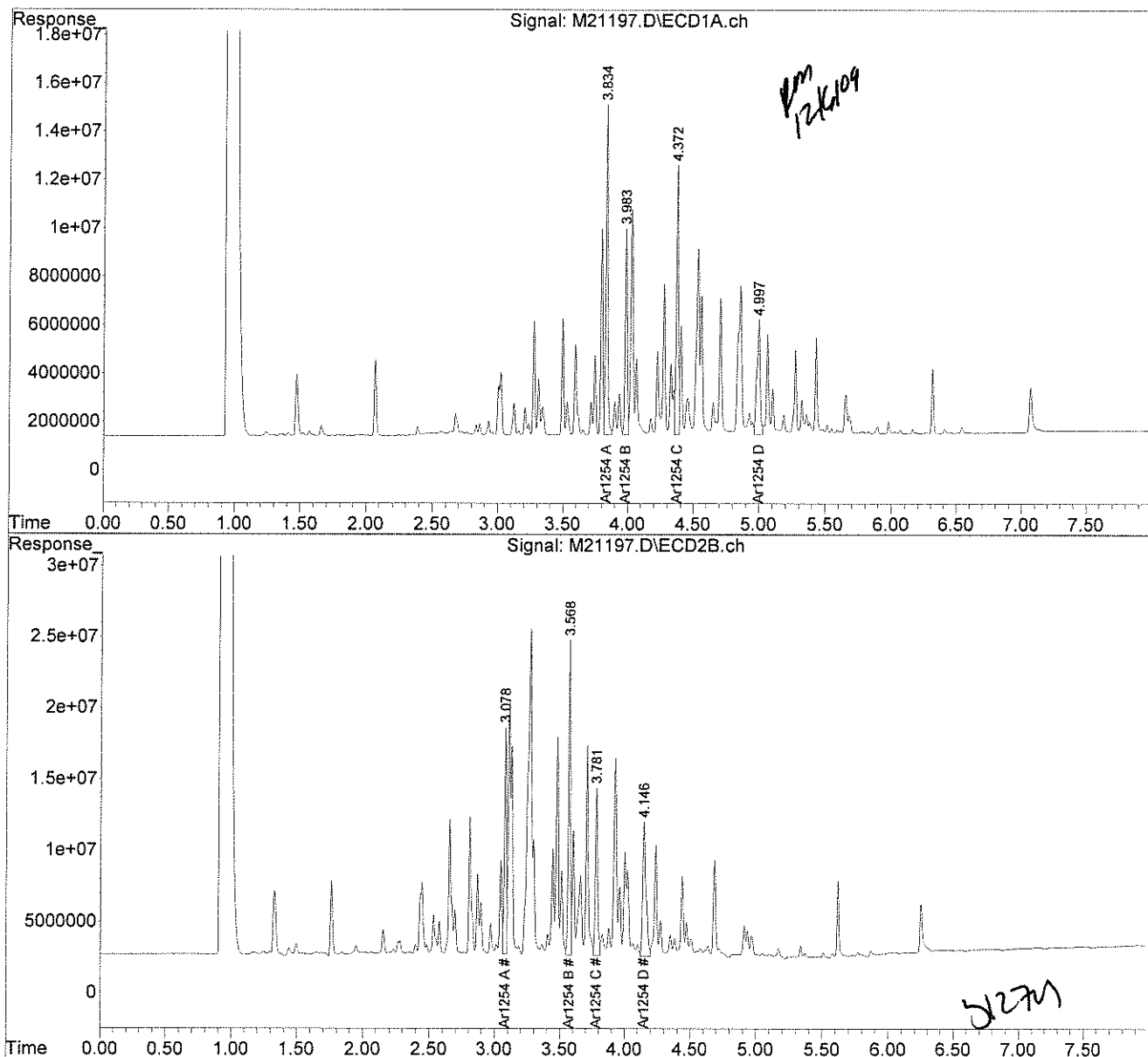
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21197.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 6:25 pm
Operator : RM
Sample : 65436-32,1:5,,A/C
Misc : SOIL
ALS Vial : 50 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 22:20:20 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-6E3-CTP(6-7)-064

Lab Sample ID: 65436-33
Matrix: Solid
Percent Solid: 90
Dilution Factor: 2.2
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/01/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	73	U
PCB-1221	73	U
PCB-1232	73	U
PCB-1242	73	U
PCB-1248	73	U
PCB-1254	73	1820
PCB-1260	73	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	95	%
Decachlorobiphenyl	92	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-33,1:2,,A/C

Column ID: 0.25 mm

Data File: M21189.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 2.2

Column ID: 0.25 mm

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	1820	1547	16.2	

Column to be used to flag RPD values greater than QC limit of 40%

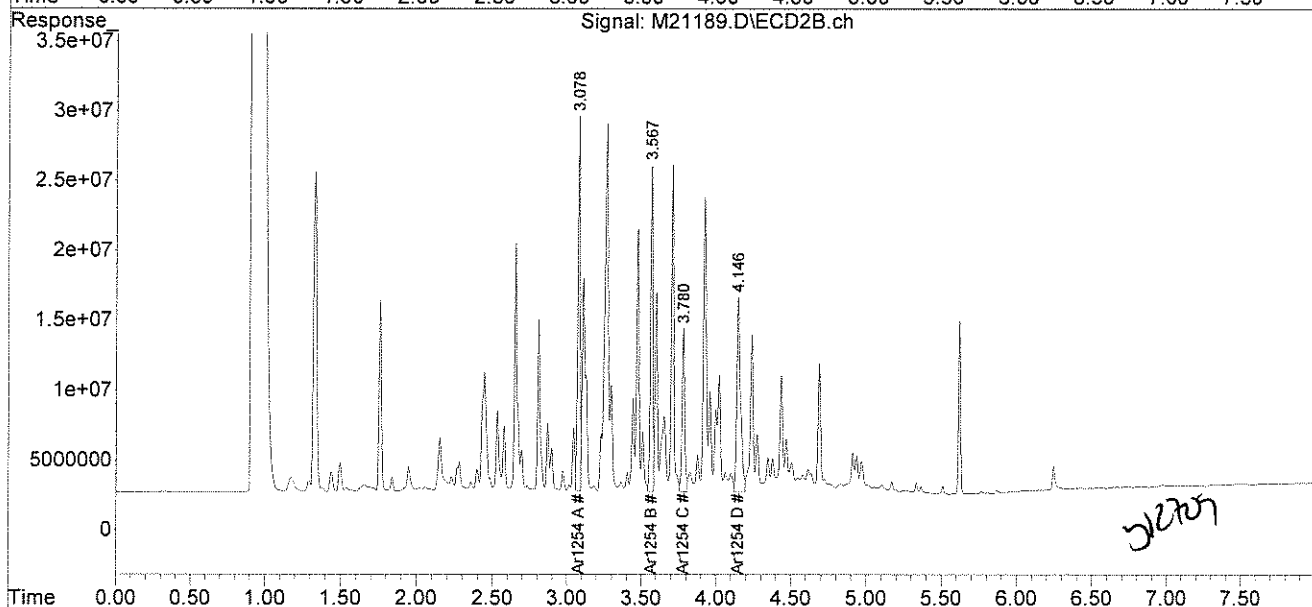
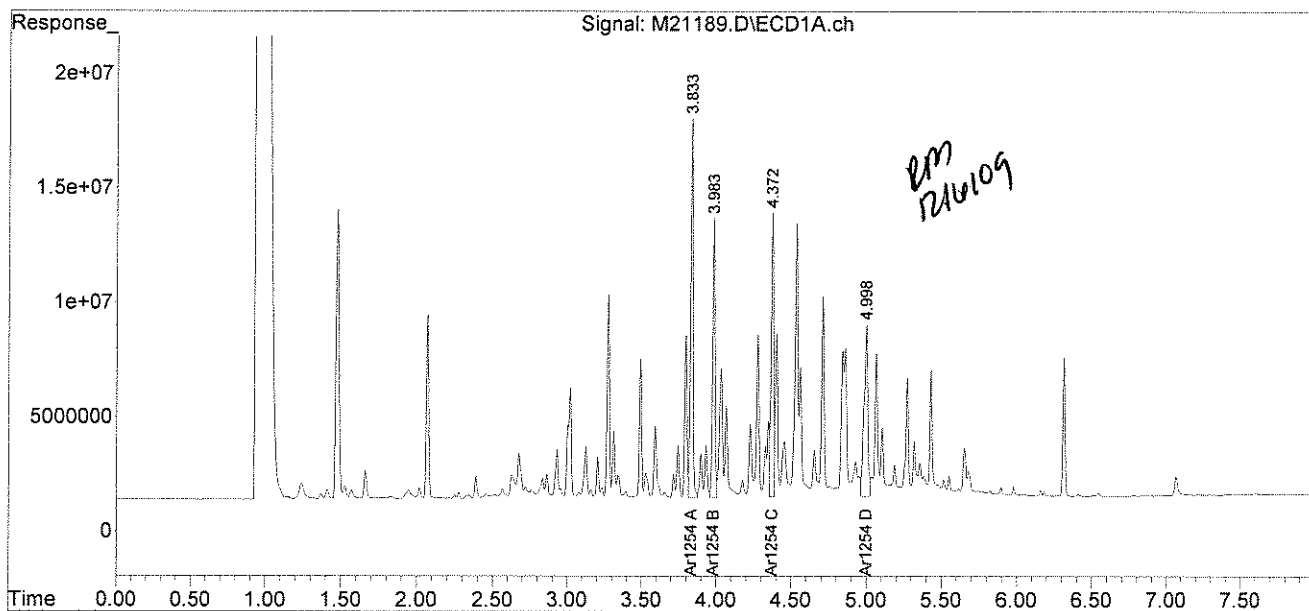
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21189.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 5:04 pm
Operator : RM
Sample : 65436-33,1:2,,A/C
Misc : SOIL
ALS Vial : 42 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 22:20:04 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-5E1-CCS(6-7)-066

Lab Sample ID: 65436-34
Matrix: Solid
Percent Solid: 99
Dilution Factor: 5.0
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/01/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	170	U
PCB-1221	170	U
PCB-1232	170	U
PCB-1242	170	U
PCB-1248	170	U
PCB-1254	170	3300
PCB-1260	170	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	105 %	
Decachlorobiphenyl	120 %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-34,1:5,,A/C
Column ID: 0.25 mm	Data File: M21196.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 5.0
Column ID: 0.25 mm	

Column #1		Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	3295	2795	16.4	

Column to be used to flag RPD values greater than QC limit of 40%

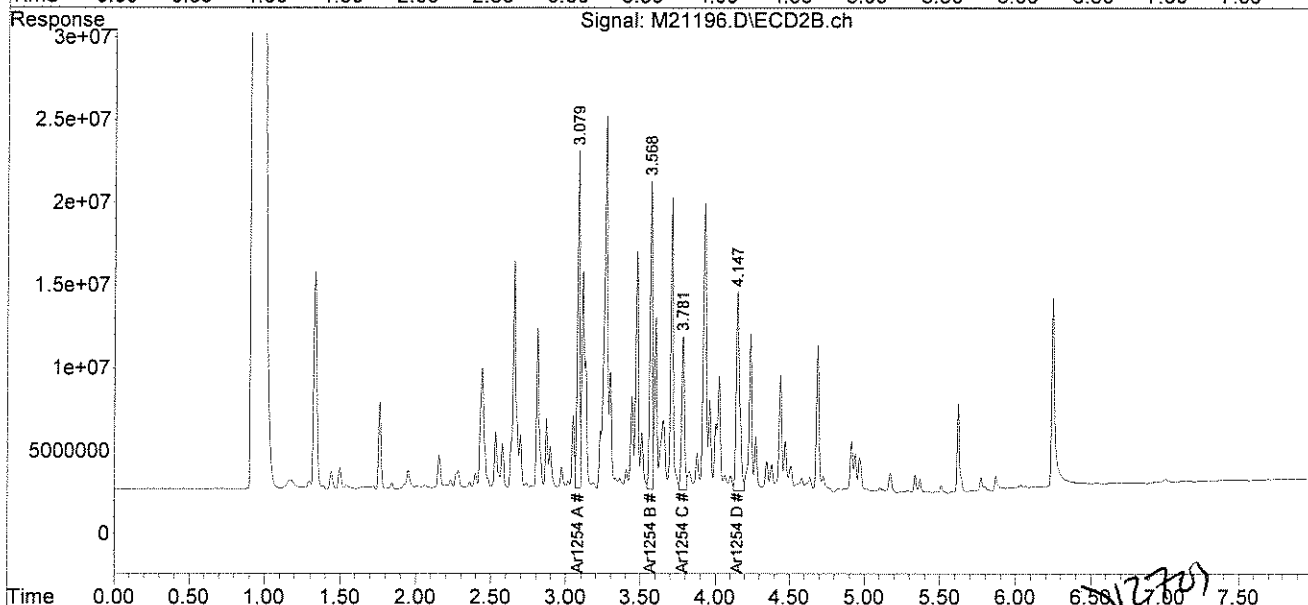
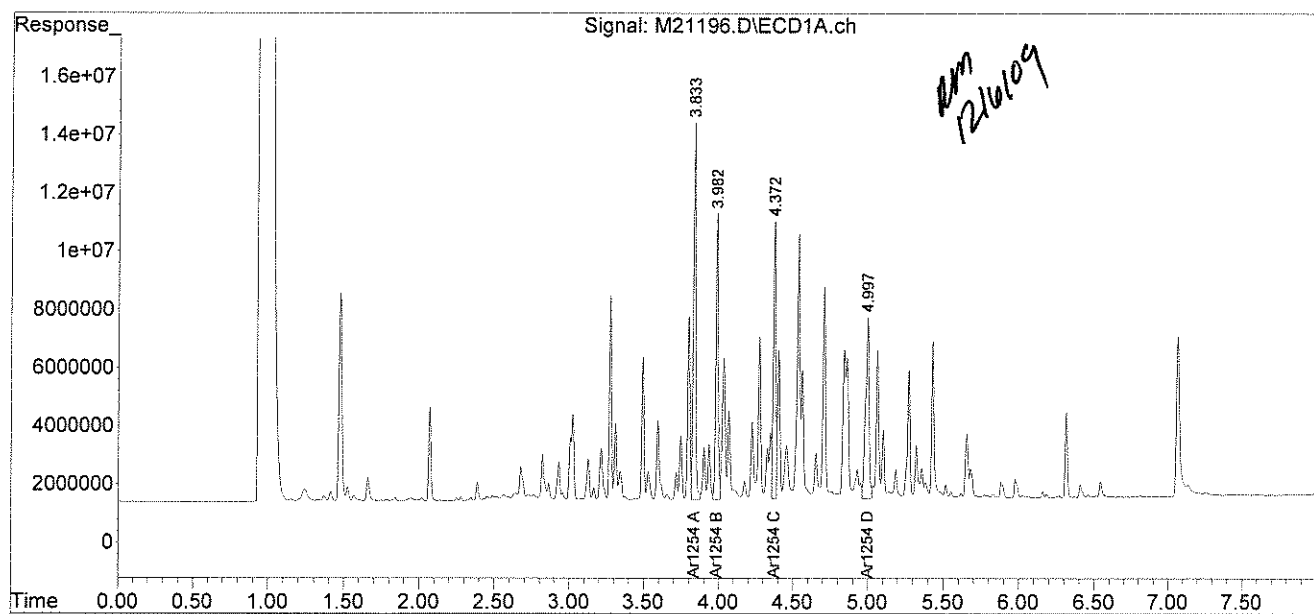
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21196.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 6:15 pm
Operator : RM *RM121109*
Sample : 65436, 1:5,, A/C
Misc : SOIL *34*
ALS Vial : 49 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 22:20:18 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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December 7, 2009

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-5E6-CPS(6-7)-068

Lab Sample ID: 65436-35
Matrix: Solid
Percent Solid: 95
Dilution Factor: 4.9
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/01/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	160	U
PCB-1221	160	U
PCB-1232	160	U
PCB-1242	160	U
PCB-1248	160	U
PCB-1254	160	2970
PCB-1260	160	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	102	%
Decachlorobiphenyl	103	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-35,1:5,,A/C
Column ID: 0.25 mm	Data File: M21202.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 4.9
Column ID: 0.25 mm	

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1254	2966	2682	10.0

Column to be used to flag RPD values greater than QC limit of 40%

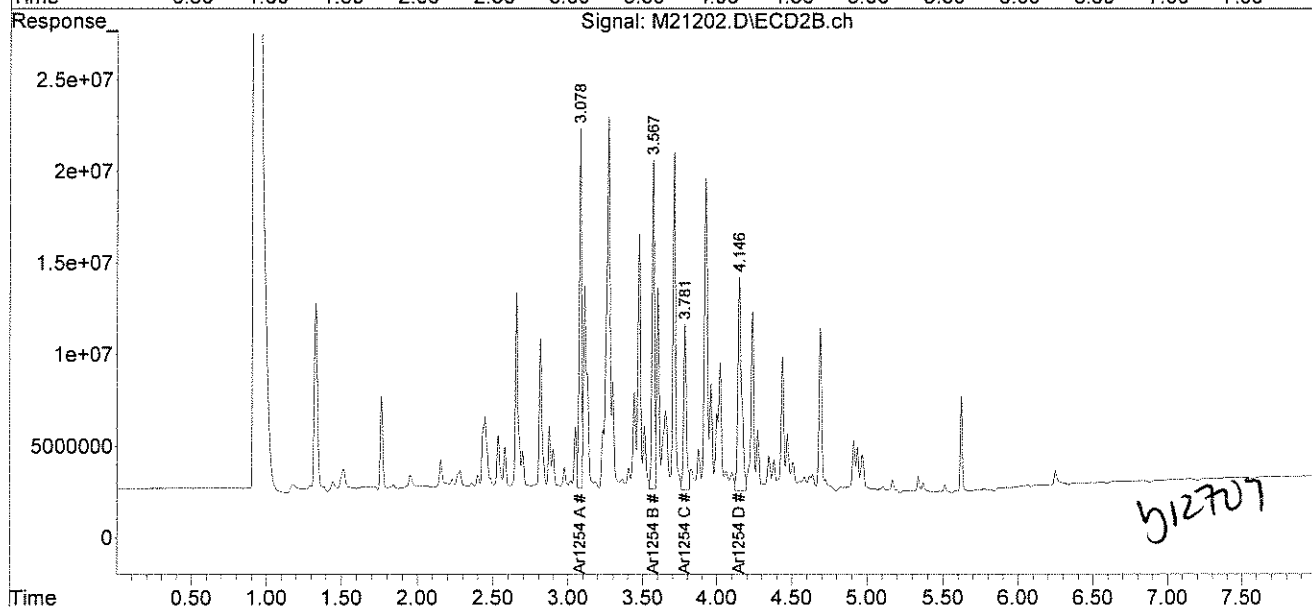
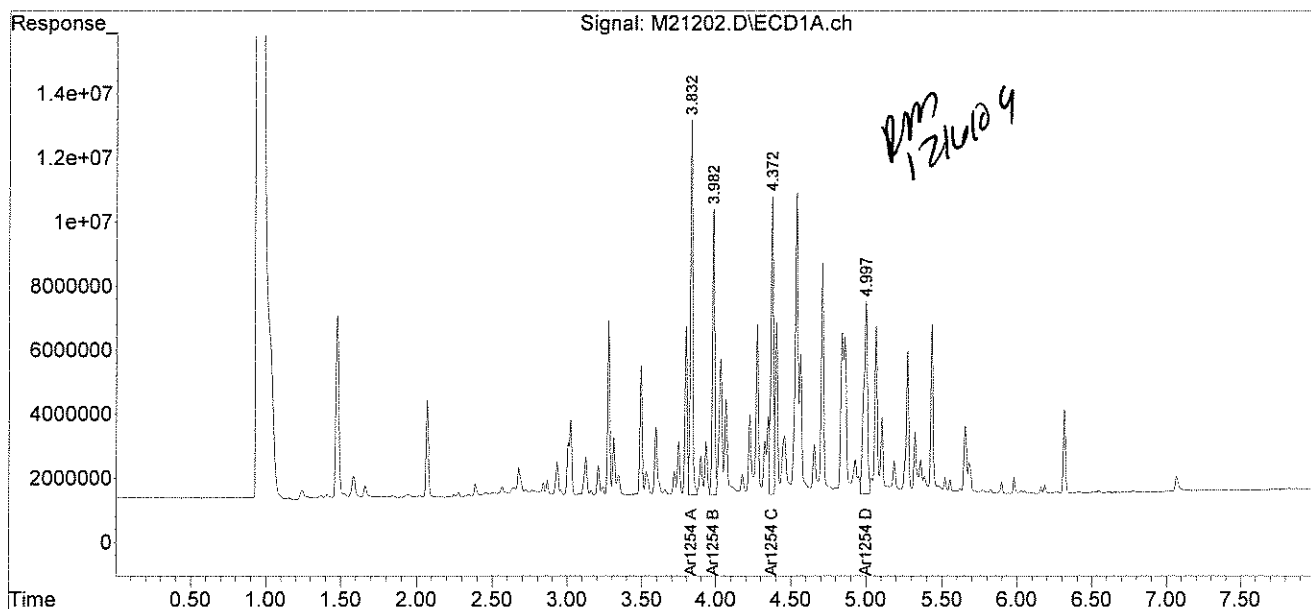
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21202.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 7:15 pm
Operator : RM
Sample : 65436-35,1:5,,A/C
Misc : SOIL
ALS Vial : 55 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 22:20:30 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA
CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-4E1-CCS(6-7)-070

Lab Sample ID: 65436-36
Matrix: Solid
Percent Solid: 99
Dilution Factor: 5.0
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/01/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	170	U
PCB-1221	170	U
PCB-1232	170	U
PCB-1242	170	U
PCB-1248	170	U
PCB-1254	170	4290
PCB-1260	170	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	104	%
Decachlorobiphenyl	108	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-36,1:5,,A/C
Column ID: 0.25 mm	Data File: M21201.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 5.0
Column ID: 0.25 mm	

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	4288	4056	5.6	

Column to be used to flag RPD values greater than QC limit of 40%

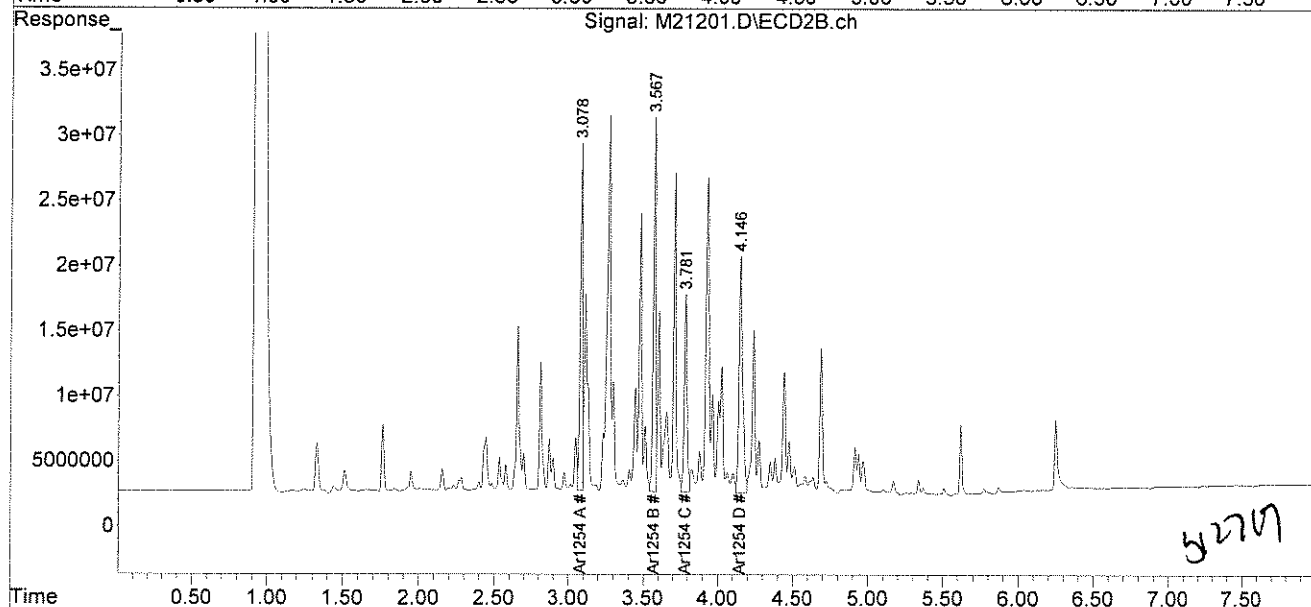
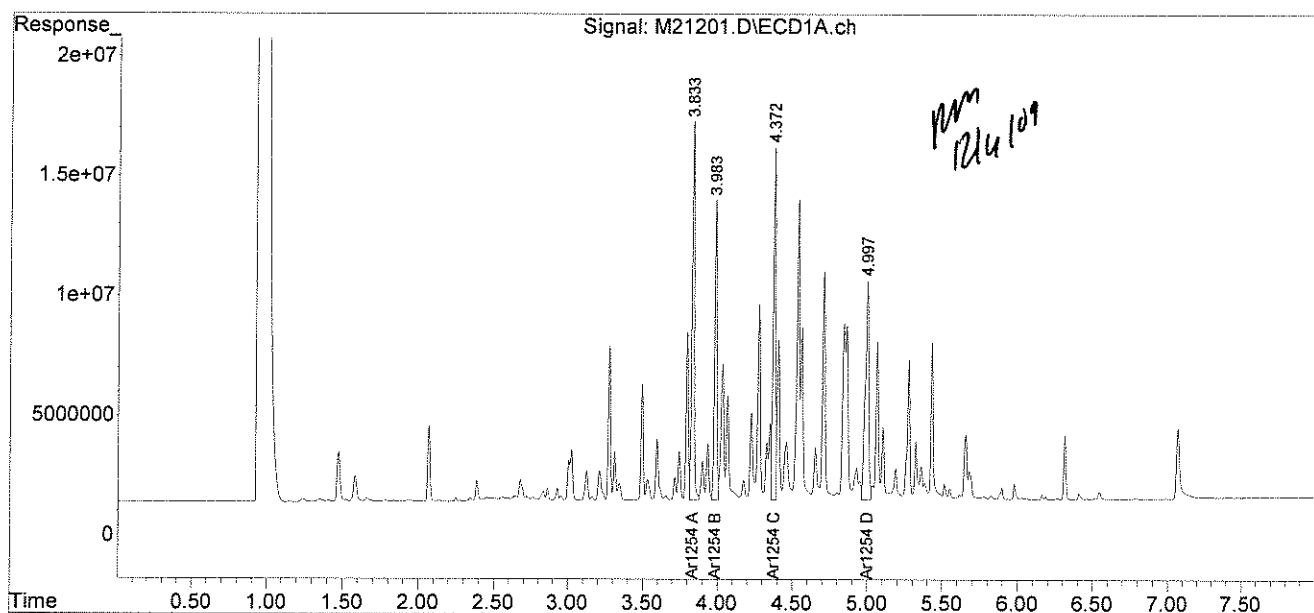
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21201.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 7:05 pm
Operator : RM
Sample : 65436-36,1:5,,A/C
Misc : SOIL
ALS Vial : 54 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 22:20:28 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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December 7, 2009

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-4E1-CCC(6-7)-072

Lab Sample ID: 65436-37
Matrix: Solid
Percent Solid: 99
Dilution Factor: 1.0
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/01/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	924
PCB-1260	33	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	95	%
Decachlorobiphenyl	93	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-37,,A/C
Column ID: 0.25 mm	Data File: M21178.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 1.0
Column ID: 0.25 mm	

Column #1		Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	920	924	0.4	

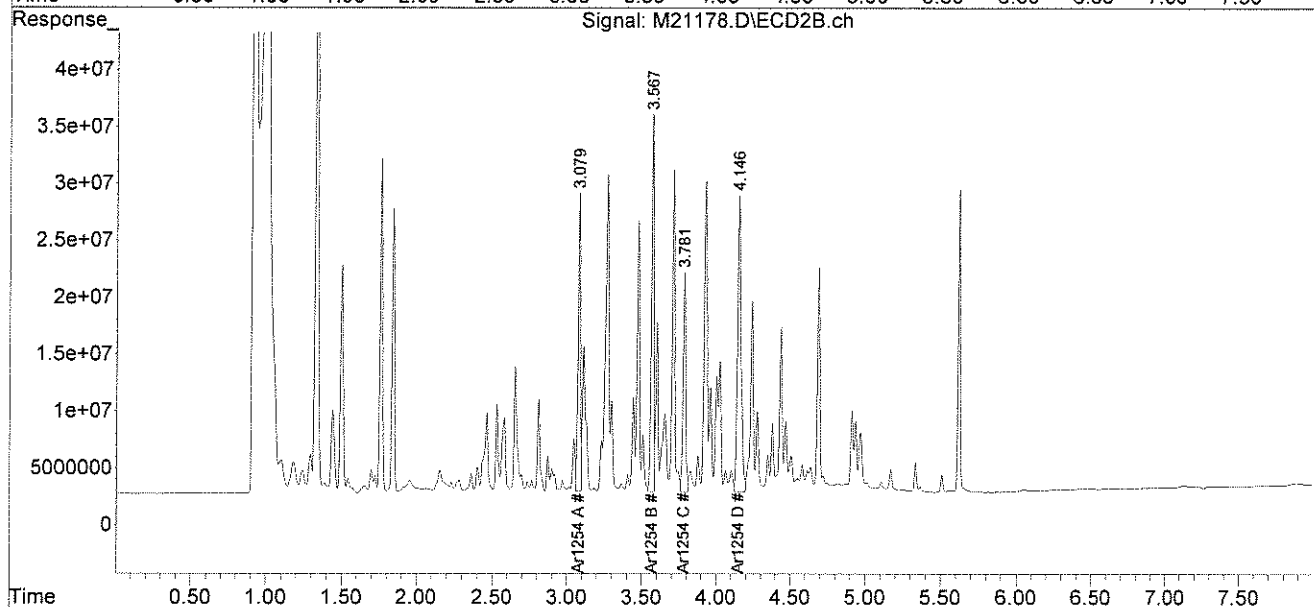
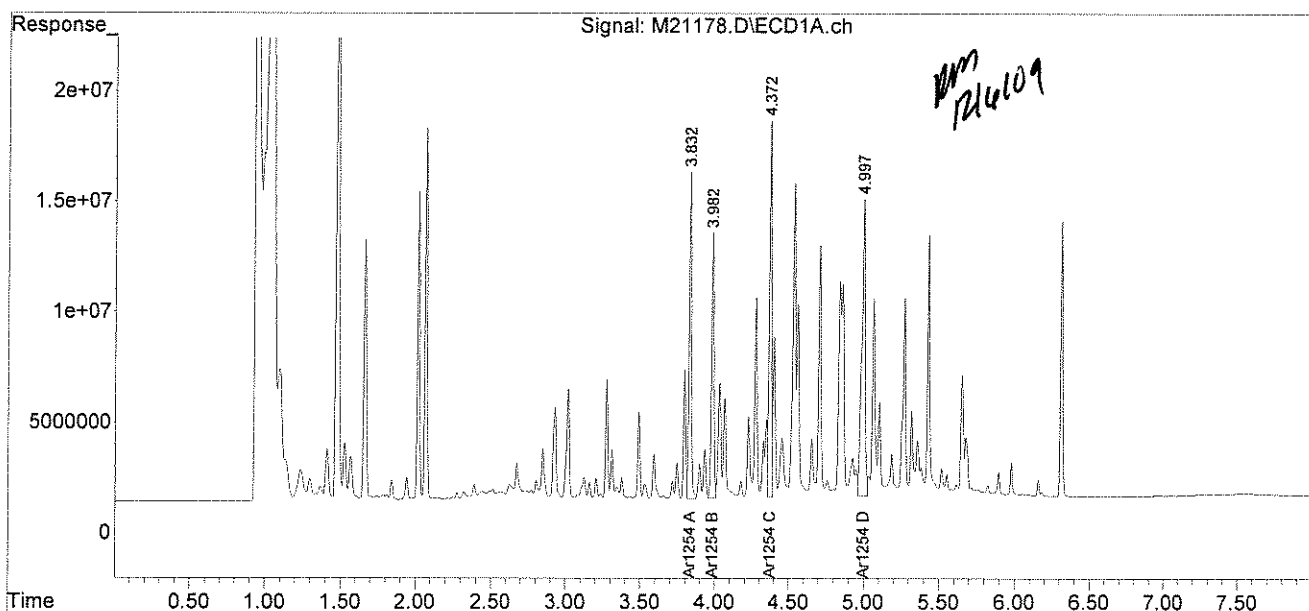
- # Column to be used to flag RPD values greater than QC limit of 40%
- * Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21178.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 2:20 pm
Operator : RM
Sample : 65436-37,,A/C
Misc : SOIL
ALS Vial : 38 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 14:42:06 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:29 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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December 7, 2009

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-4E4-CTP(6-7)-074

Lab Sample ID: 65436-38
Matrix: Solid
Percent Solid: 86
Dilution Factor: 6
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/01/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	200	U
PCB-1221	200	U
PCB-1232	200	U
PCB-1242	200	U
PCB-1248	200	U
PCB-1254	200	3820
PCB-1260	200	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	93	%
Decachlorobiphenyl	93	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-38,1:5,,A/C

Column ID: 0.25 mm

Data File: M21200.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 6.1

Column ID: 0.25 mm

COMPOUND	Column #1	Column #2	RPD		#
	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1254	3819	3547	7.4		

Column to be used to flag RPD values greater than QC limit of 40%

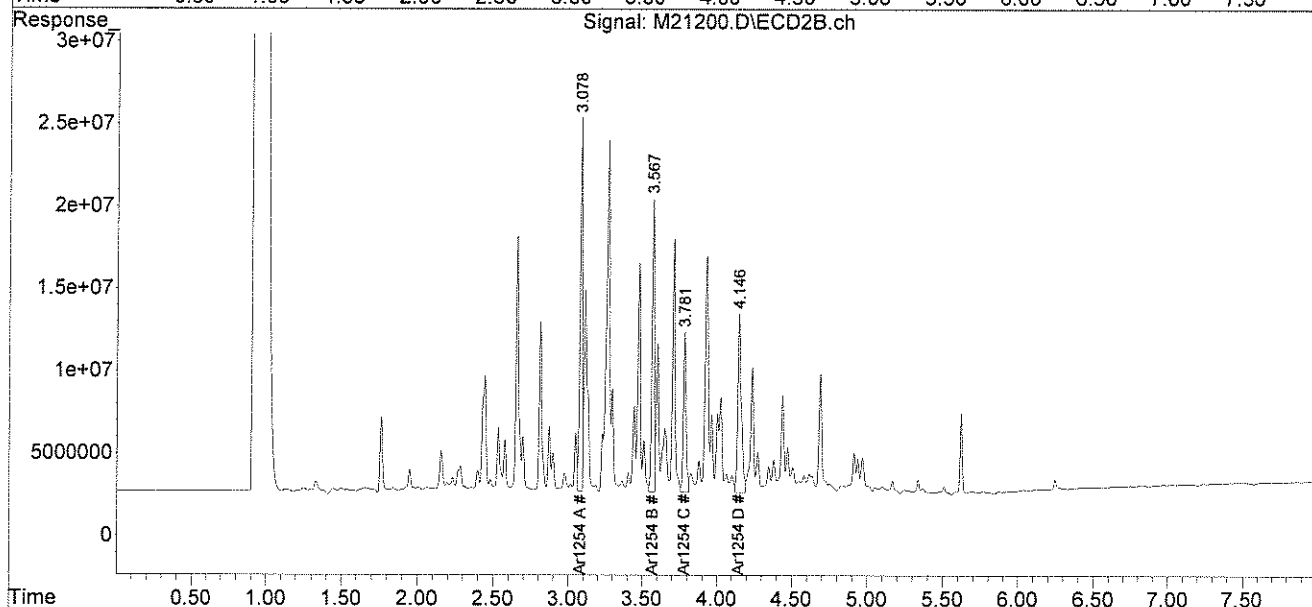
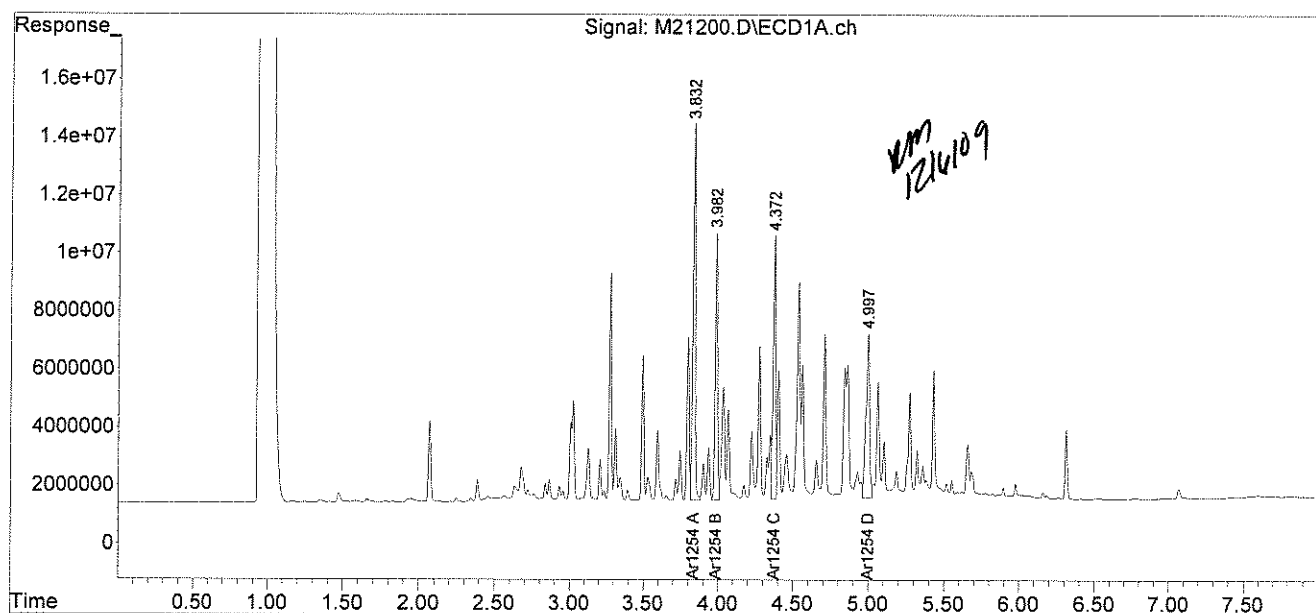
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21200.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 6:55 pm
Operator : RM
Sample : 65436-38,1:5,,A/C
Misc : SOIL
ALS Vial : 53 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 22:20:26 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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December 7, 2009

SAMPLE DATA

CLIENT SAMPLE ID
Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-4E4-TCS-075

Lab Sample ID: 65436-39
Matrix: Solid
Percent Solid: 100
Dilution Factor: 9030
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/01/09
Analysis Date: 12/07/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	298000	U
PCB-1221	298000	U
PCB-1232	298000	U
PCB-1242	298000	U
PCB-1248	298000	U
PCB-1254	298000	6820000
PCB-1260	298000	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	*	%
Decachlorobiphenyl	*	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.
* The surrogates were diluted out.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-39,1:1000,,A/C
Column ID: 0.25 mm	Data File: M21245.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 9032.5
Column ID: 0.25 mm	

Column #1		Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	6823292	6691700	1.9	

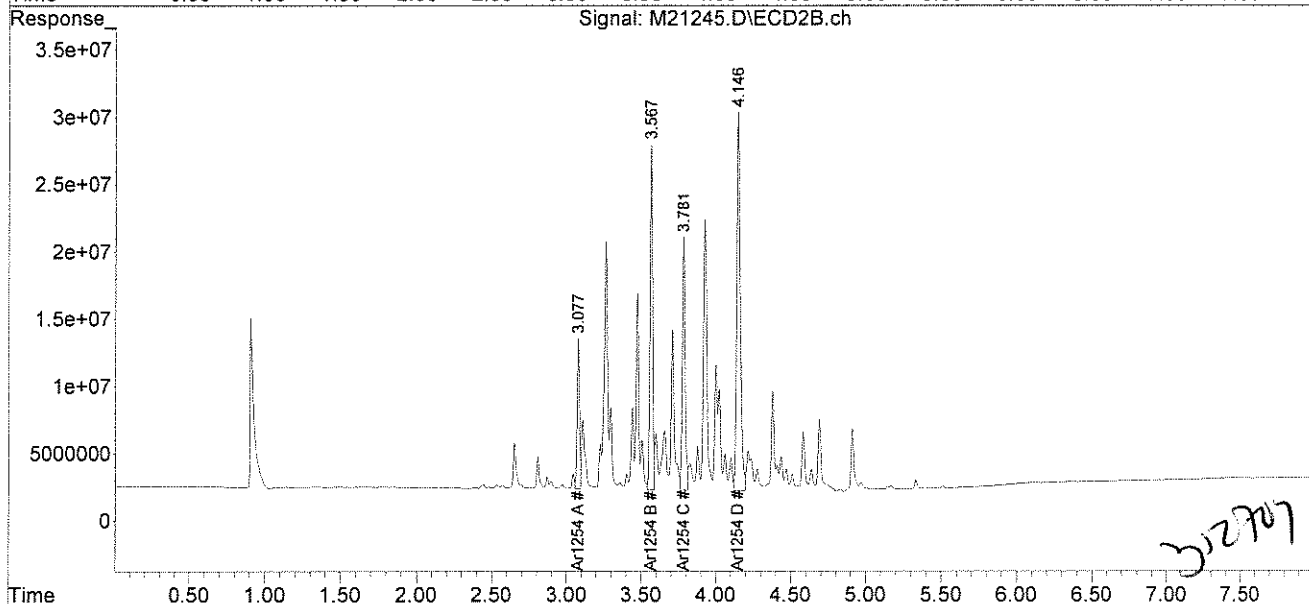
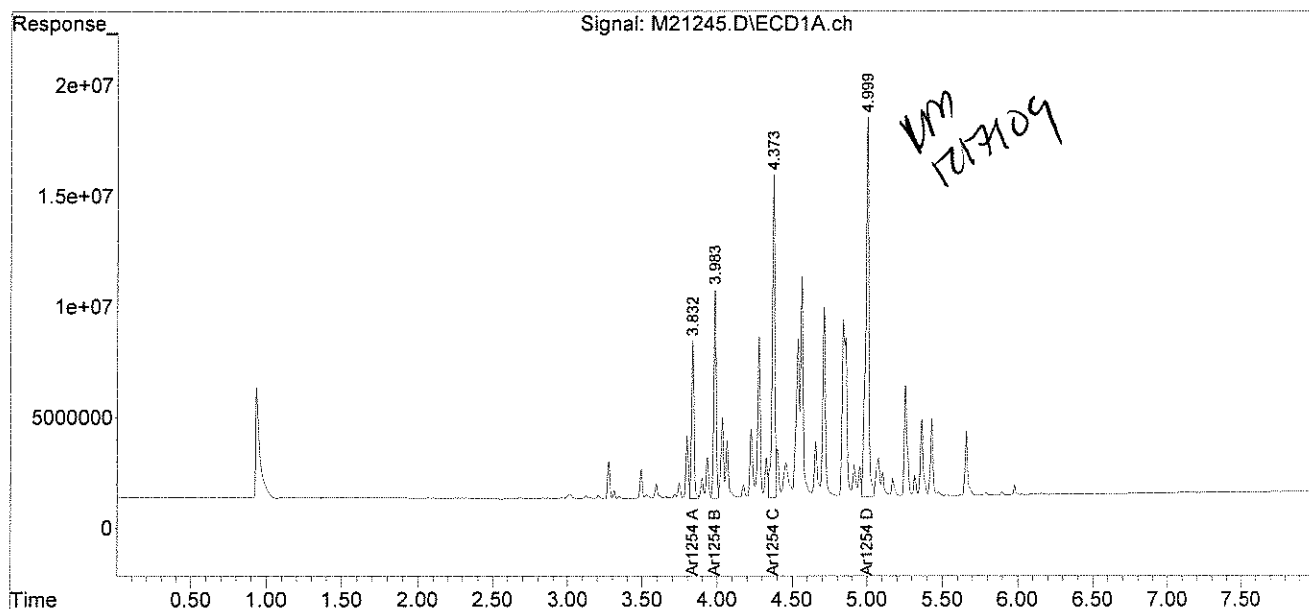
- # Column to be used to flag RPD values greater than QC limit of 40%
- * Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120709-M\
Data File : M21245.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Dec 2009 9:58 am
Operator : RM
Sample : 65436-39,1:1000,,A/C
Misc : SOIL
ALS Vial : 4 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 07 12:32:04 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-3E2-CCS(6-7)-077

Lab Sample ID: 65436-40
Matrix: Solid
Percent Solid: 99
Dilution Factor: 4.8
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/01/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	160	U
PCB-1221	160	U
PCB-1232	160	U
PCB-1242	160	U
PCB-1248	160	U
PCB-1254	160	4330
PCB-1260	160	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	103 %	
Decachlorobiphenyl	117 %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65436

GC Column #1: STX-CLPesticides I

Sample: 65436-40,1:5,,A/C

Column ID: 0.25 mm

Data File: M21204.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 4.8

Column ID: 0.25 mm

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	4333	3080	33.8	

Column to be used to flag RPD values greater than QC limit of 40%

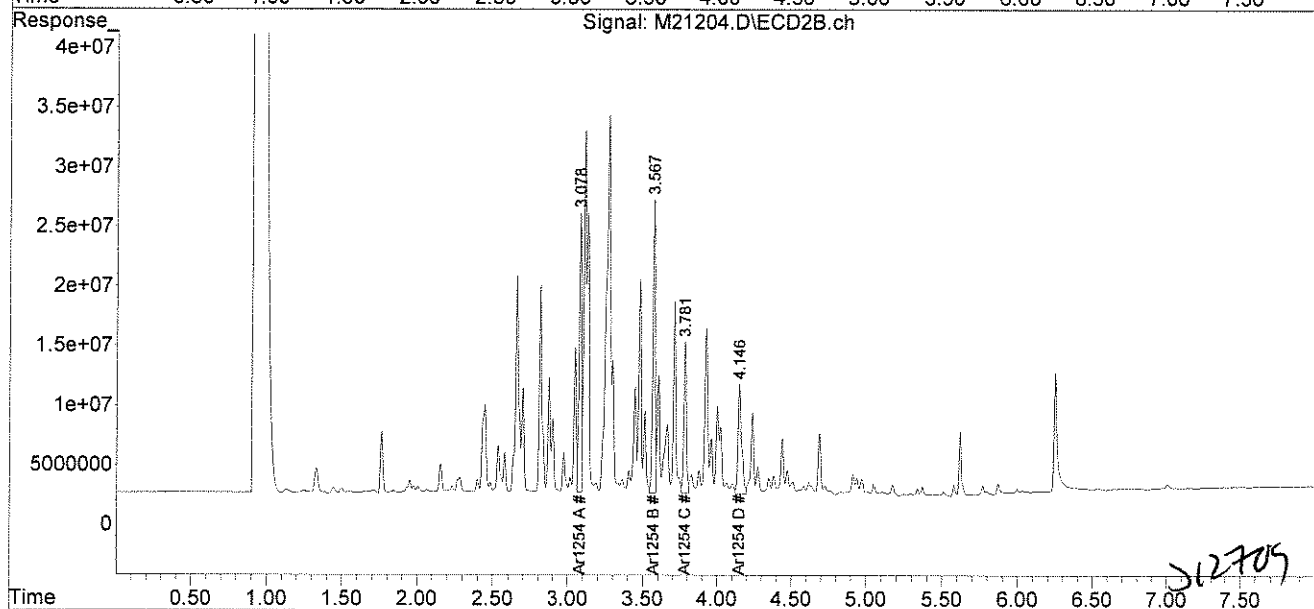
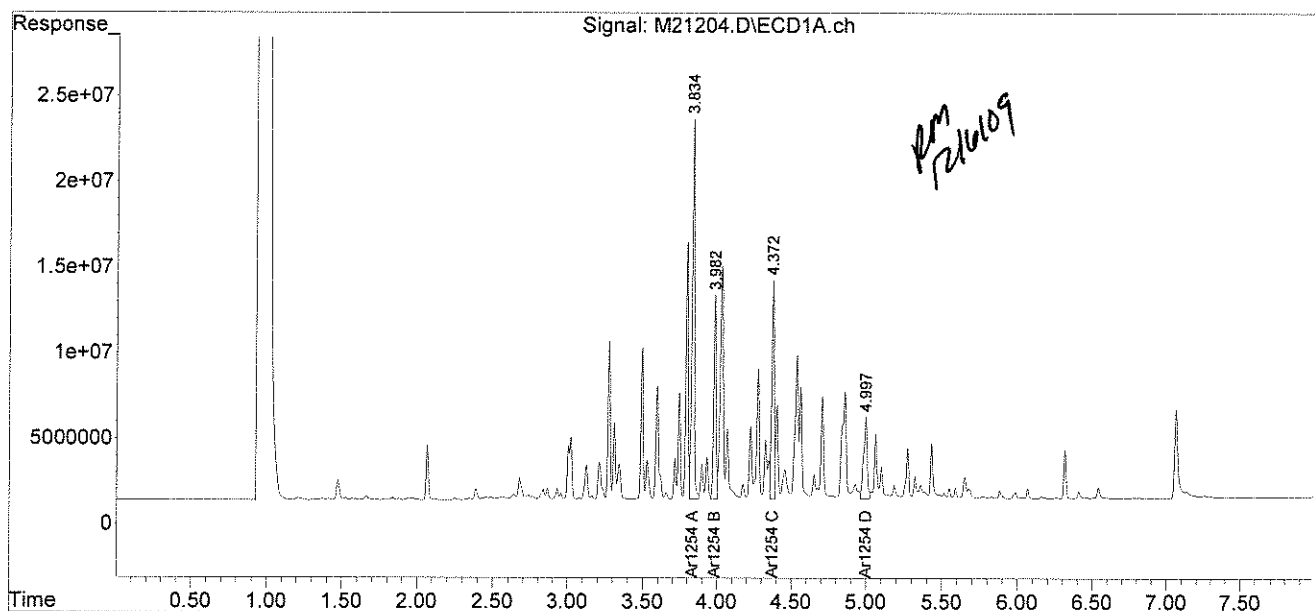
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21204.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 7:35 pm
Operator : RM
Sample : 65436-40,1:5,,A/C
Misc : SOIL
ALS Vial : 57 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 22:20:34 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase :
Signal #1 Info :
Signal #2 Phase :
Signal #2 Info :



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December 7, 2009

SAMPLE DATA

CLIENT SAMPLE ID
Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-3E4-CTP(6-7)-079

Lab Sample ID: 65436-41
Matrix: Solid
Percent Solid: 92
Dilution Factor: 2.2
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/01/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	73	U
PCB-1221	73	U
PCB-1232	73	U
PCB-1242	73	U
PCB-1248	73	U
PCB-1254	73	1670
PCB-1260	73	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	82	%
Decachlorobiphenyl	77	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65436
GC Column #1: STX-CLPesticides I	Sample: 65436-41,1:2,,A/C
Column ID: 0.25 mm	Data File: M21203.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 2.2
Column ID: 0.25 mm	

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1254	1666	1399	17.4

Column to be used to flag RPD values greater than QC limit of 40%

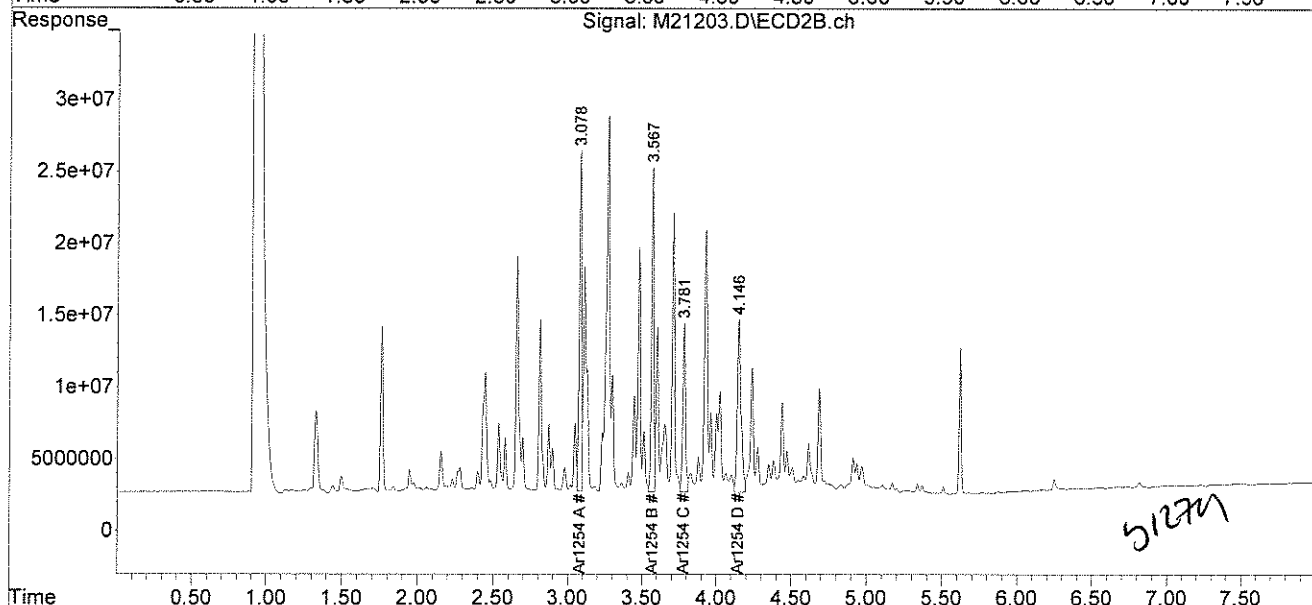
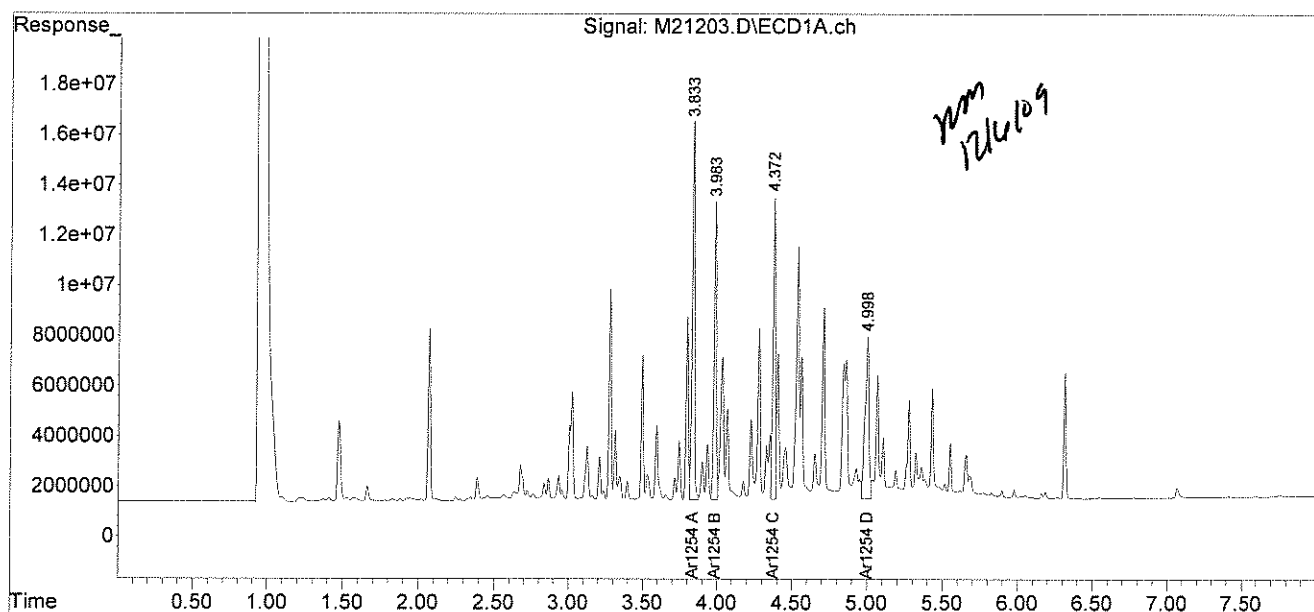
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\120409-M\
Data File : M21203.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 2009 7:25 pm
Operator : RM
Sample : 65436-41,1:2,,A/C
Misc : SOIL
ALS Vial : 56 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 04 22:20:32 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-QEB-080

Lab Sample ID: 65436-42
Matrix: Aqueous
Percent Solid: N/A
Dilution Factor: 1.0
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/02/09
Analysis Date: 12/04/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/L}$	Results $\mu\text{g/L}$
PCB-1016	0.2	U
PCB-1221	0.2	U
PCB-1232	0.2	U
PCB-1242	0.2	U
PCB-1248	0.2	U
PCB-1254	0.2	U
PCB-1260	0.2	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	91	%
Decachlorobiphenyl	88	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

COMMENTS:

PCB Report

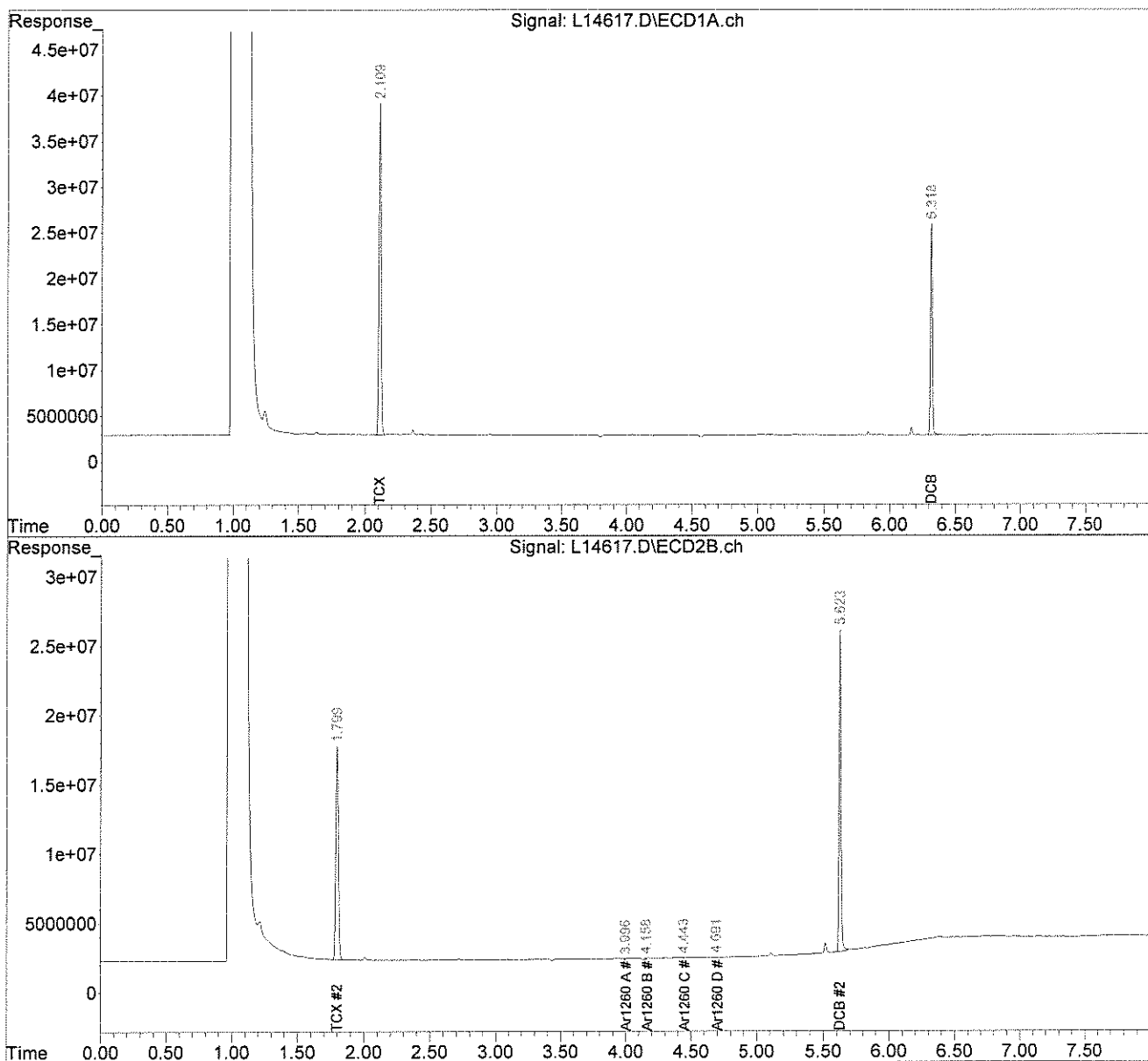
Authorized signature



Data Path : C:\msdchem\1\DATA\120309-L\
Data File : L14617.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 4 Dec 09 3:45 pm
Operator : RM
Sample : 65436-12
Misc : 42 RM 12/7/09
ALS Vial : 19 Sample Multiplier: 1

Integration File signal 1: PCBINT.E
Integration File signal 2: PCBINT2.E
Quant Time: Dec 07 15:30:51 2009
Quant Method : C:\msdchem\1\METHODS\PB12029.M
Quant Title : Aroclor 1016/1260
QLast Update : Thu Dec 03 15:02:24 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 3 ul
Signal #1 Phase : DB-1701 Widebore Signal #2 Phase: DB-5 Widebore
Signal #1 Info : 0.53 mm , 1.0um f Signal #2 Info : 0.53 mm, 1.5um film



PCB QC FORMS

Instrument ID: L
GC Column #1: STX-CLPesticides I
Column ID: 0.25 mm
GC Column #2: STX-CLPesticides II
Column ID: 0.25 mm

[illegible]

Column to be used to flag recovery values outside of QC limits
* Values outside QC limits
D System Monitoring Compound diluted out

PCB SOIL SYSTEM MONITORING COMPOUNDS SUMMARY

Instrument ID: M
GC Column #1: STX-CLPesticides I
Column ID: 0.25 mm
GC Column #2: STX-CLPesticides II
Column ID: 0.25 mm

SDG: 65436

[illegible]

	Lower Limit	Upper Limit
SMC #1 = TCX	40	130
SMC #2 = DCB	40	130

Column to be used to flag recovery values outside of QC limits
* Values outside QC limits
D System Monitoring Compound diluted out

PCB AQUEOUS
LABORATORY CONTROL/LABORATORY CONTROL DUPLICATE
PERCENT RECOVERY

Instrument ID: L

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG:

Non-spiked sample: B12029PW

Spike: L12029PWB

Spike duplicate: LD12029PWB

COMPOUND	LCS SPIKE	LCSD SPIKE	LOWER	UPPER	RPD	NON-SPIKE	SPIKE	SPIKE	SPIKE DUP	SPIKE DUP	RPD	#
	ADDED (ug/L)	ADDED (ug/L)	LIMIT	LIMIT	LIMIT	RESULT (ug/L)	RESULT (ug/L)	% REC				
PCB 1016	2.0	2.0	79	113	25	0.00	1.92	96	1.95	98	1.7	
PCB 1260	2.0	2.0	58	115	25	0.00	1.80	90	1.83	92	1.9	
PCB 1016 #2	2.0	2.0	81	112	25	0.00	1.82	91	1.79	89	1.8	
PCB 1260 #2	2.0	2.0	54	123	25	0.00	1.45	72	1.53	76	5.5	

Column to be used to flag recovery and RPD values outside of QC limits

* Values outside QC limits

LCS/LCSD spike added values have been volume adjusted.

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

PCB SOIL
LABORATORY CONTROL SAMPLE/DUPLICATE
PERCENT RECOVERY

Instrument ID: M

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG:

Non-spiked sample: B11309PSOX,,A/C

Spike: L11309PSOX,,A/C

Spike duplicate: LD11309PSOX,,A/C

COMPOUND	LCS SPIKE	LCSD SPIKE	LOWER	UPPER	RPD	NON-SPIKE	SPIKE	SPIKE		SPIKE DUP	SPIKE DUP		RPD	
	ADDED (ug/kg)	ADDED (ug/kg)	LIMIT	LIMIT	LIMIT	RESULT (ug/kg)	RESULT (ug/kg)	% REC	#	RESULT (ug/kg)	% REC	#	RPD	#
PCB 1016	200	200	65	140	30	0	233	117		228	114		2.3	
PCB 1260	200	200	60	130	30	0	232	116		216	108		7.2	
PCB 1016 #2	200	200	65	140	30	0	227	114		172	86		27.6	
PCB 1260 #2	200	200	60	130	30	0	246	123		229	114		7.1	

Column to be used to flag recovery and RPD values outside of QC limits

* Values outside QC limits

LCS/LCSD spike added values have been weight adjusted.

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

PCB SOIL
MATRIX SPIKE/DUPLICATE
PERCENT RECOVERY

Instrument ID: M

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG:

Non-spiked sample: 65436-11,,A/C

Spike: 65436-11,MS,,A/C

Spike duplicate: 65436-11,MSD,,A/C

COMPOUND	MS SPIKE ADDED (ug/kg)	MSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
PCB 1016	196	199	65	140	30	0	530	270	*	870	438	*	48.6	*
PCB 1260	196	199	60	130	30	0	213	108		214	108		0.7	
PCB 1016 #2	196	199	65	140	30	0	508	259	*	1902	958	*	115.7	*
PCB 1260 #2	196	199	60	130	30	0	198	101		204	103		2.8	

Column to be used to flag recovery and RPD values outside of QC limits

* Values outside QC limits

MS/MSD spike added values have been weight adjusted.

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

PCB SOIL
LABORATORY CONTROL SAMPLE/DUPLICATE
PERCENT RECOVERY

Instrument ID: M

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG:

Non-spiked sample: B12019PSOX,,A/C

Spike: L12019PSOX,,A/C

Spike duplicate: LD12019PSOX,,A/C

COMPOUND	LCS SPIKE	LCSD SPIKE	LOWER	UPPER	RPD	NON-SPIKE	SPIKE	SPIKE	SPIKE DUP		SPIKE DUP	RPD	
	ADDED (ug/kg)	ADDED (ug/kg)	LIMIT	LIMIT	LIMIT	RESULT (ug/kg)	RESULT (ug/kg)	% REC	#	RESULT (ug/kg)	% REC	#	#
PCB 1016	200	200	65	140	30	0	222	111		226	113		2.1
PCB 1260	200	200	60	130	30	0	210	105		219	109		4.1
PCB 1016 #2	200	200	65	140	30	0	235	118		225	113		4.3
PCB 1260 #2	200	200	60	130	30	0	237	119		242	121		2.0

Column to be used to flag recovery and RPD values outside of QC limits

* Values outside QC limits

LCS/LCSD spike added values have been weight adjusted.

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

PCB SOIL
MATRIX SPIKE/DUPLICATE
PERCENT RECOVERY

Instrument ID: M

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG:

Non-spiked sample: 65436-36,,A/C

Spike: 65436-36,MS,,A/C

Spike duplicate: 65436-36,MSD,,A/C

COMPOUND	MS SPIKE ADDED (ug/kg)	MSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	SPIKE #	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	SPIKE DUP #	RPD	#
PCB 1016	197	194	65	140	30	0	2002	1014	*	1552	801	*	25.3	
PCB 1260	197	194	60	130	30	0	3816	1933	*	2754	1421	*	32.3	*
PCB 1016 #2	197	194	65	140	30	0	1199	607	*	917	473	*	26.6	
PCB 1260 #2	197	194	60	130	30	0	3365	1705	*	2534	1308	*	28.2	

Column to be used to flag recovery and RPD values outside of QC limits

* Values outside QC limits

MS/MSD spike added values have been weight adjusted.

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

PCB SOIL
LABORATORY CONTROL SAMPLE/DUPLICATE
PERCENT RECOVERY

Instrument ID: M

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG:

Non-spiked sample: B11309PSOX2,,A/C

Spike: L11309PSOX2,,A/C

Spike duplicate: LD11309PSOX2,,A/C

COMPOUND	LCS SPIKE	LCSD SPIKE	LOWER	UPPER	RPD	NON-SPIKE	SPIKE	SPIKE		SPIKE DUP	SPIKE DUP		
	ADDED (ug/kg)	ADDED (ug/kg)	LIMIT	LIMIT	LIMIT	RESULT (ug/kg)	RESULT (ug/kg)	% REC		RESULT (ug/kg)	% REC		
PCB 1016	200	200	65	140	30	0	219	109		224	112		2.5
PCB 1260	200	200	60	130	30	0	200	100		213	107		6.5
PCB 1016 #2	200	200	65	140	30	0	206	103		225	113		8.8
PCB 1260 #2	200	200	60	130	30	0	214	107		221	110		3.3

Column to be used to flag recovery and RPD values outside of QC limits

* Values outside QC limits

LCS/LCSD spike added values have been weight adjusted.

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

PCB SOIL
MATRIX SPIKE/DUPLICATE
PERCENT RECOVERY

Instrument ID: M

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG:

Non-spiked sample: 65436-30,,A/C

Spike: 65436-30,MS,,A/C

Spike duplicate: 65436-30,MSD,,A/C

	MS SPIKE	MSD SPIKE	LOWER	UPPER	RPD	NON-SPIKE	SPIKE	SPIKE		SPIKE DUP	SPIKE DUP			
COMPOUND	ADDED (ug/kg)	ADDED (ug/kg)	LIMIT	LIMIT	LIMIT	RESULT (ug/kg)	RESULT (ug/kg)	% REC	#	RESULT (ug/kg)	% REC	#	RPD	#
PCB 1016	199	199	65	140	30	0	2960	1488	*	2534	1271	*	15.5	
PCB 1260	199	199	60	130	30	0	2759	1387	*	2308	1158	*	17.8	
PCB 1016 #2	199	199	65	140	30	0	1466	737	*	1285	645	*	13.2	
PCB 1260 #2	199	199	60	130	30	0	2405	1209	*	2072	1039	*	14.9	

Column to be used to flag recovery and RPD values outside of QC limits

* Values outside QC limits

MS/MSD spike added values have been weight adjusted.

Non-spiked result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

CHAIN OF CUSTODIES

A7942E

Page 1 of 4

Analyze

Chain Of Custody Form

analitycs environmental laboratory LLC 195 Commerce Way Suite E Portsmouth, NH 03801 Phone (603) 436-5111 Fax (603) 430-2151		For Analytics Use Only Rev. 5/06/18/08	
Project#: 222955 Company: Woodward & Curran Contact: JEFF HAMEL Address: 35 New England Business Center Suite 180 Andover, MA 01810 Phone: (978) 557-8150 PO#: Sampler (Signature): <i>Jeff Hamel</i>		Proj. Name: UMass Dubois Library Matrix Key: C = Concrete WP = Wipe WW = Wastewater SW = Surface Water GW = Groundwater DW = Drinking Water S = Soil/Sludge O = Oil E = Extract	
Station Identification DL-18E4-CCS(6-1)-024 DL-18E4-CCS(6-1)-025 DL-18E4-CTP(6-1)-027 DL-18E1-TCK-028 DL-15E2-CP(4-5)-030 DL-15E2-CM(4-5)-032 DL-15E2-CCS(6-1)-034 DL-15E2-CCC(6-1)-036 DL-15E6-CP(6-1)-038 DL-15E1-CCS(6-1)-040 DL-12E1-CCS(6-1)-042		Sample Date 11/27/09 11/27/09 11/27/09 11/27/09 11/27/09 11/27/09 11/27/09 11/27/09 11/27/09 11/27/09 11/27/09	
Sample Time 1120 1120 1205 1208 1230 1237 1242 1255 1304 1307 1313		Analysis PCBs PCBs PCBs PCBs PCBs PCBs PCBs PCBs PCBs PCBs PCBs	
Preservation Unpres 4°C HNO3 H2SO4 HCL Methanol Other		Container Key P=plastic G=glass Matrix C C P K P B C C P C C	
Container number/type 1 1 1 1 1 1 1 1 1 1 1		pH 6.5436-12 13 14 15 16 17 18 19 20 21 22	
Email Results to: jhamel@woodwardcurran.com Turnaround Time (TAT) <input type="checkbox"/> 24hr* <input type="checkbox"/> 48hr* <input checked="" type="checkbox"/> 5 Days* <input type="checkbox"/> 72hr* <input type="checkbox"/> 10 Days		Project Requirements: *Fee may apply Report Type: <input type="checkbox"/> MCP* <input checked="" type="checkbox"/> Level II* <input type="checkbox"/> Level III* <input type="checkbox"/> Level IV* <input type="checkbox"/> Standard <input type="checkbox"/> CTRCP* <input type="checkbox"/> DOD*	
State Standard: (eg. S-1 or GW-1) EDD Required: Y* N Type:		Relinquished By: <i>Jeff Hamel</i> Date: 11/27/09 Time: 1500 Relinquished By: <i>Jeff Hamel</i> Date: 11/30/09 Time: 1410 Relinquished By: <i>Jeff Hamel</i> Date: 11/30/09 Time: 1410	

ANALYZE

Chain Of Custody Form

Analytics environmental laboratory LLC 195 Commerce Way Suite E Portsmouth, NH 03801 Phone (603) 436-5111 Fax (603) 430-2151		For Analytics Use Only Rev. 5/06/18/08 Samples were: 1) Shipped or hand-delivered 2) Temp blank °C <u>3-4.1°</u> 3) Received in good condition <u>Y</u> or <u>N</u> 4) pH checked by: <u>N/A</u> 5) Labels checked by: <u>5/11/30/09</u>										
Project#: 222955 Company: Woodward & Curran Contact: JEFF HANDEL Address: 35 New England Business Center Suite 180 Andover, MA 01810 Phone: (978) 557-8150 PO# Sampler (Signature): <i>Jeff Handel</i>	Proj. Name: UMass Dubois Library Quote # Station Identification DL-10E1-CCS(6-7)-044 DL-10E4-CTP(6-7)-046 DL-9E4-CTP(6-7)-048 DL-9E2-CCS(6-7)-050 DL-7E5-CTP(6-7)-052 DL-7E1-CCS(4-5)-054 DL-7E1-CM8(4-5)-056 DL-7E1-CCS(6-7)-058 DL-4E6-CCS(6-7)-060 DL-6E2-CCS(6-7)-062 DL-6E3-CTP(6-7)-064	Sample Date 11/27/09 11/27/09 11/27/09 11/27/09 11/27/09 11/27/09 11/27/09 11/27/09 11/27/09 11/27/09 11/27/09 11/27/09	Sample Time 1325 1339 1310 1320 1330 1338 1345 1350 1405 1512 1520	Analysis PCB PCB PCB PCB PCB PCB PCB PCB PCB PCB PCB	Preservation Unpres 4°C HNO ₃ H ₂ SO ₄ HCL Methanol Other	Container Key P=plastic G=glass Matrix C P P C P P B C P C P	Container number/twoe 1 1 1 1 1 1 1 1 1 1 1 1	pH Analytics Sample # 65436-23 24 25 26 27 28 29 30 31 32 33	Received By: <i>Mike Miller</i> Date: 11/29/09 Time: 15:00	Relinquished By: <i>Mike Miller</i> Date: 11/30/09 Time: 11:10	Received By: <i>Mike Miller</i> Date: 11/30/09 Time: 11:10	Relinquished By: <i>Mike Miller</i> Date: 11/30/09 Time: 11:10
Email Results to: jhandel@woodwardcurran.com		Comments / Instructions: PCBs by 8082 w/ SAMLET EXTRACTION P = Plaster B = Masonry Block		Project Requirements: *Fee may apply		Report Type: <input type="checkbox"/> MCP* <input checked="" type="checkbox"/> Level II* <input type="checkbox"/> CTRCP* <input type="checkbox"/> Level III* <input type="checkbox"/> DOD* <input type="checkbox"/> Level IV* <input type="checkbox"/> Standard		State: NH <input type="checkbox"/> MA <input type="checkbox"/> ME <input type="checkbox"/> CT <input type="checkbox"/> RI <input type="checkbox"/> Other:		State Standard: (eg. S-1 or GW-1) EDD Required: Y* N Type:		
Turnaround Time (TAT) <input type="checkbox"/> 24hr* <input type="checkbox"/> 48hr* <input type="checkbox"/> 72hr* <input checked="" type="checkbox"/> 5 Days* <input type="checkbox"/> 10 Days		*Fee may apply: lab approval required Analytics V&E Documents V&E COC										

Analytic

Chain Of Custody Form

analytic environmental laboratory LLC

195 Commerce Way Suite E
Portsmouth, NH 03801
Phone (603) 436-5111
Fax (603) 430-2151

Project#: 222955 Proj. Name: UM... Dobbs Library

Company: Woodard & Curran

Contact: JEFF HAMMILL

Address: 35 New England Business Center Suite 180
Andover, MA 01810

Phone: (978) 557-8150 PO# Quote #
Sampler (Signature): [Signature]

Station Identification	Sample Date	Sample Time	Analysis
DL-5E1-CCS(6-7)-066	11/27/09	1533	PCB
DL-5E6-CCS(6-7)-068	11/27/09	1540	PCB
DL-4E1-CCS(6-7)-070	11/27/09	1555	PCB
DL-4E1-CCS(6-7)-072	11/27/09	1605	PCB
DL-4E4-CTP(6-7)-074	11/27/09	1612	PCB
DL-4E4-TC5-075	11/27/09	1615	PCB
DL-3E2-CCS(6-7)-077	11/27/09	1635	PCB
DL-3E4-CTP(6-7)-079	11/27/09	1649	PCB
DL-QE0-080	11/27/09	1705	PCB

Email Results to:

Jeff Hammill
Woodard & Curran

Turnaround Time (TAT)

☐ 24hr* ☐ 48hr* ☒ 5 Days*
☐ 72hr* ☐ 10 Days

*Fee may apply; lab approval required

Analytics\AEL Documents\AEL COC

Comments / Instructions:

PCBs by B022 w/ SUMMER
EXTRACTION

P = Plaster
B = Masonry Block
K = Concrete

* Container rec'd broken (slight crack)
upon arrival @ AEL

- CP 11/30/09

For Analytics Use Only Rev. 5/06/18/08

Samples were:

- 1) Shipped or hand-delivered
- 2) Temp blank °C 3-4.1°
- 3) Received in good condition Y or N*
- 4) pH checked by: CP 11/30/09
- 5) Labels checked by: 5/11/30/09

Container Key
P=plastic G=glass
Amber liter is (-)
for CL using KI
paper - CP 11/30/09

Matrix	Container number/type	pH	Analytics Sample #
C	1 G		65436-34
P	1 G		35
C	1 G		36
C	1 G		37
P	1 G		38
K	1 G		39
C	1 G		40
P	1 G		41
W	1 G	6.0	42

Project Requirements:

*Fee may apply

Report Type:

☐ MCP* ☒ Level II*
☐ CTRCP* ☐ Level III*
☐ DOD* ☐ Level IV*
☐ Standard

State:

NH MA ME CT RI

State Standard:

(eg. S-1 or GW-1)

EDD Required: Y* N

Type:

Relinquished By:

Relinquished By Sampler:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

Relinquished By:

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Relinquished By:

Relinquished By:



ANALYTICS SAMPLE RECEIPT CHECKLIST

AEL LAB#: 65436
 CLIENT: Woodard
 PROJECT: UNass Dubois Library

COOLER NUMBER: _____
 NUMBER OF COOLERS: 2
 DATE RECEIVED: 11/30/09

A: PRELIMINARY EXAMINATION:

DATE COOLER OPENED: 11/30/09
 Date Received: 11/30/09

1. Cooler received by (initials) _____
 2. Circle one: Hand delivered
 (If so, skip 3)
 3. Did cooler come with a shipping slip? _____
 3a. Enter carrier name and airbill number here: _____

Shipped _____
 Y N/A

4. Were custody seals on the outside of cooler?
 How many & where: _____ Seal Date: _____ Seal Name: _____
 Y N
 5. Did the custody seals arrive unbroken and intact upon arrival?
 Y N/A

6. COC#: _____

7. Were Custody papers filled out properly (ink, signed, etc)? Y N
 8. Were custody papers sealed in a plastic bag? Y N
 9. Did you sign the COC in the appropriate place? Y N
 10. Was the project identifiable from the COC papers? Y N

11. Was enough ice used to chill the cooler? Y N Temp. of cooler: 3.0° - 4.1°C

B. Log-In: Date samples were logged in: 11/30/09 By: CP

12. Type of packing in cooler (bubble wrap, popcorn) Y N
 13. Were all bottles sealed in separate plastic bags? Y N
 14. Did all bottles arrive unbroken and were labels in good condition? Y N
 15. Were all bottle labels complete (ID, Date, time, etc.) Y N
 16. Did all bottle labels agree with custody papers? - DL-24E4-CMB(4-5)-005 Y N
 17. Were the correct containers used for the tests indicated: matching COC but label says "DL-24E4-CMB(4-5)-003" Y N
 18. Were samples received at the correct pH? Y N/A to PCB solids
 19. Was sufficient amount of sample sent for the tests indicated? Y N
 20. Were bubbles absent in VOA samples? Y N/A

If NO, List sample #'s: _____

21. Laboratory labeling verified by (initials): _____ Date: 12/1/09

January 6, 2010

Mr. Jeff Hamel
Woodard & Curran
35 NE Business Center Suite 180
Andover MA 01810

**RE: Analytical Results Case Narrative
Analytics # 65535 Revision 1
UMass Dubois Library Proj# 222955**

Dear Mr. Hamel;

Enclosed please find the analytical results for samples submitted for the above-mentioned project. The attached Cover Page lists the sample IDs, Lab tracking numbers and collection dates for the samples included in this deliverable.

Samples were analyzed Polychlorinated Biphenyls (PCBs) by EPA Method 8082.

Revision 1: This report has been revised to correct the typographical error on the form 10 for sample 65535-1.

Unless otherwise noted in the Non-conformance Summary listed below, all of the quality control (QC) criteria including initial calibration, calibration verification, surrogate recovery, holding time and method accuracy/precision for these analyses were within acceptable limits.

This Level II data package has been assembled in the following order:

- Case Narrative/Non-Conformance Summary
- Sample Log Sheet - Cover Page
- PCB Form 1 Data Sheet for Samples and Blanks
- Chromatograms
- PCB Form 10 Confirmation Results
- PCB Form 3 MS/MSD (LCS) Recoveries
- Chain of Custody (COC) Forms

QC NON CONFORMANCE SUMMARY

Sample Receipt:

No exceptions.

PCBs by EPA Method 8082:

All samples were analyzed at dilutions due to concentrations of PCBs detected in the samples.

The MS/MSD analyzed on sample 65535-1 had high recoveries for PCB 1016 and PCB 1260 due to the presence of PCB 1254 & 1260 in the parent sample. The laboratory control samples (L12149PSOX/LD12149PSOX) were in control for all analytes. Results were reported without qualification.

The closing continuing calibration standard (file# M21492SC) had high recovery (121%) for Decachlorobiphenyl (DCB) on column #2. Column #1 was in control for all analytes. Results were reported without qualification.

If you have any questions on this data submittal, please do not hesitate to contact me.

Sincerely,
ANALYTICS Environmental Laboratory, LLC



Stephen Knollmeyer
Laboratory Director

Mr. Jeff Hamel
Woodard & Curran
35 NE Business Center Suite 180
Andover MA 01810

Report Number: 65535

Revision: Rev. 0

Re: UMass Dubois Library

222955

Enclosed are the results of the analyses on your sample(s). Samples were received on 30 November 2009 and analyzed for the tests listed below. Samples were received in acceptable condition, with the exceptions noted below or on the chain of custody. These results pertain to samples as received by the laboratory and for the analytical tests requested on the chain of custody. The results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. Please see individual reports for specific methodologies and references.

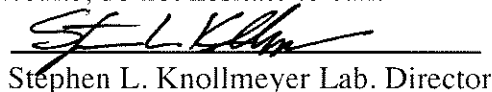
<u>Lab Number</u>	<u>Sample Date</u>	<u>Station Location</u>	<u>Analysis</u>	<u>Comments</u>
65535-1	11/27/09	DL-24E6-CPS(12-13)-001	EPA 8082 (PCBs only)	
65535-2	11/27/09	DL-21E4-CPS(12-13)-009	EPA 8082 (PCBs only)	
65535-3	11/27/09	DL-21E4-CCS(12-13)-013	EPA 8082 (PCBs only)	
65535-4	11/27/09	DL-18E4-CPS(12-13)-019	EPA 8082 (PCBs only)	
65535-5	11/27/09	DL-18E4-CCS(12-13)-023	EPA 8082 (PCBs only)	
65535-6	11/27/09	DL-15E2-CCC(10-12)-035	EPA 8082 (PCBs only)	
65535-7	11/27/09	DL-4E4-CTP(12-13)-073	EPA 8082 (PCBs only)	

Sample Receipt Exceptions: None

Analytics Environmental Laboratory is certified by the states of New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, New York, Virginia, Maryland, and is validated by the U.S. Navy (NFESC). A list of actual certified parameters is available upon request.

If you have any further question on the analytical methods or these results, do not hesitate to call.

Authorized signature

A handwritten signature in black ink, appearing to read "Stephen L. Knollmeyer".

Stephen L. Knollmeyer Lab. Director

Date

12/21/2009

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Surrogate Compound Limits

	Matrix: Units:	Aqueous % Recovery	Solid % Recovery	Method
Volatile Organic Compounds - Drinking Water				
1,4-Difluorobenzene		70-130		EPA 524.2
Bromofluorobenzene		70-130		
1,2-Dichlorobenzene-d4		70-130		
Volatile Organic Compounds				
1,2-Dichloroethane-d4		70-120	70-120	EPA 624/8260B
Toluene-d8		85-120	85-120	
Bromofluorobenzene		75-120	75-120	
Semi-Volatile Organic Compounds				
2-Fluorophenol		20-110	35-105	EPA 625/8270C
d5-Phenol		15-110	40-100	
d5-nitrobenzene		40-110	35-100	
2-Fluorobiphenyl		50-110	45-105	
2,4,6-Tribromophenol		40-110	40-125	
d14-p-terphenyl		50-130	30-125	
PAH's by SIM				
d5-nitrobenzene		21-110	35-110	EPA 8270C
2-Fluorobiphenyl		36-121	45-105	
d14-p-terphenyl		33-141	30-125	
Pesticides and PCBs				
2,4,5,6-Tetrachloro-m-xylene (TCX)		46-122	40-130	EPA 608/8082
Decachlorobiphenyl (DCB)		40-135	40-130	
Herbicides				
Dichloroacetic acid (DCAA0		30-150	30-150	
Gasoline Range Organics/TPH Gasoline				
Trifluorotoluene TFT (FID)		60-140	60-140	MEDEP 4217/EPA 8015
Bromofluorobenzene (BFB) (FID)		60-140	60-140	
Trifluorotoluene TFT (PID)		60-140	60-140	
Bromofluorobenzene (BFB) (PID)		60-140	60-140	
Diesel Range Organics/TPH Diesel				
m-terphenyl		60-140	60-140	MEDEP 4125/EPA 8015/CT ETPH

PCB DATA SUMMARIES

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December 18, 2009

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: Lab QC

Lab Sample ID: B12149PSOX
Matrix: Soil
Percent Solid: N/A
Dilution Factor: 1.0
Collection Date:
Lab Receipt Date:
Extraction Date: 12/14/09
Analysis Date: 12/17/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	82	%
Decachlorobiphenyl	98	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

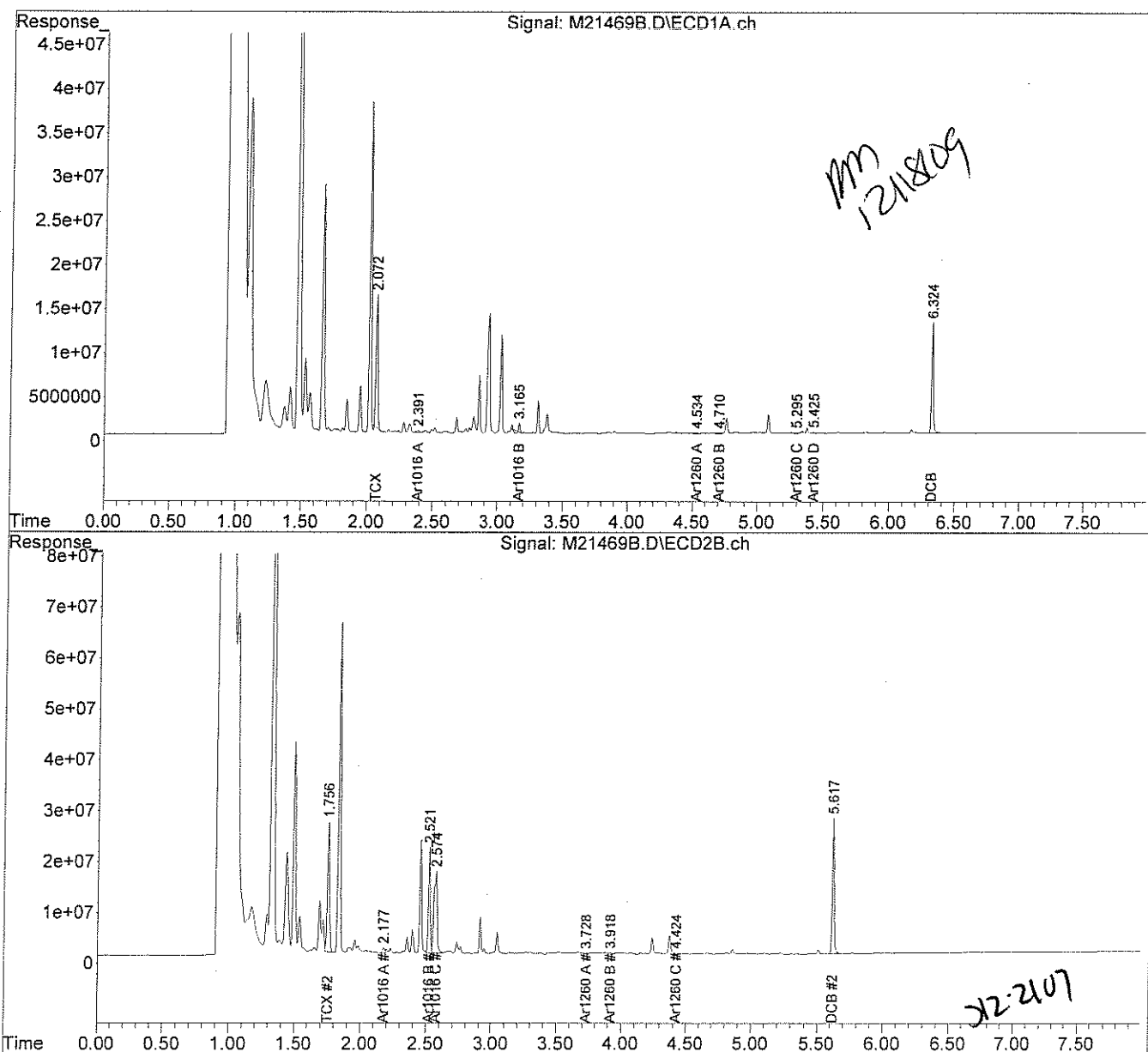
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

Data Path : C:\msdchem\1\DATA\121709-M\
Data File : M21469B.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 17 Dec 2009 9:54 am
Operator : RM
Sample : B12149PSOX,,A/C
Misc : SOIL
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 18 08:03:09 2009
Quant Method : C:\msdchem\1\METHODS\PCB11249.M
Quant Title : Aroclor 1016/1260
QLast Update : Tue Nov 24 16:14:04 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-24E6-CPS(12-13)-001

Lab Sample ID: 65535-1
Matrix: Solid
Percent Solid: 94
Dilution Factor: 5.0
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/14/09
Analysis Date: 12/17/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	170	U
PCB-1221	170	U
PCB-1232	170	U
PCB-1242	170	U
PCB-1248	170	U
PCB-1254	170	2620
PCB-1260	170	2080
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	91	%
Decachlorobiphenyl	98	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65535
GC Column #1: STX-CLPesticides I	Sample: 65535-1,1:5,,A/C
Column ID: 0.25 mm	Data File: M21485.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 5.0
Column ID: 0.25 mm	

Column #1		Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1260	1927	2075	7.4	

Column to be used to flag RPD values greater than QC limit of 40%

* Values outside QC limits

Comments: _____

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65535
GC Column #1: STX-CLPesticides I	Sample: 65535-1,1:5,,A/C
Column ID: 0.25 mm	Data File: M21485.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 5.0
Column ID: 0.25 mm	

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1254	2624	2413	8.4

Column to be used to flag RPD values greater than QC limit of 40%

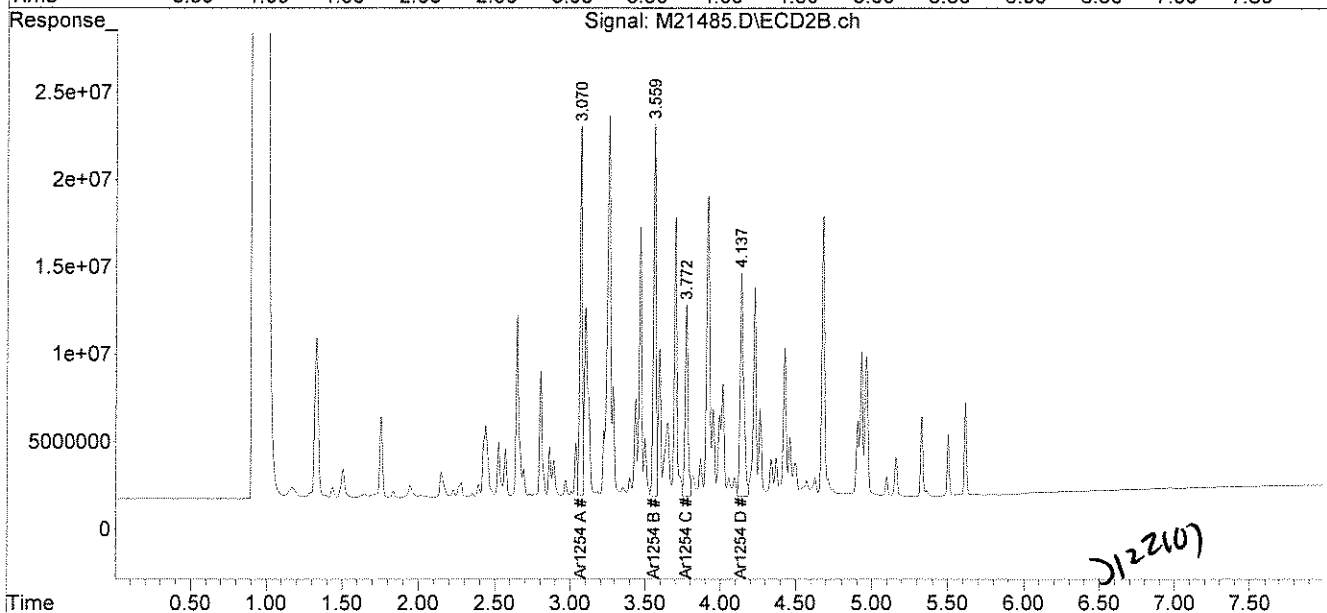
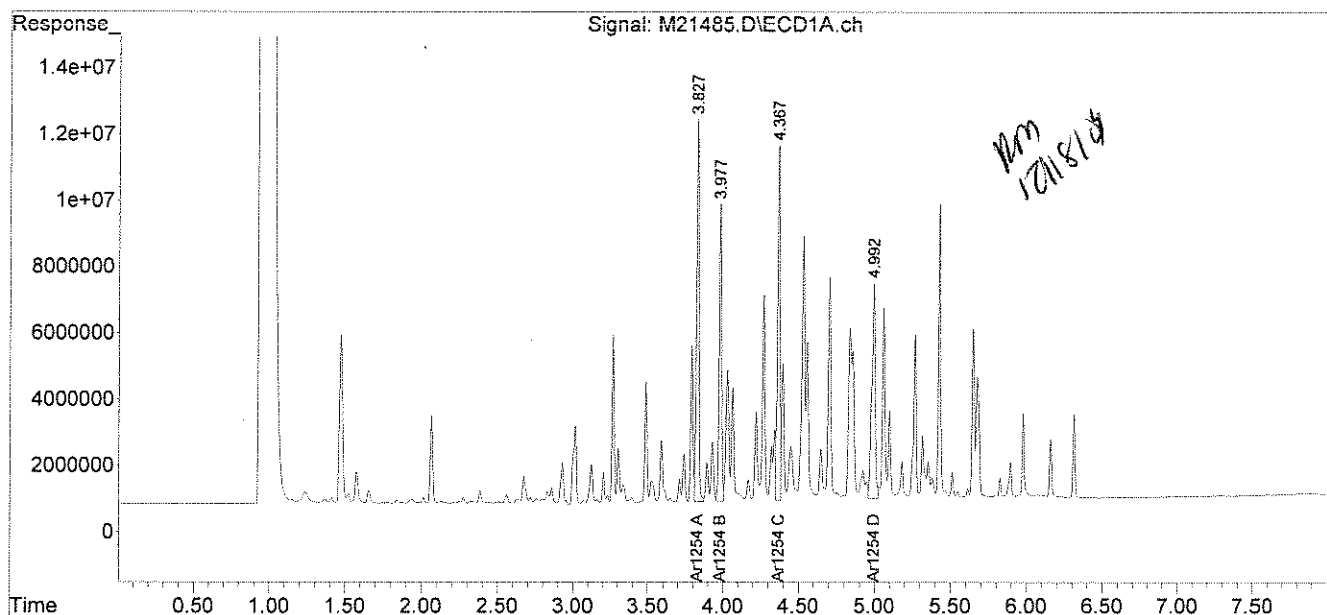
* Values outside QC limits

Comments: _____

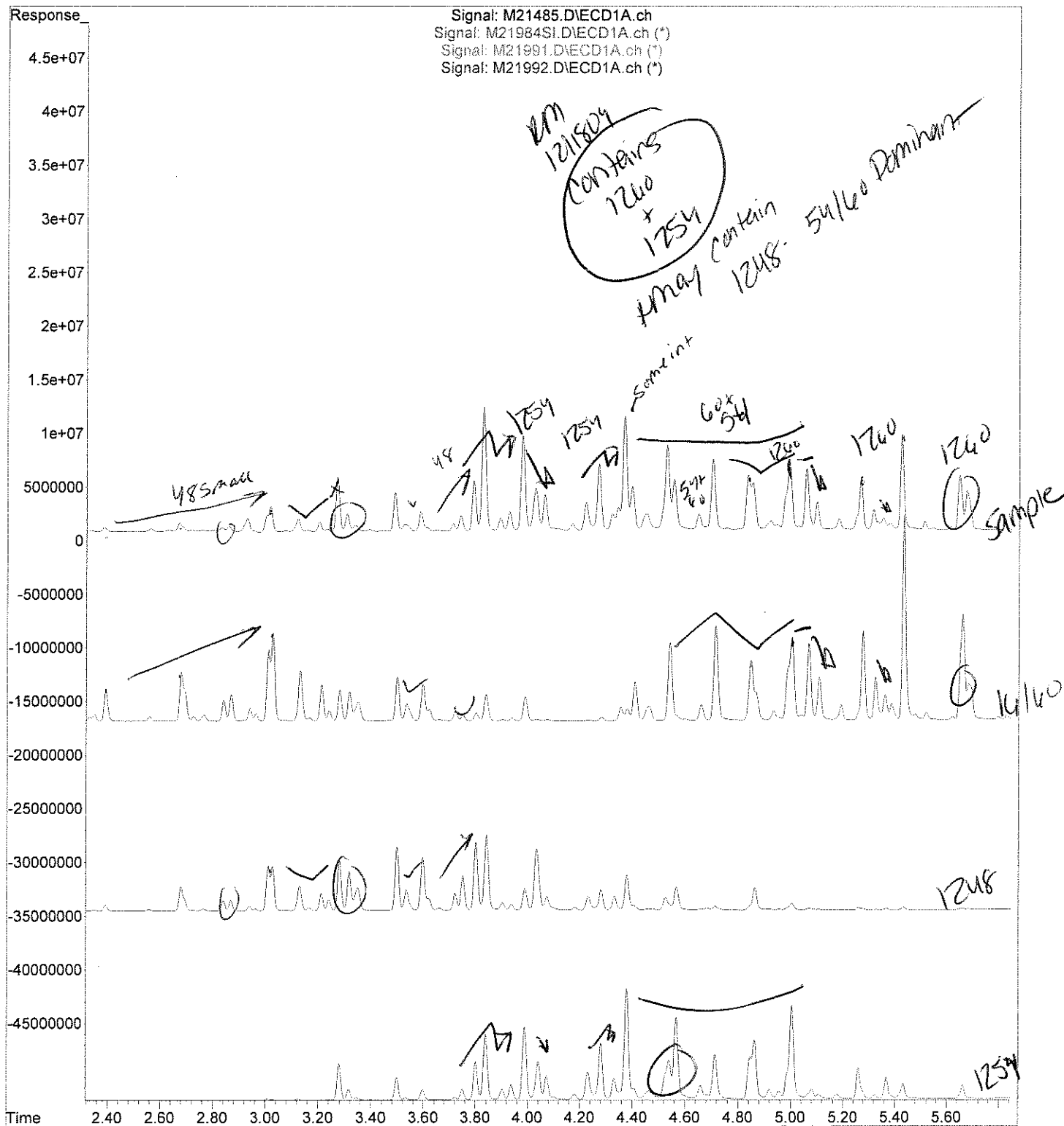
Data Path : C:\msdchem\1\DATA\121709-M\
Data File : M21485.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 17 Dec 2009 3:54 pm
Operator : RM
Sample : 65535-1,1:5,,A/C
Misc : SOIL
ALS Vial : 9 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 18 07:44:41 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



File : C:\msdchem\1\DATA\121709-M\M21485.D
Operator : RM
Acquired : 17 Dec 2009 3:54 pm using AcqMethod PCB.M
Instrument : Instrument M
Sample Name: 65535-1,1:5,,A/C
Misc Info : SOIL
Vial Number: 9



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-21E4-CPS(12-13)-009

Lab Sample ID: 65535-2
Matrix: Solid
Percent Solid: 95
Dilution Factor: 5
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/14/09
Analysis Date: 12/17/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	170	U
PCB-1221	170	U
PCB-1232	170	U
PCB-1242	170	U
PCB-1248	170	U
PCB-1254	170	2730
PCB-1260	170	1920
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	92	%
Decachlorobiphenyl	103	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65535
GC Column #1: STX-CLPesticides I	Sample: 65535-2,1:5,,A/C
Column ID: 0.25 mm	Data File: M21486.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 5.1
Column ID: 0.25 mm	

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD
PCB 1260	1781	1919	7.4

Column to be used to flag RPD values greater than QC limit of 40%

* Values outside QC limits

Comments: _____

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65535
GC Column #1: STX-CLPesticides I	Sample: 65535-2,1:5,,A/C
Column ID: 0.25 mm	Data File: M21486.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 5.1
Column ID: 0.25 mm	

Column #1		Column #2		
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1254	2734	2467	10.3	

Column to be used to flag RPD values greater than QC limit of 40%

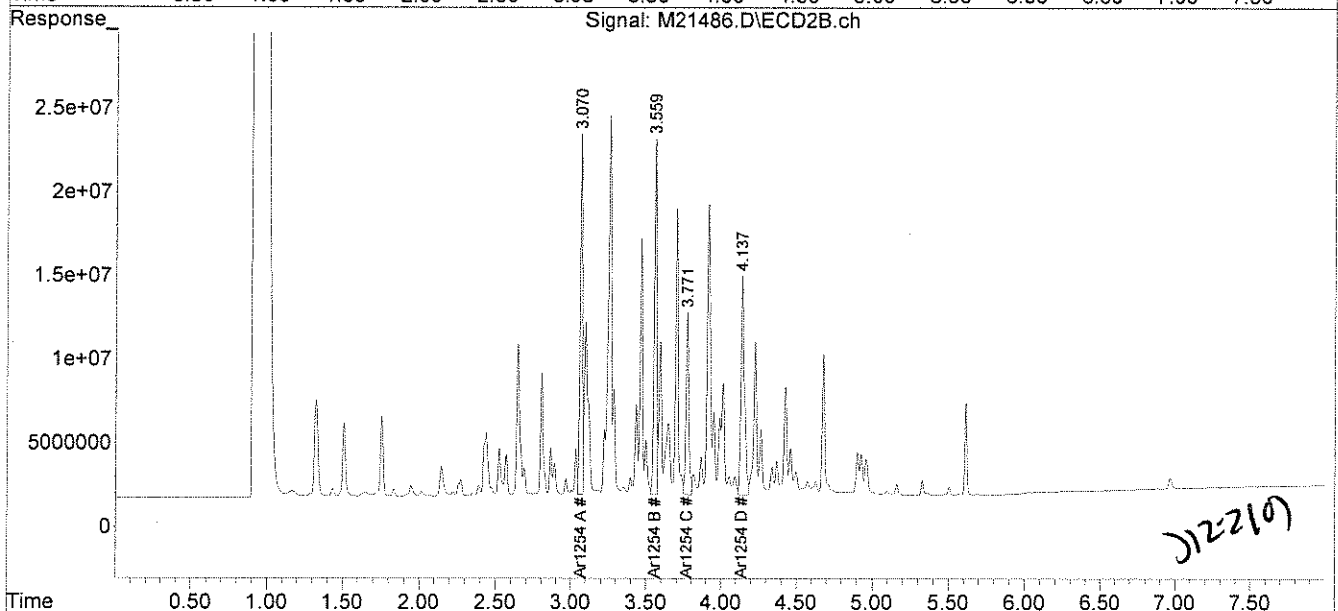
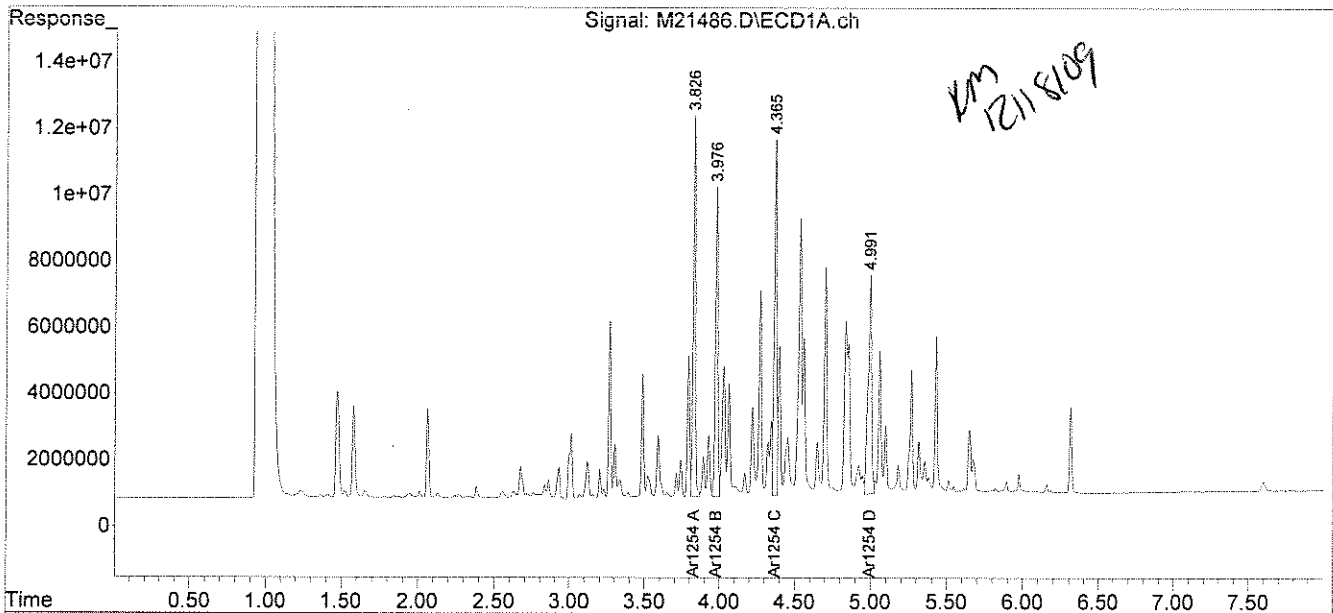
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\121709-M\
Data File : M21486.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 17 Dec 2009 4:05 pm
Operator : RM
Sample : 65535-2,1:5,,A/C
Misc : SOIL
ALS Vial : 10 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 18 07:44:44 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-21E4-CCS(12-13)-013

Lab Sample ID: 65535-3
Matrix: Solid
Percent Solid: 99
Dilution Factor: 4.8
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/14/09
Analysis Date: 12/17/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	160	U
PCB-1221	160	U
PCB-1232	160	U
PCB-1242	160	U
PCB-1248	160	U
PCB-1254	160	1630
PCB-1260	160	1090
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	94	%
Decachlorobiphenyl	115	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65535
GC Column #1: STX-CLPesticides I	Sample: 65535-3,1:5,,A/C
Column ID: 0.25 mm	Data File: M21487.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 4.8
Column ID: 0.25 mm	

COMPOUND	Column #1	Column #2	RPD		#
	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1260	1088	1093	0.4		

Column to be used to flag RPD values greater than QC limit of 40%

* Values outside QC limits

Comments: _____

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65535

GC Column #1: STX-CLPesticides I

Sample: 65535-3,1:5,,A/C

Column ID: 0.25 mm

Data File: M21487.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 4.8

Column ID: 0.25 mm

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	1627	1355	18.2	

Column to be used to flag RPD values greater than QC limit of 40%

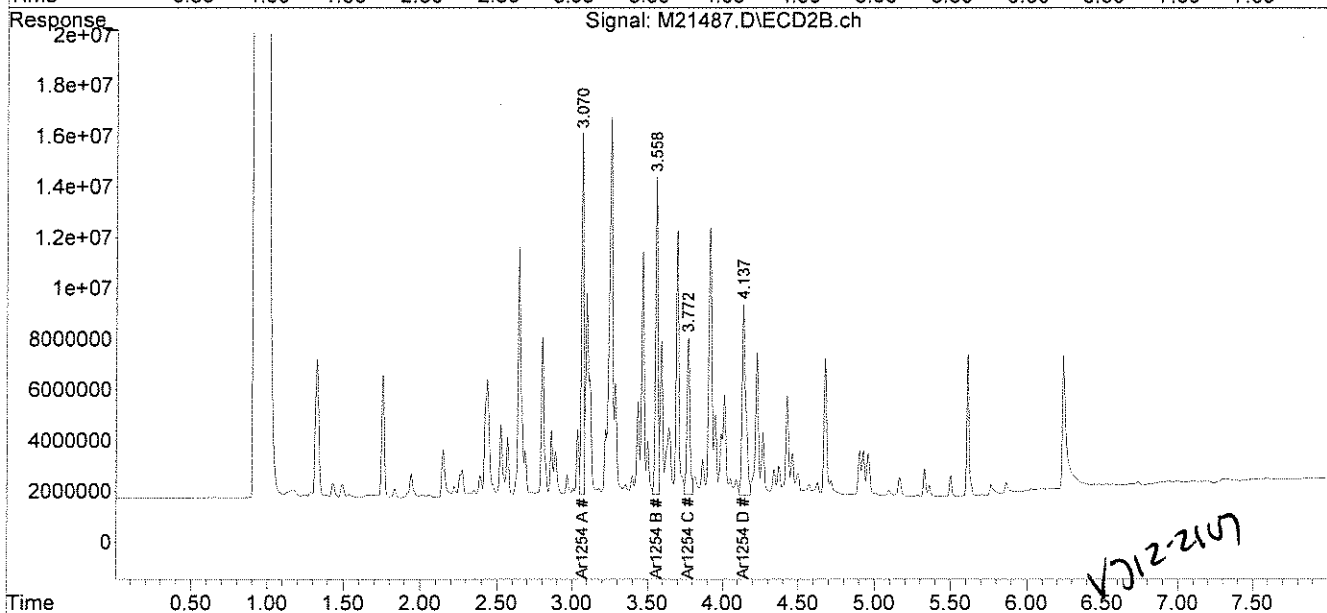
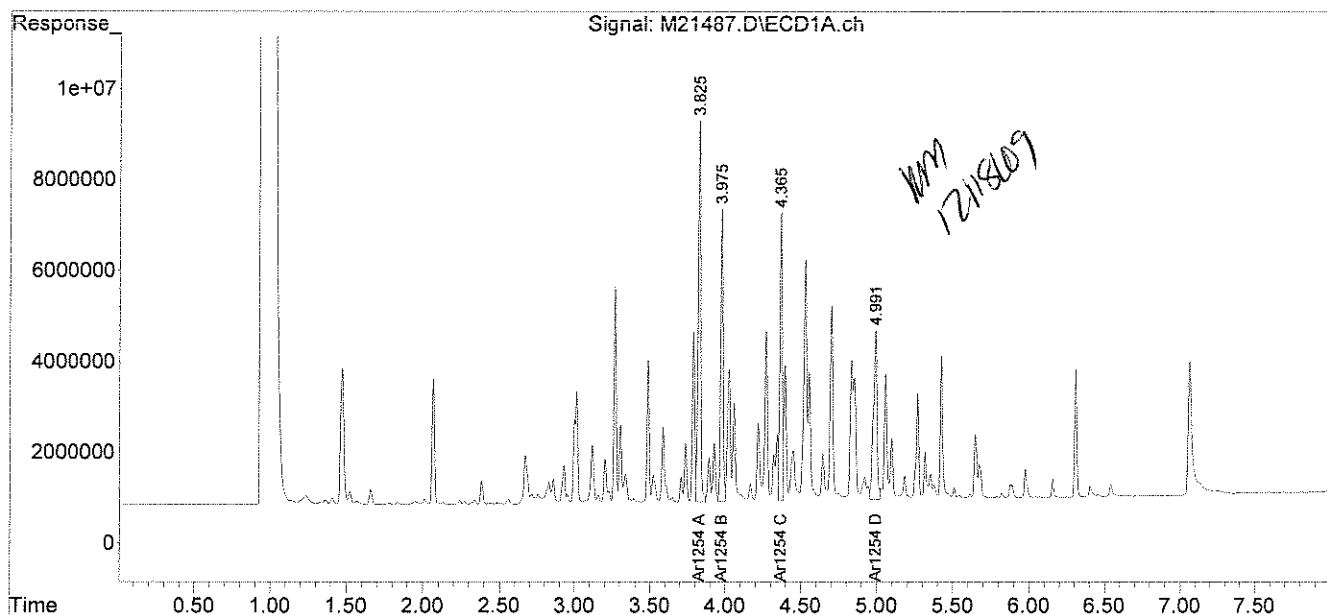
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\121709-M\
Data File : M21487.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 17 Dec 2009 4:15 pm
Operator : RM
Sample : 65535-3,1:5,,A/C
Misc : SOIL
ALS Vial : 11 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 18 07:44:46 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-18E4-CPS(12-13)-019

Lab Sample ID: 65535-4
Matrix: Solid
Percent Solid: 94
Dilution Factor: 5
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/14/09
Analysis Date: 12/17/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	170	U
PCB-1221	170	U
PCB-1232	170	U
PCB-1242	170	U
PCB-1248	170	U
PCB-1254	170	2500
PCB-1260	170	1670
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	95	%
Decachlorobiphenyl	107	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65535
GC Column #1: STX-CLPesticides I	Sample: 65535-4,1:5,,A/C
Column ID: 0.25 mm	Data File: M21488.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 5.1
Column ID: 0.25 mm	

COMPOUND	Column #1	Column #2	RPD		#
	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1260	1590	1665	4.6		

Column to be used to flag RPD values greater than QC limit of 40%

* Values outside QC limits

Comments: _____

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65535

GC Column #1: STX-CLPesticides I

Sample: 65535-4,1:5,,A/C

Column ID: 0.25 mm

Data File: M21488.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 5.1

Column ID: 0.25 mm

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD #
PCB 1254	2503	2249	10.7

Column to be used to flag RPD values greater than QC limit of 40%

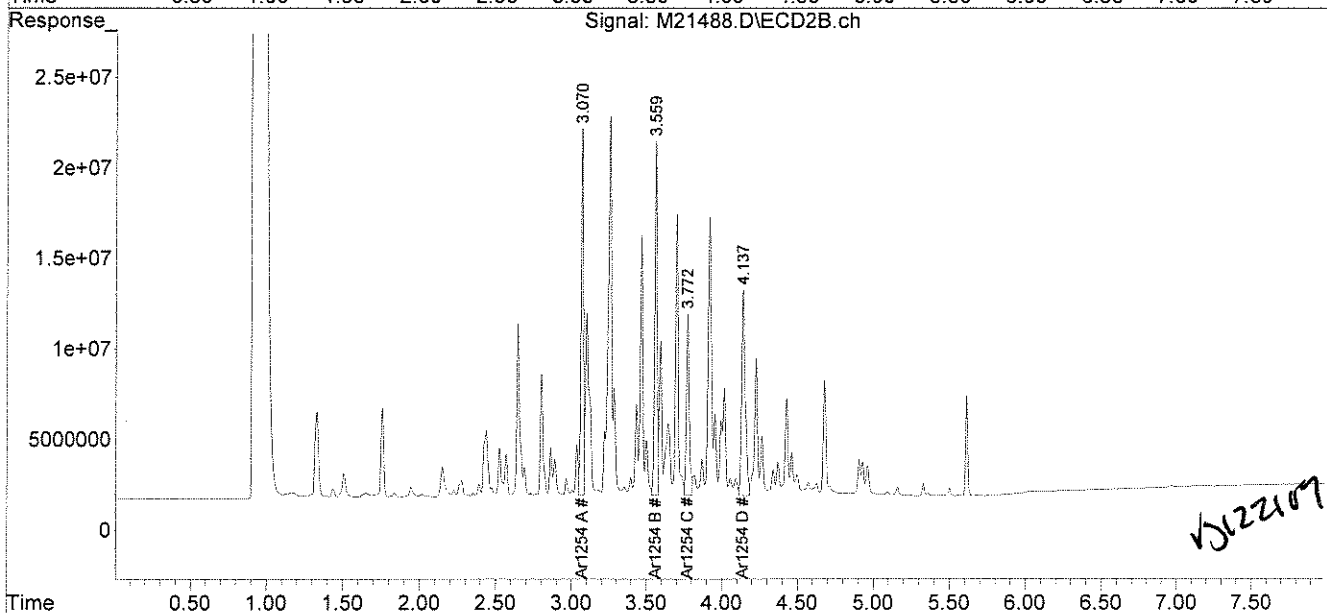
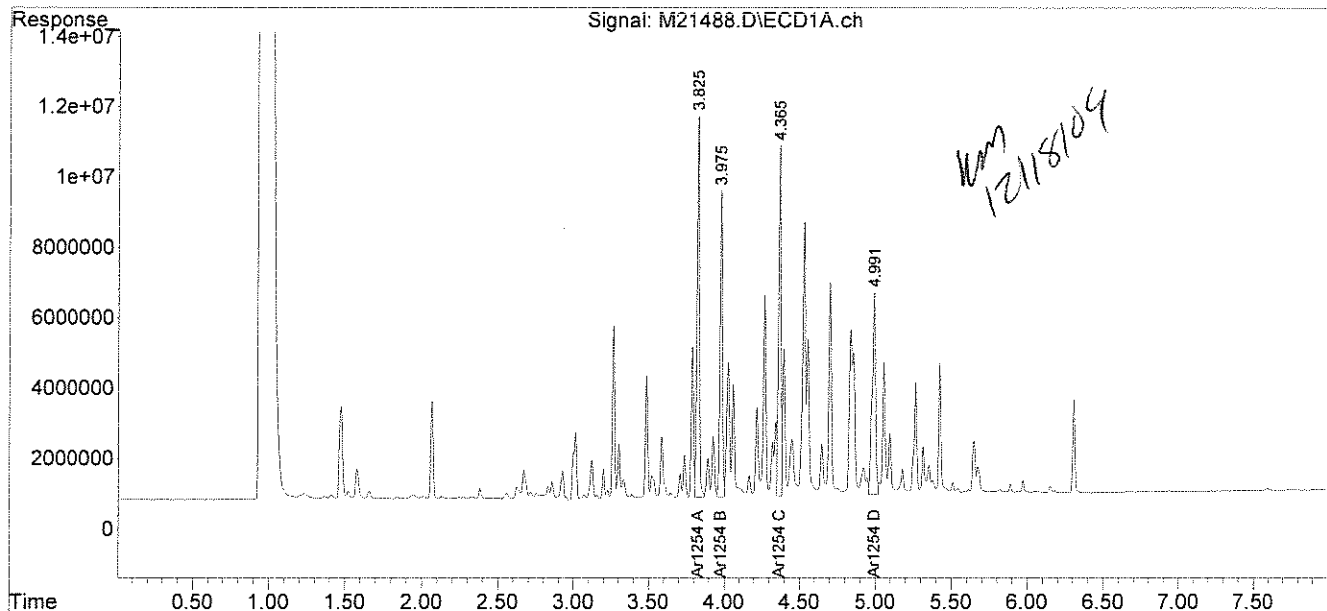
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\121709-M\
Data File : M21488.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 17 Dec 2009 4:25 pm
Operator : RM
Sample : 65535-4,1:5,,A/C
Misc : SOIL
ALS Vial : 12 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 18 07:44:48 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-18E4-CCS(12-13)-023

Lab Sample ID: 65535-5
Matrix: Solid
Percent Solid: 99
Dilution Factor: 5.0
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/14/09
Analysis Date: 12/17/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	170	U
PCB-1221	170	U
PCB-1232	170	U
PCB-1242	170	U
PCB-1248	170	U
PCB-1254	170	1760
PCB-1260	170	955
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	95	%
Decachlorobiphenyl	108	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65535
GC Column #1: STX-CLPesticides I	Sample: 65535-5,1:5,,A/C
Column ID: 0.25 mm	Data File: M21489.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 5.0
Column ID: 0.25 mm	

COMPOUND	Column #1	Column #2	RPD		#
	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1260	896	955	6.4		

Column to be used to flag RPD values greater than QC limit of 40%

* Values outside QC limits

Comments: _____

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65535

GC Column #1: STX-CLPesticides I

Sample: 65535-5,1:5,,A/C

Column ID: 0.25 mm

Data File: M21489.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 5.0

Column ID: 0.25 mm

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	1764	1379	24.5	

Column to be used to flag RPD values greater than QC limit of 40%

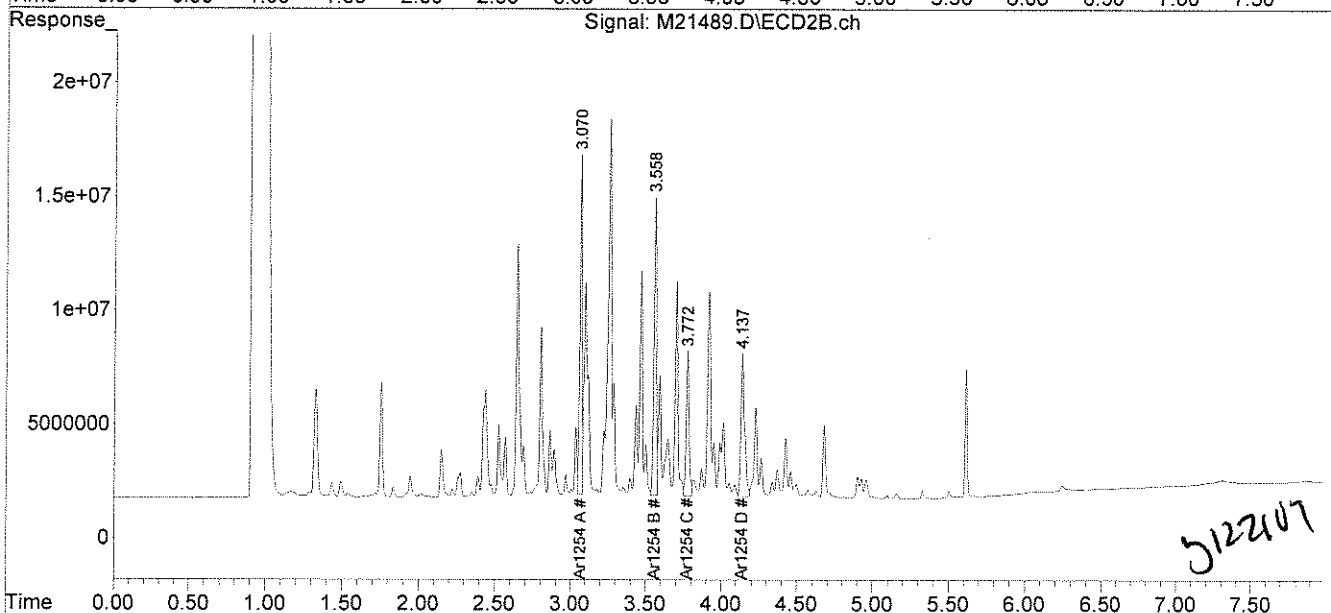
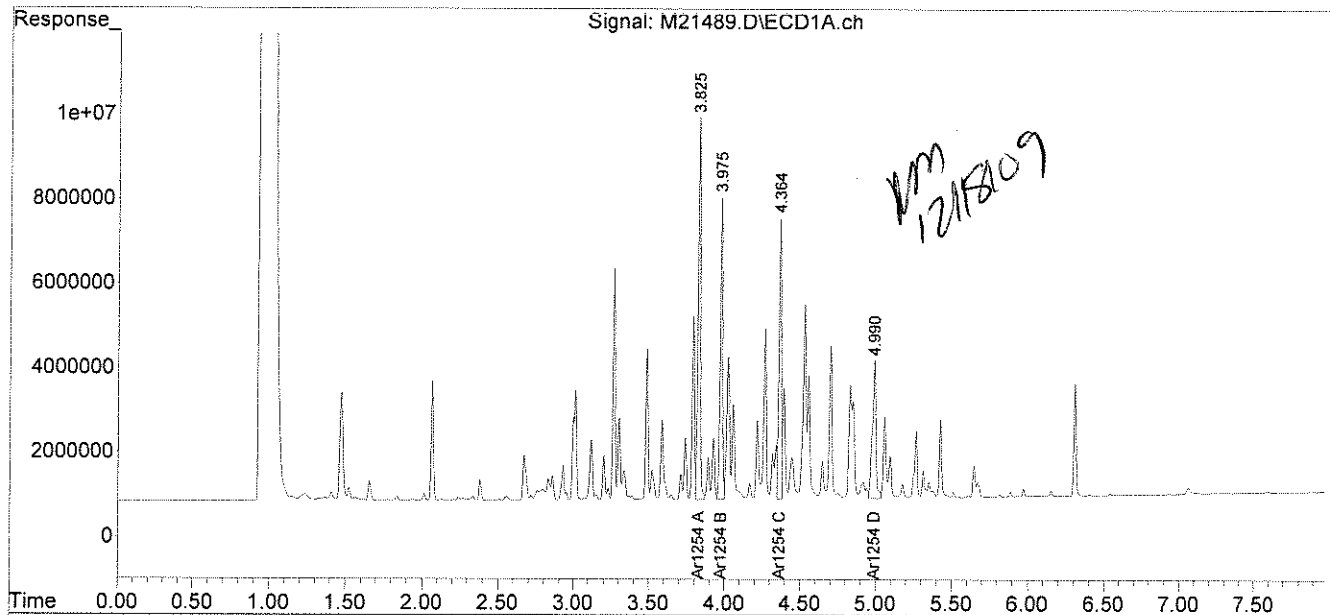
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\121709-M\
Data File : M21489.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 17 Dec 2009 4:35 pm
Operator : RM
Sample : 65535-5,1:5,,A/C
Misc : SOIL
ALS Vial : 13 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 18 07:44:50 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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SAMPLE DATA

CLIENT SAMPLE ID
Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-15E2-CCC(10-12)-035

Lab Sample ID: 65535-6
Matrix: Solid
Percent Solid: 99
Dilution Factor: 4.9
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/14/09
Analysis Date: 12/17/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	160	U
PCB-1221	160	U
PCB-1232	160	U
PCB-1242	160	U
PCB-1248	160	U
PCB-1254	160	1690
PCB-1260	160	1000
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	91	%
Decachlorobiphenyl	109	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65535
GC Column #1: STX-CLPesticides I	Sample: 65535-6,1:5,,A/C
Column ID: 0.25 mm	Data File: M21490.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 4.9
Column ID: 0.25 mm	

COMPOUND	Column #1	Column #2	RPD		#
	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1260	979	1004	2.5		

Column to be used to flag RPD values greater than QC limit of 40%

* Values outside QC limits

Comments: _____

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65535

GC Column #1: STX-CLPesticides I

Sample: 65535-6,1:5,,A/C

Column ID: 0.25 mm

Data File: M21490.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 4.9

Column ID: 0.25 mm

Column #1		Column #2		#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	
PCB 1254	1685	1686	0.1	

Column to be used to flag RPD values greater than QC limit of 40%

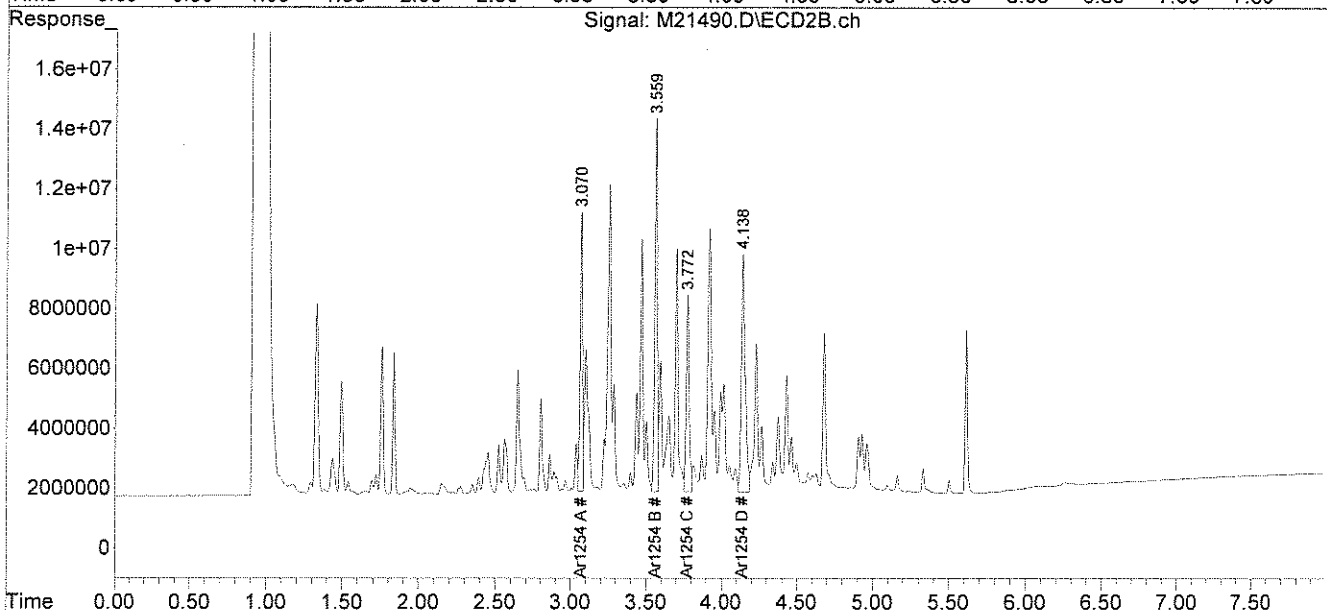
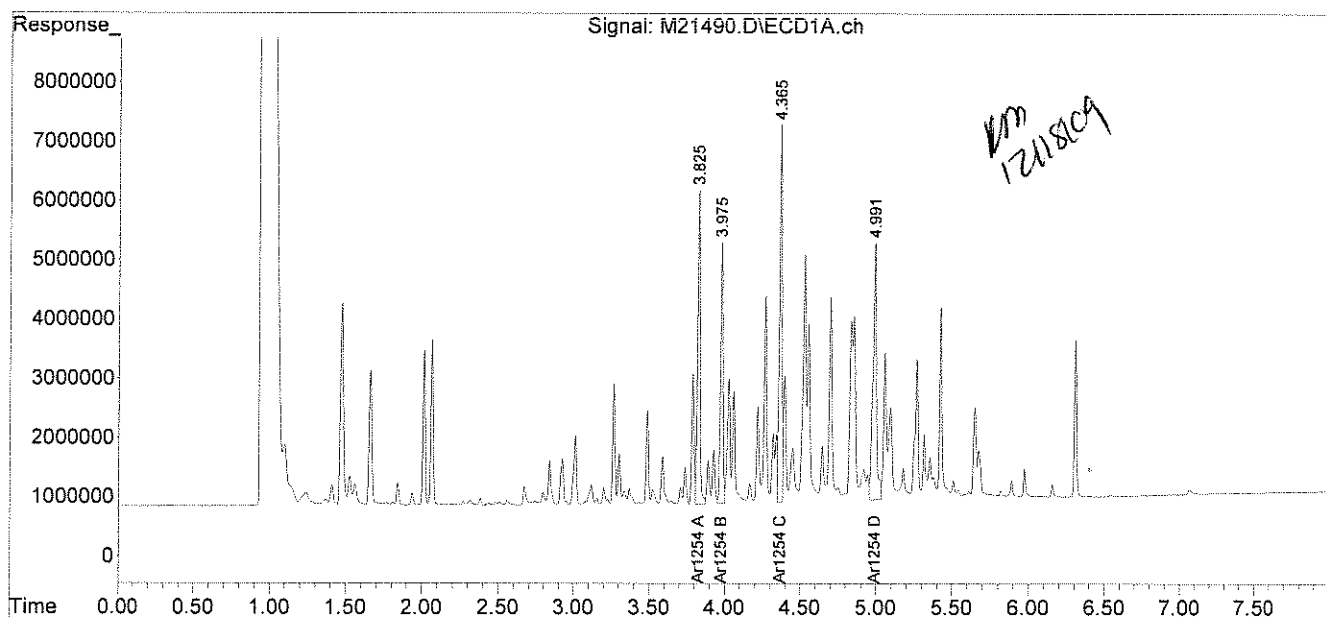
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\121709-M\
Data File : M21490.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 17 Dec 2009 4:45 pm
Operator : RM
Sample : 65535-6,1:5,,A/C
Misc : SOIL
ALS Vial : 14 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 18 07:44:52 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



Mr. Jeff Hamel
Woodard & Curran
35 NE Business Center Suite 180
Andover MA 01810

December 18, 2009

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-4E4-CTP(12-13)-073

Lab Sample ID: 65535-7
Matrix: Solid
Percent Solid: 86
Dilution Factor: 6
Collection Date: 11/27/09
Lab Receipt Date: 11/30/09
Extraction Date: 12/14/09
Analysis Date: 12/17/09

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/kg}$	Results $\mu\text{g/kg}$
PCB-1016	200	U
PCB-1221	200	U
PCB-1232	200	U
PCB-1242	200	U
PCB-1248	200	U
PCB-1254	200	3300
PCB-1260	200	1790
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	92	%
Decachlorobiphenyl	101	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS: Results are expressed on a dry weight basis.

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M	SDG: 65535
GC Column #1: STX-CLPesticides I	Sample: 65535-7,1:5,,A/C
Column ID: 0.25 mm	Data File: M21491.D
GC Column #2: STX-CLPesticides II	Dilution Factor: 5.7
Column ID: 0.25 mm	

COMPOUND	Column #1	Column #2		
	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)	RPD	#
PCB 1260	1732	1785	3.0	

Column to be used to flag RPD values greater than QC limit of 40%

* Values outside QC limits

Comments: _____

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65535

GC Column #1: STX-CLPesticides I

Sample: 65535-7,1:5,,A/C

Column ID: 0.25 mm

Data File: M21491.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 5.7

Column ID: 0.25 mm

Column #1		Column #2		RPD	#
COMPOUND	SAMPLE RESULT (ug/kg)	SAMPLE RESULT (ug/kg)			
PCB 1254	3295	2565		24.9	

Column to be used to flag RPD values greater than QC limit of 40%

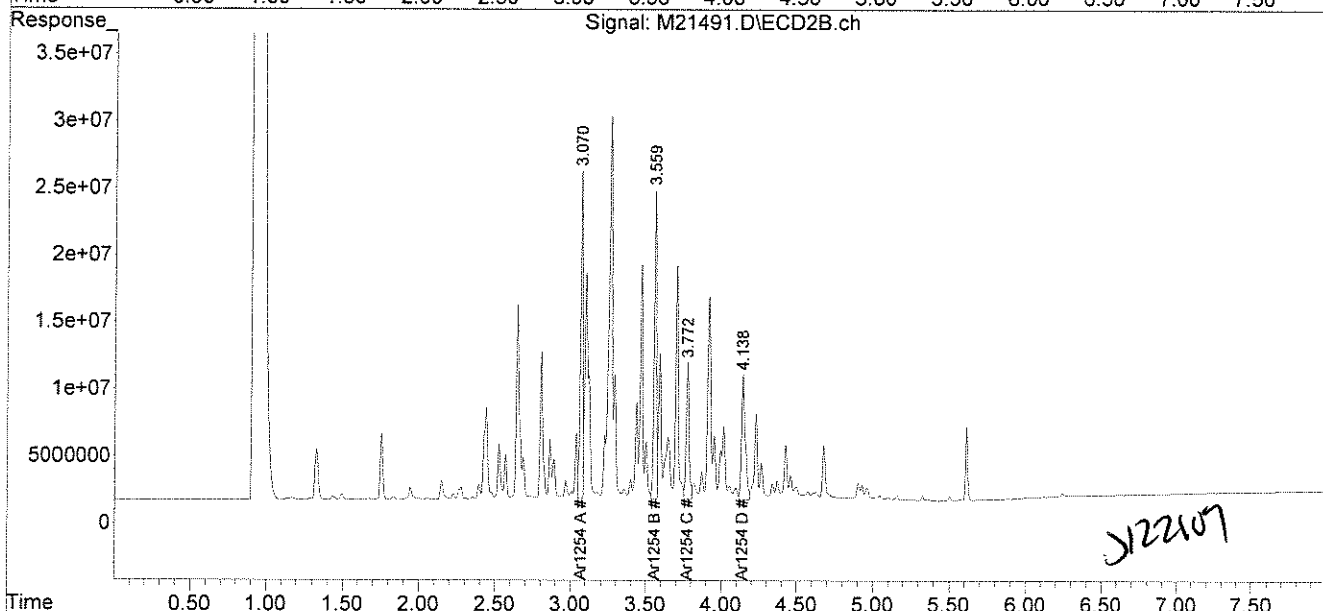
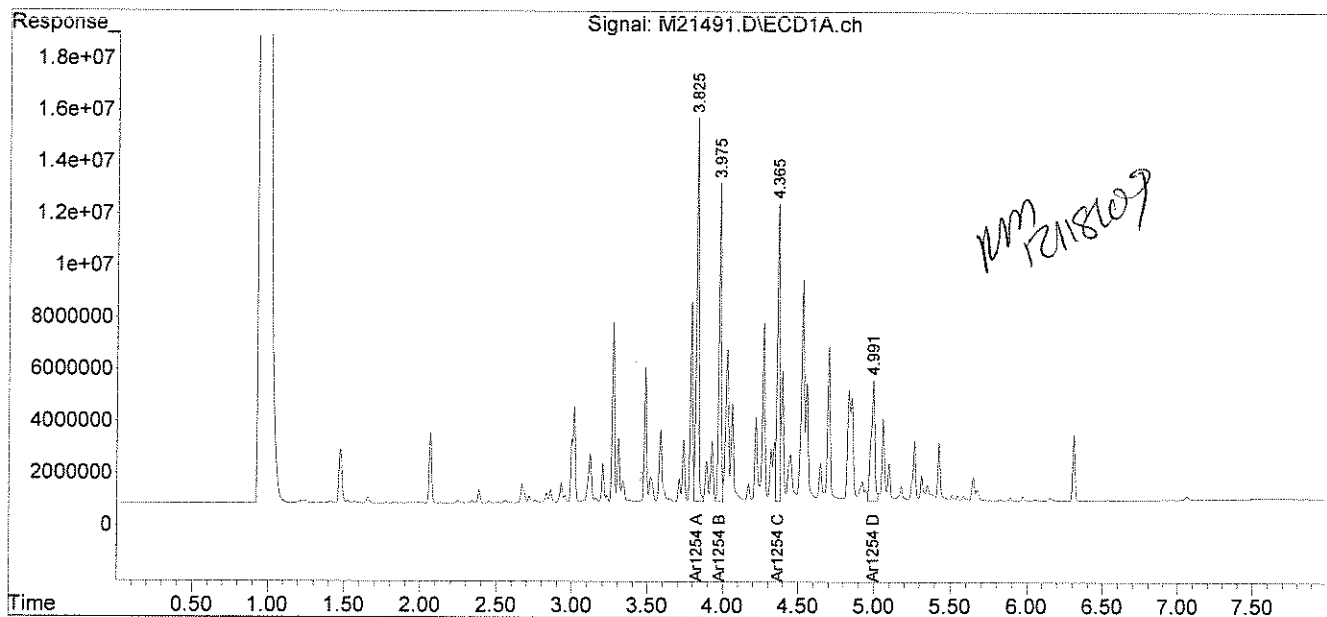
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\121709-M\
Data File : M21491.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 17 Dec 2009 4:55 pm
Operator : RM
Sample : 65535-7,1:5,,A/C
Misc : SOIL
ALS Vial : 15 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Dec 18 07:44:54 2009
Quant Method : C:\msdchem\1\METHODS\54SP11249.M
Quant Title :
QLast Update : Wed Nov 25 15:04:28 2009
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



PCB
QC FORMS

PCB SOIL
LABORATORY CONTROL SAMPLE/DUPLICATE
PERCENT RECOVERY

Instrument ID: M

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG:

Non-spiked sample: B12149PSOX,,A/C

Spike: L12149PSOX,,A/C

Spike duplicate: LD12149PSOX,,A/C

	LCS SPIKE	LCSD SPIKE	LOWER	UPPER	RPD	NON-SPIKE	SPIKE	SPIKE		SPIKE DUP		SPIKE DUP			
COMPOUND	ADDED (ug/kg)	ADDED (ug/kg)	LIMIT	LIMIT	LIMIT	RESULT (ug/kg)	RESULT (ug/kg)	% REC	#	RESULT (ug/kg)	% REC	#	RPD	#	
PCB 1016	200	200	65	140	30	0	179	89		187	93		4.3		
PCB 1260	200	200	60	130	30	0	175	88		190	95		7.8		
PCB 1016 #2	200	200	65	140	30	0	222	111		185	93		18.2		
PCB 1260 #2	200	200	60	130	30	0	200	100		189	95		5.8		

Column to be used to flag recovery and RPD values outside of QC limits

* Values outside QC limits

LCS/LCSD spike added values have been weight adjusted.

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

PCB SOIL
MATRIX SPIKE/DUPLICATE
PERCENT RECOVERY

Instrument ID: M

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG:

Non-spiked sample: 65535-1,,A/C

Spike: 65535-1,MS,,A/C

Spike duplicate: 65535-1,MSD,,A/C

COMPOUND	MS SPIKE ADDED (ug/kg)	MSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	SPIKE #	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	SPIKE DUP #	RPD	#
PCB 1016	205	205	65	140	30	0	787	384	*	897	438	*	13.1	
PCB 1260	205	205	60	130	30	1894	985	-443	*	1180	-348	*	18.0	
PCB 1016 #2	205	205	65	140	30	0	965	470	*	866	422	*	10.7	
PCB 1260 #2	205	205	60	130	30	1924	1069	-416	*	1015	-443	*	5.1	

Column to be used to flag recovery and RPD values outside of QC limits

* Values outside QC limits

MS/MSD spike added values have been weight adjusted.

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

CHAIN OF CUSTODIES

Hold

Chain Of Custody Form

analytical environmental laboratory LLC

195 Commerce Way Suite E
Portsmouth, NH 03801
Phone (603) 436-5111
Fax (603) 430-2151

Project#: 222955 Proj. Name: UMass Dartmouth Library
Company: Woodard & Curran
Contact: Jeff Hamel
Address: 35 New England Business Center Suite 180
Andover, MA 01810
Phone: (978) 557-8150 PO# Quote #
Sampler (Signature): George Franklin

Station Identification	Sample Date	Sample Time	Analysis	Preservation					Container Key		pH	Analytics Sample #
				Unpres	A/C	HNO ₃	H ₂ SO ₄	HCL	Methanol	Other		
L-24E6 - CPS (12-13) - 001	11/27/09	0941	PCB *									
L-24E4 - CPS (12-13) - 004	11/27/09	0956	PCB									
L-24E4 - CMB (12-13) - 006	11/27/09	0956	PCB									
L-24E4 - CCS (12-13) - 008	11/27/09	1000	PCB									
L-24E4 - CPS (12-13) - 009	11/27/09	1055	PCB *									
L-24E4 - CMB (12-13) - 011	11/27/09	1059	PCB									
L-24E4 - CCS (12-13) - 013	11/27/09	1110	PCB *									
L-24E4 - CCS (12-13) - 014	11/27/09	1136	PCB									
L-24E4 - CPS (12-13) - 016	11/27/09	1140	PCB									
L-24E4 - CPS (12-13) - 019	11/27/09	1152	PCB *									
L-24E4 - CMB (12-13) - 021	11/27/09	1203	PCB									

Email Results to: <u>jeff.hamel@woodardcurran.com</u>		Comments / Instructions: PCBs BY BOBZ w/ SUXHLET EXTRACTION	
Turnaround Time (TAT) <input type="checkbox"/> 24hr* <input type="checkbox"/> 48hr* <input checked="" type="checkbox"/> 5 Days* <input type="checkbox"/> 10 Days		Project Requirements: *Fee may apply	
Report Type: <input type="checkbox"/> MCP* <input checked="" type="checkbox"/> Level II* <input type="checkbox"/> CTRCP* <input type="checkbox"/> Level III* <input type="checkbox"/> DOD* <input type="checkbox"/> Level IV* <input type="checkbox"/> Standard		State: <input type="checkbox"/> NH <input type="checkbox"/> MA <input type="checkbox"/> ME <input type="checkbox"/> CT <input type="checkbox"/> RI	
Turnaround Time (TAT) <input type="checkbox"/> 24hr* <input type="checkbox"/> 48hr* <input checked="" type="checkbox"/> 5 Days* <input type="checkbox"/> 10 Days		State Standard: (eg. S-1 or GW-1)	
Fee may apply; lab approval required		EDD Required: Y N	
Analyticals VAEI Documents VAEI COC		Type:	

For Analytics Use Only Rev. 5 06/18/08

Samples were:

- 1) Shipped or hand-delivered
- 2) Temp blank °C 30-4.1°
- 3) Received in good condition or N
- 4) pH checked by: NA
- 5) Labels checked by: CP 12/14/09

Container Key
P=plastic G=glass

Matrix	Container number/type	pH	Analytics Sample #
P	1 G		65535-1
P	1 G		
B	1 G		
D	1 G		
P	1 G		-2
B	1 G		
C	1 G		-3
C	1 G		
P	1 G		
P	1 G		-4
B	1 G		

Relinquished By Sample:	Date: <u>11/27/09</u> Time: <u>1500</u>	Relinquished By:	Date: <u>11/30/09</u> Time: <u>11:10</u>
Relinquished By:	Date: <u>11/30/09</u> Time: <u>11:10</u>	Relinquished By:	Date: <u>11/30/09</u> Time: <u>11:10</u>

HOLD

Chain Of Custody Form

analytical environmental laboratory LLC 195 Commerce Way Suite E Portsmouth, NH 03801 Phone (603) 436-5111 Fax (603) 430-2151		For Analytics Use Only Rev. 5 06/18/08	
Project#: 222955 Proj. Name: UMass Dubois Library Company: Woodard & Curran Contact: Jeff Hamee Address: 35 New England Business Center Suite 180 Andover, MA 01810 Phone: (978) 557-8150 PO# Quote # Sampler (Signature): <i>Jeff Hamee</i>		Samples were: 1) Shipped or hand-delivered 2) Temp blank °C <u>3-4.0</u> 3) Received in good condition <u>Y</u> or <u>N</u> 4) pH checked by: <u>N/A</u> 5) Labels checked by: <u>CP 12/14/09</u>	
Matrix Key: C = Concrete WP = Wipe WW = Wastewater SW = Surface Water GW = Groundwater DW = Drinking Water S = Soil/Sludge O = Oil E = Extract		Container Key: P=plastic G=glass	
Preservation Unpres <input checked="" type="checkbox"/> 4°C <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> HCL <input type="checkbox"/> Methanol <input type="checkbox"/> Other		pH Analytics Sample # <u>65535-5</u>	
Station Identification L-18E4-CCS(12-13)-023 11/27/09 1115 PCBs * L-18E4-CTP(12-13)-026 11/27/09 1200 PCBs L-15E2-CPB(12-13)-029 11/27/09 1225 PCBs L-15E2-CMB(12-13)-031 11/27/09 1235 PCBs L-15E3-CCS(12-13)-033 11/27/09 1240 PCBs L-15E2-CCC(12-13)-035 11/27/09 1250 PCBs * L-15E6-CPB(12-13)-037 11/27/09 1300 PCBs L-13E1-CCS(12-13)-039 11/27/09 1303 PCBs L-12E1-CCS(12-13)-041 11/27/09 1310 PCBs L-10E1-CCS(12-13)-043 11/27/09 1323 PCBs L-10E4-CTP(12-13)-045 11/27/09 1338 PCBs		Comments / Instructions: PCBs by 8082 w/ Soxhlet Extraction S = Plaster B = Masonry Block HOLD DO NOT ANALYZE UNTIL AUTHORIZED BY WIC *Samples off hold as per	
Email Results to: Jeff Hamee jhamee@analytical.com (603) 436-5111		Project Requirements: *Fee may apply Report Type: <input type="checkbox"/> MCP* <input checked="" type="checkbox"/> Level II* <input type="checkbox"/> Level III* <input type="checkbox"/> Level IV* <input type="checkbox"/> Standard <input type="checkbox"/> CTRCP* <input type="checkbox"/> DOD* <input type="checkbox"/> Other: State: <input type="checkbox"/> NH <input type="checkbox"/> MA <input type="checkbox"/> ME <input type="checkbox"/> CT <input type="checkbox"/> RI State Standard: (eg. S-1 or GW-1) EDD Required: Y* N Type:	
Turnaround Time (TAT) <input type="checkbox"/> 24hr* <input type="checkbox"/> 48hr* <input checked="" type="checkbox"/> 5 Days* <input type="checkbox"/> 72hr* <input type="checkbox"/> 10 Days *Fee may apply; lab approval required		Relinquished By Sampler: <i>Jeff Hamee</i> Date: 11/29/09 Time: 1:50 Relinquished By: <i>CP 12/14/09</i> Date: 11/30/09 Time: 11:10 Relinquished By: <i>CP 12/14/09</i> Date: 11/30/09 Time: 11:10	

George Franklin via email 12/14/09
 Sample ID DL-15E2-CCC(12-13)-035-13 incorrect
 DL-15E2-CCC(10-12)-035-13
 WIC email from George Franklin

Chain Of Custody Form

analytical environmental laboratory LLC

195 Commerce Way Suite E
Portsmouth, NH 03801
Phone (603) 436-5111
Fax (603) 430-2151

For Analytics Use Only Rev. 5/06/18/08

Project#: 222955 Proj. Name: UMass Doherty Library

Company: Woodward & Curran

Contact: JEFF HAMEL

Address: 35 New England Business Center Suite 180

Andover, MA 01810

Phone: (978) 557-8150 PO# Quote #

Sampler (Signature): *Jeff Hamel*

- Samples were:
- 1) Shipped or hand-delivered
 - 2) Temp blank °C 3-4.1°
 - 3) Received in good condition Y or N
 - 4) pH checked by:
 - 5) Labels checked by:

Container Key
P=plastic G=glass

Preservation

Station Identification	Sample Date	Sample Time	Analysis	Unpres	4° C	HNO ₃	H ₂ SO ₄	HCL	Methanol	Other	Matrix	Container number/type	pH	Analytics Sample #
L-7E4-CIP(12-13)-047	11/27/09	1400	PCB		✓						P	1 G		
L-7E4-CIP(12-13)-049	11/27/09	1315	PCB		✓						C	1 G		
L-7E5-CIP(12-13)-051	11/27/09	1327	PCB		✓						P	1 G		
L-7E1-CIP(12-13)-053	11/27/09	1335	PCB		✓						P	1 G		
L-7E1-CIP(12-13)-055	11/27/09	1340	PCB		✓						P	1 G		
L-7E1-CIP(12-13)-057	11/27/09	1350	PCB		✓						C	1 G		
L-4E6-CIP(12-13)-059	11/27/09	1400	PCB		✓						P	1 G		
L-6E2-CIP(12-13)-061	11/27/09	1500	PCB		✓						C	1 G		
L-6E3-CIP(12-13)-063	11/27/09	1515	PCB		✓						P	1 G		
L-5E1-CIP(12-13)-065	11/27/09	1530	PCB		✓						C	1 G		
L-5E6-CIP(12-13)-067	11/27/09	1535	PCB		✓						P	1 G		

Comments / Instructions:

PCBs by 8082 w/ SILEX EXTRACTION

P = Plastic

B = Masonry Block

HOLD DO NOT ANALYZE UNTIL
AUTHORIZATION BY WIC

Email Results to:

Jeff Hamel
Woodward & Curran

Turnaround Time (TAT)

☐ 24hr* ☐ 48hr*
☐ 72hr* ☒ 5 Days*
☐ 10 Days

*Fee may apply; lab approval required

Analytics\VEL Documents\VEL COC

Project Requirements:

*Fee may apply

Report Type:

☐ MCP* ☒ Level II*
☐ CTRCP* ☐ Level III*
☐ DOD* ☐ Level IV*
☐ Standard

State:

☐ NH ☐ MA ☐ ME ☐ CT ☐ RI
 Other:

State Standard:

(eg. S-1 or GW-1)

EDD Required: Y* N

Type:

Received By: *Jeff Hamel* Date: 11/29/09 Time: 1500
Received By: *Carol S. Sirocco* Date: 11/30/09 Time: 11/10
Received By: *Carol S. Sirocco* Date: 11/30/09 Time: 11/10

Relinquished By: *Jeff Hamel* Date: 11/29/09 Time: 1500
Relinquished By: *Carol S. Sirocco* Date: 11/30/09 Time: 11/10
Relinquished By: *Carol S. Sirocco* Date: 11/30/09 Time: 11/10

Chain Of Custody Form

Analytics environmental laboratory LLC

195 Commerce Way Suite E
Portsmouth, NH 03801
Phone (603) 436-5111
Fax (603) 430-2151

Project#: 222955 Proj. Name: UMass Dubois Library
Company: Woodward & Curran
Contact: JEFF HAMEL
Address: 35 New England Business Center Suite 180
Andover, MA 01810

Phone: (978) 557-8150 PO# Quote #
Sampler (Signature): *Jeff Hamel*

Samples were:
1) Shipped or hand-delivered
2) Temp blank °C 3-4.10
3) Received in good condition Y or N
4) pH checked by: N/A
5) Labels checked by: C012/14/09

Container Key
P=plastic G=glass

Preservation

Matrix Key:
C = Concrete
WP = Wipe
WW = Wastewater
SW = Surface Water
GW = Groundwater
DW = Drinking Water
S = Soil/Sludge
O = Oil
E = Extract

Station Identification	Sample Date	Sample Time	Analysis
DL-4E1-CCS(12-13)-069	11/27/09	1550	PCB _s
DL-4E1-CCS(12-13)-071	11/27/09	1602	PCB _s
DL-4E4-CTP(12-13)-073	11/27/09	1610	PCB *
DL-3E2-CCS(12-13)-076	11/27/09	1631	PCB
DL-3E4-CTP(12-13)-078	11/27/09	1645	PCB

Unpres
4°C
HNO₃
H₂SO₄
HCL
Methanol
Other

Matrix
Container number/volume
pH
Analytics Sample #

Comments / Instructions:

PCBs by 8002 w/ Soxhlet Extraction
P = Plaster
D = Masonry Block
HOLD Do Not Analyze Until
Authorization By WIC

Email Results to:

Jeff Hamel
jeff.hamel@analyticsllc.com

Turnaround Time (TAT)

☐ 24hr* ☐ 48hr* ☒ 5 Days*
☐ 72hr* ☐ 10 Days

*Fee may apply; lab approval required

Analytics\AEL Documents\AEL COC

For Analytics Use Only Rev. 5/06/18/08

Relinquished By Sampler: *Jeff Hamel* Date: 11/25/09 Time: 1500
Relinquished By: *Cold Storage* Date: 11/30/09 Time: 11/10
Relinquished By: *Mr. Hamel* Date: 11/30/09 Time: 11/10

Project Requirements:

*Fee may apply

Report Type:
☐ MCP* ☒ Level II*
☐ CTC* ☐ Level III*
☐ DOD* ☐ Level IV*
☐ Standard

State:
☐ NH ☐ MA ☐ ME ☐ CT ☐ RI

State Standard:
(eg. S-1 or GW-1)
EDD Required: Y* N
Type: _____

ANALYTICS SAMPLE RECEIPT CHECKLIST

AEL LAB#: 65535
 CLIENT: Woodard
 PROJECT: UMass Dubois Library

COOLER NUMBER: _____
 NUMBER OF COOLERS: 2
 DATE RECEIVED: 11/30/09

A: PRELIMINARY EXAMINATION:

DATE COOLER OPENED: 11/30/09
 Date Received: 11/30/09

1. Cooler received by (initials)

2. Circle one:

Hand delivered
 (If so, skip 3)

Shipped

3. Did cooler come with a shipping slip?

Y

N/A

3a. Enter carrier name and airbill number here:

4. Were custody seals on the outside of cooler?

Y

N

How many & where: _____

Seal Date: _____

Seal Name: _____

5. Did the custody seals arrive unbroken and intact upon arrival?

Y

N/A

6. COC#: _____

7. Were Custody papers filled out properly (ink, signed, etc)?

Y

N

8. Were custody papers sealed in a plastic bag?

Y

N

9. Did you sign the COC in the appropriate place?

Y

N

10. Was the project identifiable from the COC papers?

Y

N

11. Was enough ice used to chill the cooler?

Y

N

Temp. of cooler: _____

3-4.1°

B. Log-In: Date samples were logged in:

12/14/09

By: JSB

12. Type of packing in cooler (bubble wrap, popcorn)

Y

N

13. Were all bottles sealed in separate plastic bags?

Y

N

14. Did all bottles arrive unbroken and were labels in good condition?

Y

N

15. Were all bottle labels complete (ID, Date, time, etc.)

Y

N

16. Did all bottle labels agree with custody papers?

Y

N

17. Were the correct containers used for the tests indicated?

Y

N

18. Were samples received at the correct pH?

Y

N/A

19. Was sufficient amount of sample sent for the tests indicated?

Y

N

20. Were bubbles absent in VOA samples?

Y

N/A

If NO, List sample #'s: _____

21. Laboratory labeling verified by (initials):

Date: CR 12/14/09

January 20, 2010

Mr. George Franklin
Woodard & Curran
35 NE Business Center Suite 180
Andover MA 01810

**RE: Analytical Results Case Narrative
Analytics # 65762 Revision 1
UMass Dubois Library Proj# 222955**

Dear Mr. Franklin;

Enclosed please find the analytical results for samples submitted for the above-mentioned project. The attached Cover Page lists the sample IDs, Lab tracking numbers and collection dates for the samples included in this deliverable.

Samples were analyzed Polychlorinated Biphenyls (PCBs) by EPA Method 8082.

Unless otherwise noted in the Non-conformance Summary listed below, all of the quality control (QC) criteria including initial calibration, calibration verification, surrogate recovery, holding time and method accuracy/precision for these analyses were within acceptable limits.

This Level II data package has been assembled in the following order:

- Case Narrative/Non-Conformance Summary
- Sample Log Sheet - Cover Page
- PCB Form 1 Data Sheet for Samples and Blanks
- Chromatograms
- PCB Form 10 Confirmation Results
- PCB Form 3 MS/MSD (LCS) Recoveries
- Chain of Custody (COC) Forms

QC NON CONFORMANCE SUMMARY

Sample Receipt:

No exceptions.

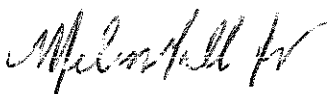
PCBs by EPA Method 8082:

At the clients request no results were reported below the quantitation limit.

If you have any questions on this data submittal, please do not hesitate to contact me.

Sincerely,

ANALYTICS Environmental Laboratory, LLC

A handwritten signature in black ink, appearing to read 'Stephen Knollmeyer', with a stylized flourish at the end.

Stephen Knollmeyer
Laboratory Director

Mr. George Franklin
Woodard & Curran
35 NE Business Center Suite 180
Andover MA 01810

Report Number: 65762

Revision: Rev. 1

Re: UMass Dubois Library

222955

Enclosed are the results of the analyses on your sample(s). Samples were received on 15 January 2010 and analyzed for the tests listed below. Samples were received in acceptable condition, with the exceptions noted below or on the chain of custody. These results pertain to samples as received by the laboratory and for the analytical tests requested on the chain of custody. The results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. Please see individual reports for specific methodologies and references.

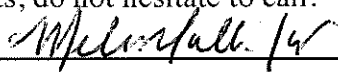
<u>Lab Number</u>	<u>Sample Date</u>	<u>Station Location</u>	<u>Analysis</u>	<u>Comments</u>
65762-1	01/15/10	DL-18E4-CWS(8-12)-080	EPA 8082 (PCBs only)	
65762-2	01/15/10	DL-18E4-PWS(7-11)-081	EPA 8082 (PCBs only)	
65762-3	01/15/10	DL-15E2-CWS(7-11)-083	EPA 8082 (PCBs only)	
65762-4	01/15/10	DL-15E6-PWS(6-10)-084	EPA 8082 (PCBs only)	
65762-5	01/15/10	DL-4E1-CWS(7-11)-086	EPA 8082 (PCBs only)	
65762-6	01/15/10	DL-4E6-PWS(8-12)-087	EPA 8082 (PCBs only)	

Sample Receipt Exceptions: None

Analytics Environmental Laboratory is certified by the states of New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, New York, Virginia, Maryland, and is validated by the U.S. Navy (NFESC). A list of actual certified parameters is available upon request.

If you have any further question on the analytical methods or these results, do not hesitate to call.

Authorized signature


Stephen L. Kpallmeyer Lab. Director

Date

01/21/10

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consent of Analytics Environmental Laboratory, LLC.**

Surrogate Compound Limits

	Matrix: Units:	Aqueous % Recovery	Solid % Recovery	Method
Volatile Organic Compounds - Drinking Water				
1,4-Difluorobenzene		70-130		EPA 524.2
Bromofluorobenzene		70-130		
1,2-Dichlorobenzene-d4		70-130		
Volatile Organic Compounds				
1,2-Dichloroethane-d4		70-120	70-120	EPA 624/8260B
Toluene-d8		85-120	85-120	
Bromofluorobenzene		75-120	75-120	
Semi-Volatile Organic Compounds				
2-Fluorophenol		20-110	35-105	EPA 625/8270C
d5-Phenol		15-110	40-100	
d5-nitrobenzene		40-110	35-100	
2-Fluorobiphenyl		50-110	45-105	
2,4,6-Tribromophenol		40-110	40-125	
d14-p-terphenyl		50-130	30-125	
PAH's by SIM				
d5-nitrobenzene		21-110	35-110	EPA 8270C
2-Fluorobiphenyl		36-121	45-105	
d14-p-terphenyl		33-141	30-125	
Pesticides and PCBs				
2,4,5,6-Tetrachloro-m-xylene (TCX)		46-122	40-130	EPA 608/8082
Decachlorobiphenyl (DCB)		40-135	40-130	
Herbicides				
Dichloroacetic acid (DCAA0		30-150	30-150	
Gasoline Range Organics/TPH Gasoline				
Trifluorotoluene TFT (FID)		60-140	60-140	MEDEP 4217/EPA 8015
Bromofluorobenzene (BFB) (FID)		60-140	60-140	
Trifluorotoluene TFT (PID)		60-140	60-140	
Bromofluorobenzene (BFB) (PID)		60-140	60-140	
Diesel Range Organics/TPH Diesel				
m-terphenyl		60-140	60-140	MEDEP 4125/EPA 8015/CT ETPH

PCB DATA SUMMARIES

Mr. George Franklin
Woodard & Curran
35 NE Business Center Suite 180
Andover MA 01810

January 20, 2010

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: Lab QC

Lab Sample ID: B011910PSOX
Matrix: Wipe
Percent Solid: N/A
Dilution Factor: 1.0
Collection Date:
Lab Receipt Date:
Extraction Date: 01/19/10
Analysis Date: 01/20/10

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/wipe}$	Results $\mu\text{g/wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	107	%
Decachlorobiphenyl	88	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

PCB Report

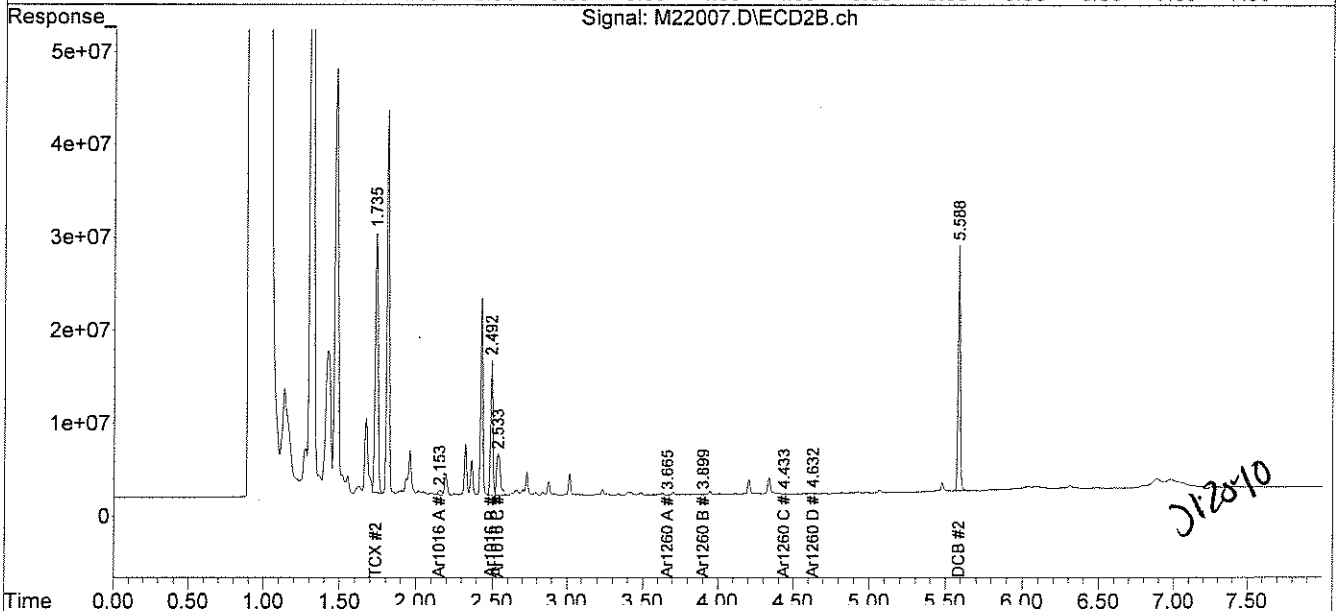
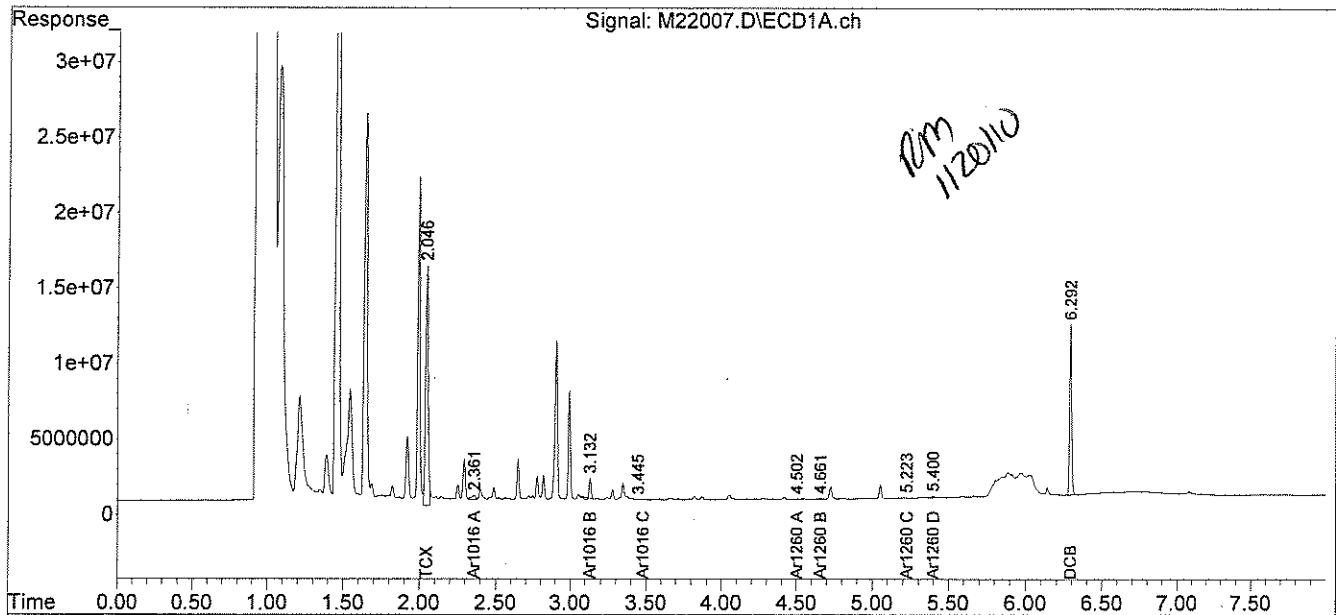
Authorized signature



Data Path : C:\msdchem\1\DATA\011910-M\
Data File : M22007.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 20 Jan 2010 10:40 am
Operator : RM
Sample : B011910PSOX,,A/C
Misc : SOIL
ALS Vial : 17 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Jan 20 11:28:08 2010
Quant Method : C:\msdchem\1\METHODS\PCB011910.M
Quant Title : Aroclor 1016/1260
QLast Update : Wed Jan 20 10:23:20 2010
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



Mr. George Franklin
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January 21, 2010

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-18E4-CWS(8-12)-080

Lab Sample ID: 65762-1
Matrix: Wipe
Percent Solid: N/A
Dilution Factor: 1.0
Collection Date: 01/15/10
Lab Receipt Date: 01/15/10
Extraction Date: 01/19/10
Analysis Date: 01/20/10

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/wipe}$	Results $\mu\text{g/wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	100	%
Decachlorobiphenyl	84	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

PCB Report

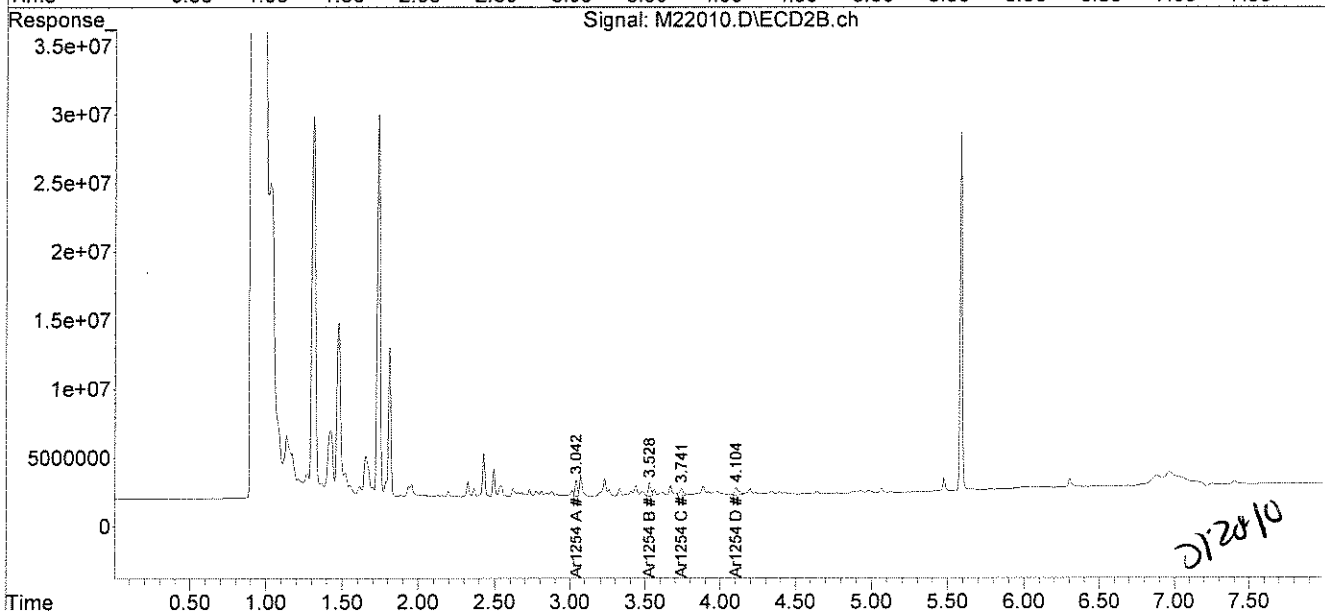
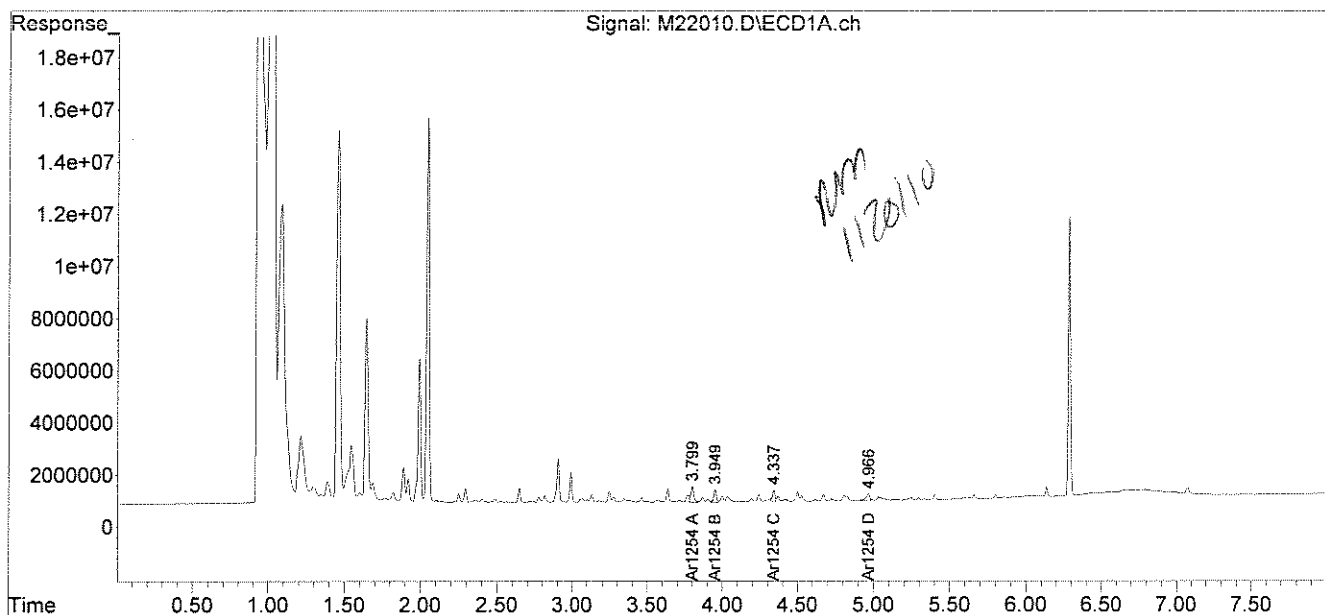
Authorized signature

M. J. Shell

Data Path : C:\msdchem\1\DATA\011910-M\
Data File : M22010.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 20 Jan 2010 11:10 am
Operator : RM
Sample : 65762-1,,A/C
Misc : SOIL
ALS Vial : 20 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Jan 20 11:47:10 2010
Quant Method : C:\msdchem\1\METHODS\54SP011910.M
Quant Title :
QLast Update : Wed Jan 20 11:25:33 2010
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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January 20, 2010

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-18E4-PWS(7-11)-081

Lab Sample ID: 65762-2
Matrix: Wipe
Percent Solid: N/A
Dilution Factor: 1.0
Collection Date: 01/15/10
Lab Receipt Date: 01/15/10
Extraction Date: 01/19/10
Analysis Date: 01/20/10

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/wipe}$	Results $\mu\text{g/wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	0.5
PCB-1260	0.5	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	105 %	
Decachlorobiphenyl	86 %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

PCB
COLUMN RELATIVE PERCENT DIFFERENCE

Instrument ID: M

SDG: 65762

GC Column #1: STX-CLPesticides I

Sample: 65762-2,,A/C

Column ID: 0.25 mm

Data File: M22011.D

GC Column #2: STX-CLPesticides II

Dilution Factor: 1.0

Column ID: 0.25 mm

Column #1		Column #2	
COMPOUND	SAMPLE RESULT (ug/wipe)	SAMPLE RESULT (ug/wipe)	RPD #
PCB 1254	0.5	0.4 J	4.3

Column to be used to flag RPD values greater than QC limit of 40%

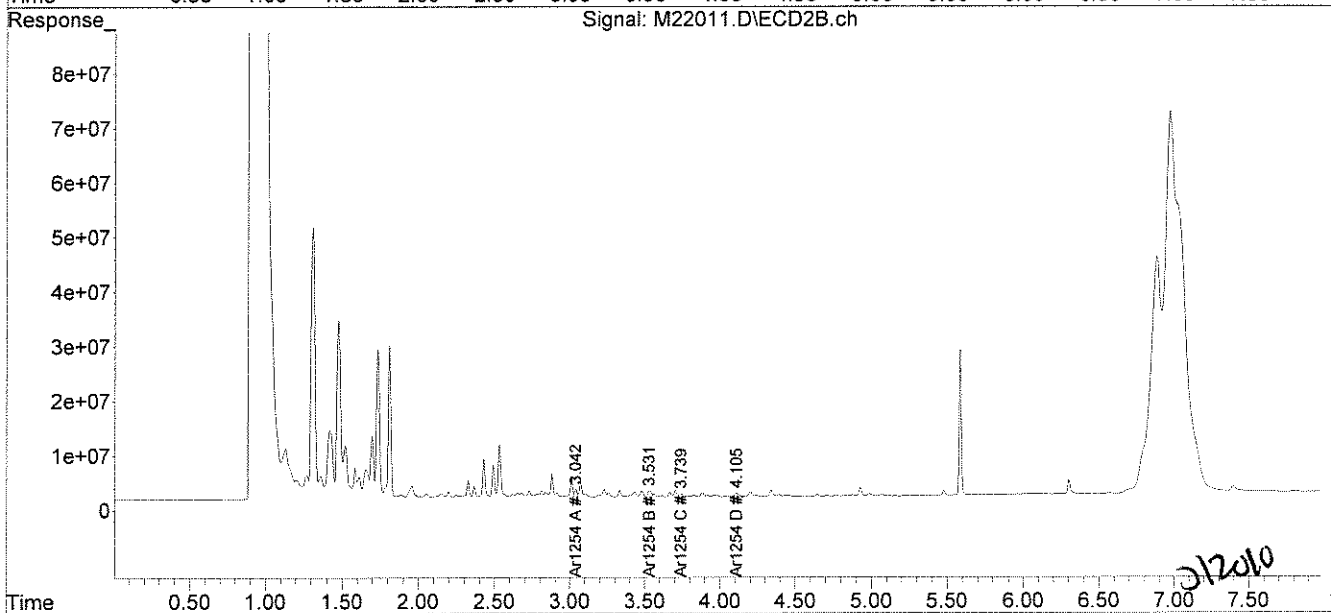
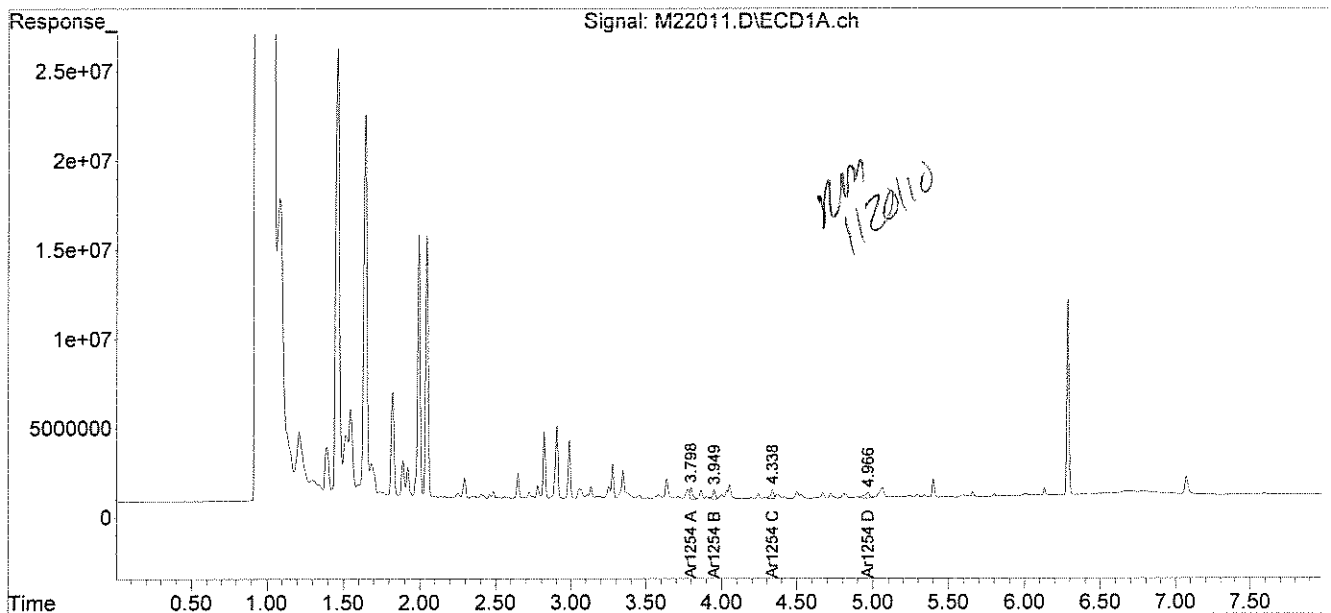
* Values outside QC limits

Comments: _____

Data Path : C:\msdchem\1\DATA\011910-M\
Data File : M22011.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 20 Jan 2010 11:20 am
Operator : RM
Sample : 65762-2,,A/C
Misc : SOIL
ALS Vial : 21 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Jan 20 12:04:11 2010
Quant Method : C:\msdchem\1\METHODS\54SP011910.M
Quant Title :
QLast Update : Wed Jan 20 11:25:33 2010
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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January 20, 2010

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-15E2-CWS(7-11)-083

Lab Sample ID: 65762-3
Matrix: Wipe
Percent Solid: N/A
Dilution Factor: 1.0
Collection Date: 01/15/10
Lab Receipt Date: 01/15/10
Extraction Date: 01/19/10
Analysis Date: 01/20/10

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/wipe}$	Results $\mu\text{g/wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	104 %	
Decachlorobiphenyl	87 %	
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

PCB Report

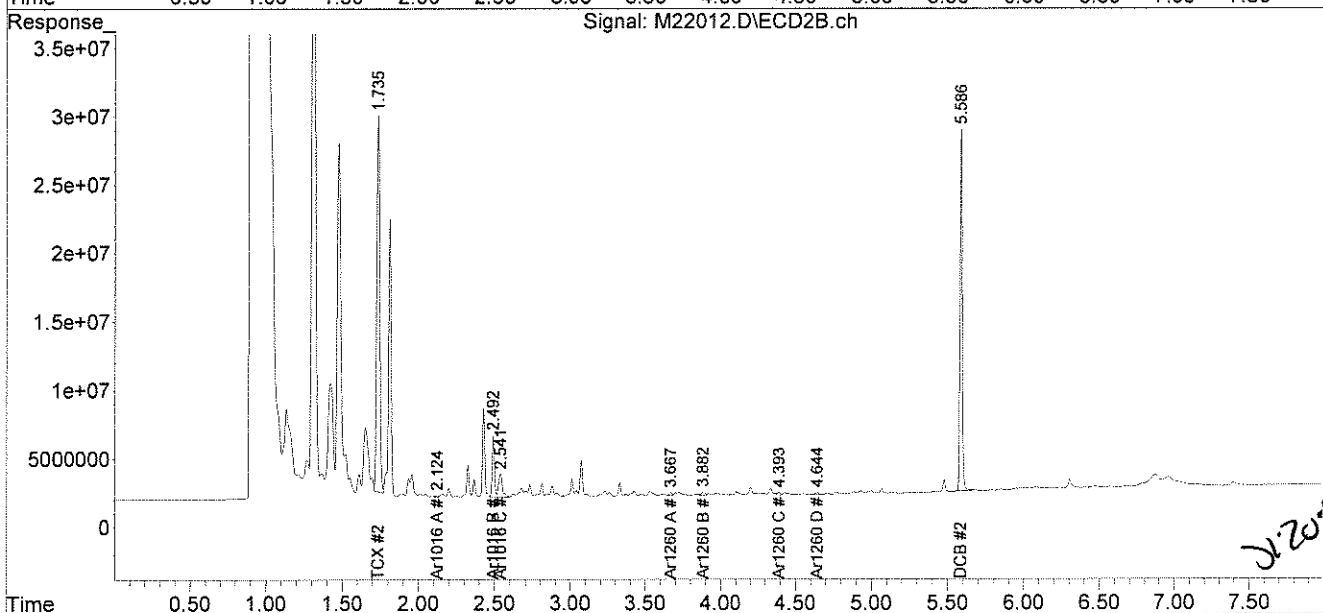
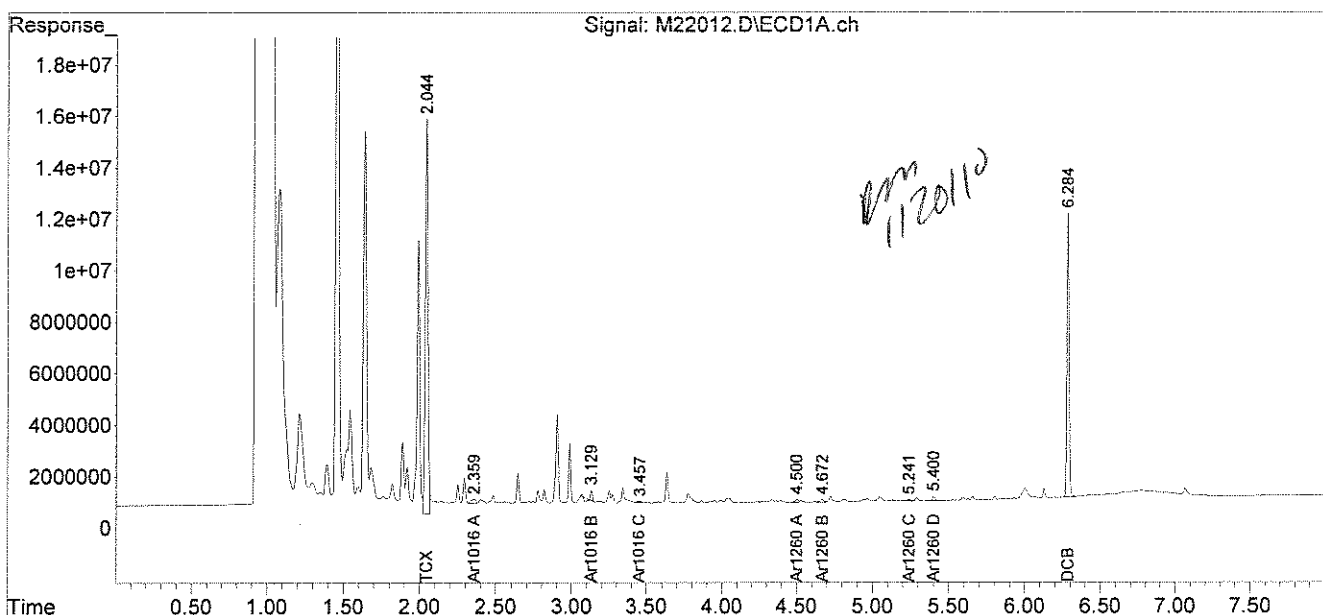
Authorized signature



Data Path : C:\msdchem\1\DATA\011910-M\
Data File : M22012.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 20 Jan 2010 11:30 am
Operator : RM
Sample : 65762-3,,A/C
Misc : SOIL
ALS Vial : 22 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Jan 20 12:04:33 2010
Quant Method : C:\msdchem\1\METHODS\PCB011910.M
Quant Title : Aroclor 1016/1260
QLast Update : Wed Jan 20 10:23:21 2010
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



Mr. George Franklin
Woodard & Curran
35 NE Business Center Suite 180
Andover MA 01810

January 20, 2010

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-15E6-PWS(6-10)-084

Lab Sample ID: 65762-4
Matrix: Wipe
Percent Solid: N/A
Dilution Factor: 1.0
Collection Date: 01/15/10
Lab Receipt Date: 01/15/10
Extraction Date: 01/19/10
Analysis Date: 01/20/10

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/wipe}$	Results $\mu\text{g/wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	103	%
Decachlorobiphenyl	84	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

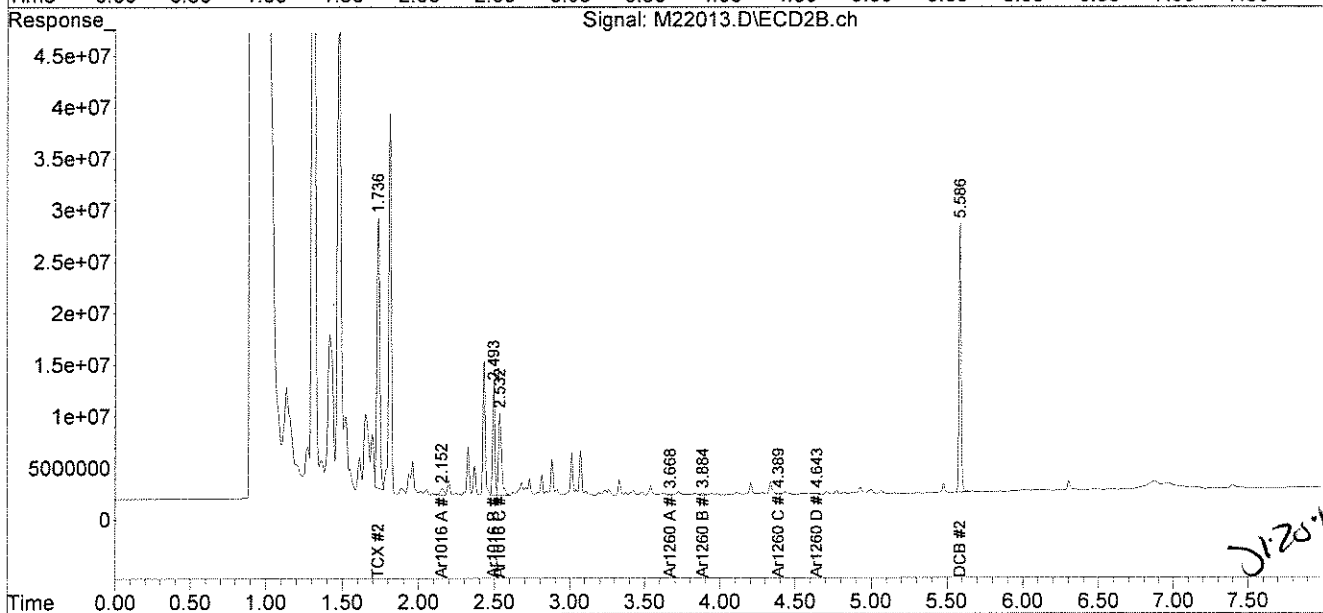
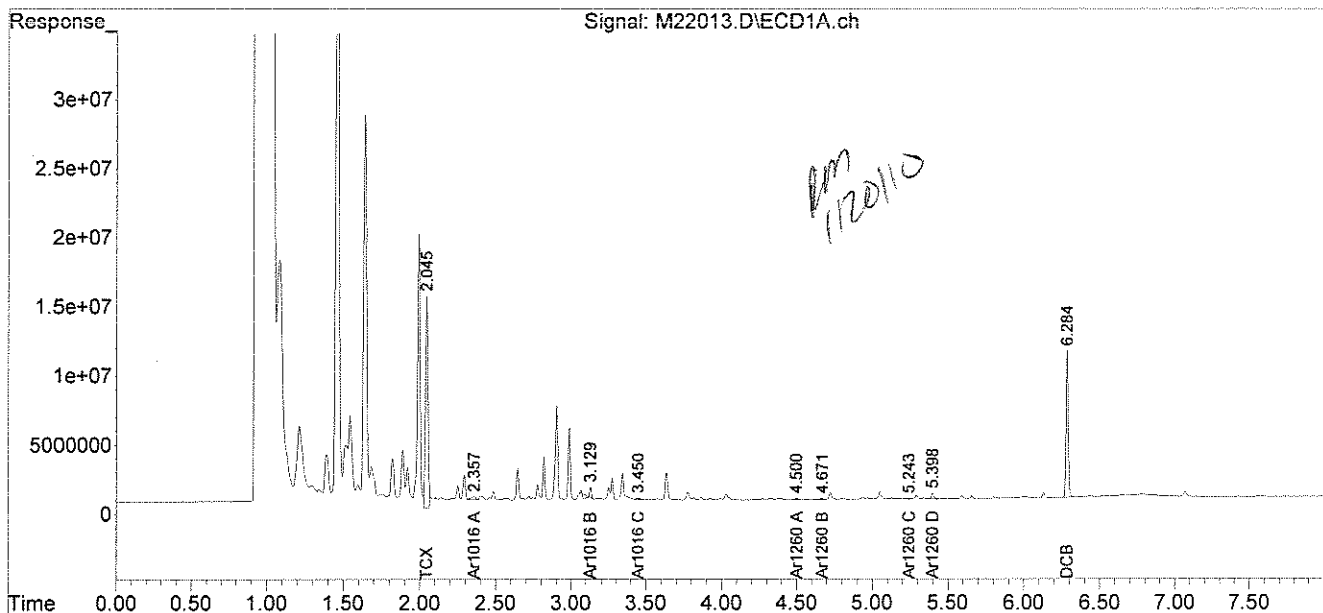
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

Data Path : C:\msdchem\1\DATA\011910-M\
Data File : M22013.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 20 Jan 2010 11:40 am
Operator : RM
Sample : 65762-4,,A/C
Misc : SOIL
ALS Vial : 23 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Jan 20 12:11:20 2010
Quant Method : C:\msdchem\1\METHODS\PCB011910.M
Quant Title : Aroclor 1016/1260
QLast Update : Wed Jan 20 10:23:21 2010
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



Mr. George Franklin
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35 NE Business Center Suite 180
Andover MA 01810

January 20, 2010

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-4E1-CWS(7-11)-086

Lab Sample ID: 65762-5
Matrix: Wipe
Percent Solid: N/A
Dilution Factor: 1.0
Collection Date: 01/15/10
Lab Receipt Date: 01/15/10
Extraction Date: 01/19/10
Analysis Date: 01/20/10

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/wipe	Results µg/wipe
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
<u>Surrogate Standard Recovery</u>		
2,4,5,6-Tetrachloro-m-xylene	106	%
Decachlorobiphenyl	87	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

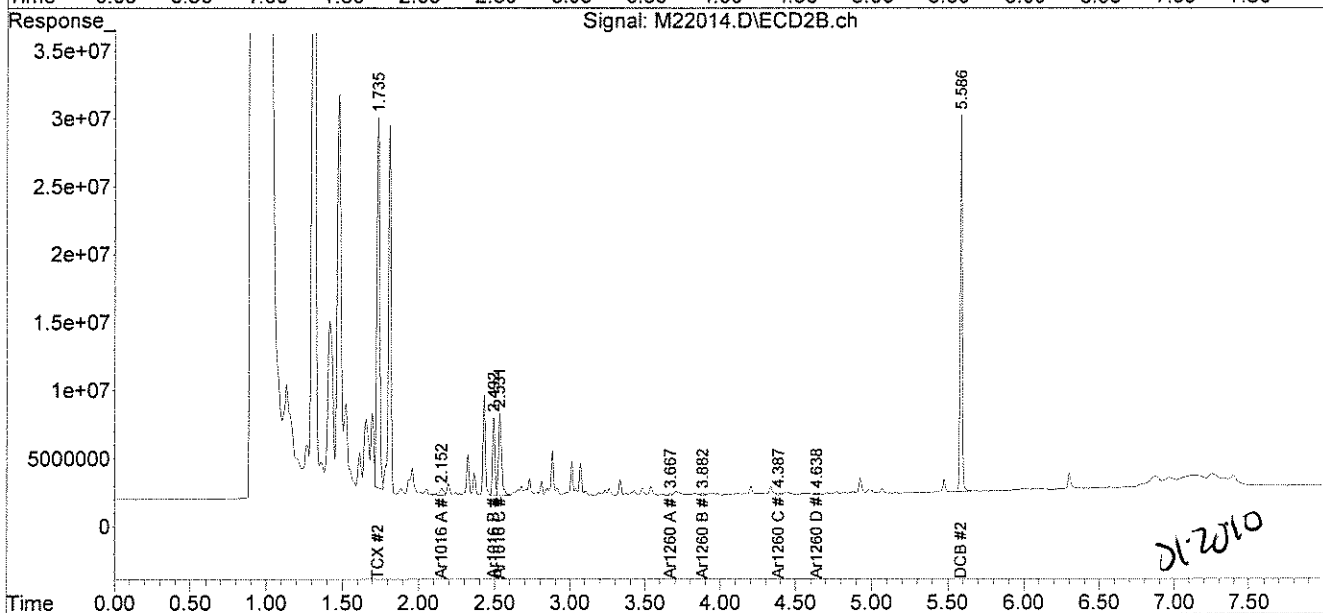
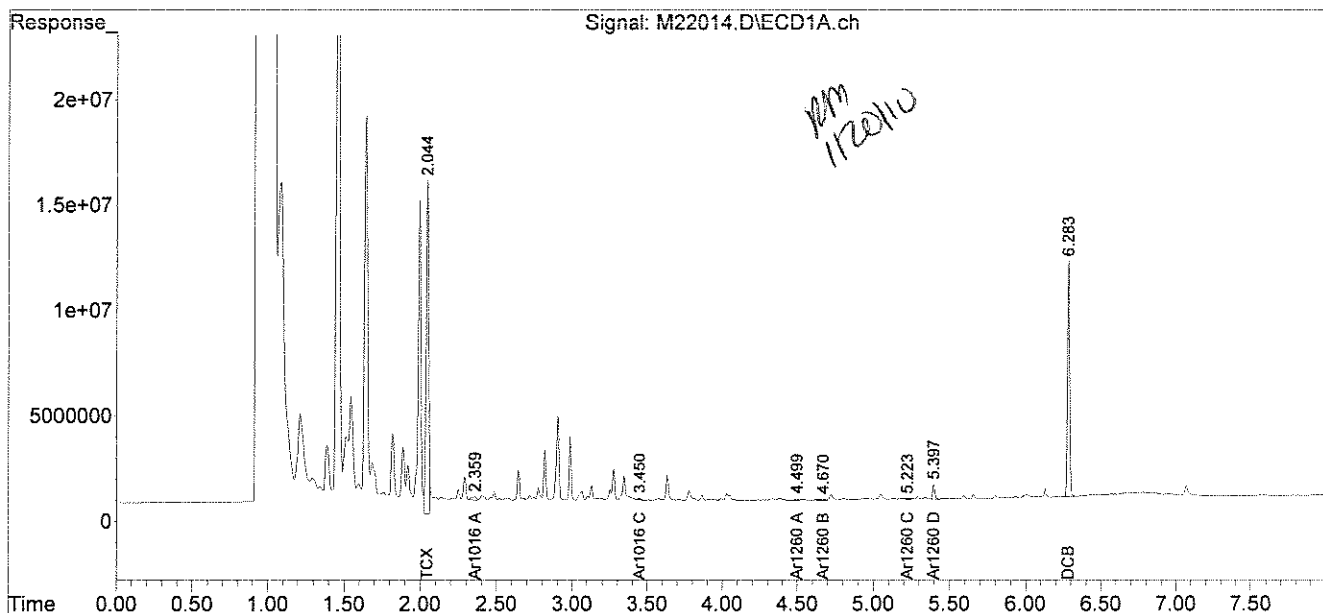
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

Data Path : C:\msdchem\1\DATA\011910-M\
Data File : M22014.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 20 Jan 2010 11:50 am
Operator : RM
Sample : 65762-5,,A/C
Misc : SOIL
ALS Vial : 24 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Jan 20 12:12:01 2010
Quant Method : C:\msdchem\1\METHODS\PCB011910.M
Quant Title : Aroclor 1016/1260
QLast Update : Wed Jan 20 10:23:21 2010
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



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Andover MA 01810

January 20, 2010

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: UMass Dubois Library
Project Number: 222955
Field Sample ID: DL-4E6-PWS(8-12)-087

Lab Sample ID: 65762-6
Matrix: Wipe
Percent Solid: N/A
Dilution Factor: 1.0
Collection Date: 01/15/10
Lab Receipt Date: 01/15/10
Extraction Date: 01/19/10
Analysis Date: 01/20/10

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit $\mu\text{g/wipe}$	Results $\mu\text{g/wipe}$
PCB-1016	0.5	U
PCB-1221	0.5	U
PCB-1232	0.5	U
PCB-1242	0.5	U
PCB-1248	0.5	U
PCB-1254	0.5	U
PCB-1260	0.5	U
Surrogate Standard Recovery		
2,4,5,6-Tetrachloro-m-xylene	103	%
Decachlorobiphenyl	86	%
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in		

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

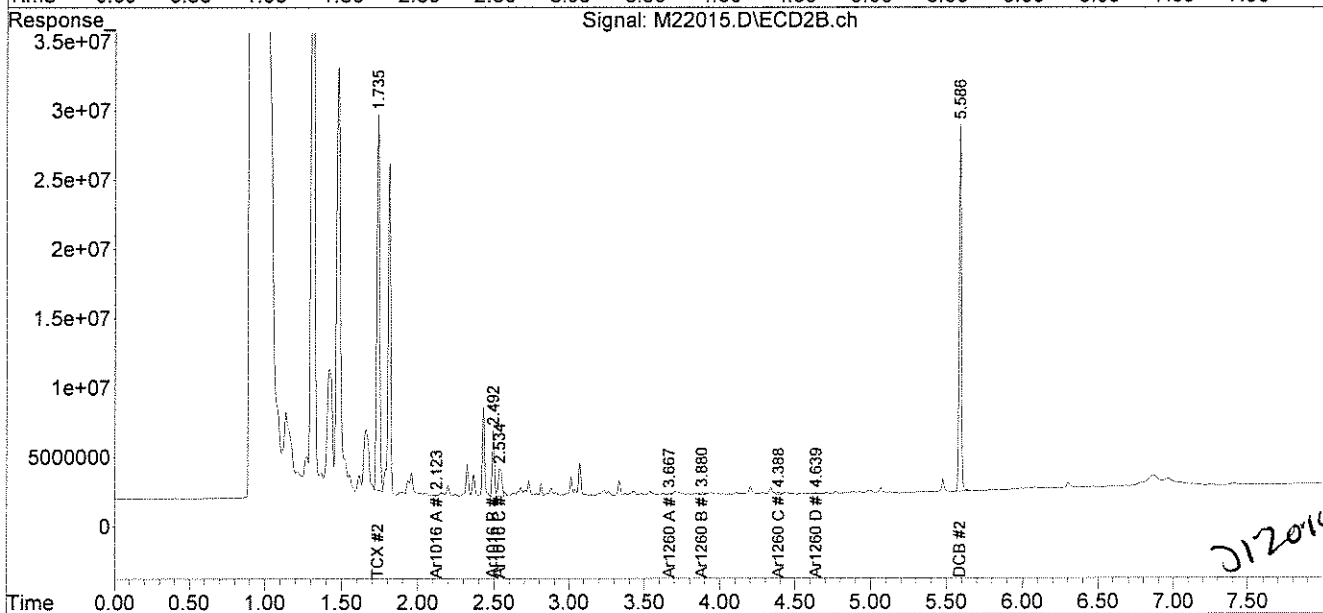
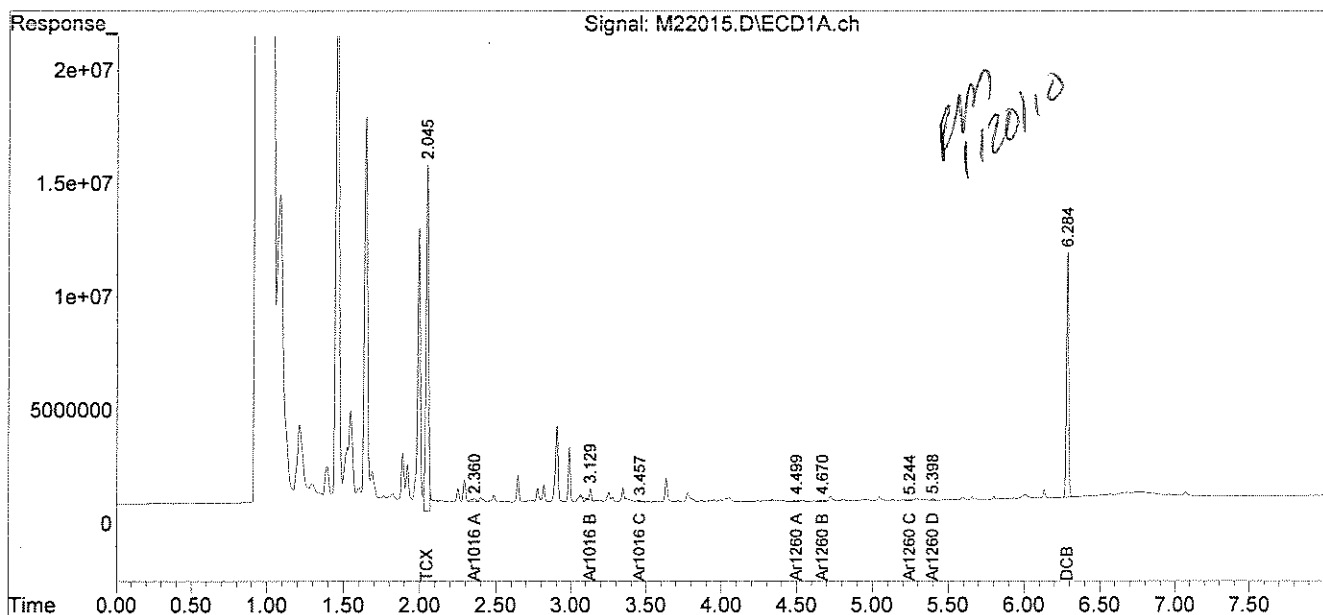
Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C.

COMMENTS:

Data Path : C:\msdchem\1\DATA\011910-M\
Data File : M22015.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 20 Jan 2010 12:00 pm
Operator : RM
Sample : 65762-6,,A/C
Misc : SOIL
ALS Vial : 25 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Jan 20 12:26:45 2010
Quant Method : C:\msdchem\1\METHODS\PCB011910.M
Quant Title : Aroclor 1016/1260
QLast Update : Wed Jan 20 10:23:21 2010
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



PCB QC FORMS

PCB SOIL
LABORATORY CONTROL SAMPLE/DUPLICATE
PERCENT RECOVERY

Instrument ID: M

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG:

Non-spiked sample: B011910PSOX,,A/C

Spike: L011910PSOX,,A/C

Spike duplicate: LD011910PSOX,,A/C

COMPOUND	LCS SPIKE	LCSD SPIKE	LOWER	UPPER	RPD	NON-SPIKE	SPIKE	SPIKE	SPIKE DUP		SPIKE DUP		RPD	
	ADDED (ug/kg)	ADDED (ug/kg)	LIMIT	LIMIT	LIMIT	RESULT (ug/kg)	RESULT (ug/kg)	% REC	#	RESULT (ug/kg)	% REC	#	RPD	#
PCB 1016	200	200	65	140	30	0	234	117		218	109		7.0	
PCB 1260	200	200	60	130	30	0	204	102		201	100		1.7	
PCB 1016 #2	200	200	65	140	30	0	195	98		216	108		10.2	
PCB 1260 #2	200	200	60	130	30	0	211	105		203	101		4.1	

Column to be used to flag recovery and RPD values outside of QC limits

* Values outside QC limits

LCS/LCSD spike added values have been weight adjusted.

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

CHAIN OF CUSTODIES

Chain Of Custody Form

analytical environmental laboratory LLC 195 Commerce Way Suite E Portsmouth, NH 03801 Phone (603) 436-5111 Fax (603) 430-2151		For Analytics Use Only Rev. 5/06/18/08	
Project#: 222955 Company: Woodward & Curran Contact: GEORGE FRANKLIN Address: 35 New England Business Center Suite 180 Andover, MA 01810 Phone: (978) 557-8150 PO#: 3015 Quote #: 1132424 Proj. Name: DUBOIS LIBRARY		Samples were: 1) Shipped & hand-delivered 2) Temp blank °C 3) Received in good condition 4) pH checked by: 5) Labels checked by:	
Matrix Key: C = Concrete WP = Wipe WW = Wastewater SW = Surface Water GW = Groundwater DW = Drinking Water S = Soil/Sludge O = Oil E = Extract		Container Key: P = plastic G = glass	
Station Identification DL-18E4-CWS(8-12)-080 DL-18E4-PWS(7-11)-081 DL-15E2-CWS(7-11)-083 DL-15E6-PWS(6-10)-084 DL-4E1-CWS(7-11)-086 DL-4E6-PWS(8-12)-087		Preservation U = Pres C = C H = H M = M O = O S = S E = E	
Sample Date 1/15/10 1/15/10 1/15/10 1/15/10 1/15/10 1/15/10		Sample Time 0905 0909 0930 0935 1057 1000	
Analysis PCBs PCBs PCBs PCBs PCBs PCBs		Matrix WP WP WP WP WP WP	
Other X X X X X X		Container number/type 1 G 1 G 1 G 1 G 1 G 1 G	
Date 1/15/10 1/15/10 1/15/10 1/15/10 1/15/10 1/15/10		Time 1510 1510 1510 1510 1510 1510	
Received By: [Signature]		Relinquished By: [Signature]	
Date 1/15/10		Date 1/15/10	
Relinquished By: [Signature]		Relinquished By: [Signature]	
Relinquished By: [Signature]		Relinquished By: [Signature]	
Comments / Instructions: PCBs BY 8082 w/ Soxhlet Extraction STD 5-DAY TAT RESULTS BY FRANKLIN 1/22/10 Wed. 1/20/10		Project Requirements: *Fee may apply Report Type: MCP* <input checked="" type="checkbox"/> Level II* CTCP* <input type="checkbox"/> Level III* DOD* <input type="checkbox"/> Level IV* <input type="checkbox"/> Standard State: NH <input type="checkbox"/> MA <input type="checkbox"/> ME <input type="checkbox"/> CT <input type="checkbox"/> RI <input type="checkbox"/> Other: TSCA State Standard: (eg. S-1 or GW-1) EDD Required: Y* <input checked="" type="checkbox"/> Type:	
Email Results to: jfranklin@jeffhanel.com		Turnaround Time (TAT) 24hr* <input type="checkbox"/> 48hr* <input type="checkbox"/> 72hr* <input checked="" type="checkbox"/> 5 Days* <input type="checkbox"/> 10 Days <input type="checkbox"/>	
*Fee may apply; lab approval required		Analytics/Vael Documents/Vael COC	

ANALYTICS SAMPLE RECEIPT CHECKLIST

AEL LAB#: 65762
 CLIENT: Woodard & Curran
 PROJECT: UMass Dubois Library

COOLER NUMBER: _____
 NUMBER OF COOLERS: 1
 DATE RECEIVED: 1/15/10

A: PRELIMINARY EXAMINATION:

DATE COOLER OPENED: 1/15/10
 Date Received: AP 1/15/10

1. Cooler received by (initials)

2. Circle one:

Hand delivered
 (If so, skip 3)

Shipped

3. Did cooler come with a shipping slip?

Y

N/A

3a. Enter carrier name and airbill number here:

4. Were custody seals on the outside of cooler?

How many & where: _____ Seal Date: _____ Seal Name: _____

Y

N

5. Did the custody seals arrive unbroken and intact upon arrival?

Y

N/A

6. COC#: _____

7. Were Custody papers filled out properly (ink, signed, etc)?

Y

N

8. Were custody papers sealed in a plastic bag?

Y

N

9. Did you sign the COC in the appropriate place?

Y

N

10. Was the project identifiable from the COC papers?

Y

N

11. Was enough ice used to chill the cooler?

Y

Temp. of cooler:

4°C

B. Log-In: Date samples were logged in:

1/15/10

By:

AP

12. Type of packing in cooler bubble wrap, popcorn)

Y

N

13. Were all bottles sealed in separate plastic bags?

Y

N

14. Did all bottles arrive unbroken and were labels in good condition?

Y

N

15. Were all bottle labels complete (ID, Date, time, etc.)

Y

N

16. Did all bottle labels agree with custody papers?

Y

N

17. Were the correct containers used for the tests indicated:

Y

N

18. Were samples received at the correct pH?

Y

N/A

19. Was sufficient amount of sample sent for the tests indicated?

Y

N

20. Were bubbles absent in VOA samples?

Y

N/A

If NO, List sample #'s: _____

21. Laboratory labeling verified by (initials):

Date:

JB 1/15/10

Analytical Report for Sampling Event 4/23/09



ANALYTICAL REPORT

Lab Number:	L0905263
Client:	Tighe & Bond, Inc. 446 Main Street Worcester, MA 01608
ATTN:	Dan Dragon
Project Name:	UMASS-DUBIOS LIBRARY
Project Number:	Not Specified
Report Date:	05/05/09

Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (2003), NJ (MA935), RI (LAO00065), ME (MA0086), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

05050913:14

Project Name: UMASS-DUBIOS LIBRARY
Project Number: Not Specified

Lab Number: L0905263
Report Date: 05/05/09

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0905263-01	CAULK-01	UMASS AMHERST, MA	04/23/09 12:00
L0905263-02	CAULK-02	UMASS AMHERST, MA	04/23/09 12:10

t

Project Name: UMASS-DUBIOS LIBRARY
Project Number: Not Specified

Lab Number: L0905263
Report Date: 05/05/09

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

PCB by GC

L0905263-01 and the associated QC have elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix.

L0905263-01 has elevated detection limits due to the dilution required by matrix interferences encountered during the concentration of the sample.

The surrogate recoveries for L0905263-01 are below the acceptance criteria for 2,4,5,6-Tetrachloro-m-xylene and Decachlorobiphenyl (all 0%) due to the dilution required to quantitate the sample. Re-extraction is not required; therefore, the results of the original analysis are reported.

Project Name: UMASS-DUBIOS LIBRARY
Project Number: Not Specified

Lab Number: L0905263
Report Date: 05/05/09

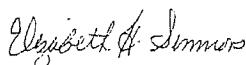
Case Narrative (continued)

L0905263-02 has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

The surrogate recoveries for L0905263-02 are below the acceptance criteria for 2,4,5,6-Tetrachloro-m-xylene and Decachlorobiphenyl (all 0%) due to the dilution required to quantitate the sample. Re-extraction is not required, therefore, the results of the original analysis are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Title: Technical Director/Representative

Date: 05/05/09

ORGANICS

PCBS

05050913:14

Project Name: UMASS-DUBIOS LIBRARY

Lab Number: L0905263

Project Number: Not Specified

Report Date: 05/05/09

SAMPLE RESULTS

Lab ID: L0905263-01
Client ID: CAULK-01
Sample Location: UMASS AMHERST, MA
Matrix: Solid
Analytical Method: 1,8082
Analytical Date: 05/05/09 08:33
Analyst: SH
Percent Solids: Results are reported on an 'AS RECEIVED' basis

Date Collected: 04/23/09 12:00
Date Received: 04/28/09
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 05/02/09 00:30
Cleanup Method1: EPA 3665A
Cleanup Date1: 05/05/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1254	2690		ug/kg	800	40

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: UMASS-DUBIOS LIBRARY
 Project Number: Not Specified

Lab Number: L0905263
 Report Date: 05/05/09

SAMPLE RESULTS

Lab ID: L0905263-01
 Client ID: CAULK-01
 Sample Location: UMASS AMHERST, MA
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 05/05/09 08:33
 Analyst: SH
 Percent Solids: Results are reported on an 'AS RECEIVED' basis

Date Collected: 04/23/09 12:00
 Date Received: 04/28/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 05/02/09 00:30
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 05/05/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1016	ND		ug/kg	800	40
Aroclor 1221	ND		ug/kg	800	40
Aroclor 1232	ND		ug/kg	800	40
Aroclor 1242	ND		ug/kg	800	40
Aroclor 1248	ND		ug/kg	800	40
Aroclor 1260	ND		ug/kg	800	40
Aroclor 1262	ND		ug/kg	800	40
Aroclor 1268	ND		ug/kg	800	40

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

05050913:14

Project Name: UMASS-DUBIOS LIBRARY

Lab Number: L0905263

Project Number: Not Specified

Report Date: 05/05/09

SAMPLE RESULTS

Lab ID: L0905263-02
 Client ID: CAULK-02
 Sample Location: UMASS AMHERST, MA
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 05/01/09 12:29
 Analyst: SH
 Percent Solids: Results are reported on an 'AS RECEIVED' basis

Date Collected: 04/23/09 12:10
 Date Received: 04/28/09
 Field Prep: Not Specified
 Extraction Method: EPA 3580A
 Extraction Date: 04/30/09 03:47
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 05/01/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1254	93400000		ug/kg	10000000	2000

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

05050913:14

Project Name: UMASS-DUBIOS LIBRARY

Lab Number: L0905263

Project Number: Not Specified

Report Date: 05/05/09

SAMPLE RESULTS

Lab ID: L0905263-02
 Client ID: CAULK-02
 Sample Location: UMASS AMHERST, MA
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 05/01/09 12:29
 Analyst: SH
 Percent Solids: Results are reported on an 'AS RECEIVED' basis

Date Collected: 04/23/09 12:10
 Date Received: 04/28/09
 Field Prep: Not Specified
 Extraction Method: EPA 3580A
 Extraction Date: 04/30/09 03:47
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 05/01/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1016	ND		ug/kg	1000000C	2000
Aroclor 1221	ND		ug/kg	1000000C	2000
Aroclor 1232	ND		ug/kg	1000000C	2000
Aroclor 1242	ND		ug/kg	1000000C	2000
Aroclor 1248	ND		ug/kg	1000000C	2000
Aroclor 1260	ND		ug/kg	1000000C	2000
Aroclor 1262	ND		ug/kg	1000000C	2000
Aroclor 1268	ND		ug/kg	1000000C	2000

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: UMASS-DUBIOS LIBRARY
 Project Number: Not Specified

Lab Number: L0905263
 Report Date: 05/05/09

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082
 Analytical Date: 05/01/09 10:04
 Analyst: SH

Extraction Method: EPA 3580A
 Extraction Date: 04/30/09 03:47
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 05/01/09

Parameter	Result	Qualifier	Units	RDL
PCB by GC - Westborough Lab for sample(s): 02 Batch: WG360651-1				
Aroclor 1016	ND		ug/kg	5000
Aroclor 1221	ND		ug/kg	5000
Aroclor 1232	ND		ug/kg	5000
Aroclor 1242	ND		ug/kg	5000
Aroclor 1248	ND		ug/kg	5000
Aroclor 1254	ND		ug/kg	5000
Aroclor 1260	ND		ug/kg	5000
Aroclor 1262	ND		ug/kg	5000
Aroclor 1268	ND		ug/kg	5000

Surrogate	%Recovery	Qualifier	Acceptance	
			Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	90		30-150	A
Decachlorobiphenyl	120		30-150	A
2,4,5,6-Tetrachloro-m-xylene	98		30-150	B
Decachlorobiphenyl	140		30-150	B

Project Name: UMASS-DUBIOS LIBRARY
 Project Number: Not Specified

Lab Number: L0905263
 Report Date: 05/05/09

Method Blank Analysis
 Batch Quality Control

Analytical Method: 1,8082
 Analytical Date: 05/05/09 08:45
 Analyst: SH

Extraction Method: EPA 3540C
 Extraction Date: 05/02/09 00:30
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 05/05/09

Parameter	Result	Qualifier	Units	RDL
PCB by GC - Westborough Lab for sample(s): 01 Batch: WG360985-1				
Aroclor 1016	ND		ug/kg	20.0
Aroclor 1221	ND		ug/kg	20.0
Aroclor 1232	ND		ug/kg	20.0
Aroclor 1242	ND		ug/kg	20.0
Aroclor 1248	ND		ug/kg	20.0
Aroclor 1254	ND		ug/kg	20.0
Aroclor 1260	ND		ug/kg	20.0
Aroclor 1262	ND		ug/kg	20.0
Aroclor 1268	ND		ug/kg	20.0

Surrogate	%Recovery	Qualifier	Acceptance	
			Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	47		30-150	A
Decachlorobiphenyl	73		30-150	A
2,4,5,6-Tetrachloro-m-xylene	63		30-150	B
Decachlorobiphenyl	75		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Lab Number: L0905263

Report Date: 05/05/09

Project Name: UMASS-DUBIOS LIBRARY

Project Number: Not Specified

Parameter	LCS %Recovery	LCS %Recovery	LCS %Recovery	%Recovery Limits	RPD	RPD Limits
PCB by GC - Westborough Lab Associated sample(s): 02 Batch: WG360651-2 WG360651-3						
Aroclor 1016	103	100		40-140	3	50
Aroclor 1260	102	98		40-140	4	50

Surrogate	LCS %Recovery	Qualifier	LCS %Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	86		82		30-150	A
Decachlorobiphenyl	116		110		30-150	A
2,4,5,6-Tetrachloro-m-xylene	92		88		30-150	B
Decachlorobiphenyl	136		131		30-150	B

PCB by GC - Westborough Lab Associated sample(s): 01 Batch: WG360985-2 WG360985-3

Aroclor 1016	79	69		40-140	14	50
Aroclor 1260	70	77		40-140	10	50

Surrogate	LCS %Recovery	Qualifier	LCS %Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	50		55		30-150	A
Decachlorobiphenyl	81		91		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		67		30-150	B
Decachlorobiphenyl	79		84		30-150	B

05050913:14

Project Name: UMASS-DUBIOS LIBRARY

Lab Number: L0905263

Project Number: Not Specified

Report Date: 05/05/09

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0905263-01A	Amber 250ml unpreserved	A	N/A	3.0	Y	Absent	PCB-8082(14)
L0905263-02A	Amber 250ml unpreserved	A	N/A	3.0	Y	Absent	PCB-8082(14)

*Hold days indicated by values in parentheses



Project Name: UMASS-DUBIOS LIBRARY
 Project Number: Not Specified

Lab Number: L0905263
 Report Date: 05/05/09

GLOSSARY

Acronyms

EPA	- Environmental Protection Agency
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
ND	- Not detected at the reported detection limit for the sample.
NI	- Not Ignitable
RDL	- Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report

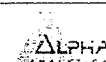
Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

*	- The batch duplicate RPD exceeds the acceptance criteria. This flag is not applicable when the sample concentrations are less than 5x the RDL. (Metals only.)
A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte.
D	- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	- Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
H	- The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
N	- The matrix spike recovery exceeds the acceptance criteria. This flag is not applicable when the sample concentration is greater than 4x the spike added. (Metals only.)
P	- The RPD between the results for the two columns exceeds the method-specified criteria.
R	- Analytical results are from sample re-analysis.
RE	- Analytical results are from sample re-extraction.
J	- Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs)

Report Format: Data Usability Report



Project Name: UMASS-DUBIOS LIBRARY
Project Number: Not Specified

Lab Number: L0905263
Report Date: 05/05/09

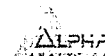
REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certificate/Approval Program Summary

Last revised February 18, 2009 - Westboro Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0574.

Drinking Water (Inorganic Parameters: Color, pH, Turbidity, Conductivity, Alkalinity, Chloride, Free Residual Chlorine, Fluoride, Calcium Hardness, Sulfate, Nitrate, Nitrite, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Dissolved Solids, Total Organic Carbon, Total Cyanide, Perchlorate. Organic Parameters: Haloacetic Acids, Volatile Organics 524.2, Total Trihalomethanes 524.2, 1,2-Dibromo-3-chloropropane (DBCP), Ethylene Dibromide (EDB).)

Wastewater/Non-Potable Water (Inorganic Parameters: Color, pH, Conductivity, Acidity, Alkalinity, Chloride, Total Residual Chlorine, Fluoride, Total Hardness, Calcium Hardness, Silica, Sulfate, Sulfide, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), BOD, CBOD, COD, TOC, Total Cyanide, Phenolics, Foaming Agents (MBAS), Bromide, Oil and Grease Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: Lead in Paint, pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), Reactivity. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Extractable Petroleum Hydrocarbons (ETPH), Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Volatile Organics, Acid Extractables (Phenols), 3,3'-Dichlorobenzidine, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Maine Department of Human Services Certificate/Lab ID: MA0086.

Drinking Water (Inorganic Parameters: SM9215B, 9221E, 9222B, 9222D, 9223B, EPA 150.1, 180.1, 300.0, 353.2, SM2130B, 2320B, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1. Organic Parameters: 504.1, 524.2, SM 6251B.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, Lachat 10-107-06-1-B, SM2320B, 2340B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NH3-H, 4500NO3-F, 4500P-B.5, 4500P-E, 5210B, 5220D, 5310C, EPA 200.7, 200.8, 245.1. Organic Parameters: 608, 624.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.

Drinking Water

Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl)

(EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Nitrite-N, Fluoride, Sulfate) 353.2 for: Nitrate-N, Nitrite-N; SM4500NO3-F, 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, 2320B, SM2540C, EPA 150.1, SM4500H-B.

Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics) (504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), SM6251B, 314.0.

Non-Potable Water

Inorganic Parameters: (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn)

(EPA 200.7 for: Al,Sb,As,Be,Cd,Cr,Co,Cu,Fe,Pb,Mn,Mo,Ni,Se,Ag,Sr,Ti,Ti,V,Zn,Ca,Mg,Na,K)

245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2540B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Nitrate-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-B,C-Titr, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CN-CE, 2540D, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1

Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics)

(608 for: Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, PCB-Water) 600/4-81-045-PCB-Oil

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086*Drinking Water*

Microbiology Parameters: SM9215B, MF-SM9222B, ENZ. SUB. SM9223, EC-SM9221E, MF-SM9222D, ENZ. SUB. SM9223,

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307

Drinking Water (Inorganic Parameters: SM6215B, 9222B, 9223B Colilert, EPA 200.7, 200.8, 245.2, 110.2, 120.1, 150.1, 300.0, 325.2, 314.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 331.0. Organic Parameters: 504.1, 524.2, SM6251B.)

Non-Potable Water (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 200.7, 200.8, 245.1, 245.2, SW-846 6010B, 6020, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 150.1, 300.0, 305.1, 310.1, 325.2, 340.2, 350.1, 350.2, 351.1, 353.2, 354.1, 365.2, 375.4, 376.2, 405.1, 415.1, 420.1, 425.1, 1664A, SW-846 9010, 9030, 9040B, EPA 160.1, 160.2, 160.3, SM426C, SM2310B, 2540B, 2540D, 4500H+B, 4500NH3-H, 4500NH3-E, 4500NO2-B, 4500P-E, 4500-S2-D, 5210B, 2320B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-117-07-1-B, LACHAT 10-107-06-1-B, LACHAT 10-107-04-1-C, LACHAT 10-107-04-1-J, LACHAT 10-117-07-1-A, SM4500CL-E, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D. Organic Parameters: SW-846 3005A, 3015A, 3510C, 5030B, 8021B, 8260B, 8270C, 8330, EPA 624. 625, 608, SW-846 8082, 8081A.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6010B, 7196A, 7471A, 7.3.3.2, 7.3.4.2, 1010, 1030, 9010, 9012A, 9014, 9030B, 9040, 9045C, 9050C, 1311, 3005A, 3050B, 3051A. Organic Parameters: SW-846 3540C, 3545, 3580A, 5030B, 5035, 8021B, 8260B, 8270C, 8330, 8151A, 8082, 8081A.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935

Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 2540C, 2320B, 314.0, 331.0, 110.2, SM2120B, 2510B, 5310C, EPA 150.1, SM4500H-B, EPA 200.8, 245.2. Organic Parameters: 504.1, SM6251B, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.1, SM5220D, 4500CI-D, EPA 300.0, SM2120B, SM4500F-BC, EPA 200.7, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM15 426C, SM9221CE, 9222D, 9221B, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, EPA 350.2/1, SM5210B, SW-846 3015, 6020, 7470A, 5540C, 4500H-B, EPA 200.8, SM3500Cr-D, EPA 245.1, 245.2, SW-846 9040B, 3005A, EPA 6010B, 7196A, SW-846 9010B, 9030B. Organic Parameters: SW-846 8260B, 8270C, 3510C, EPA 608, 624, 625, SW-846 5030B, 8021B, 8081A, 8082, 8151A, 8330.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 9040B, 3005A, 6010B, 7196A, 5030B, 9010B, 9030B, 1030, 1311, 3050B, 3051, 7471A, 9014, 9012A, 9045C, 9050A, 9065. Organic Parameters: SW-846 8021B, 8081A, 8082, 8151A, 8330, 8260B, 8270C, 1311, 3540C, 3545, 3550B, 3580A, 5035L, 5035H.)

New York Department of Health Certificate/Lab ID: 11148

Drinking Water (Inorganic Parameters: SM9223B, 9222B, 8215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 314.0, 331.0, SM2320B, EPA 300.0, 325.2, 110.2, SM2120B, 4500CN-E, 4500F-C, EPA 150.1, SM4500H-B, 4500NO3-F, 2540C, EPA 120.1, SM 2510B. Organic Parameters: EPA 524.2, 504.1, SM6251B.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, EPA 405.1, SM5210B, EPA 410.4, SM5220D, EPA 305.1, SM2310B-4a, EPA 310.1, SM2320B, EPA 200.7, 300.0, 325.2, LACHAT 10-117-07-1A or B, SM4500CI-E, EPA 340.2, SM4500F-C, EPA 375.4, SM15 426C, EPA 350.1, 350.2, LACHAT 10-107-06-1-B, SM4500NH3-H, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, LACHAT 10-107-041-C, SM4500-NO30F, EPA 354.1, SM4500-NO2-B, EPA 365.2, SM4500P-E, EPA 160.3, SM2540B, EPA 160.1, SM2540C, EPA 160.2, SM2540D, EPA 200.8, EPA 6010B, 6020, EPA 7196A, SM3500Cr-D, EPA 245.1, 245.2, 7470A, 110.2, SM2120B, 335.2, LACHAT 10-204-00-1-A, EPA 150.1, 9040B, SM4500-HB, EPA 1664A, EPA 415.1, SM5310C, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, EPA 376.2, SM4500S-D, EPA 425.1, SM5540C, EPA 3005A, 3015. Organic Parameters: EPA 624, 8260B, 8270C, 625, 608, 8081A, 8151A, 8330, 8082, 8021B, EPA 3510C, 5030B, 9010B, 9030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, 1010, 1030, SW-846 Ch 7 Sec 7.3, EPA 6010B, 7196A, 7471A, 9012A, 9014, 9040B, 9045C, 9065, 9050, EPA 1311, 3005A, 3050B, 3051, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8081A, 8151A, 8330, 8082, 8021B, 3540C, 3545, 3580, 5030B, 5035.)

Analytical Services Protocol: CLP Volatile Organics, CLP Inorganics, CLP PCB/Pesticides.

Rhode Island Department of Health Certificate/Lab ID: LAO00065

Refer to MA-DEP Certificate for Potable and Non-Potable Water.

Refer to NY-DOH Certificate for Potable and Non-Potable Water.

Pennsylvania Department of Environmental Protection Certificate/Lab ID: 68-03671 Registered Laboratory

ALPHA
ANALYTICAL

CHAIN OF CUSTODY

PAGE 1 of 1

 Westborough, MA Mansfield, MA
 TEL: 508-898-9220 TEL: 508-822-3300
 FAX: 508-898-9193 FAX: 508-822-3289

Client Information

 Client: Tighe & Bond, Inc.
 Address: 446 Main Street
 Worcester, MA 01608
 Phone: 508-754-2201
 Fax: 508-795-1087
 Email: DTDRAGON@TIGHEBOND.COM
Project Information

 Project Name: UMMS - DUBOIS LIBRARY
 Project Location: UMMS, AMHERST, MA
 Project #: —
 Project Manager: DAN DRAGDO
 ALPHA Quote #: —
 Turnaround Time

☐ These samples have been previously analyzed by Alpha

Due Date: 5/4/09 Time:

Other Project Specific Requirements/Comments/Detection Limits:

Please notify client services when you are collecting samples with short hold times. See back of COC for listing of parameters with short hold times.

DL ≤ 1 ppm RECOVERED

EXTRACTION

 ALPHA Lab ID
 (Lab Use Only)

Sample ID

 Collection
 Date Time

 Sample
 Matrix

 Sampler's
 Initials

 05263.1
 CAULK-01
 4/23/09 12:00
 4/23/09 12:10
 X1
 DTG
 X

 X1 = CAULK
 X1 = CAULK

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT
MA MCP or CT RCP?

 FORM NO 01-01
 (Rev. 3-01-07)

Date Rec'd in Lab

4/28/09

ALPHA Job #:

109652603

Report Information Data Deliverables
Billing Information
☐ FAX

☐ EMAIL

☒ Same as Client Info

PO #

☒ ADEX

☐ Add'l Deliverables

Regulatory Requirements/Report Limits

State/Fed Program

N/A

Criteria

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS
☐ Yes

☒ No

Are MCP Analytical Methods Required?

☐ Yes

☒ No

Are CT RCP (Reasonable Confidence Protocols) Required?

ANALYSIS
SAMPLE HANDLING

Filtration

☐ Done

☒ Not Needed

☐ Lab to do

☐ Preservation

☐ Lab to do

(Please specify below)

SAMPLE SPECIFIC COMMENTS

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

Reimbursed By:

Container Type

Preservative

Received By:

Date/Time

Date/Time

 4/23/09 14:50
 4/28/09 15:45
 4/28/09 11:20
 4/28/09 11:54

Analytical Report for Sampling Event 5/8/09



ANALYTICAL REPORT

Lab Number:	L0906084
Client:	Tighe & Bond, Inc. 446 Main Street Worcester, MA 01608
ATTN:	Dan Dragon
Project Name:	UMASS-DUBOIS LIBRARY
Project Number:	29-163-1-01
Report Date:	05/19/09

Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (2003), NJ (MA935), RI (LAO00065), ME (MA0086), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: UMASS-DUBOIS LIBRARY
Project Number: 29-163-1-01

Lab Number: L0906084
Report Date: 05/19/09

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0906084-01	P-01	UMASS, AMHERST, MA	05/08/09 10:00
L0906084-02	P-02	UMASS, AMHERST, MA	05/08/09 10:15
L0906084-03	P-03	UMASS, AMHERST, MA	05/08/09 10:30
L0906084-04	P-04	UMASS, AMHERST, MA	05/08/09 10:45
L0906084-05	P-05	UMASS, AMHERST, MA	05/08/09 11:00
L0906084-06	P-06	UMASS, AMHERST, MA	05/08/09 11:15
L0906084-07	P-07	UMASS, AMHERST, MA	05/08/09 11:30
L0906084-08	P-08	UMASS, AMHERST, MA	05/08/09 11:45

Project Name: UMASS-DUBOIS LIBRARY
Project Number: 29-163-1-01

Lab Number: L0906084
Report Date: 05/19/09

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEX data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Sample Receipt

The samples were received at the laboratory above the required temperature range. The samples were transported to the laboratory in a cooler with ice. The client was notified of the exceedance at drop off, and all requested analyses were performed.

PCB

L0906084-01 through -04, -06 and -07 and their associated QC have elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix. In addition, L0906084-01, -02, -05 through -08 have elevated detection limits due to the dilutions required by the elevated concentrations

Project Name: UMASS-DUBOIS LIBRARY
Project Number: 29-163-1-01

Lab Number: L0906084
Report Date: 05/19/09

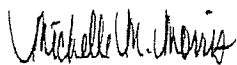
Case Narrative (continued)

of target compounds in the samples. L0906084-03 has elevated detection limits due to the dilution required by matrix interferences encountered during the concentration of the sample.

The surrogate recoveries for L0906084-01 through -03 and -05 through -08 were below the acceptance criteria for 2,4,5,6-Tetrachloro-m-xylene and Decachlorobiphenyl (All at 0%) due to the dilutions required to quantitate the samples. Re-extraction was not required; therefore, the results of the original analysis are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Title: Technical Director/Representative

Date: 05/19/09

ORGANICS



PCBS



Project Name: UMASS-DUBOIS LIBRARY
 Project Number: 29-163-1-01

Lab Number: L0906084
 Report Date: 05/19/09

SAMPLE RESULTS

Lab ID: L0906084-01
 Client ID: P-01
 Sample Location: UMASS, AMHERST, MA
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 05/19/09 14:29
 Analyst: SH
 Percent Solids: 94%

Date Collected: 05/08/09 10:00
 Date Received: 05/13/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 05/15/09 04:00
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 05/18/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1016	ND		ug/kg	21200	1000
Aroclor 1221	ND		ug/kg	21200	1000
Aroclor 1232	ND		ug/kg	21200	1000
Aroclor 1242	ND		ug/kg	21200	1000
Aroclor 1248	ND		ug/kg	21200	1000
Aroclor 1254	1240000		ug/kg	21200	1000
Aroclor 1260	ND		ug/kg	21200	1000
Aroclor 1262	ND		ug/kg	21200	1000
Aroclor 1268	ND		ug/kg	21200	1000

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: UMASS-DUBOIS LIBRARY
 Project Number: 29-163-1-01

Lab Number: L0906084
 Report Date: 05/19/09

SAMPLE RESULTS

Lab ID: L0906084-02
 Client ID: P-02
 Sample Location: UMASS, AMHERST, MA
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 05/19/09 11:34
 Analyst: SH
 Percent Solids: 99%

Date Collected: 05/08/09 10:15
 Date Received: 05/13/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 05/15/09 04:00
 Cleanup Method: EPA 3665A
 Cleanup Date: 05/18/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					

Aroclor 1016	ND		ug/kg	202	10
Aroclor 1221	ND		ug/kg	202	10
Aroclor 1232	ND		ug/kg	202	10
Aroclor 1242	ND		ug/kg	202	10
Aroclor 1248	ND		ug/kg	202	10
Aroclor 1254	5920		ug/kg	202	10
Aroclor 1260	ND		ug/kg	202	10
Aroclor 1262	ND		ug/kg	202	10
Aroclor 1268	ND		ug/kg	202	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

05190916:10

Project Name: UMASS-DUBOIS LIBRARY

Lab Number: L0906084

Project Number: 29-163-1-01

Report Date: 05/19/09

SAMPLE RESULTS

Lab ID: L0906084-03

Date Collected: 05/08/09 10:30

Client ID: P-03

Date Received: 05/13/09

Sample Location: UMASS, AMHERST, MA

Field Prep: Not Specified

Matrix: Solid

Extraction Method: EPA 3540C

Analytical Method: 1,8082

Extraction Date: 05/15/09 04:00

Analytical Date: 05/19/09 01:19

Cleanup Method1: EPA 3665A

Analyst: SH

Cleanup Date1: 05/18/09

Percent Solids: Results are reported on an 'AS RECEIVED' bas

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1248	6710		ug/kg	200	10
Aroclor 1254	1730		ug/kg	200	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B



05190916:10

Project Name: UMASS-DUBOIS LIBRARY

Lab Number: L0906084

Project Number: 29-163-1-01

Report Date: 05/19/09

SAMPLE RESULTS

Lab ID:	L0906084-03	Date Collected:	05/08/09 10:30
Client ID:	F-03	Date Received:	05/13/09
Sample Location:	UMASS, AMHERST, MA	Field Prep:	Not Specified
Matrix:	Solid	Extraction Method:	EPA 3540C
Analytical Method:	1,8082	Extraction Date:	05/15/09 04:00
Analytical Date:	05/19/09 01:19	Cleanup Method1:	EPA 3665A
Analyst:	SH	Cleanup Date1:	05/18/09
Percent Solids:	Results are reported on an 'AS RECEIVED' basis		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
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PCB by GC - Westborough Lab

Aroclor 1016	ND		ug/kg	200	10
Aroclor 1221	ND		ug/kg	200	10
Aroclor 1232	ND		ug/kg	200	10
Aroclor 1242	ND		ug/kg	200	10
Aroclor 1260	ND		ug/kg	200	10
Aroclor 1262	ND		ug/kg	200	10
Aroclor 1268	ND		ug/kg	200	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B



Project Name: UMASS-DUBOIS LIBRARY
 Project Number: 29-163-1-01

Lab Number: L0906084
 Report Date: 05/19/09

SAMPLE RESULTS

Lab ID: L0906084-04
 Client ID: P-04
 Sample Location: UMASS, AMHERST, MA
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 05/19/09 01:33
 Analyst: SH
 Percent Solids: 100%

Date Collected: 05/08/09 10:45
 Date Received: 05/13/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 05/15/09 04:00
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 05/18/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
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PCE by GC - Westborough Lab

Aroclor 1016	ND		ug/kg	20.0	1
Aroclor 1221	ND		ug/kg	20.0	1
Aroclor 1232	ND		ug/kg	20.0	1
Aroclor 1242	ND		ug/kg	20.0	1
Aroclor 1248	503		ug/kg	20.0	1
Aroclor 1254	256		ug/kg	20.0	1
Aroclor 1260	ND		ug/kg	20.0	1
Aroclor 1262	ND		ug/kg	20.0	1
Aroclor 1268	ND		ug/kg	20.0	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	69		30-150	A
Decachlorobiphenyl	99		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		30-150	B
Decachlorobiphenyl	86		30-150	B

Project Name: UMASS-DUBOIS LIBRARY
 Project Number: 29-163-1-01

Lab Number: L0906084
 Report Date: 05/19/09

SAMPLE RESULTS

Lab ID:	L0906084-05	Date Collected:	05/08/09 11:00
Client ID:	P-05	Date Received:	05/13/09
Sample Location:	UMASS, AMHERST, MA	Field Prep:	Not Specified
Matrix:	Solid	Extraction Method:	EPA 3570
Analytical Method:	1,8082	Extraction Date:	05/15/09 10:36
Analytical Date:	05/19/09 13:22	Cleanup Method1:	EPA 3665A
Analyst:	SH	Cleanup Date1:	05/15/09
Percent Solids:	Results are reported on an 'AS RECEIVED' basis		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1016	ND		ug/kg	500000	500
Aroclor 1221	ND		ug/kg	500000	500
Aroclor 1232	ND		ug/kg	500000	500
Aroclor 1242	ND		ug/kg	500000	500
Aroclor 1248	ND		ug/kg	500000	500
Aroclor 1254	28900000		ug/kg	500000	500
Aroclor 1260	ND		ug/kg	500000	500
Aroclor 1262	ND		ug/kg	500000	500
Aroclor 1268	ND		ug/kg	500000	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

05190916:10

Project Name: UMASS-DUBOIS LIBRARY

Lab Number: L0906084

Project Number: 29-163-1-01

Report Date: 05/19/09

SAMPLE RESULTS

Lab ID: L0906084-06

Date Collected: 05/08/09 11:15

Client ID: P-06

Date Received: 05/13/09

Sample Location: UMASS, AMHERST, MA

Field Prep: Not Specified

Matrix: Solid

Extraction Method: EPA 3540C

Analytical Method: 1,8082

Extraction Date: 05/15/09 04:00

Analytical Date: 05/19/09 11:46

Cleanup Method1: EPA 3665A

Analyst: SH

Cleanup Date1: 05/18/09

Percent Solids: 99%

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
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PCB by GC - Westborough Lab

Aroclor 1016	ND		ug/kg	1010	50
Aroclor 1221	ND		ug/kg	1010	50
Aroclor 1232	ND		ug/kg	1010	50
Aroclor 1242	ND		ug/kg	1010	50
Aroclor 1248	ND		ug/kg	1010	50
Aroclor 1254	27600		ug/kg	1010	50
Aroclor 1260	ND		ug/kg	1010	50
Aroclor 1262	ND		ug/kg	1010	50
Aroclor 1268	ND		ug/kg	1010	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B



Project Name: UMASS-DUBOIS LIBRARY

Lab Number: L0906084

Project Number: 29-163-1-01

Report Date: 05/19/09

SAMPLE RESULTS

Lab ID: L0906084-07

Date Collected: 05/08/09 11:30

Client ID: P-07

Date Received: 05/13/09

Sample Location: UMASS, AMHERST, MA

Field Prep: Not Specified

Matrix: Solid

Extraction Method: EPA 3540C

Analytical Method: 1,8082

Extraction Date: 05/15/09 04:00

Analytical Date: 05/19/09 11:58

Cleanup Method: EPA 3665A

Analyst: SH

Cleanup Date: 05/18/09

Percent Solids: 95%

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
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PCB by GC - Westborough Lab

Aroclor 1016	ND		ug/kg	1050	50
Aroclor 1221	ND		ug/kg	1050	50
Aroclor 1232	ND		ug/kg	1050	50
Aroclor 1242	ND		ug/kg	1050	50
Aroclor 1248	ND		ug/kg	1050	50
Aroclor 1254	29300		ug/kg	1050	50
Aroclor 1260	ND		ug/kg	1050	50
Aroclor 1262	ND		ug/kg	1050	50
Aroclor 1268	ND		ug/kg	1050	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

05190916:10

Project Name: UMASS-DUBOIS LIBRARY

Lab Number: L0906084

Project Number: 29-163-1-01

Report Date: 05/19/09

SAMPLE RESULTS

Lab ID: L0906084-08
 Client ID: P-08
 Sample Location: UMASS, AMHERST, MA
 Matrix: Solid
 Analytical Method: 1.8082
 Analytical Date: 05/19/09 13:34
 Analyst: SH
 Percent Solids: Results are reported on an 'AS RECEIVED' basis

Date Collected: 05/08/09 11:45
 Date Received: 05/13/09
 Field Prep: Not Specified
 Extraction Method: EPA 3570
 Extraction Date: 05/15/09 10:36
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 05/15/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
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PCB by GC - Westborough Lab

Aroclor 1016	ND		ug/kg	500000	500
Aroclor 1221	ND		ug/kg	500000	500
Aroclor 1232	ND		ug/kg	500000	500
Aroclor 1242	ND		ug/kg	500000	500
Aroclor 1248	ND		ug/kg	500000	500
Aroclor 1254	14900000		ug/kg	500000	500
Aroclor 1260	ND		ug/kg	500000	500
Aroclor 1262	ND		ug/kg	500000	500
Aroclor 1268	ND		ug/kg	500000	500

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B



Project Name: UMASS-DUBOIS LIBRARY
 Project Number: 29-163-1-01

Lab Number: L0906084
 Report Date: 05/19/09

Method Blank Analysis
 Batch Quality Control

Analytical Method: 1,8082
 Analytical Date: 05/19/09 07:43
 Analyst: SH

Extraction Method: EPA 3540C
 Extraction Date: 05/15/09 04:00
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 05/18/09

Parameter	Result	Qualifier	Units	RDL
PCB by GC - Westborough Lab for sample(s): 01-04,06-07 Batch: WG362526-1				
Aroclor 1016	ND		ug/kg	20.0
Aroclor 1221	ND		ug/kg	20.0
Aroclor 1232	ND		ug/kg	20.0
Aroclor 1242	ND		ug/kg	20.0
Aroclor 1248	ND		ug/kg	20.0
Aroclor 1254	ND		ug/kg	20.0
Aroclor 1260	ND		ug/kg	20.0
Aroclor 1262	ND		ug/kg	20.0
Aroclor 1268	ND		ug/kg	20.0

Surrogate	%Recovery	Qualifier	Acceptance	
			Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	85		30-150	A
Decachlorobiphenyl	101		30-150	A
2,4,5,6-Tetrachloro-m-xylene	89		30-150	B
Decachlorobiphenyl	108		30-150	B

Project Name: UMASS-DUBOIS LIBRARY
 Project Number: 29-163-1-01

Lab Number: L0906084
 Report Date: 05/19/09

Method Blank Analysis
 Batch Quality Control

Analytical Method: 1,8082
 Analytical Date: 05/15/09 21:04
 Analyst: SH

Extraction Method: EPA 3570
 Extraction Date: 05/15/09 10:36
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 05/15/09

Parameter	Result	Qualifier	Units	RDL
PCB by GC - Westborough Lab for sample(s): 05,08 Batch: WG362561-1				
Aroclor 1016	ND		ug/kg	1000
Aroclor 1221	ND		ug/kg	1000
Aroclor 1232	ND		ug/kg	1000
Aroclor 1242	ND		ug/kg	1000
Aroclor 1248	ND		ug/kg	1000
Aroclor 1254	ND		ug/kg	1000
Aroclor 1260	ND		ug/kg	1000
Aroclor 1262	ND		ug/kg	1000
Aroclor 1268	ND		ug/kg	1000

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	62		30-150	A
Decachlorobiphenyl	53		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	55		30-150	B



Lab Control Sample Analysis

Project Name: UMASS-DUBOIS LIBRARY

Lab Number: L0906084

Project Number: 29-163-1-01

Report Date: 05/19/09

Parameter	LCS %Recovery	LCS %Recovery	%Recovery Limits	RPD	RPD Limits
PCB by GC - Westborough Lab Associated sample(s): 01-04,06-07 Batch: WG362526-2 WG362526-3					
Aroclor 1016	98	101	40-140	3	50
Aroclor 1260	80	88	40-140	10	50

Surrogate	LCS %Recovery	Qualifier	LCS %Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	74		80		30-150	A
Decachlorobiphenyl	93		104		30-150	A
2,4,5,6-Tetrachloro-m-xylene	79		86		30-150	B
Decachlorobiphenyl	98		106		30-150	B

PCB by GC - Westborough Lab Associated sample(s): 05,08 Batch: WG362561-2 WG362561-3					
Aroclor 1016	67	65	40-140	3	50
Aroclor 1260	56	55	40-140	2	50

Surrogate	LCS %Recovery	Qualifier	LCS %Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59		58		30-150	A
Decachlorobiphenyl	49		50		30-150	A
2,4,5,6-Tetrachloro-m-xylene	60		59		30-150	B
Decachlorobiphenyl	56		56		30-150	B

INORGANICS & MISCELLANEOUS



05190916:10

Project Name: UMASS-DUBOIS LIBRARY
Project Number: 29-163-1-01

Lab Number: L0906084
Report Date: 05/19/09

SAMPLE RESULTS

Lab ID: L0906084-01
Client ID: P-01
Sample Location: UMASS, AMHERST, MA
Matrix: Solid

Date Collected: 05/08/09 10:00
Date Received: 05/13/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	94		%	0.10	1	-	05/14/09 14:45	30.2540G	SD



05190916:10

Project Name: UMASS-DUBOIS LIBRARY
Project Number: 29-163-1-01

Lab Number: L0906084
Report Date: 05/19/09

SAMPLE RESULTS

Lab ID: L0906084-02
Client ID: P-02
Sample Location: UMASS, AMHERST, MA
Matrix: Solid

Date Collected: 05/08/09 10:15
Date Received: 05/13/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	99		%	0.10	1	-	05/14/09 14:45	30.2540G	SD



05190916:10

Project Name: UMASS-DUBOIS LIBRARY
Project Number: 29-163-1-01

Lab Number: L0906084
Report Date: 05/19/09

SAMPLE RESULTS

Lab ID: L0906084-04
Client ID: P-04
Sample Location: UMASS, AMHERST, MA
Matrix: Solid

Date Collected: 05/08/09 10:45
Date Received: 05/13/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	100		%	0.10	1	-	05/14/09 14:45	30.2540G	SD



05190916:10

Project Name: UMASS-DUBOIS LIBRARY
Project Number: 29-163-1-01

Lab Number: L0906084
Report Date: 05/19/09

SAMPLE RESULTS

Lab ID: L0906084-06
Client ID: P-06
Sample Location: UMASS, AMHERST, MA
Matrix: Solid

Date Collected: 05/08/09 11:15
Date Received: 05/13/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	99		%	0.10	1	-	05/14/09 14:45	30,2540G	SD



05190916:10

Project Name: UMASS-DUBOIS LIBRARY
Project Number: 29-163-1-01

Lab Number: L0906084
Report Date: 05/19/09

SAMPLE RESULTS

Lab ID: L0906084-07
Client ID: P-07
Sample Location: UMASS, AMHERST, MA
Matrix: Solid

Date Collected: 05/08/09 11:30
Date Received: 05/13/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	95		%	0.10	1	-	05/14/09 14.45	30,2540G	SD



Lab Duplicate Analysis Batch Quality Control

Project Name: UMASS-DUBOIS LIBRARY
Project Number: 29-163-1-01

Lab Number: L0906084
Report Date: 05/19/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s):	01-02,04,06-07	QC Batch ID: WG362451-1	QC Sample:	L0906090-01	Client ID: DUP
Sample					
Solids, Total	98	98	%	0	20

Project Name: UMASS-DUBOIS LIBRARY

Lab Number: L0906084

Project Number: 29-163-1-01

Report Date: 05/19/09

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0906084-01A	Amber 250ml unpreserved	A	N/A	9	Y	Absent	PCB-8082(14),TS(7)
L0906084-02A	Amber 250ml unpreserved	A	N/A	9	Y	Absent	PCB-8082(14),TS(7)
L0906084-03A	Amber 250ml unpreserved	A	N/A	9	Y	Absent	PCB-8082(14)
L0906084-04A	Amber 250ml unpreserved	A	N/A	9	Y	Absent	PCB-8082(14),TS(7)
L0906084-05A	Amber 250ml unpreserved	A	N/A	9	Y	Absent	PCB-8082(14)
L0906084-06A	Amber 250ml unpreserved	A	N/A	9	Y	Absent	PCB-8082(14),TS(7)
L0906084-07A	Amber 250ml unpreserved	A	N/A	9	Y	Absent	PCB-8082(14),TS(7)
L0906084-08A	Amber 250ml unpreserved	A	N/A	9	Y	Absent	PCB-8082(14)

*Hold days indicated by values in parentheses



Project Name: UMASS-DUBOIS LIBRARY
 Project Number: 29-163-1-01

Lab Number: L0906084
 Report Date: 05/19/09

GLOSSARY

Acronyms

- EPA - Environmental Protection Agency.
- LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes
- LCSD - Laboratory Control Sample Duplicate: Refer to LCS.
- MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available
- MSD - Matrix Spike Sample Duplicate: Refer to MS.
- NA - Not Applicable.
- NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
- ND - Not detected at the reported detection limit for the sample.
- NI - Not Ignitable
- RDL - Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable
- RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum

Data Qualifiers

- * - The batch duplicate RPD exceeds the acceptance criteria. This flag is not applicable when the sample concentrations are less than 5x the RDL. (Metals only.)
- A - Spectra identified as "Aldol Condensation Product".
- B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte.
- D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- N - The matrix spike recovery exceeds the acceptance criteria. This flag is not applicable when the sample concentration is greater than 4x the spike added. (Metals only.)
- P - The RPD between the results for the two columns exceeds the method-specified criteria.
- R - Analytical results are from sample re-analysis.
- RE - Analytical results are from sample re-extraction.
- J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

Report Format: Data Usability Report



Project Name: UMASS-DUBOIS LIBRARY
Project Number: 29-163-1-01

Lab Number: L0906084
Report Date: 05/19/09

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.
- 30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certificate/Approval Program Summary

Last revised February 18, 2009 - Westboro Facility

The following list includes only those analytes/methods for which certification/approval is currently held
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0574.

Drinking Water (Inorganic Parameters: Color, pH, Turbidity, Conductivity, Alkalinity, Chloride, Free Residual Chlorine, Fluoride, Calcium Hardness, Sulfate, Nitrate, Nitrite, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Dissolved Solids, Total Organic Carbon, Total Cyanide, Perchlorate. Organic Parameters: Haloacetic Acids, Volatile Organics 524.2, Total Trihalomethanes 524.2, 1,2-Dibromo-3-chloropropane (DBCP), Ethylene Dibromide (EDB).)

Wastewater/Non-Potable Water (Inorganic Parameters: Color, pH, Conductivity, Acidity, Alkalinity, Chloride, Total Residual Chlorine, Fluoride, Total Hardness, Calcium Hardness, Silica, Sulfate, Sulfide, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), BOD, CBOD, COD, TOC, Total Cyanide, Phenolics, Foaming Agents (MBAS), Bromide, Oil and Grease. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: Lead in Paint, pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), Reactivity. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Extractable Petroleum Hydrocarbons (ETPH), Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Volatile Organics, Acid Extractables (Phenols), 3,3'-Dichlorobenzidine, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Maine Department of Human Services Certificate/Lab ID: MA0086.

Drinking Water (Inorganic Parameters: SM9215B, 9221E, 9222B, 9222D, 9223B, EPA 150.1, 180.1, 300.0, 353.2, SM2130B, 2320B, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1. Organic Parameters: 504.1, 524.2, SM 6251B.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, Lachat 10-107-06-1-B, SM2320B, 2340B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NH3-H, 4500NO3-F, 4500P-B.5, 4500P-E, 5210B, 5220D, 5310C, EPA 200.7, 200.8, 245.1. Organic Parameters: 608, 624.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.

Drinking Water

Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl)

(EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Nitrite-N, Fluoride, Sulfate) 353.2 for: Nitrate-N, Nitrite-N; SM4500NO3-F, 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, 2320B, SM2540C, EPA 150.1, SM4500H-B.

Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics)

(504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), SM6251B, 314.0.

Non-Potable Water

Inorganic Parameters: (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn)

(EPA 200.7 for: Al,Sb,As,Be,Cd,Cr,Co,Cu,Fe,Pb,Mn,Mo,Ni,Se,Ag,Sr,Tl,Ti,V,Zn,Ca,Mg,Na,K)

245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2540B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Nitrate-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-B,C-Titr, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B.E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CN-CE, 2540D, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1

Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics)

(608 for: Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, PCB-Water) 600/4-81-045-PCB-Oil

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086*Drinking Water*

Microbiology Parameters: SM9215B; MF-SM9222B; ENZ. SUB. SM9223; EC-SM9221E; MF-SM9222D; ENZ. SUB. SM9223.

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307.

Drinking Water (Inorganic Parameters: SM6215B, 9222B, 9223B ColiIert, EPA 200.7, 200.8, 245.2, 110.2, 120.1, 150.1, 300.0, 325.2, 314.0, SM4500CN-E, 4500H+B, 4500NO₃-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 331.0. Organic Parameters: 504.1, 524.2, SM6251B.)

Non-Potable Water (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 200.7, 200.8, 245.1, 245.2, SW-846 6010B, 6020, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 150.1, 300.0, 305.1, 310.1, 325.2, 340.2, 350.1, 350.2, 351.1, 353.2, 354.1, 365.2, 375.4, 376.2, 405.1, 415.1, 420.1, 425.1, 1664A, SW-846 9010, 9030, 9040B, EPA 160.1, 160.2, 160.3, SM426C, SM2310B, 2540B, 2540D, 4500H+B, 4500NH₃-H, 4500NH₃-E, 4500NO₂-B, 4500P-E, 4500-S2-D, 5210B, 2320B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-117-07-1-B, LACHAT 10-107-06-1-B, LACHAT 10-107-04-1-C, LACHAT 10-107-04-1-J, LACHAT 10-117-07-1-A, SM4500CL-E, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D. Organic Parameters: SW-846 3005A, 3015A, 3510C, 5030B, 8021B, 8260B, 8270C, 8330, EPA 624, 625, 608, SW-846 8082, 8081A.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6010B, 7196A, 7471A, 733.2, 734.2, 1010, 1030, 9010, 9012A, 9014, 9030B, 9040, 9045C, 9050C, 1311, 3005A, 3050B, 3051A. Organic Parameters: SW-846 3540C, 3545, 3580A, 5030B, 5035, 8021B, 8260B, 8270C, 8330, 8151A, 8082, 8081A.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935.

Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500NO₃-F, 4500F-C, EPA 300.0, 200.7, 2540C, 2320B, 314.0, 331.0, 110.2, SM2120B, 2510B, 5310C, EPA 150.1, SM4500H-B, EPA 200.8, 245.2. Organic Parameters: 504.1, SM6251B, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.1, SM5220D, 4500CI-D, EPA 300.0, SM2120B, SM4500F-BC, EPA 200.7, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO₃-F, 4500NO₂-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM15 426C, SM9221CE, 9222D, 9221B, 9222B, 9215B, 2310B, 2320B, 4500NH₃-H, EPA 350.2/1, SM5210B, SW-846 3015, 6020, 7470A, 5540C, 4500H-B, EPA 200.8, SM3500Cr-D, EPA 245.1, 245.2, SW-846 9040B, 3005A, EPA 6010B, 7196A, SW-846 9010B, 9030B. Organic Parameters: SW-846 8260B, 8270C, 3510C, EPA 608, 624, 625, SW-846 5030B, 8021B, 8081A, 8082, 8151A, 8330.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 9040B, 3005A, 6010B, 7196A, 5030B, 9010B, 9030B, 1030, 1311, 3050B, 3051, 7471A, 9014, 9012A, 9045C, 9050A, 9065. Organic Parameters: SW-846 8021B, 8081A, 8082, 8151A, 8330, 8260B, 8270C, 1311, 3540C, 3545, 3550B, 3580A, 5035L, 5035H.)

New York Department of Health Certificate/Lab ID: 11148.

Drinking Water (Inorganic Parameters: SM9223B, 9222B, 8215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 314.0, 331.0, SM2320B, EPA 300.0, 325.2, 110.2, SM2120B, 4500CN-E, 4500F-C, EPA 150.1, SM4500H-B, 4500NO₃-F, 2540C, EPA 120.1, SM 2510B. Organic Parameters: EPA 524.2, 504.1, SM6251B.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, EPA 405.1, SM5210B, EPA 410.4, SM5220D, EPA 305.1, SM2310B-4a, EPA 310.1, SM2320B, EPA 200.7, 300.0, 325.2, LACHAT 10-117-07-1A or B, SM4500CI-E, EPA 340.2, SM4500F-C, EPA 375.4, SM15 426C, EPA 350.1, 350.2, LACHAT 10-107-06-1-B, SM4500NH₃-H, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, LACHAT 10-107-041-C, SM4500-NO₃F, EPA 354.1, SM4500-NO₂-B, EPA 365.2, SM4500P-E, EPA 160.3, SM2540B, EPA 160.1, SM2540C, EPA 160.2, SM2540D, EPA 200.8, EPA 6010B, 6020, EPA 7196A, SM3500Cr-D, EPA 245.1, 245.2, 7470A, 110.2, SM2120B, 335.2, LACHAT 10-204-00-1-A, EPA 150.1, 9040B, SM4500-HB, EPA 1664A, EPA 415.1, SM5310C, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, EPA 376.2, SM4500S-D, EPA 425.1, SM5540C, EPA 3005A, 3015. Organic Parameters: EPA 624, 8260B, 8270C, 625, 608, 8081A, 8151A, 8330, 8082, 8021B, EPA 3510C, 5030B, 9010B, 9030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, 1010, 1030, SW-846 Ch 7 Sec 7.3, EPA 6010B, 7196A, 7471A, 9012A, 9014, 9040B, 9045C, 9065, 9050, EPA 1311, 3005A, 3050B, 3051, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8081A, 8151A, 8330, 8082, 8021B, 3540C, 3545, 3580, 5030B, 5035.)

Analytical Services Protocol: CLP Volatile Organics, CLP Inorganics, CLP PCB/Pesticides.

Rhode Island Department of Health Certificate/Lab ID: LAO00065.

Refer to MA-DEP Certificate for Potable and Non-Potable Water.

Refer to NY-DOH Certificate for Potable and Non-Potable Water.

Pennsylvania Department of Environmental Protection Certificate/Lab ID: 68-03671. Registered Laboratory.

Analytical Report for Sampling Event 9/4/09



ANALYTICAL REPORT

Lab Number:	L0912388
Client:	Tighe & Bond, Inc. 446 Main Street Worcester, MA 01608
ATTN:	Dan Dragon
Project Name:	TIM MURPHY-DUBOIS
Project Number:	T-0163-1-02
Report Date:	09/14/09

Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (2003), NJ (MA935), RI (LAO00065), ME (MA0086), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0912388
Report Date: 09/14/09

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0912388-01	090409-01	UMASS, AMHERST	09/04/09 08:50
L0912388-02	090409-02	UMASS, AMHERST	09/04/09 09:15
L0912388-03	090409-03	UMASS, AMHERST	09/04/09 09:35
L0912388-04	090409-04	UMASS, AMHERST	09/04/09 09:50
L0912388-05	090409-05	UMASS, AMHERST	09/04/09 10:10
L0912388-06	090409-06	UMASS, AMHERST	09/04/09 10:20
L0912388-07	090409-07	UMASS, AMHERST	09/04/09 10:40
L0912388-08	090409-08	UMASS, AMHERST	09/04/09 10:55
L0912388-09	090409-09	UMASS, AMHERST	09/04/09 11:10
L0912388-10	090409-10	UMASS, AMHERST	09/04/09 11:25
L0912388-11	090409-11	UMASS, AMHERST	09/04/09 11:35
L0912388-12	090409-12	UMASS, AMHERST	09/04/09 12:00
L0912388-13	090409-13	UMASS, AMHERST	09/04/09 13:22
L0912388-14	090409-14	UMASS, AMHERST	09/04/09 13:32
L0912388-15	090409-15	UMASS, AMHERST	09/04/09 13:50

Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0912388
Report Date: 09/14/09

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

PCB

L0912388-01, -03 through -09 and -11 through -14 have elevated detection limits due to the dilutions required by the elevated concentrations of target compounds in the samples.

L0912388-02 has elevated detection limits due to the dilution required by matrix interferences encountered during the concentration of the sample.

L0912388-10 has elevated detection limits due to the dilution required by the matrix interferences encountered during the concentration of the sample and the dilution required by the elevated concentrations of target compounds in the sample.

The surrogate recoveries for L0912388-03 through -15 are below the acceptance criteria for 2,4,5,6-

Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

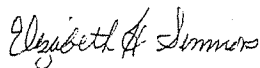
Lab Number: L0912388
Report Date: 09/14/09

Case Narrative (continued)

Tetrachloro-m-xylene and Decachlorobiphenyl (All at 0%) due to the dilutions required to quantitate the samples. Re-extractions were not required; therefore, the results of the original analyses are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Title: Technical Director/Representative

Date: 09/14/09

ORGANICS



PCBS

09140919:51

Project Name: TIM MURPHY-DUBOIS

Lab Number: L0912388

Project Number: T-0163-1-02

Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-01
 Client ID: 090409-01
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 18:15
 Analyst: GT
 Percent Solids: 99%

Date Collected: 09/04/09 08:50
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1242	5470		ug/kg	505	5
Aroclor 1254	7250		ug/kg	505	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		30-150	A
Decachlorobiphenyl	120		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		30-150	B
Decachlorobiphenyl	124		30-150	B



Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-01
 Client ID: 090409-01
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 18:15
 Analyst: GT
 Percent Solids: 99%

Date Collected: 09/04/09 08:50
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
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PCB by GC - Westborough Lab

Aroclor 1016	ND		ug/kg	505	5
Aroclor 1221	ND		ug/kg	505	5
Aroclor 1232	ND		ug/kg	505	5
Aroclor 1248	ND		ug/kg	505	5
Aroclor 1260	ND		ug/kg	505	5
Aroclor 1262	ND		ug/kg	505	5
Aroclor 1268	ND		ug/kg	505	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		30-150	A
Decachlorobiphenyl	120		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		30-150	B
Decachlorobiphenyl	124		30-150	B

Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0912388
Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-02
Client ID: 090409-02
Sample Location: UMASS, AMHERST
Matrix: Solid
Analytical Method: 1,8082
Analytical Date: 09/11/09 13:28
Analyst: GT
Percent Solids: 97%

Date Collected: 09/04/09 09:15
Date Received: 09/04/09
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 09/08/09 18:53
Cleanup Method1: EPA 3665A
Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
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PCB by GC - Westborough Lab

Aroclor 1016	ND		ug/kg	825	8
Aroclor 1221	ND		ug/kg	825	8
Aroclor 1232	ND		ug/kg	825	8
Aroclor 1242	2840		ug/kg	825	8
Aroclor 1248	ND		ug/kg	825	8
Aroclor 1254	3910		ug/kg	825	8
Aroclor 1260	ND		ug/kg	825	8
Aroclor 1262	ND		ug/kg	825	8
Aroclor 1268	ND		ug/kg	825	8

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		30-150	A
Decachlorobiphenyl	102		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	98		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-03
 Client ID: 090409-03
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 18:27
 Analyst: GT
 Percent Solids: 95%

Date Collected: 09/04/09 09:35
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1254	18200		ug/kg	2100	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0912388
Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-03
Client ID: 090409-03
Sample Location: UMASS, AMHERST
Matrix: Solid
Analytical Method: 1,8082
Analytical Date: 09/12/09 18:27
Analyst: GT
Percent Solids: 95%

Date Collected: 09/04/09 09:35
Date Received: 09/04/09
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 09/08/09 18:53
Cleanup Method1: EPA 3665A
Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1016	ND		ug/kg	2100	20
Aroclor 1221	ND		ug/kg	2100	20
Aroclor 1232	ND		ug/kg	2100	20
Aroclor 1242	16200		ug/kg	2100	20
Aroclor 1248	ND		ug/kg	2100	20
Aroclor 1260	ND		ug/kg	2100	20
Aroclor 1262	ND		ug/kg	2100	20
Aroclor 1268	ND		ug/kg	2100	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-04
 Client ID: 090409-04
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 18:39
 Analyst: GT
 Percent Solids: 99%

Date Collected: 09/04/09 09:50
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1242	8800		ug/kg	2020	20
Aroclor 1254	24100		ug/kg	2020	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS

Lab Number: L0912388

Project Number: T-0163-1-02

Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-04
 Client ID: 090409-04
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 18:39
 Analyst: GT
 Percent Solids: 99%

Date Collected: 09/04/09 09:50
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1016	ND		ug/kg	2020	20
Aroclor 1221	ND		ug/kg	2020	20
Aroclor 1232	ND		ug/kg	2020	20
Aroclor 1248	ND		ug/kg	2020	20
Aroclor 1260	ND		ug/kg	2020	20
Aroclor 1262	ND		ug/kg	2020	20
Aroclor 1268	ND		ug/kg	2020	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-05
 Client ID: 090409-05
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 18:51
 Analyst: GT
 Percent Solids: 99%

Date Collected: 09/04/09 10:10
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1242	6610		ug/kg	2020	20
Aroclor 1254	15200		ug/kg	2020	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-05
 Client ID: 090409-05
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 18:51
 Analyst: GT
 Percent Solids: 99%

Date Collected: 09/04/09 10:10
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1016	ND		ug/kg	2020	20
Aroclor 1221	ND		ug/kg	2020	20
Aroclor 1232	ND		ug/kg	2020	20
Aroclor 1248	ND		ug/kg	2020	20
Aroclor 1260	ND		ug/kg	2020	20
Aroclor 1262	ND		ug/kg	2020	20
Aroclor 1268	ND		ug/kg	2020	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-06
 Client ID: 090409-06
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 19:04
 Analyst: GT
 Percent Solids: 96%

Date Collected: 09/04/09 10:20
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1242	36300		ug/kg	2080	20
Aroclor 1254	8560		ug/kg	2080	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS

Lab Number: L0912388

Project Number: T-0163-1-02

Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-06
 Client ID: 090409-06
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 19:04
 Analyst: GT
 Percent Solids: 96%

Date Collected: 09/04/09 10:20
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1016	ND		ug/kg	2080	20
Aroclor 1221	ND		ug/kg	2080	20
Aroclor 1232	ND		ug/kg	2080	20
Aroclor 1248	ND		ug/kg	2080	20
Aroclor 1260	ND		ug/kg	2080	20
Aroclor 1262	ND		ug/kg	2080	20
Aroclor 1268	ND		ug/kg	2080	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-07
 Client ID: 090409-07
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 19:16
 Analyst: GT
 Percent Solids: 99%

Date Collected: 09/04/09 10:40
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1242	7020		ug/kg	1010	10
Aroclor 1254	8200		ug/kg	1010	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS

Lab Number: L0912388

Project Number: T-0163-1-02

Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-07
 Client ID: 090409-07
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 19:16
 Analyst: GT
 Percent Solids: 99%

Date Collected: 09/04/09 10:40
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
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PCB by GC - Westborough Lab

Aroclor 1016	ND		ug/kg	1010	10
Aroclor 1221	ND		ug/kg	1010	10
Aroclor 1232	ND		ug/kg	1010	10
Aroclor 1248	ND		ug/kg	1010	10
Aroclor 1260	ND		ug/kg	1010	10
Aroclor 1262	ND		ug/kg	1010	10
Aroclor 1268	ND		ug/kg	1010	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-08
 Client ID: 090409-08
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 19:28
 Analyst: GT
 Percent Solids: 99%

Date Collected: 09/04/09 10:55
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1242	10200		ug/kg	2020	20
Aroclor 1254	26800		ug/kg	2020	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0912388
Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-08
Client ID: 090409-08
Sample Location: UMASS, AMHERST
Matrix: Solid
Analytical Method: 1,8082
Analytical Date: 09/12/09 19:28
Analyst: GT
Percent Solids: 99%

Date Collected: 09/04/09 10:55
Date Received: 09/04/09
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 09/08/09 18:53
Cleanup Method1: EPA 3665A
Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					

Aroclor 1016	ND		ug/kg	2020	20
Aroclor 1221	ND		ug/kg	2020	20
Aroclor 1232	ND		ug/kg	2020	20
Aroclor 1248	ND		ug/kg	2020	20
Aroclor 1260	ND		ug/kg	2020	20
Aroclor 1262	ND		ug/kg	2020	20
Aroclor 1268	ND		ug/kg	2020	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-09
 Client ID: 090409-09
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 19:40
 Analyst: GT
 Percent Solids: 95%

Date Collected: 09/04/09 11:10
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1242	28500		ug/kg	2100	20
Aroclor 1254	5620		ug/kg	2100	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0912388
Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-09
Client ID: 090409-09
Sample Location: UMASS, AMHERST
Matrix: Solid
Analytical Method: 1,8082
Analytical Date: 09/12/09 19:40
Analyst: GT
Percent Solids: 95%

Date Collected: 09/04/09 11:10
Date Received: 09/04/09
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 09/08/09 18:53
Cleanup Method1: EPA 3665A
Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					

Aroclor 1016	ND		ug/kg	2100	20
Aroclor 1221	ND		ug/kg	2100	20
Aroclor 1232	ND		ug/kg	2100	20
Aroclor 1248	ND		ug/kg	2100	20
Aroclor 1260	ND		ug/kg	2100	20
Aroclor 1262	ND		ug/kg	2100	20
Aroclor 1268	ND		ug/kg	2100	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-10
 Client ID: 090409-10
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/14/09 17:13
 Analyst: SH
 Percent Solids: 99%

Date Collected: 09/04/09 11:25
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/12/09 14:14
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/14/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1242	8230		ug/kg	2020	20
Aroclor 1254	17000		ug/kg	2020	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS

Lab Number: L0912388

Project Number: T-0163-1-02

Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-10
 Client ID: 090409-10
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/14/09 17:13
 Analyst: SH
 Percent Solids: 99%

Date Collected: 09/04/09 11:25
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/12/09 14:14
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/14/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1016	ND		ug/kg	2020	20
Aroclor 1221	ND		ug/kg	2020	20
Aroclor 1232	ND		ug/kg	2020	20
Aroclor 1248	ND		ug/kg	2020	20
Aroclor 1260	ND		ug/kg	2020	20
Aroclor 1262	ND		ug/kg	2020	20
Aroclor 1268	ND		ug/kg	2020	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-11
 Client ID: 090409-11
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 19:53
 Analyst: GT
 Percent Solids: 99%

Date Collected: 09/04/09 11:35
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1016	ND		ug/kg	1010	10
Aroclor 1221	ND		ug/kg	1010	10
Aroclor 1232	ND		ug/kg	1010	10
Aroclor 1248	ND		ug/kg	1010	10
Aroclor 1260	ND		ug/kg	1010	10
Aroclor 1262	ND		ug/kg	1010	10
Aroclor 1268	ND		ug/kg	1010	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-11
 Client ID: 090409-11
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 19:53
 Analyst: GT
 Percent Solids: 99%

Date Collected: 09/04/09 11:35
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1242	3290		ug/kg	1010	10
Aroclor 1254	5060		ug/kg	1010	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-12
 Client ID: 090409-12
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 20:05
 Analyst: GT
 Percent Solids: 94%

Date Collected: 09/04/09 12:00
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1242	33500		ug/kg	5320	50
Aroclor 1254	16800		ug/kg	5320	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0912388
Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-12
Client ID: 090409-12
Sample Location: UMASS, AMHERST
Matrix: Solid
Analytical Method: 1,8082
Analytical Date: 09/12/09 20:05
Analyst: GT
Percent Solids: 94%

Date Collected: 09/04/09 12:00
Date Received: 09/04/09
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 09/08/09 18:53
Cleanup Method1: EPA 3665A
Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1016	ND		ug/kg	5320	50
Aroclor 1221	ND		ug/kg	5320	50
Aroclor 1232	ND		ug/kg	5320	50
Aroclor 1248	ND		ug/kg	5320	50
Aroclor 1260	ND		ug/kg	5320	50
Aroclor 1262	ND		ug/kg	5320	50
Aroclor 1268	ND		ug/kg	5320	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-13
 Client ID: 090409-13
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 20:29
 Analyst: GT
 Percent Solids: 100%

Date Collected: 09/04/09 13:22
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1242	10400		ug/kg	2000	20
Aroclor 1254	28400		ug/kg	2000	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS

Lab Number: L0912388

Project Number: T-0163-1-02

Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-13
 Client ID: 090409-13
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 20:29
 Analyst: GT
 Percent Solids: 100%

Date Collected: 09/04/09 13:22
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
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PCB by GC - Westborough Lab

Aroclor 1016	ND		ug/kg	2000	20
Aroclor 1221	ND		ug/kg	2000	20
Aroclor 1232	ND		ug/kg	2000	20
Aroclor 1248	ND		ug/kg	2000	20
Aroclor 1260	ND		ug/kg	2000	20
Aroclor 1262	ND		ug/kg	2000	20
Aroclor 1268	ND		ug/kg	2000	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-14
 Client ID: 090409-14
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 20:42
 Analyst: GT
 Percent Solids: 99%

Date Collected: 09/04/09 13:32
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1242	3960		ug/kg	1010	10
Aroclor 1254	12900		ug/kg	1010	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-14
 Client ID: 090409-14
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 20:42
 Analyst: GT
 Percent Solids: 99%

Date Collected: 09/04/09 13:32
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1016	ND		ug/kg	1010	10
Aroclor 1221	ND		ug/kg	1010	10
Aroclor 1232	ND		ug/kg	1010	10
Aroclor 1248	ND		ug/kg	1010	10
Aroclor 1260	ND		ug/kg	1010	10
Aroclor 1262	ND		ug/kg	1010	10
Aroclor 1268	ND		ug/kg	1010	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-15
 Client ID: 090409-15
 Sample Location: UMASS, AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/12/09 20:54
 Analyst: GT
 Percent Solids: 96%

Date Collected: 09/04/09 13:50
 Date Received: 09/04/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1242	20600		ug/kg	2080	20
Aroclor 1254	12900		ug/kg	2080	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0912388
Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-15
Client ID: 090409-15
Sample Location: UMASS, AMHERST
Matrix: Solid
Analytical Method: 1,8082
Analytical Date: 09/12/09 20:54
Analyst: GT
Percent Solids: 96%

Date Collected: 09/04/09 13:50
Date Received: 09/04/09
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 09/08/09 18:53
Cleanup Method1: EPA 3665A
Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1016	ND		ug/kg	2080	20
Aroclor 1221	ND		ug/kg	2080	20
Aroclor 1232	ND		ug/kg	2080	20
Aroclor 1248	ND		ug/kg	2080	20
Aroclor 1260	ND		ug/kg	2080	20
Aroclor 1262	ND		ug/kg	2080	20
Aroclor 1268	ND		ug/kg	2080	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0		30-150	A
Decachlorobiphenyl	0		30-150	A
2,4,5,6-Tetrachloro-m-xylene	0		30-150	B
Decachlorobiphenyl	0		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

Method Blank Analysis
 Batch Quality Control

Analytical Method: 1,8082
 Analytical Date: 09/11/09 12:38
 Analyst: GT

Extraction Method: EPA 3540C
 Extraction Date: 09/08/09 18:53
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/11/09

Parameter	Result	Qualifier	Units	RDL
PCB by GC - Westborough Lab for sample(s): 01-09,11-15 Batch: WG378807-1				
Aroclor 1016	ND		ug/kg	100
Aroclor 1221	ND		ug/kg	100
Aroclor 1232	ND		ug/kg	100
Aroclor 1242	ND		ug/kg	100
Aroclor 1248	ND		ug/kg	100
Aroclor 1254	ND		ug/kg	100
Aroclor 1260	ND		ug/kg	100
Aroclor 1262	ND		ug/kg	100
Aroclor 1268	ND		ug/kg	100

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	105		30-150	A
2,4,5,6-Tetrachloro-m-xylene	103		30-150	B
Decachlorobiphenyl	148		30-150	B

Project Name: TIM MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0912388
 Report Date: 09/14/09

Method Blank Analysis
 Batch Quality Control

Analytical Method: 1,8082
 Analytical Date: 09/14/09 15:44
 Analyst: SH

Extraction Method: EPA 3540C
 Extraction Date: 09/12/09 14:14
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/14/09

Parameter	Result	Qualifier	Units	RDL
PCB by GC - Westborough Lab for sample(s): 10 Batch: WG379466-1				
Aroclor 1016	ND		ug/kg	100
Aroclor 1221	ND		ug/kg	100
Aroclor 1232	ND		ug/kg	100
Aroclor 1242	ND		ug/kg	100
Aroclor 1248	ND		ug/kg	100
Aroclor 1254	ND		ug/kg	100
Aroclor 1260	ND		ug/kg	100
Aroclor 1262	ND		ug/kg	100
Aroclor 1268	ND		ug/kg	100

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	60		30-150	A
Decachlorobiphenyl	75		30-150	A
2,4,5,6-Tetrachloro-m-xylene	58		30-150	B
Decachlorobiphenyl	84		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: TIM MURPHY-DUBOIS

Lab Number: L0912388

Project Number: T-0163-1-02

Report Date: 09/14/09

Parameter	LCS %Recovery	LCS %Recovery	LCS %Recovery	RPD	RPD Limits
PCB by GC - Westborough Lab Associated sample(s): 01-09,11-15 Batch: WG378807-2 WG378807-3					
Aroclor 1016	80	114	40-140	35	50
Aroclor 1260	101	107	40-140	6	50

Surrogate	LCS %Recovery	LCS Qualifier	LCS %Recovery	LCS Qualifier	Acceptance Criteria	Column
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2,4,5,6-Tetrachloro-m-xylene	86		92		30-150	A
Decachlorobiphenyl	117		122		30-150	A
2,4,5,6-Tetrachloro-m-xylene	91		99		30-150	B
Decachlorobiphenyl	135		146		30-150	B

PCB by GC - Westborough Lab Associated sample(s): 10 Batch: WG379466-2 WG379466-3

Aroclor 1016	58	96	40-140	49	50
Aroclor 1260	68	98	40-140	36	50

Surrogate	LCS %Recovery	LCS Qualifier	LCS %Recovery	LCS Qualifier	Acceptance Criteria	Column
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2,4,5,6-Tetrachloro-m-xylene	64		94		30-150	A
Decachlorobiphenyl	83		113		30-150	A
2,4,5,6-Tetrachloro-m-xylene	59		68		30-150	B
Decachlorobiphenyl	88		93		30-150	B

INORGANICS & MISCELLANEOUS



Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0912388
Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-01
Client ID: 090409-01
Sample Location: UMASS, AMHERST
Matrix: Solid

Date Collected: 09/04/09 08:50
Date Received: 09/04/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	99		%	0.10	1	-	09/08/09 15:55	30.2540G	TL



Project Name: TIM MURPHY-DUBOIS

Lab Number: L0912388

Project Number: T-0163-1-02

Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-02

Date Collected: 09/04/09 09:15

Client ID: 090409-02

Date Received: 09/04/09

Sample Location: UMASS, AMHERST

Field Prep: Not Specified

Matrix: Solid

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	97		%	0.10	1	-	09/08/09 15:55	30,2540G	TL



Project Name: TIM MURPHY-DUBOIS

Lab Number: L0912388

Project Number: T-0163-1-02

Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-03

Date Collected: 09/04/09 09:35

Client ID: 090409-03

Date Received: 09/04/09

Sample Location: UMASS, AMHERST

Field Prep: Not Specified

Matrix: Solid

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	95		%	0.10	1	-	09/08/09 15:55	30,2540G	TL



09140919:51

Project Name: TIM MURPHY-DUBOIS

Lab Number: L0912388

Project Number: T-0163-1-02

Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-04
Client ID: 090409-04
Sample Location: UMASS, AMHERST
Matrix: Solid

Date Collected: 09/04/09 09:50
Date Received: 09/04/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	99		%	0.10	1	-	09/08/09 15:55	30,2540G	TL



Project Name: TIM MURPHY-DUBOIS

Lab Number: L0912388

Project Number: T-0163-1-02

Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-05

Date Collected: 09/04/09 10:10

Client ID: 090409-05

Date Received: 09/04/09

Sample Location: UMASS, AMHERST

Field Prep: Not Specified

Matrix: Solid

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	99		%	0.10	1	-	09/08/09 15:55	30.2540G	TL



Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0912388
Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-06
Client ID: 090409-06
Sample Location: UMASS, AMHERST
Matrix: Solid

Date Collected: 09/04/09 10:20
Date Received: 09/04/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	96		%	0.10	1	-	09/08/09 15:55	30,2540G	TL



Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0912388
Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-07
Client ID: 090409-07
Sample Location: UMASS, AMHERST
Matrix: Solid

Date Collected: 09/04/09 10:40
Date Received: 09/04/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	99		%	0.10	1	-	09/08/09 15:55	30,2540G	TL



09140919:51

Project Name: TIM MURPHY-DUBOIS

Lab Number: L0912388

Project Number: T-0163-1-02

Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-08
Client ID: 090409-08
Sample Location: UMASS, AMHERST
Matrix: Solid

Date Collected: 09/04/09 10:55
Date Received: 09/04/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	99		%	0.10	1	-	09/08/09 15:55	30,2540G	TL



Project Name: TIM MURPHY-DUBOIS

Lab Number: L0912388

Project Number: T-0163-1-02

Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-09
Client ID: 090409-09
Sample Location: UMASS, AMHERST
Matrix: Solid

Date Collected: 09/04/09 11:10
Date Received: 09/04/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	95		%	0.10	1	-	09/08/09 15:55	30,2540G	TL



Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0912388
Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-10
Client ID: 090409-10
Sample Location: UMASS, AMHERST
Matrix: Solid

Date Collected: 09/04/09 11:25
Date Received: 09/04/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	99		%	0.10	1	-	09/08/09 15:55	30,2540G	TL



Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0912388
Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-11
Client ID: 090409-11
Sample Location: UMASS, AMHERST
Matrix: Solid

Date Collected: 09/04/09 11:35
Date Received: 09/04/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	99		%	0.10	1	-	09/08/09 15:55	30.2540G	TL



Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0912388
Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-12
Client ID: 090409-12
Sample Location: UMASS, AMHERST
Matrix: Solid

Date Collected: 09/04/09 12:00
Date Received: 09/04/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	94		%	0.10	1	-	09/08/09 15:55	30,2540G	TL



Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0912388
Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-13
Client ID: 090409-13
Sample Location: UMASS, AMHERST
Matrix: Solid

Date Collected: 09/04/09 13:22
Date Received: 09/04/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	100		%	0.10	1	-	09/08/09 15:55	30,2540G	TL



Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0912388
Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-14
Client ID: 090409-14
Sample Location: UMASS, AMHERST
Matrix: Solid

Date Collected: 09/04/09 13:32
Date Received: 09/04/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	99		%	0.10	1	-	09/08/09 15:55	30,2540G	TL



Project Name: TIM MURPHY-DUBOIS

Project Number: T-0163-1-02

Lab Number: L0912388

Report Date: 09/14/09

SAMPLE RESULTS

Lab ID: L0912388-15
Client ID: 090409-15
Sample Location: UMASS, AMHERST
Matrix: Solid

Date Collected: 09/04/09 13:50
Date Received: 09/04/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	96		%	0.10	1	-	09/08/09 15:55	30,2540G	TL



Lab Duplicate Analysis

Batch Quality Control

Project Name: TIM MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0912388
Report Date: 09/14/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-15 QC Batch ID: WG378776-1 QC Sample: L0912326-01 Client ID: DUP Sample					
Solids, Total	100	100	%	0	20

Project Name: TIM MURPHY-DUBOIS

Lab Number: L0912388

Project Number: T-0163-1-02

Report Date: 09/14/09

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0912388-01A	Amber 120ml unpreserved	A	N/A	3.9	Y	Absent	PCB-8082(14),TS(7)
L0912388-02A	Amber 120ml unpreserved	A	N/A	3.9	Y	Absent	PCB-8082(14),TS(7)
L0912388-03A	Amber 120ml unpreserved	A	N/A	3.9	Y	Absent	PCB-8082(14),TS(7)
L0912388-04A	Amber 250ml unpreserved	A	N/A	3.9	Y	Absent	PCB-8082(14),TS(7)
L0912388-05A	Amber 250ml unpreserved	A	N/A	3.9	Y	Absent	PCB-8082(14),TS(7)
L0912388-06A	Amber 250ml unpreserved	A	N/A	3.9	Y	Absent	PCB-8082(14),TS(7)
L0912388-07A	Amber 250ml unpreserved	A	N/A	3.9	Y	Absent	PCB-8082(14),TS(7)
L0912388-08A	Amber 250ml unpreserved	A	N/A	3.9	Y	Absent	PCB-8082(14),TS(7)
L0912388-09A	Amber 250ml unpreserved	A	N/A	3.9	Y	Absent	PCB-8082(14),TS(7)
L0912388-10A	Amber 250ml unpreserved	A	N/A	3.9	Y	Absent	PCB-8082(14),TS(7)
L0912388-11A	Amber 250ml unpreserved	A	N/A	3.9	Y	Absent	PCB-8082(14),TS(7)
L0912388-12A	Amber 250ml unpreserved	A	N/A	3.9	Y	Absent	PCB-8082(14),TS(7)
L0912388-13A	Amber 250ml unpreserved	A	N/A	3.9	Y	Absent	PCB-8082(14),TS(7)
L0912388-14A	Amber 250ml unpreserved	A	N/A	3.9	Y	Absent	PCB-8082(14),TS(7)
L0912388-15A	Amber 250ml unpreserved	A	N/A	3.9	Y	Absent	PCB-8082(14),TS(7)

*Hold days indicated by values in parentheses



Project Name: TIM MURPHY-DUBOIS

Lab Number: L0912388

Project Number: T-0163-1-02

Report Date: 09/14/09

GLOSSARY

Acronyms

- EPA - Environmental Protection Agency.
- LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
- LCSD - Laboratory Control Sample Duplicate: Refer to LCS.
- MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
- MSD - Matrix Spike Sample Duplicate: Refer to MS.
- NA - Not Applicable.
- NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
- ND - Not detected at the reported detection limit for the sample.
- NI - Not Ignitable.
- RDL - Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
- RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

- A - Spectra identified as "Aldol Condensation Product".
- B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
- D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- P - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q - The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RDL. (Metals only.)
- R - Analytical results are from sample re-analysis.
- RE - Analytical results are from sample re-extraction.
- J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

Report Format: Data Usability Report



Project Name: TIM MURPHY-DUBOIS

Lab Number: L0912388

Project Number: T-0163-1-02

Report Date: 09/14/09

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.
- 30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certificate/Approval Program Summary

Last revised August 27, 2009 - Westboro Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0574 **NELAP Accredited Solid Waste/Soil.**

Drinking Water (Inorganic Parameters: Color, pH, Turbidity, Conductivity, Alkalinity, Chloride, Free Residual Chlorine, Fluoride, Calcium Hardness, Sulfate, Nitrate, Nitrite, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Dissolved Solids, Total Organic Carbon, Total Cyanide, Perchlorate. Organic Parameters: Haloacetic Acids, Volatile Organics 524.2, Total Trihalomethanes 524.2, 1,2-Dibromo-3-chloropropane (DBCP), Ethylene Dibromide (EDB).)

Wastewater/Non-Potable Water (Inorganic Parameters: Color, pH, Conductivity, Acidity, Alkalinity, Chloride, Total Residual Chlorine, Fluoride, Total Hardness, Calcium Hardness, Silica, Sulfate, Sulfide, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), BOD, CBOD, COD, TOC, Total Cyanide, Phenolics, Foaming Agents (MBAS), Bromide, Oil and Grease. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: Lead in Paint, pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), Reactivity. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Extractable Petroleum Hydrocarbons (ETPH), Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Volatile Organics, Acid Extractables (Phenols), 3,3'-Dichlorobenzidine, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Maine Department of Human Services Certificate/Lab ID: 2009024.

Drinking Water (Inorganic Parameters: SM9215B, 9221E, 9222B, 9222D, 9223B, EPA 180.1, 300.0, 353.2, SM2130B, 2320B, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1. Organic Parameters: 504.1, 524.2, SM 6251B.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, Lachat 10-107-06-1-B, SM2320B, 2340B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NH3-H, 4500NO3-F, 4500P-B.5, 4500P-E, 5210B, 5220D, 5310C, EPA 200.7, 200.8, 245.1. Organic Parameters: 608, 624.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.

Drinking Water

Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl)

(EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Nitrite-N, Fluoride, Sulfate)

353.2 for: Nitrate-N, Nitrite-N; SM4500NO3-F, 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, 2320B, SM2540C, SM4500H-B.

Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics)

(504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), SM6251B, 314.0.

Non-Potable Water

Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn)

(EPA 200.7 for: Al,Sb,As,Be,Cd,Cr,Co,Cu,Fe,Pb,Mn,Mo,Ni,Se,Ag,Sr,Tl,Ti,V,Zn,Ca,Mg,Na,K)

245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2540B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Nitrate-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-B,C-Titr, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CN-CE, 2540D, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1

Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics)

(608 for: Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, PCB-Water) 600/4-81-045-PCB-Oil

Drinking Water

Microbiology Parameters: SM9215B; MF-SM9222B; ENZ. SUB. SM9223; EC-SM9221E; MF-SM9222D;

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM6215B, 9222B, 9223B Colilert, EPA 200.7, 200.8, 245.2, 120.1, 300.0, 314.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 331.0. *Organic Parameters:* 504.1, 524.2, SM6251B.)

Non-Potable Water (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 200.7, 200.8, 245.1, 245.2, SW-846 6010B, 6020, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 351.1, 353.2, 420.1, 1664A, SW-846 9010, 9030, 9040B, SM426C, SM2310B, 2540B, 2540D, 4500H+B, 4500NH3-H, 4500NH3-E, 4500NO2-B, 4500P-E, 4500-S2-D, 5210B, 2320B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-117-07-1-B, LACHAT 10-107-06-1-B, LACHAT 10-107-04-1-C, LACHAT 10-107-04-1-J, LACHAT 10-117-07-1-A, SM4500CL-E, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D. *Organic Parameters:* SW-846 3005A, 3015A, 3510C, 5030B, 8021B, 8260B, 8270C, 8330, EPA 624, 625, 608, SW-846 8082, 8081A.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6010B, 7196A, 7471A, 7.3.3.2, 7.3.4.2, 1010, 1030, 9010, 9012A, 9014, 9030B, 9040, 9045C, 9050C, 1311, 3005A, 3050B, 3051A. *Organic Parameters:* SW-846 3540C, 3545, 3580A, 5030B, 5035, 8021B, 8260B, 8270C, 8330, 8151A, 8082, 8081A.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 2540C, 2320B, 314.0, SM2120B, 2510B, 5310C, SM4500H-B, EPA 200.8, 245.2. *Organic Parameters:* 504.1, SM6251B, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500CI-D, EPA 300.0, SM2120B, SM4500F-BC, EPA 200.7, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM15 426C, SM9221CE, 9222D, 9221B, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, SM5210B, SW-846 3015, 6020, 7470A, 5540C, 4500H-B, EPA 200.8, SM3500Cr-D, EPA 245.1, 245.2, SW-846 9040B, 3005A, EPA 6010B, 7196A, SW-846 9010B, 9030B. *Organic Parameters:* SW-846 8260B, 8270C, 3510C, EPA 608, 624, 625, SW-846 5030B, 8021B, 8081A, 8082, 8151A, 8330, NJ OQA-QAM-025 Rev.7.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 9040B, 3005A, 6010B, 7196A, 5030B, 9010B, 9030B, 1030, 1311, 3050B, 3051, 7471A, 9014, 9012A, 9045C, 9050A, 9065. *Organic Parameters:* SW-846 8021B, 8081A, 8082, 8151A, 8330, 8260B, 8270C, 1311, 1312, 3540C, 3545, 3550B, 3580A, 5035L, 5035H, NJ OQA-QAM-025 Rev.7.)

New York Department of Health Certificate/Lab ID: 11148. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM9223B, 9222B, 8215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 314.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500H-B, 4500NO3-F, 2540C, EPA 120.1, SM 2510B. *Organic Parameters:* EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, LACHAT 10-117-07-1A or B, SM4500CI-E, 4500F-C, SM15 426C, EPA 350.1, LACHAT 10-107-06-1-B, SM4500NH3-H, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, LACHAT 10-107-041-C, SM4500-NO30F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6020, EPA 7196A, SM3500Cr-D, EPA 245.1, 245.2, 7470A, SM2120B, SM4500-CN-E LACHAT 10-204-00-1-A, EPA 9040B, SM4500-HB, EPA 1664A, SM5310C, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 3015. *Organic Parameters:* EPA 624, 8260B, 8270C, 625, 608, 8081A, 8151A, 8330, 8082, 8021B, EPA 3510C, 5030B, 9010B, 9030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, 1010, 1030, SW-846 Ch 7 Sec 7.3, EPA 6010B, 7196A, 7471A, 9012A, 9014, 9040B, 9045C, 9065, 9050, EPA 1311, 3005A, 3050B, 9010B, 9030B. *Organic Parameters:* EPA 8260B, 8270C, 8081A, 8151A, 8330, 8082, 8021B, 3540C, 3545, 3580, 5030B, 5035.)

Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. NELAP Accredited.

Non-Potable Water (Organic Parameters: EPA 3510C, 625, 608, 8081A, 8082, 8151A, 8270C, 8330)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010, 1030, 1311, 3050B, 3051, 6010B, EPA 7.3.3.2, EPA 7.3.4.2, 7196A, 7471A, 9010B, 9012A, 9014, 9040B, 9045C, 9050, 9065. *Organic Parameters:* 3540C, 3545, 3580A, 5035, 8021B, 8081A, 8082, 8151A, 8260B, 8270C, 8330)

Rhode Island Department of Health Certificate/Lab ID: LAO00065. NELAP Accredited via NY-DOH.

Refer to MA-DEP Certificate for Potable and Non-Potable Water.

Refer to NY-DOH Certificate for Potable and Non-Potable Water.

Utah Department of Health Certificate/Lab ID: AAMA. NELAP Accredited.

Non-Potable Water (Inorganic Parameters: Chloride EPA 300.0)

Non-NELAC Approved Analytes

The following analytes are considered non-NELAC certifiable parameters: 8260B: Freon-113, Diisopropyl Ether, 8330A: PETN; Picric Acid; Nitroglycerine; 2,6-DANT; 2,4-DANT)

Analytical Report for Sampling Event 9/16/09



ANALYTICAL REPORT

Lab Number:	L0913028
Client:	Tighe & Bond, Inc. 446 Main Street Worcester, MA 01608
ATTN:	Dan Dragon
Project Name:	T. MURPHY-DUBOIS
Project Number:	T-0163-1-02
Report Date:	09/23/09

Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (2003), NJ (MA935), RI (LAO00065), ME (MA0086), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: T. MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0913028
Report Date: 09/23/09

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L0913028-01	091609-01	UMASS AMHERST	09/16/09 08:15
L0913028-02	091609-02	UMASS AMHERST	09/16/09 08:30
L0913028-03	091609-03	UMASS AMHERST	09/16/09 08:50
L0913028-04	091609-04	UMASS AMHERST	09/16/09 09:00

Project Name: T. MURPHY-DUBOIS

Lab Number: L0913028

Project Number: T-0163-1-02

Report Date: 09/23/09

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

PCB

L0913028-01 through -04 and their associated QC have elevated detection limits due to the limited sample volume utilized during extraction, as required by the samples matrices. In addition, L0913028-01 through -04 have elevated detection limits due to the dilutions required by matrix interferences encountered during the concentration of the samples.

The surrogate recoveries for the following samples are outside the acceptance criteria for 2,4,5,6-Tetrachloro-m-xylene; however, the samples were not re-extracted due to coelution with obvious interferences. Copies of the chromatogram are included as an attachment to this report. The recoveries are as follows:

L0913028-01: 164%/173%

Project Name: T. MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0913028
Report Date: 09/23/09

Case Narrative (continued)

L0913028-03: 186%/206%

L0913028-04: 184%/198%

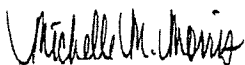
The dual column RPD for L0913028-04 is above the acceptance criteria for Aroclor 1242; however, no obvious column interferences are present. The results have been qualified with a "P".

The surrogate recovery for the WG380273-1 Method Blank, associated with L0913028-01 through -04, is outside the individual acceptance criteria for 2,4,5,6-Tetrachloro-m-xylene (170%), but within the overall method allowances. The results of the original analysis are reported.

The surrogate recovery for the WG380273-3 LCSD, associated with L0913028-01 through -04, is outside the individual acceptance criteria for 2,4,5,6-Tetrachloro-m-xylene (166%), but within the overall method allowances. The results of the original analysis are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Title: Technical Director/Representative

Date: 09/23/09

ORGANICS

PCBS

Project Name: T. MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0913028
Report Date: 09/23/09

SAMPLE RESULTS

Lab ID: L0913028-01
Client ID: 091609-01
Sample Location: UMASS AMHERST
Matrix: Solid
Analytical Method: 1,8082
Analytical Date: 09/22/09 20:12
Analyst: JC
Percent Solids: 99%

Date Collected: 09/16/09 08:15
Date Received: 09/17/09
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 09/17/09 17:38
Cleanup Method1: EPA 3665A
Cleanup Date1: 09/21/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
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PCB by GC - Westborough Lab

Aroclor 1016	ND		ug/kg	504	5
Aroclor 1221	ND		ug/kg	504	5
Aroclor 1232	ND		ug/kg	504	5
Aroclor 1242	5270		ug/kg	504	5
Aroclor 1248	ND		ug/kg	504	5
Aroclor 1254	612		ug/kg	504	5
Aroclor 1260	ND		ug/kg	504	5
Aroclor 1262	ND		ug/kg	504	5
Aroclor 1268	ND		ug/kg	504	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	164		30-150	A
Decachlorobiphenyl	73		30-150	A
2,4,5,6-Tetrachloro-m-xylene	173		30-150	B
Decachlorobiphenyl	85		30-150	B

Project Name: T. MURPHY-DUBOIS

Lab Number: L0913028

Project Number: T-0163-1-02

Report Date: 09/23/09

SAMPLE RESULTS

Lab ID: L0913028-02
 Client ID: 091609-02
 Sample Location: UMASS AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/22/09 20:24
 Analyst: JC
 Percent Solids: 96%

Date Collected: 09/16/09 08:30
 Date Received: 09/17/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/17/09 17:38
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/21/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1016	ND		ug/kg	519	5
Aroclor 1221	ND		ug/kg	519	5
Aroclor 1232	ND		ug/kg	519	5
Aroclor 1242	2920		ug/kg	519	5
Aroclor 1248	ND		ug/kg	519	5
Aroclor 1254	ND		ug/kg	519	5
Aroclor 1260	ND		ug/kg	519	5
Aroclor 1262	ND		ug/kg	519	5
Aroclor 1268	ND		ug/kg	519	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	97		30-150	A
Decachlorobiphenyl	68		30-150	A
2,4,5,6-Tetrachloro-m-xylene	106		30-150	B
Decachlorobiphenyl	74		30-150	B

Project Name: T. MURPHY-DUBOIS
 Project Number: T-0163-1-02

Lab Number: L0913028
 Report Date: 09/23/09

SAMPLE RESULTS

Lab ID: L0913028-03
 Client ID: 091609-03
 Sample Location: UMASS AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/22/09 20:36
 Analyst: JC
 Percent Solids: 99%

Date Collected: 09/16/09 08:50
 Date Received: 09/17/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/17/09 17:38
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/21/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1016	ND		ug/kg	505	5
Aroclor 1221	ND		ug/kg	505	5
Aroclor 1232	ND		ug/kg	505	5
Aroclor 1242	ND		ug/kg	505	5
Aroclor 1248	ND		ug/kg	505	5
Aroclor 1254	ND		ug/kg	505	5
Aroclor 1260	ND		ug/kg	505	5
Aroclor 1262	ND		ug/kg	505	5
Aroclor 1268	ND		ug/kg	505	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	186		30-150	A
Decachlorobiphenyl	86		30-150	A
2,4,5,6-Tetrachloro-m-xylene	206		30-150	B
Decachlorobiphenyl	92		30-150	B

Project Name: T. MURPHY-DUBOIS

Lab Number: L0913028

Project Number: T-0163-1-02

Report Date: 09/23/09

SAMPLE RESULTS

Lab ID: L0913028-04
 Client ID: 091609-04
 Sample Location: UMASS AMHERST
 Matrix: Solid
 Analytical Method: 1,8082
 Analytical Date: 09/22/09 20:49
 Analyst: JC
 Percent Solids: 94%

Date Collected: 09/16/09 09:00
 Date Received: 09/17/09
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 09/17/09 17:38
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/21/09

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB by GC - Westborough Lab					
Aroclor 1016	ND		ug/kg	530	5
Aroclor 1221	ND		ug/kg	530	5
Aroclor 1232	ND		ug/kg	530	5
Aroclor 1242	740	P	ug/kg	530	5
Aroclor 1248	ND		ug/kg	530	5
Aroclor 1254	ND		ug/kg	530	5
Aroclor 1260	ND		ug/kg	530	5
Aroclor 1262	ND		ug/kg	530	5
Aroclor 1268	ND		ug/kg	530	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	184		30-150	A
Decachlorobiphenyl	84		30-150	A
2,4,5,6-Tetrachloro-m-xylene	198		30-150	B
Decachlorobiphenyl	88		30-150	B

Project Name: T. MURPHY-DUBOIS

Lab Number: L0913028

Project Number: T-0163-1-02

Report Date: 09/23/09

Method Blank Analysis

Batch Quality Control

Analytical Method: 1,8082
 Analytical Date: 09/22/09 21:37
 Analyst: JC

Extraction Method: EPA 3540C
 Extraction Date: 09/17/09 17:38
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 09/21/09

Parameter	Result	Qualifier	Units	RDL
PCB by GC - Westborough Lab for sample(s): 01-04 Batch: WG380273-1				
Aroclor 1016	ND		ug/kg	100
Aroclor 1221	ND		ug/kg	100
Aroclor 1232	ND		ug/kg	100
Aroclor 1242	ND		ug/kg	100
Aroclor 1248	ND		ug/kg	100
Aroclor 1254	ND		ug/kg	100
Aroclor 1260	ND		ug/kg	100
Aroclor 1262	ND		ug/kg	100
Aroclor 1268	ND		ug/kg	100

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	147		30-150	A
Decachlorobiphenyl	76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	170		30-150	B
Decachlorobiphenyl	80		30-150	B

Lab Control Sample Analysis

Project Name: T. MURPHY-DUBOIS
 Project Number: T-0163-1-02
 Lab Number: L0913028
 Report Date: 09/23/09
 Batch Quality Control

Parameter	LCS %Recovery	LCS %Recovery	LCS %Recovery	%Recovery Limits	RPD	RPD Limits
PCB by GC - Westborough Lab Associated sample(s): 01-04 Batch: WG380273-2 WG380273-3						
Aroclor 1016	66	85	40-140	25	50	
Aroclor 1260	62	82	40-140	28	50	

Surrogate	LCS %Recovery	Qualifier	LCS %Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	105		150		30-150	A
Decachlorobiphenyl	60		79		30-150	A
2,4,5,6-Tetrachloro-m-xylene	127		166		30-150	B
Decachlorobiphenyl	66		82		30-150	B

INORGANICS & MISCELLANEOUS

Project Name: T. MURPHY-DUBOIS

Lab Number: L0913028

Project Number: T-0163-1-02

Report Date: 09/23/09

SAMPLE RESULTS

Lab ID: L0913028-01
Client ID: 091609-01
Sample Location: UMASS AMHERST
Matrix: Solid

Date Collected: 09/16/09 08:15
Date Received: 09/17/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	99		%	0.10	1	-	09/18/09 15:25	30,2540G	TL



Project Name: T. MURPHY-DUBOIS

Project Number: T-0163-1-02

Lab Number: L0913028

Report Date: 09/23/09

SAMPLE RESULTS

Lab ID: L0913028-02

Client ID: 091609-02

Sample Location: UMASS AMHERST

Matrix: Solid

Date Collected: 09/16/09 08:30

Date Received: 09/17/09

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	96		%	0.10	1	-	09/18/09 15:25	30,2540G	TL



Project Name: T. MURPHY-DUBOIS

Lab Number: L0913028

Project Number: T-0163-1-02

Report Date: 09/23/09

SAMPLE RESULTS

Lab ID: L0913028-03
Client ID: 091609-03
Sample Location: UMASS AMHERST
Matrix: Solid

Date Collected: 09/16/09 08:50
Date Received: 09/17/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	99		%	0.10	1	-	09/18/09 15:25	30,2540G	TL



Project Name: T. MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0913028
Report Date: 09/23/09

SAMPLE RESULTS

Lab ID: L0913028-04
Client ID: 091609-04
Sample Location: UMASS AMHERST
Matrix: Solid

Date Collected: 09/16/09 09:00
Date Received: 09/17/09
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total	94		%	0.10	1	-	09/18/09 15:25	30,2540G	TL



Lab Duplicate Analysis

Batch Quality Control

Project Name: T. MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0913028
Report Date: 09/23/09

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s):	01-04 QC Batch ID: WG380426-1	QC Sample: L0912105-27	Client ID: DUP Sample		
Solids, Total	85	86	%	1	20

Project Name: T. MURPHY-DUBOIS

Lab Number: L0913028

Project Number: T-0163-1-02

Report Date: 09/23/09

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L0913028-01A	Amber 250ml unpreserved	A	N/A	3.5	Y	Absent	PCB-8082(14),TS(7)
L0913028-02A	Amber 250ml unpreserved	A	N/A	3.5	Y	Absent	PCB-8082(14),TS(7)
L0913028-03A	Amber 250ml unpreserved	A	N/A	3.5	Y	Absent	PCB-8082(14),TS(7)
L0913028-04A	Amber 250ml unpreserved	A	N/A	3.5	Y	Absent	PCB-8082(14),TS(7)

Project Name: T. MURPHY-DUBOIS

Lab Number: L0913028

Project Number: T-0163-1-02

Report Date: 09/23/09

GLOSSARY

Acronyms

- EPA - Environmental Protection Agency.
- LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
- LCSD - Laboratory Control Sample Duplicate: Refer to LCS.
- MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
- MSD - Matrix Spike Sample Duplicate: Refer to MS.
- NA - Not Applicable.
- NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
- ND - Not detected at the reported detection limit for the sample.
- NI - Not Ignitable.
- RDL - Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
- RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

- A - Spectra identified as "Aldol Condensation Product".
- B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
- D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- P - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q - The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RDL. (Metals only.)
- R - Analytical results are from sample re-analysis.
- RE - Analytical results are from sample re-extraction.
- J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

Report Format: Data Usability Report



Project Name: T. MURPHY-DUBOIS
Project Number: T-0163-1-02

Lab Number: L0913028
Report Date: 09/23/09

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.
- 30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certificate/Approval Program Summary

Last revised August 27, 2009 - Westboro Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0574. **NELAP Accredited Solid Waste/Soil.**

Drinking Water (Inorganic Parameters: Color, pH, Turbidity, Conductivity, Alkalinity, Chloride, Free Residual Chlorine, Fluoride, Calcium Hardness, Sulfate, Nitrate, Nitrite, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Dissolved Solids, Total Organic Carbon, Total Cyanide, Perchlorate. Organic Parameters: Haloacetic Acids, Volatile Organics 524.2, Total Trihalomethanes 524.2, 1,2-Dibromo-3-chloropropane (DBCP), Ethylene Dibromide (EDB).)

Wastewater/Non-Potable Water (Inorganic Parameters: Color, pH, Conductivity, Acidity, Alkalinity, Chloride, Total Residual Chlorine, Fluoride, Total Hardness, Calcium Hardness, Silica, Sulfate, Sulfide, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), BOD, CBOD, COD, TOC, Total Cyanide, Phenolics, Foaming Agents (MBAS), Bromide, Oil and Grease. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: Lead in Paint, pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), Reactivity. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Extractable Petroleum Hydrocarbons (ETPH), Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Volatile Organics, Acid Extractables (Phenols), 3,3'-Dichlorobenzidine, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Maine Department of Human Services Certificate/Lab ID: 2009024.

Drinking Water (Inorganic Parameters: SM9215B, 9221E, 9222B, 9222D, 9223B, EPA 180.1, 300.0, 353.2, SM2130B, 2320B, 4500CI-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1. Organic Parameters: 504.1, 524.2, SM 6251B.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, Lachat 10-107-06-1-B, SM2320B, 2340B, 2510B, 2540C, 2540D, 426C, 4500CI-D, 4500CI-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NH3-H, 4500NO3-F, 4500P-B.5, 4500P-E, 5210B, 5220D, 5310C, EPA 200.7, 200.8, 245.1. Organic Parameters: 608, 624.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.

Drinking Water

Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl)

(EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Nitrite-N, Fluoride, Sulfate)

353.2 for: Nitrate-N, Nitrite-N; SM4500NO3-F, 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, 2320B, SM2540C, SM4500H-B.

Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics)

(504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), SM6251B, 314.0.

Non-Potable Water

Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn)

(EPA 200.7 for: Al,Sb,As,Be,Cd,Cr,Co,Cu,Fe,Pb,Mn,Mo,Ni,Se,Ag,Sr,Tl,Ti,V,Zn,Ca,Mg,Na,K)

245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2540B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Nitrate-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-B,C-Titr, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CN-CE, 2540D, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1

Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics)

(608 for: Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, PCB-Water)

600/4-81-045-PCB-Oil

Drinking Water

Microbiology Parameters: SM9215B; MF-SM9222B; ENZ. SUB. SM9223; EC-SM9221E; MF-SM9222D;

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM6215B, 9222B, 9223B Colilert, EPA 200.7, 200.8, 245.2, 120.1, 300.0, 314.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 331.0. *Organic Parameters:* 504.1, 524.2, SM6251B.)

Non-Potable Water (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 200.7, 200.8, 245.1, 245.2, SW-846 6010B, 6020, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 351.1, 353.2, 420.1, 1664A, SW-846 9010, 9030, 9040B, SM426C, SM2310B, 2540B, 2540D, 4500H+B, 4500NH3-H, 4500NH3-E, 4500NO2-B, 4500P-E, 4500-S2-D, 5210B, 2320B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-117-07-1-B, LACHAT 10-107-06-1-B, LACHAT 10-107-04-1-C, LACHAT 10-107-04-1-J, LACHAT 10-117-07-1-A, SM4500CL-E, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D. *Organic Parameters:* SW-846 3005A, 3015A, 3510C, 5030B, 8021B, 8260B, 8270C, 8330, EPA 624, 625, 608, SW-846 8082, 8081A.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6010B, 7196A, 7471A, 7.3.3.2, 7.3.4.2, 1010, 1030, 9010, 9012A, 9014, 9030B, 9040, 9045C, 9050C, 1311, 3005A, 3050B, 3051A. *Organic Parameters:* SW-846 3540C, 3545, 3580A, 5030B, 5035, 8021B, 8260B, 8270C, 8330, 8151A, 8082, 8081A.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 2540C, 2320B, 314.0, SM2120B, 2510B, 5310C, SM4500H-B, EPA 200.8, 245.2. *Organic Parameters:* 504.1, SM6251B, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500Cl-D, EPA 300.0, SM2120B, SM4500F-BC, EPA 200.7, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM15 426C, SM9221CE, 9222D, 9221B, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, SM5210E, SW-846 3015, 6020, 7470A, 5540C, 4500H-B, EPA 200.8, SM3500Cr-D, EPA 245.1, 245.2, SW-846 9040B, 3005A, EPA 6010B, 7196A, SW-846 9010B, 9030B. *Organic Parameters:* SW-846 8260B, 8270C, 3510C, EPA 608, 624, 625, SW-846 5030B, 8021B, 8081A, 8082, 8151A, 8330, NJ OQA-QAM-025 Rev.7.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 9040B, 3005A, 6010B, 7196A, 5030B, 9010B, 9030B, 1030, 1311, 3050B, 3051, 7471A, 9014, 9012A, 9045C, 9050A, 9065. *Organic Parameters:* SW-846 8021B, 8081A, 8082, 8151A, 8330, 8260B, 8270C, 1311, 1312, 3540C, 3545, 3550B, 3580A, 5035L, 5035H, NJ OQA-QAM-025 Rev.7.)

New York Department of Health Certificate/Lab ID: 11148. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM9223B, 9222B, 8215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 314.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500H-B, 4500NO3-F, 2540C, EPA 120.1, SM 2510B. *Organic Parameters:* EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, LACHAT 10-117-07-1A or B, SM4500Cl-E, 4500F-C, SM15 426C, EPA 350.1, LACHAT 10-107-06-1-B, SM4500NH3-H, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, LACHAT 10-107-041-C, SM4500-NO30F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6020, EPA 7196A, SM3500Cr-D, EPA 245.1, 245.2, 7470A, SM2120B, SM4500-CN-E LACHAT 10-204-00-1-A, EPA 9040B, SM4500-HB, EPA 1664A, SM5310C, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 3015. *Organic Parameters:* EPA 624, 8260B, 8270C, 625, 608, 8081A, 8151A, 8330, 8082, 8021B, EPA 3510C, 5030B, 9010B, 9030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, 1010, 1030, SW-846 Ch 7 Sec 7.3, EPA 6010B, 7196A, 7471A, 9012A, 9014, 9040B, 9045C, 9065, 9050, EPA 1311, 3005A, 3050B, 9010B, 9030B. *Organic Parameters:* EPA 8260B, 8270C, 8081A, 8151A, 8330, 8082, 8021B, 3540C, 3545, 3580, 5030B, 5035.)

Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. NELAP Accredited.

Non-Potable Water (Organic Parameters: EPA 3510C, 625, 608, 8081A, 8082, 8151A, 8270C, 8330)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010, 1030, 1311, 3050B, 3051, 6010B, EPA 7.3.3.2, EPA 7.3.4.2, 7196A, 7471A, 9010B, 9012A, 9014, 9040B, 9045C, 9050, 9065. *Organic Parameters:* 3540C, 3545, 3580A, 5035, 8021B, 8081A, 8082, 8151A, 8260B, 8270C, 8330)

Rhode Island Department of Health Certificate/Lab ID: LAO00065. NELAP Accredited via NY-DOH.

Refer to MA-DEP Certificate for Potable and Non-Potable Water.

Refer to NY-DOH Certificate for Potable and Non-Potable Water.

Utah Department of Health Certificate/Lab ID: AAMA. NELAP Accredited.

Non-Potable Water (Inorganic Parameters: Chloride EPA 300.0)

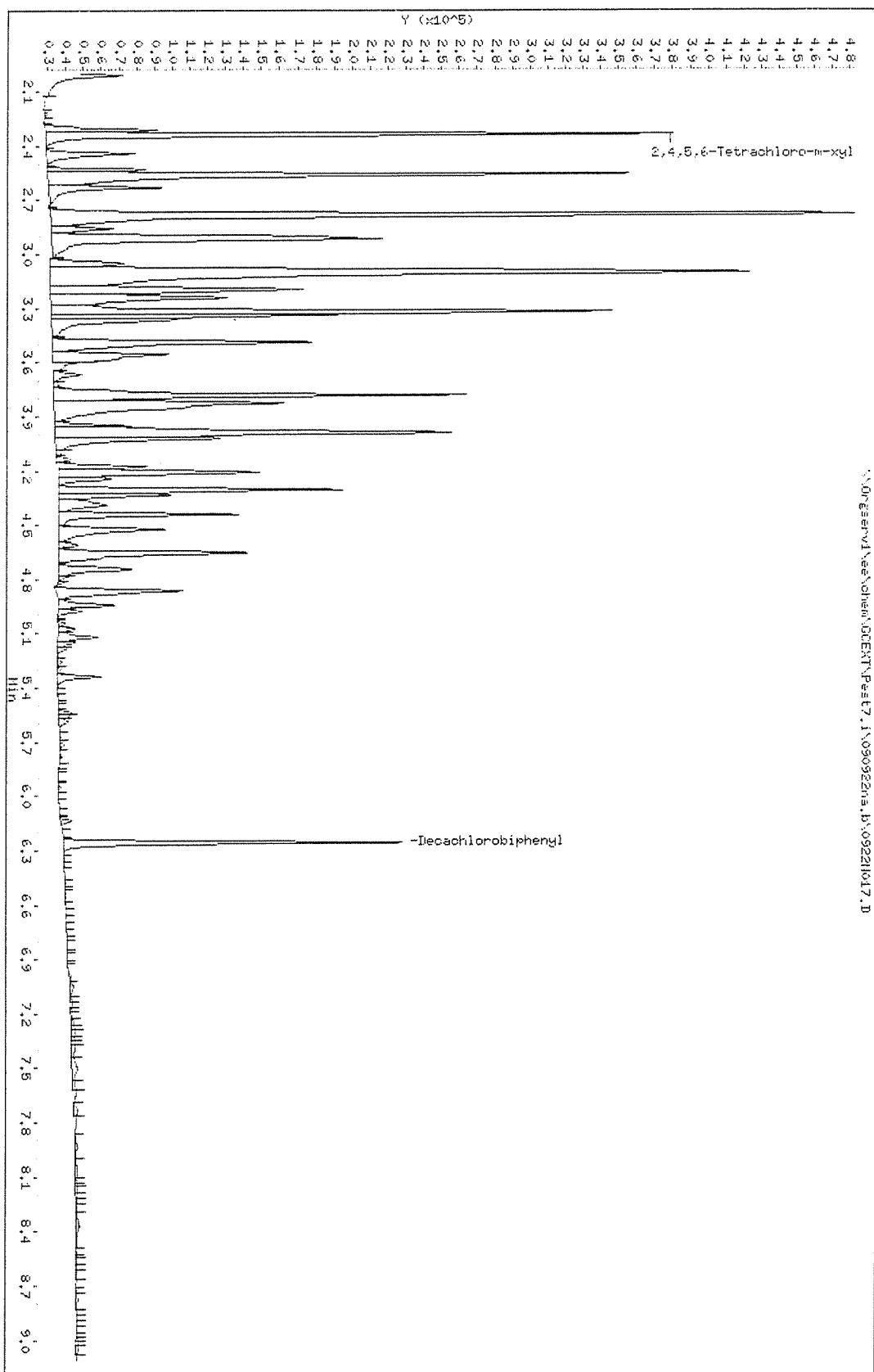
Non-NELAC Approved Analytes

The following analytes are considered non-NELAC certifiable parameters: 8260B: Freon-113, Diisopropyl Ether, 8330A: PETN; Picric Acid; Nitroglycerine; 2,6-DANT; 2,4-DANT)

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Sample Info: 10913028-01.4, fvs
Column Phase: RTX-1701

Instrument: Peak7.1
Operator: jo
Column diameter: 0.32

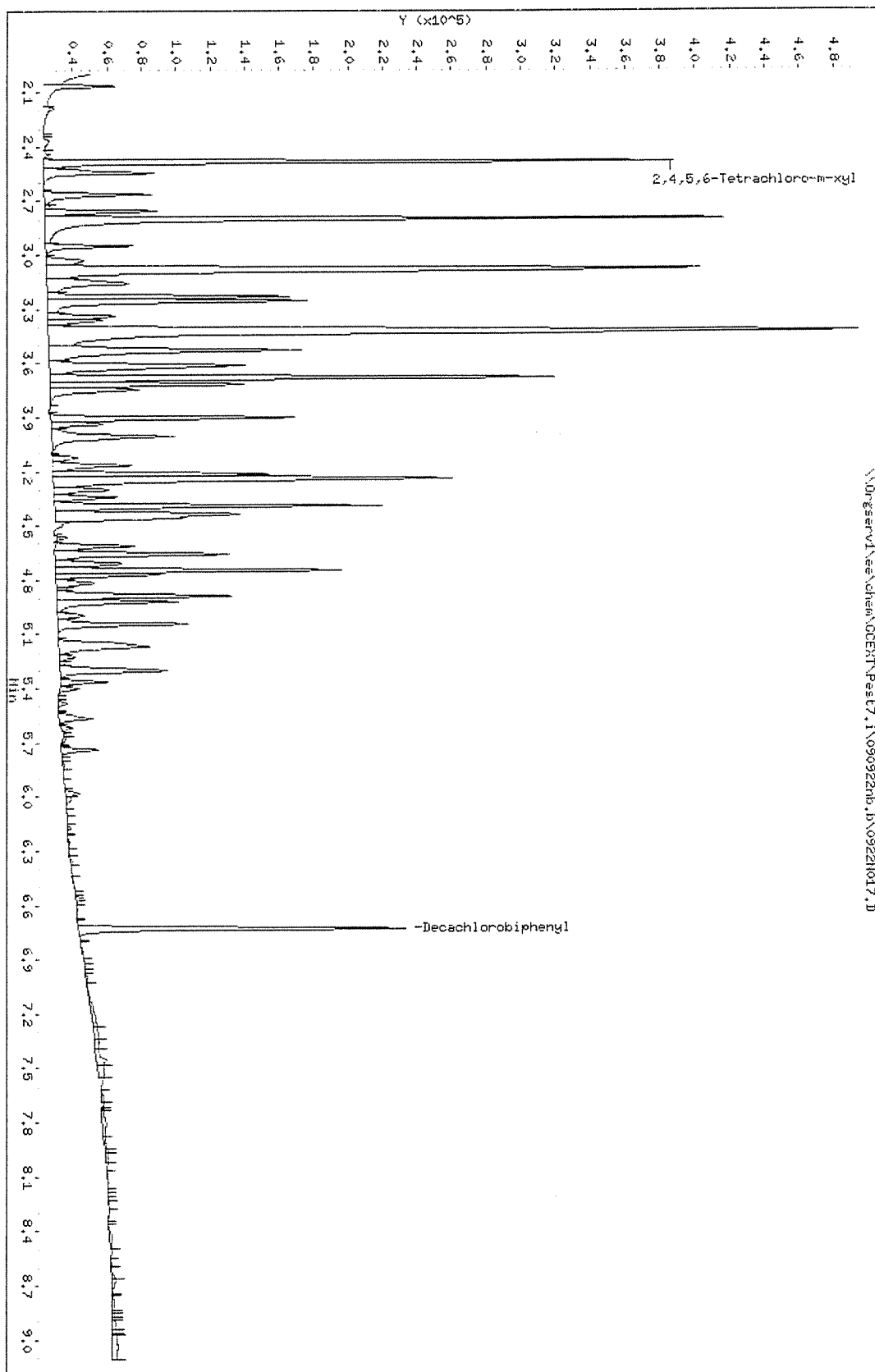
Page 5



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Instrument: Pest7.1
Operator: jo
Column diameter: 0.32

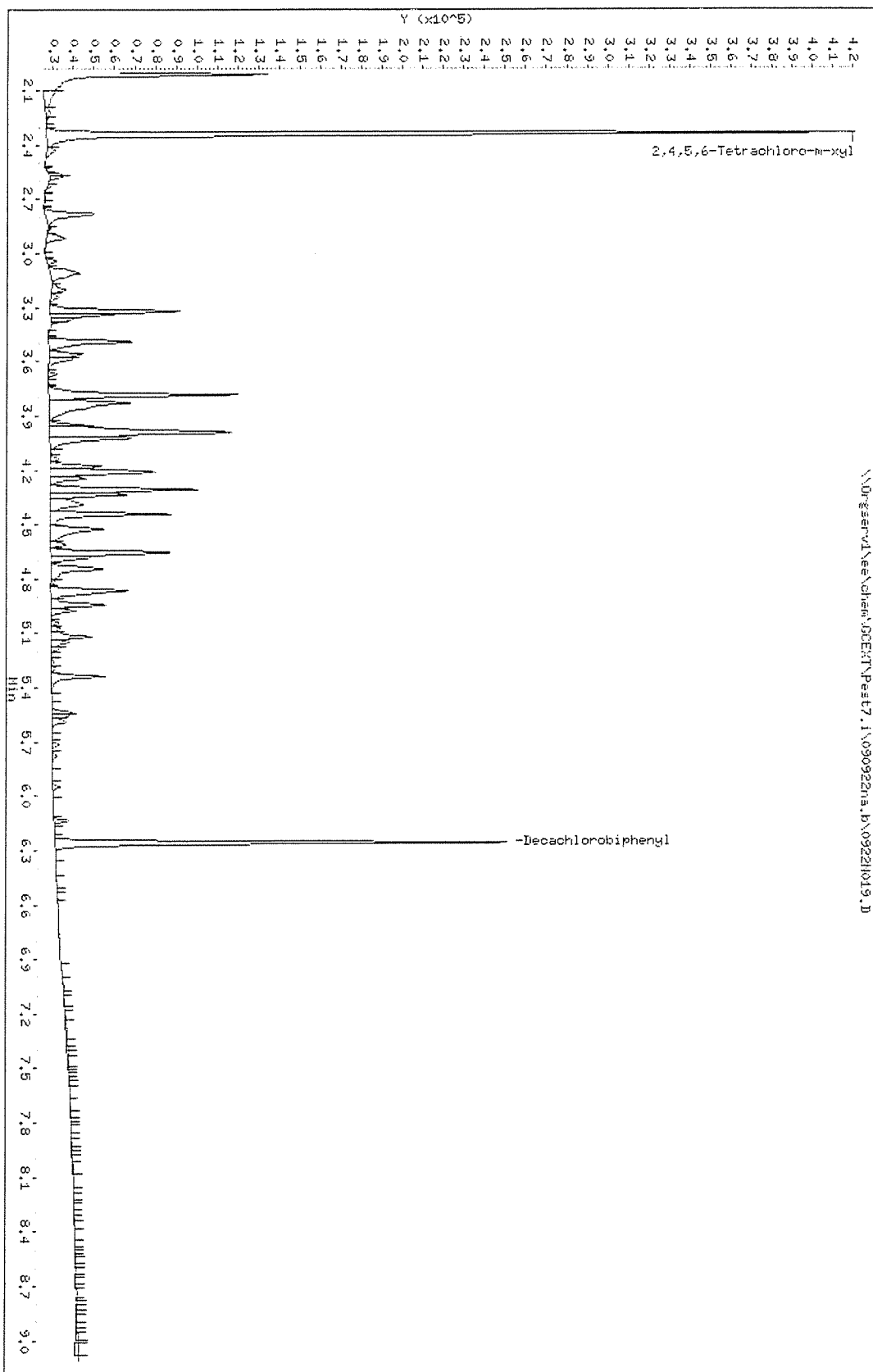
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Instrument: Pest7.1
Operator: jo
Column diameter: 0.32

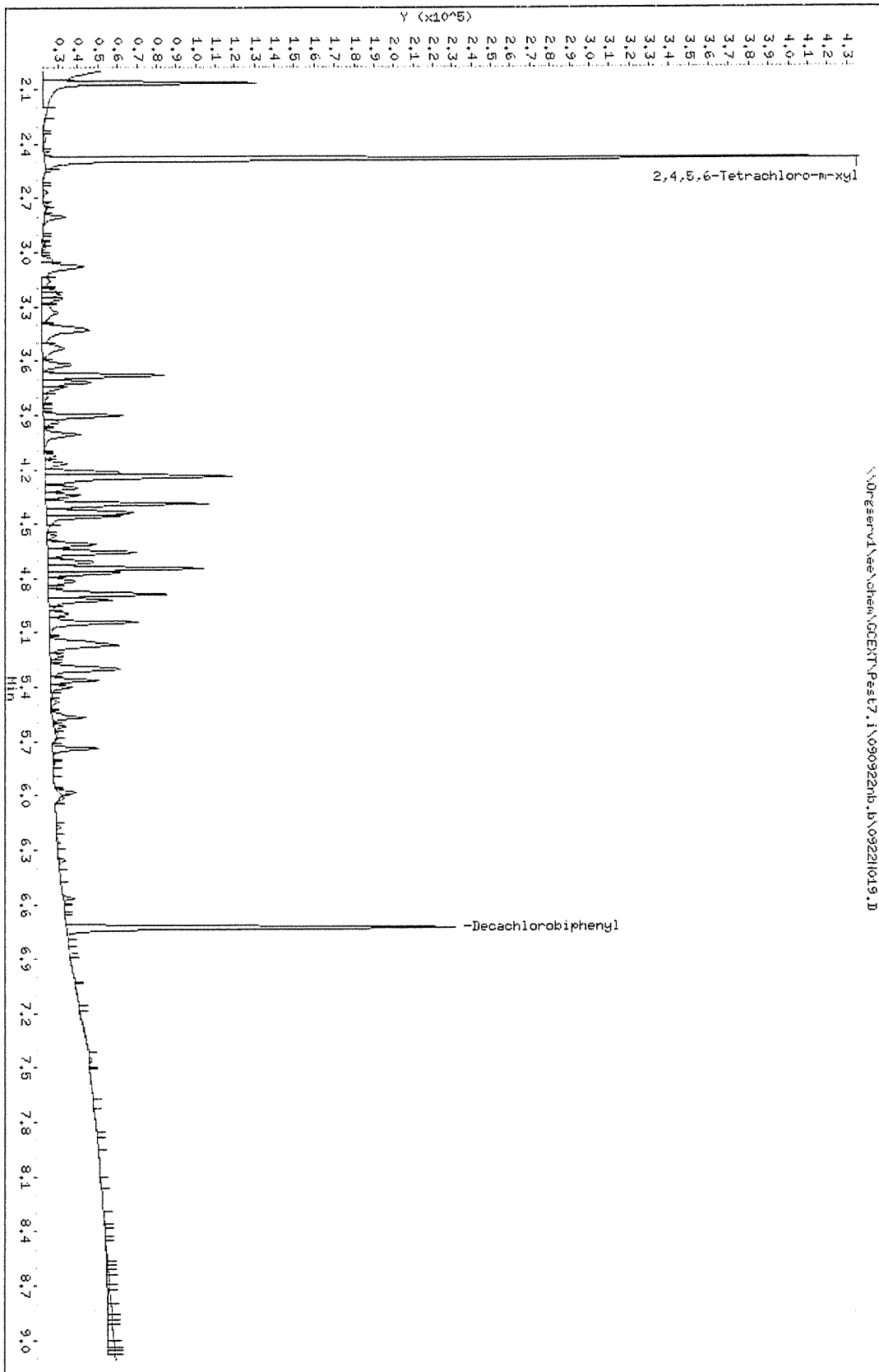
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Operator: jo
Column diameter: 0.32

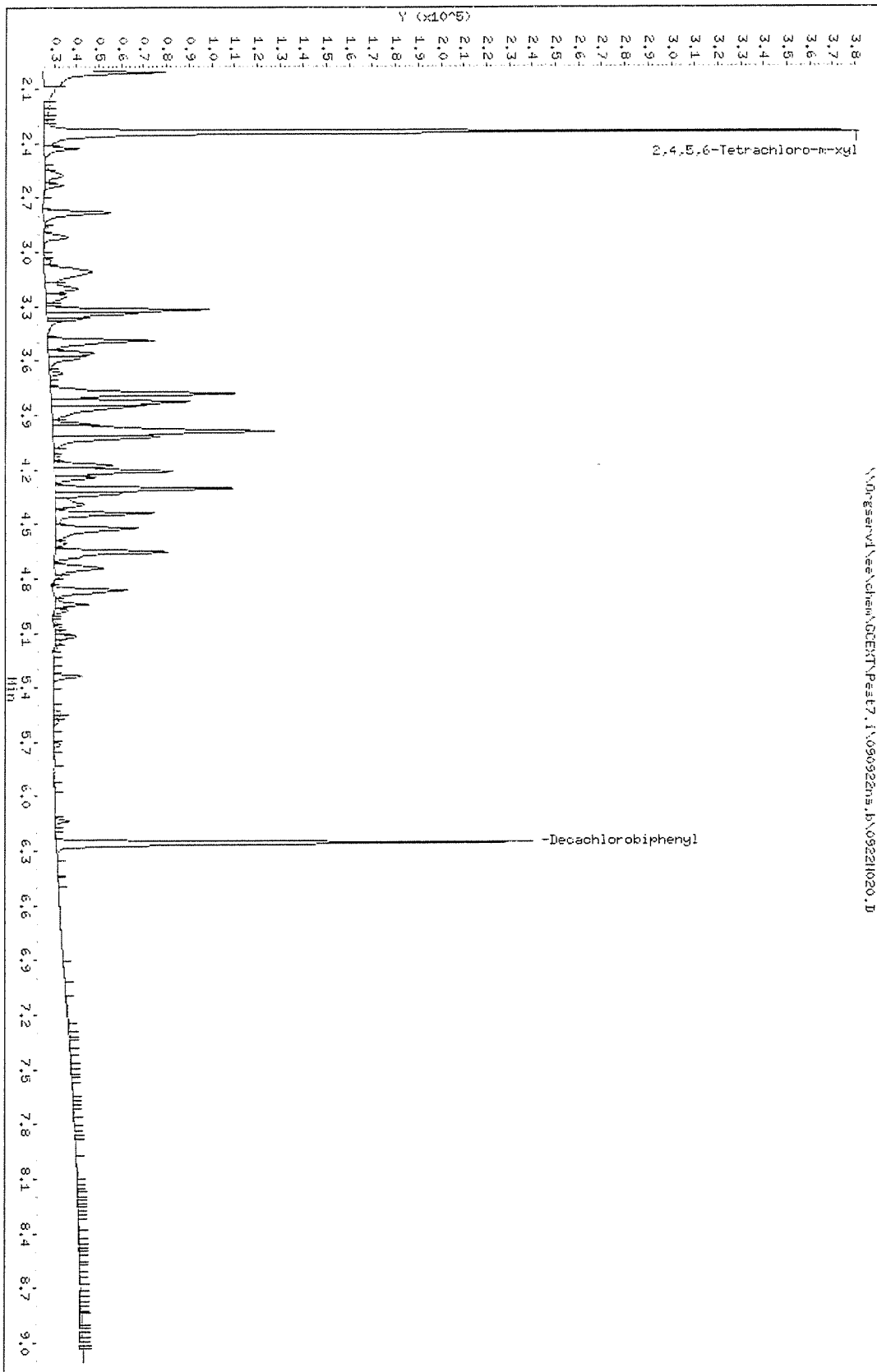
Page 5



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Column phase: Rtx-1701

Instrument: Peak7.1
Operator: jo
Column diameter: 0.32

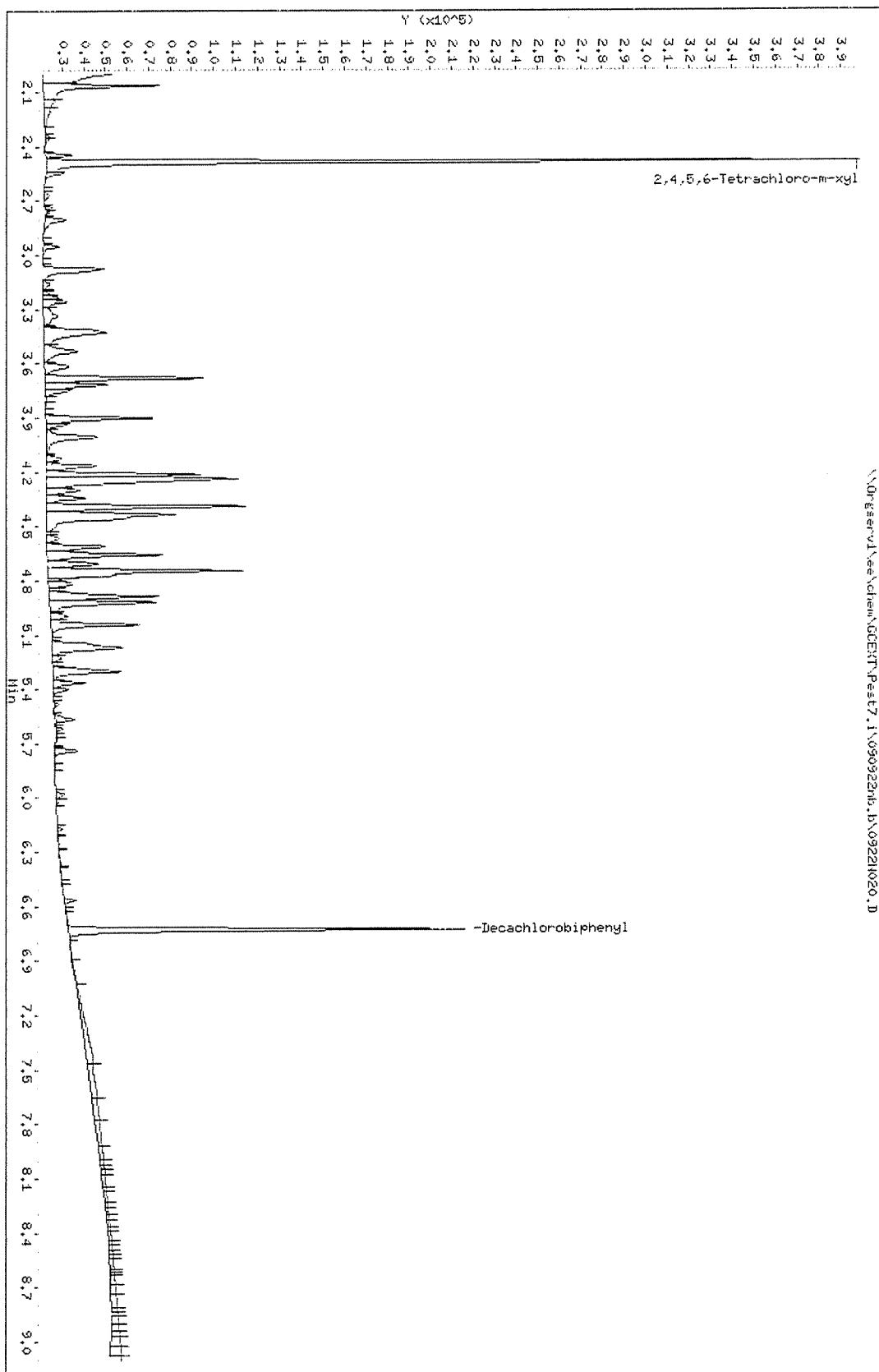
Page 5



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Client ID:
Sample Info: 10913028-04.4, fv5
Column phase: HP-5

Instrument: Peak7.1
Operator: jo
Column diameter: 0.32

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ANALYTICAL REPORT

Lab Number: L1000822

Client: Woodard & Curran
35 New England Business Center
Suite 180
Andover, MA 01810

ATTN: Jeff Hamel

Project Name: DUBOIS LIBRARY

Project Number: 222955

Report Date: 01/25/10

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com



Project Name: DUBOIS LIBRARY
Project Number: 222955

Lab Number: L1000822
Report Date: 01/25/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1000822-01	DL-18E-IAS-082	AMHERST, MA	01/15/10 11:23
L1000822-02	DL-15E-IAS-085	AMHERST, MA	01/15/10 11:47
L1000822-03	DL-4E-IAS-088	AMHERST, MA	01/15/10 12:05

Project Name: DUBOIS LIBRARY
Project Number: 222955

Lab Number: L1000822
Report Date: 01/25/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Title: Technical Director/Representative

Date: 01/25/10

ORGANICS

SEMIVOLATILES

Project Name: DUBOIS LIBRARY**Lab Number:** L1000822**Project Number:** 222955**Report Date:** 01/25/10**SAMPLE RESULTS**

Lab ID: L1000822-01
Client ID: DL-18E-IAS-082
Sample Location: AMHERST, MA
Matrix: Air Cartridge
Analytical Method: 1,8270C-SIM
Analytical Date: 01/25/10 09:21
Analyst: JS

Date Collected: 01/15/10 11:23
Date Received: 01/15/10
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 01/18/10 11:26

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB Homologs by GC/MS-SIM - Mansfield Lab					
Monochlorobiphenyls	11.2		ng/cart	10.0	10
Dichlorobiphenyls	13.9		ng/cart	10.0	10
Trichlorobiphenyls	42.6		ng/cart	10.0	10
Tetrachlorobiphenyls	51.1		ng/cart	10.0	10
Pentachlorobiphenyls	55.8		ng/cart	10.0	10
Hexachlorobiphenyls	18.6		ng/cart	10.0	10
Heptachlorobiphenyls	ND		ng/cart	10.0	10
Octachlorobiphenyls	ND		ng/cart	10.0	10
Nonachlorobiphenyls	ND		ng/cart	10.0	10
Decachlorobiphenyl	ND		ng/cart	10.0	10
Total Homologs	193		ng/cart	10.0	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Cl3-BZ#19-C13	92		50-125
Cl8-BZ#202-C13	84		50-125

Project Name: DUBOIS LIBRARY**Lab Number:** L1000822**Project Number:** 222955**Report Date:** 01/25/10**SAMPLE RESULTS**

Lab ID: L1000822-02
Client ID: DL-15E-IAS-085
Sample Location: AMHERST, MA
Matrix: Air Cartridge
Analytical Method: 1,8270C-SIM
Analytical Date: 01/25/10 10:16
Analyst: JS

Date Collected: 01/15/10 11:47
Date Received: 01/15/10
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 01/18/10 11:26

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
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PCB Homologs by GC/MS-SIM - Mansfield Lab

Monochlorobiphenyls	ND		ng/cart	10.0	10
Dichlorobiphenyls	11.7		ng/cart	10.0	10
Trichlorobiphenyls	26.6		ng/cart	10.0	10
Tetrachlorobiphenyls	42.7		ng/cart	10.0	10
Pentachlorobiphenyls	49.6		ng/cart	10.0	10
Hexachlorobiphenyls	15.6		ng/cart	10.0	10
Heptachlorobiphenyls	ND		ng/cart	10.0	10
Octachlorobiphenyls	ND		ng/cart	10.0	10
Nonachlorobiphenyls	ND		ng/cart	10.0	10
Decachlorobiphenyl	ND		ng/cart	10.0	10
Total Homologs	146		ng/cart	10.0	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Cl3-BZ#19-C13	85		50-125
Cl8-BZ#202-C13	72		50-125

Project Name: DUBOIS LIBRARY**Lab Number:** L1000822**Project Number:** 222955**Report Date:** 01/25/10**SAMPLE RESULTS**

Lab ID: L1000822-03
Client ID: DL-4E-IAS-088
Sample Location: AMHERST, MA
Matrix: Air Cartridge
Analytical Method: 1,8270C-SIM
Analytical Date: 01/25/10 11:10
Analyst: JS

Date Collected: 01/15/10 12:05
Date Received: 01/15/10
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 01/18/10 11:26

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
PCB Homologs by GC/MS-SIM - Mansfield Lab					
Monochlorobiphenyls	14.8		ng/cart	10.0	10
Dichlorobiphenyls	15.1		ng/cart	10.0	10
Trichlorobiphenyls	28.5		ng/cart	10.0	10
Tetrachlorobiphenyls	54.6		ng/cart	10.0	10
Pentachlorobiphenyls	64.7		ng/cart	10.0	10
Hexachlorobiphenyls	20.6		ng/cart	10.0	10
Heptachlorobiphenyls	ND		ng/cart	10.0	10
Octachlorobiphenyls	ND		ng/cart	10.0	10
Nonachlorobiphenyls	ND		ng/cart	10.0	10
Decachlorobiphenyl	ND		ng/cart	10.0	10
Total Homologs	198		ng/cart	10.0	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Cl3-BZ#19-C13	98		50-125
Cl8-BZ#202-C13	86		50-125

Project Name: DUBOIS LIBRARY
Project Number: 222955

Lab Number: L1000822
Report Date: 01/25/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270C-SIM
Analytical Date: 01/25/10 07:33
Analyst: JS

Extraction Method: EPA 3540C
Extraction Date: 01/18/10 11:26

Parameter	Result	Qualifier	Units	RDL
PCB Homologs by GC/MS-SIM - Mansfield Lab for sample(s): 01-03 Batch: WG397016-1				
Monochlorobiphenyls	ND		ng/cart	10.0
Dichlorobiphenyls	ND		ng/cart	10.0
Trichlorobiphenyls	ND		ng/cart	10.0
Tetrachlorobiphenyls	ND		ng/cart	10.0
Pentachlorobiphenyls	ND		ng/cart	10.0
Hexachlorobiphenyls	ND		ng/cart	10.0
Heptachlorobiphenyls	ND		ng/cart	10.0
Octachlorobiphenyls	ND		ng/cart	10.0
Nonachlorobiphenyls	ND		ng/cart	10.0
Decachlorobiphenyl	ND		ng/cart	10.0
Total Homologs	ND		ng/cart	10.0

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Cl3-BZ#19-C13	108		50-125
Cl8-BZ#202-C13	95		50-125

Lab Control Sample Analysis

Batch Quality Control

Project Name: DUBOIS LIBRARY

Project Number: 222955

Lab Number: L1000822

Report Date: 01/25/10

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PCB Homologs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-03 Batch: WG397016-2								
Cl1-BZ#1	96		-		40-140	-		30
CL1-BZ#3	101		-		40-140	-		30
Cl2-BZ#4/#10	112		-		40-140	-		30
Cl2-BZ#5/#8	98		-		40-140	-		30
Cl3-BZ#19	99		-		40-140	-		30
Cl3-BZ#18	94		-		40-140	-		30
Cl2-BZ#15	100		-		40-140	-		30
Cl4-BZ#54	102		-		40-140	-		30
Cl3-BZ#29	92		-		40-140	-		30
Cl4-BZ#50	106		-		40-140	-		30
Cl3-BZ#28/#31	92		-		40-140	-		30
Cl4-BZ#45	114		-		40-140	-		30
Cl4-BZ#52	100		-		40-140	-		30
Cl4-BZ#43/#49	105		-		40-140	-		30
Cl4-Bz#47/#48	97		-		40-140	-		30
Cl5-BZ#104	100		-		40-140	-		30
Cl4-BZ#44	98		-		40-140	-		30
Cl3-BZ#37	82		-		40-140	-		30
Cl4-BZ#74	90		-		40-140	-		30
Cl6-BZ#155	102		-		40-140	-		30
Cl4-BZ#70	89		-		40-140	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: DUBOIS LIBRARY

Project Number: 222955

Lab Number: L1000822

Report Date: 01/25/10

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PCB Homologs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-03 Batch: WG397016-2								
Cl4-BZ#66	90		-		40-140	-		30
Cl5-BZ#95	86		-		40-140	-		30
Cl4-BZ#56/#60	86		-		40-140	-		30
Cl5-BZ#101/#84	99		-		40-140	-		30
Cl5-BZ#99	93		-		40-140	-		30
Cl6-BZ#154	88		-		40-140	-		30
Cl5-BZ#110	79		-		40-140	-		30
Cl4-BZ#81	85		-		40-140	-		30
Cl6-BZ#151	92		-		40-140	-		30
Cl4-BZ#77	82		-		40-140	-		30
Cl5-BZ#123	84		-		40-140	-		30
Cl6-BZ#149	86		-		40-140	-		30
Cl7-BZ#188	80		-		40-140	-		30
Cl5-BZ#118	82		-		40-140	-		30
Cl6-BZ#146	90		-		40-140	-		30
Cl5-BZ#114	90		-		40-140	-		30
Cl6-BZ#153	86		-		40-140	-		30
Cl6-BZ#138/#163	78		-		40-140	-		30
Cl6-BZ#158	82		-		40-140	-		30
Cl5-BZ#105	72		-		40-140	-		30
Cl7-BZ#182/#187	83		-		40-140	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: DUBOIS LIBRARY

Project Number: 222955

Lab Number: L1000822

Report Date: 01/25/10

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PCB Homologs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-03 Batch: WG397016-2								
Cl7-BZ#183	92		-		40-140	-		30
Cl6-BZ#167/#128	85		-		40-140	-		30
Cl5-BZ#126	74		-		40-140	-		30
Cl7-BZ#174	96		-		40-140	-		30
Cl8-BZ#202	87		-		40-140	-		30
Cl7-BZ#177	90		-		40-140	-		30
Cl6-BZ#156	73		-		40-140	-		30
Cl6-BZ#157	78		-		40-140	-		30
Cl7-BZ#180	104		-		40-140	-		30
Cl7-BZ#170/#190	83		-		40-140	-		30
Cl8-BZ#201	94		-		40-140	-		30
Cl6-BZ#169	84		-		40-140	-		30
Cl9-BZ#208	104		-		40-140	-		30
Cl7-BZ#189	88		-		40-140	-		30
Cl8-BZ#195	92		-		40-140	-		30
Cl8-BZ#194	93		-		40-140	-		30
Cl8-BZ#205	94		-		40-140	-		30
Cl9-BZ#206	108		-		40-140	-		30
Cl10-BZ#209	112		-		40-140	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: DUBOIS LIBRARY

Project Number: 222955

Lab Number: L1000822

Report Date: 01/25/10

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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PCB Homologs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-03 Batch: WG397016-2

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Cl3-BZ#19-C13	97				50-125
Cl8-BZ#202-C13	91				50-125

Project Name: DUBOIS LIBRARY**Lab Number:** L1000822**Project Number:** 222955**Report Date:** 01/25/10**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L1000822-01A	PUF Air Cartridge - High or Low	A	NA	3	Y	Absent	A2-PCBHOMS-8270SIM(14)
L1000822-02A	PUF Air Cartridge - High or Low	A	NA	3	Y	Absent	A2-PCBHOMS-8270SIM(14)
L1000822-03A	PUF Air Cartridge - High or Low	A	NA	3	Y	Absent	A2-PCBHOMS-8270SIM(14)

*Hold days indicated by values in parentheses

Project Name: DUBOIS LIBRARY
Project Number: 222955

Lab Number: L1000822
Report Date: 01/25/10

GLOSSARY

Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
ND	- Not detected at the reported detection limit for the sample.
NI	- Not Ignitable.
RDL	- Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
D	- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	- Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
H	- The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
P	- The RPD between the results for the two columns exceeds the method-specified criteria.
Q	- The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RDL. (Metals only.)
R	- Analytical results are from sample re-analysis.
RE	- Analytical results are from sample re-extraction.
J	- Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

Report Format: Data Usability Report



Project Name: DUBOIS LIBRARY
Project Number: 222955

Lab Number: L1000822
Report Date: 01/25/10

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certificate/Approval Program Summary

Last revised December 15, 2009 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held. For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. *NELAP Accredited.*

Non-Potable Water (Inorganic Parameters: SM2320B, EPA 120.1, SM2510B, EPA 245.1, EPA 150.1, EPA 160.2, SM2540D, EPA 335.2, SM2540G, EPA 180.1. Organic Parameters: EPA 625, 608.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045, 9014. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. *NELAP Accredited.*

Non-Potable Water (Inorganic Parameters: EPA 120.1, 150.1, 160.2, 180.1, 200.8, 245.1, 310.1, 335.2, 608, 625, 1631, 3010, 3015, 3020, 6020, 9010, 9014, 9040, SM2320B, 2510B, 2540D, 2540G, 4500CN-E, 4500H-B, Organic Parameters: EPA 3510, 3580, 3630, 3640, 3660, 3665, 5030, 8015 (mod), 3570, 8081, 8082, 8260, 8270,)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7196, 7470, 7471, 7474, 9010, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015 (mod), EPA 3570, 1311, 3050, 3051, 3060, 3580, 3630, 3640, 3660, 3665, 5035, 8081, 8082, 8260, 8270.)

Biological Tissue (Inorganic Parameters: EPA 6020. Organic Parameters: EPA 3570, 3510, 3610, 3630, 3640, 8270.)

Maine Department of Human Services Certificate/Lab ID: MA0030.

Wastewater (Inorganic Parameters: EPA 120.1, 300.0, SM 2320, 2510B, 2540C, 2540D, EPA 245.1. Organic Parameters: 608, 624.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030.

Non-Potable Water (Inorganic Parameters: SM4500H+B. Organic Parameters: EPA 624.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. *NELAP Accredited.*

Non-Potable Water (Inorganic Parameters: EPA 200.8, 245.1, 1631E, 120.1, 150.1, 180.1, 310.1, 335.2, 160.2, SM2540D, 2540G, 4500CN-E, 4500H+B, 2320B, 2510B. Organic Parameters: EPA 625, 608.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. NELAP Accredited.

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, 6020, SM2320B, EPA 200.8, SM2540C, 2540D, 2540G, EPA 120.1, SM2510B, EPA 180.1, 245.1, 1631E, SW-846 9040B, 6020, 9010B, 9014 Organic Parameters: EPA 608, 625, SW-846 3510C, 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 9010B, 9014, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9045C, 9060. Organic Parameters: SW-846 3580A, 5030B, 3035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 3570, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610B, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. NELAP Accredited.

Non-Potable Water (Inorganic Parameters: EPA 310.1, SM2320B, EPA 365.2, 160.1, EPA 160.2, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 335.2, 9014, 150.1, 9040B, 120.1, SM2510B, EPA 376.2, 180.1, 9010B. Organic Parameters: EPA 624, 8260B, 8270C, 608, 8081A, 625, 8082, 3510C, 3511, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 9040B, 9045C, SW-846 Ch7 Sec 7.3, EPA 6020, 7196A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 3050B, 3580, 3050B, 3035, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Pennsylvania Department of Environmental Protection Certificate/Lab ID: 68-02089. NELAP Accredited.

Non-Potable Water (Organic Parameters: EPA 5030B, EPA 8260)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. NELAP Accredited via LA-DEQ.

Refer to MA-DEP Certificate for Non-Potable Water.

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. NELAP Accredited.

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9014, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Non-Potable Water (Inorganic Parameters: EPA 3005A, 3020, 6020, 245.1, 245.7, 1631E, 7470A, 7474, 9014, 120.1, 9050A, 180.1, SM4500H-B, 2320B, 2510B, 2540D, 9040. Organic Parameters: EPA 3510C, 5030B, 9010B, 624, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312, 3051, 6020, 747A, 7474, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580, 3570, 3540C, 5035, 8260B, 8270C, 8270 Alk-PAH, 8082, 8081A, 8015 (SHC), 8015 (DRO).)

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP

Certification is not available by NELAP for the following analytes: **8270C**: Biphenyl.

AIR ANALYSIS

PAGE 1 OF 1

Project Information

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Project Name: **Dubois Library**

Client Information

Project Location: **Amherst MA**Client: **MODARO & CURRAN**Project #: **222935**Address: **35 New England Bus. Center**Project Manager: **JEFF HANEL**Answer: **MA**

ALPHA Quote #:

Phone: **978 557 8150**

Turn-Around Time

Fax:

Email: **gfranklin@modaro-currans.com**
☐ Standard ☒ RUSH (only confirmed if pre-approved)
10 DAYS Time:

☐ These samples have been previously analyzed by Alpha
Date Due: **1/22/10** Time:

Other Project Specific Requirements/Comments:

SAMPLES TO BE ANALYZED VIA USER METHOD TO-10A For ACBS homologs
Minimum Laboratory Retention Limit = 50 nanograms/m³

All Columns Below Must Be Filled Out

Date Rec'd in Lab:

Report Information - Data Deliverables

☐ FAX
☐ ADEX

Criteria Checker:

(Default based on Regulatory Criteria Indicated)

Other Formats:

☒ EMAIL (standard pdf report)

☐ Additional Deliverables:

Report to: (if different than Project Manager)

ALPHA Job #:

L1000822

Billing Information

☒ Same as Client Info

PO #:

Regulatory Requirements/Report Limits

State/Fed Program Criteria

ANALYSIS

TO-14A by TO-15
TO-15
TO-15 SIM
APH
FIXED GASES
TO-13A
TO-10A

Sample Comments (i.e. PID)

ALPHA/Lab ID (Lab Use Only)	Sample ID	Date	Start Time	End Time	Initial Injection	Final Injection	Sample Matrix*	Sampler's Initials	Can Size	1 D Can	1 D - Flow Controller	TO-14A by TO-15	TO-15	TO-15 SIM	APH	FIXED GASES	TO-13A	TO-10A	Sample Comments (i.e. PID)
8122-1	DL-18E-IAS-082	1/15/10	0915	1123	2.57	2.6	AA	GTF	PUF	124	N/A	X							TO-128 Meters @ 2.6 L/min (10-124)
-2	DL-15E-IAS-085	1/15/10	0940	1147	2.60	2.6	AA	GTF	PUF	85	N/A	X							TO-127 Meters @ 2.6 L/min (10-124)
3	DL-4E-IAS-088	1/15/10	1204	1205	2.58	2.6	AA	GTF	PUF	20	N/A	X							TO-121 Meters @ 2.6 L/min (10-20)

*SAMPLE MATRIX CODES

AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type

Relinquished By:

Date/Time

Received By:

Date/Time:

APPENDIX B: INDOOR AIR ACTION LEVEL DEVELOPMENT

Indoor Air Action Level Development



For relative comparison purposes, action levels have been derived using a health risk-based approach, following current USEPA risk assessment guidelines. The purpose of deriving these levels is to have a protective, health-based concentration to compare results from air samples collected from the library elevator lobbies. Below, the underlying exposure assumptions are summarized and the method of calculating the air action levels is described.

The hypothesized source of airborne polychlorinated biphenyl (PCBs) is dust/particulates which may be generated from the painted caulking, plaster, and concrete in the elevator lobby areas.

The approach to calculating the action levels is based on the USEPA Risk Assessment Guidance for Superfund (RAGS), Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment) (USEPA, 2009). This guidance recommends using reference concentrations (RfCs) for evaluating non-carcinogenic effects and inhalation unit risk (IUR) values for carcinogenic effects. These toxicological factors are based on inhalation exposures with measurable endpoints and are appropriate for use in evaluating indoor air. Currently, no USEPA derived RfC is available for PCBs; therefore, only carcinogenic effects based levels have been developed.

The IUR ($\mu\text{g}/\text{m}^3$)⁻¹ is the "the upper-bound excess lifetime cancer risk estimated to result from continuous exposure to an agent at a concentration of 1 $\mu\text{g}/\text{m}^3$ in air" (USEPA, 2008). The IUR toxicity value used in these calculations was obtained from USEPA Integrated Risk Information System (IRIS), February 2010. An Air Action Level (AAL) was calculated only for the carcinogenic endpoint, since no non-cancer toxicity value (RfC) is currently available.

Indoor air samples have been collected in library lobbies near the elevators. Therefore, the exposure assumptions used in this assessment reflect how long an individual could be exposed in that micro-environment. Action levels were calculated separately for staff and students, as each receptor differs in the assumed duration of exposure. The exposure assumptions are presented in the following table:

Exposure Parameter	Staff	Student
Event frequency (EVF) (events/day)	10	10
Exposure Time (ET) (hrs/event)	0.083	0.083
Exposure Frequency (EF) (days/year)	250	250
Exposure duration (ED) (yrs)	25	4
Averaging period (AP _{nc}) non-cancer (yrs)	25	4
Averaging period (AP _c) cancer (yrs)	70	70
Conversion factor (C) (days/hr)	0.0417	0.0417
RfC ($\mu\text{g}/\text{m}^3$)	NA	NA
IUR ($\mu\text{g}/\text{m}^3$) ⁻¹	1E-4	1E-4

Both staff and students are assumed to make ten (10) elevator rides per day for 250 days/yr. The exposure time (or ET) in the lobby area is assumed to be 5 minutes per trip, or 50 minutes per day. These exposure assumptions are considered adequately conservative because it is unlikely that either receptor group would exceed the exposure time. The exposure event frequency and exposure time are based on professional judgment, in the absence of data. The exposure frequency of 250 days reflects a standard workweek of 5 days per week, 50 weeks per year, which likely exceeds a typical number of days a student would visit the library based on typical college class schedules. Staff and students are not assumed to linger in the elevator lobby area longer than the typical wait time for an elevator.

Indoor Air Action Level Development



The carcinogenic air action level (AAL-ca) in units of $\mu\text{g}/\text{m}^3$ is calculated according to the following equation:

$$\text{AAL-ca} = \text{ILCR} * \text{AP}_c / [\text{EVF} * \text{ET} * (\text{EF} / 365 \text{ days/year}) * \text{ED} * \text{EP} * \text{C} * \text{IUR}]$$

The target ILCR is the incremental lifetime cancer risk, set at a target risk level of one in one-million (1×10^{-6}). This is equivalent to the probability of one excess cancer per million people exposed to airborne PCBs in this location and reflects the lower (more stringent) end of USEPA's target cancer risk ranged of 1×10^{-6} to 1×10^{-4} . Other parameters are as defined in the above table.

The action levels, based on the carcinogenic toxicological endpoint, are shown in the following table with a worksheet provided on the following page:

Receptor	Air Action Levels ($\mu\text{g}/\text{m}^3$)
Student	7.39
Staff	1.18

The carcinogenic endpoint for the staff, who have a significantly longer exposure duration relative to students, produces the more conservative action level. Thus, indoor air concentrations will be compared to $1.18 \mu\text{g}/\text{m}^3$, which is equivalent to $1,180 \text{ ng}/\text{m}^3$.

References

USEPA (2009) Risk Assessment Guidance for Superfund (RAGS), Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment)
<http://www.epa.gov/oswer/riskassessment/ragsf/index.htm>

USEPA (2010) *Integrated Risk Information System, Glossary of Terms*. Office of Research and Development. http://www.epa.gov/iris/help_gloss.htm#content

UMASS Elevator Lobby PCB risk calculations

$ADE_{air} = (OHMAir * EF * ED * EP * C) / AP$

where: ADE = aveage daily exposure concentration ug/m3
OHMAir = EPC ug/m3 = risk based concentration (RBC)
EF = exposure frequency events/day
ED = exposure duration hrs/event
EP = duration of exposure period yrs
AP = averaging period
C1 and C2= conversion factors
To calculate a risk based concentration, the equation is:

$RBC_{air} = (ADE_{air} * AP) / (EF * ED * EP * C1)$

Carcinogenic Risk

$ELCR = Air\ conc * UR$

IRIS

$UR = 1E-4\ \mu g/m^3$

$ELCR = Exp\ fact * Air\ conc * UR$

$ELCR = 10e-5$

$Air\ conc = ELCR / (Exp\ fact * UR)$

Exposure factors:

EF	10 events/day	assumes 4 roundtrip elevator rides		
ED	0.083 hrs/event	assumes 5 min in lobby for each elevator trip		
EP	2.74 250days/yr * 4yrs	Student		
EP	17.12 250days/yr * 25yrs	Staff		
Ap non-ca	4 yrs	Student	AP ca	70 yrs
AP non-ca	25 yrs	Staff		
C1	0.041667 days/hr			
ADEair non-ca	0.02 ug/m3	Set at RfC	ADEair ca	1.00E-04 m3/ug IRIS Unit risk

Carcinogenic RBC ug/m3 @ 1e-6

Student	7.39
Staff	1.18

APPENDIX C: WRITTEN CERTIFICATION



Certification

The undersigned owner of the property where the cleanup site is located and the party conducting the cleanup certify that all sampling plans, sampling collection procedures, sample preparation procedures, extraction procedures and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination at the cleanup site, are on file at the location indicated below and are available for EPA inspection, as set forth below.

Document Location

Environmental Health and Safety
Draper Hall
University of Massachusetts
40 Campus Center Way
Amherst, MA 01003-9244

Property Owner and Party Conducting the Cleanup

A handwritten signature in black ink, appearing to read "Donald Robinson, PhD", written over a horizontal line.

Authorized Signature

Date 2-26-10

DONALD ROBINSON, PHD

Name of Authorized representative (print)

DIRECTOR, ENV. HEALTH + SAFETY

Title

DUBOIS LIBRARY ELEVATOR LOBBY REMEDIATION PLAN (PCB'S)

APPENDIX D: AIR/DUST MONITORING PLAN

APPENDIX D – SUPPORT ZONE/PERIMETER AIR MONITORING PLAN

Airborne particulate matter (PM) consists of many different substances suspended in air in the form of particles (solids or liquid droplets) that vary widely in size. Inhalation hazards are caused if the intake of these particles includes intake of vapors and/or contaminated dust. Particles less than 10 micrometers in diameter (PM-10), which include both respirable fine (less than 2.5 micrometers) and coarse (less than 10 micrometers) dust particles, pose the greatest potential health concern because they can pass through the nose and throat and get into the lungs.

During the performance of the planned remediation activities, particulate matter in the form of potentially PCB-affected dust may be generated. The greatest potential for the generation of affected dust is during the removal of PCB containing building materials including caulk and plaster.

As indicated in the remediation plan, the main dust control mechanism to be employed on the project will be the use of engineering controls (e.g. wet techniques and misting), polyethylene containment structures, and personal protective equipment (PPE). In addition, particulate air/dust monitoring will be conducted during intrusive or dust-generating activities in the area immediately outside of the containment structures. Particulate air monitoring will determine if fugitive dust particles are present in the ambient air outside the work zones during active removal activities. A direct-reading particulate meter will be used to monitor airborne particulate concentrations during these activities. Particulate concentrations shall be utilized as an indirect indicator of exposures to on-site receptors.

Dust concentrations will be measured using a suitable real time aerosol particulate monitor capable of determining ambient air fugitive dust concentrations to 0.001 milligrams per cubic meter (mg/m³). Air monitoring shall be conducted while active removal activities are occurring and at a frequency of one reading per hour of activities. Results of air monitoring will be maintained in an "Air Monitoring Log", an example of which is attached to the end of this appendix. Prior to the active removal actions, air monitoring readings will be recorded to document background particulate matter concentrations in the library.

If total particulate concentrations exceed the action limits (as specified below and incorporating background readings) and are sustained (i.e. greater than 5 minutes), then the following actions will be taken:

- The containment ventilation system will be inspected to insure proper operation;
- The containment will be visually inspected for any points of failure and repaired, as needed;
- Additional dust suppression techniques to mitigate fugitive dust shall be initiated.

If applicable, the dust suppression techniques shall involve the application of a fine mist of water over the area creating the fugitive dust condition. The water shall be applied either by small hand held sprayers or sprinklers. The water source for dust suppression activities will be from the building's water supply. In the event that the total of airborne particulate cannot be maintained below the action limit, then work activities shall be ceased until sustained readings are below the action limit or the work area designation is re-evaluated.

OSHA has published the following permissible exposure limits (8 hour time weighted average) for air contaminants (29 CFR 1910.1000):

Air Contaminant	PEL (8-hour TWA)
Total Dust	15 mg/m ³
Respirable Dust Fraction	5 mg/m ³
PCBs (42% Chlorine)	1 mg/m ³
PCBs (54% Chlorine)	0.5 mg/m ³

APPENDIX D – SUPPORT ZONE/PERIMETER AIR MONITORING PLAN

In addition, EPA has established a National Ambient Air Quality Standard for PM-10 of 0.150 mg/m³ (24-hr average).

A total airborne particulate action limit has been established for the building material removal work to be conducted at the Dubois Library with consideration of the specific receptors, PCB concentrations, work activities, and OSHA permissible exposure limits. The action limit applies only to air monitoring outside of the work area; an action limit has not been set for the active work zones (exclusion zones) as engineering controls and PPE will be used within these zones.

Given the high-occupancy setting of the project and the anticipated PCB concentration in dust that may be generated during abatement activities, a conservative action limit of 0.1 mg/m³ above background will be maintained during site work. Air monitoring at a location representative of background air conditions (i.e. a location on a floor without active remedial activities in progress) will be conducted at the same frequency to obtain data representative of real-time background conditions. The action limit will be used to determine if and when additional engineered controls and/or work stoppages would be necessary.

AIR MONITORING FORM

Dubois Library Elevator Replacement Project

Air Monitoring Location: _____

[illegible]

APPENDIX E: PRODUCT SPECIFICATION INFORMATION



MATERIAL SAFETY DATA SHEET

Sikagard® 550W Elastocolor - all colors

HMIS

HEALTH	1
FLAMMABILITY	1
REACTIVITY	0
PERSONAL PROTECTION	D

1. Product And Company Identification

Supplier

Sika Corporation
201 Polito Ave
Lyndhurst, NJ 07071

Company Contact: EHS Department
Telephone Number: 201-933-8800
FAX Number: 201-933-9379
Web Site: www.sikausa.com

Manufacturer

Sika Corporation
201 Polito Ave
Lyndhurst, NJ 07071

Company Contact: EHS Department
Telephone Number: 201-933-8800
FAX Number: 201-933-9379
Web Site: www.sikausa.com

Supplier Emergency Contacts & Phone Number

CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

Manufacturer Emergency Contacts & Phone Number

CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

Issue Date: 10/26/2005

Product Name: Sikagard® 550W Elastocolor - all colors

CAS Number: Not Established

Chemical Family: Coating

MSDS Number: 3755

Product Code: 06E2-

2. Composition/Information On Ingredients

Ingredient Name	CAS Number	Percent Of Total Weight
ZINC OXIDE	1314-13-2	1 - 10

3. Hazards Identification

Eye Hazards

May cause eye irritation.

Skin Hazards

May cause skin irritation.

Ingestion Hazards

May be harmful if swallowed.

Inhalation Hazards

May cause respiratory tract irritation.

MATERIAL SAFETY DATA SHEET

Sikagard® 550W Elastocolor - all colors

4. First Aid Measures

Eye

In case of contact, hold eyelids apart and immediately flush eyes with plenty of tepid water for at least 15 minutes. Get medical attention immediately if irritation develops and persists.

Skin

In case of contact, immediately flush skin with soap and plenty of tepid water for at least 15 minutes. Get medical attention immediately if irritation (redness, rash, blistering) develops and persists.

Ingestion

If swallowed, do not induce vomiting unless directed to do so by medical personnel.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration, seek medical attention.

5. Fire Fighting Measures

Flash Point: >200 °F > 93 °C

Extinguishing Media

In case of fire, use water spray (fog) foam, dry chemical, or CO2.

Fire Fighting Instructions

In the event of a fire, firefighters should wear full protective clothing and NIOSH-approved self-contained breathing apparatus with a full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Avoid release to the environment. Use appropriate Personal Protective Equipment (PPE). Contain spill and collect with absorbent material and transfer into suitable containers. Do not flush to sewer or allow to enter waterways. Ventilate enclosed area.

7. Handling And Storage

Handling And Storage Precautions

Keep out of reach of children. Store in a cool, dry, well ventilated area. Keep containers tightly closed.

Work/Hygienic Practices

Wash thoroughly with soap and water after handling.

8. Exposure Controls/Personal Protection

Engineering Controls

Use of a system of local and/or general exhaust is recommended to keep employee below applicable exposure limits. Refer to the current edition of "Industrial Ventilation: A Manual of Recommended Practice" published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Eye/Face Protection

Faceshield over safety glasses or goggles.

Skin Protection

Chemical-resistant gloves. Lab coat or other work clothing to prevent skin exposure (Long sleeve shirt and long pants). Launder before reuse.

Respiratory Protection

A respirator protection program that meets 29 CFR 1910.134 requirement must be followed whenever workplace conditions warrant a respirator's use. In areas where the Permissible Exposure Limits are exceeded, use a properly fitted NIOSH-approved respirator.

MATERIAL SAFETY DATA SHEET

Sikagard® 550W Elastocolor - all colors

8. Exposure Controls/Personal Protection - Continued

Ingredient(s) - Exposure Limits

ZINC OXIDE

ACGIH TLV-STEL 10 mg/m3

ACGIH TLV-TWA 5 mg/m3 - fume

ACGIH TLV-TWA 10 mg/m3 - dust

OSHA PEL-TWA 5 mg/m3

OSHA PEL-TWA 15 mg/m3

9. Physical And Chemical Properties

Appearance

Thick emulsion, various colors.

Odor

Latex

Chemical Type: Mixture

Physical State: Liquid

Specific Gravity: 1.37

Packing Density: 11.5 lbs/gallon

Solubility: Miscible

10. Stability And Reactivity

Stability: STABLE

Conditions To Avoid (Stability)

None known

Incompatible Materials

None known

11. Toxicological Information

No Data Available...

12. Ecological Information

No Data Available...

13. Disposal Considerations

Dispose in accordance with applicable federal, state and local government regulations. Waste generators must determine whether a discarded material is classified as a hazardous waste. USEPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

14. Transport Information

Proper Shipping Name

Not Regulated by the US DOT.

15. Regulatory Information

U.S. Regulatory Information

All ingredients of this product are listed or are excluded from listing under the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

MATERIAL SAFETY DATA SHEET

Sikagard® 550W Elastocolor - all colors

15. Regulatory Information - Continued

SARA Hazard Classes

Acute Health Hazard

SARA Title III - Section 313 Supplier Notification

This product contains the following toxic chemicals that are subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372.

ZINC OXIDE (1314-13-2) 1 - 10 %

This information must be included on all MSDSs that are copied and distributed for this material.

Ingredient(s) - U.S. Regulatory Information

ZINC OXIDE

SARA Title III - Section 313 Form "R"/TRI Reportable Chemical

SARA - Acute Health Hazard

SARA - Chronic Health Hazard

Ingredient(s) - State Regulations

ZINC OXIDE

New Jersey - Workplace Hazard

New Jersey - Environmental Hazard

Pennsylvania - Workplace Hazard

Pennsylvania - Environmental Hazard

Massachusetts - Hazardous Substance

New York City - Hazardous Substance

16. Other Information

HMIS Rating

Health: 1

Fire: 1

Reactivity: 0

PPE: D

Revision/Preparer Information

MSDS Preparer: EHS Department

MSDS Preparer Phone Number: 201-933-8800

This MSDS Supersedes A Previous MSDS Dated: 09/19/2005

Disclaimer

The data in this Material Safety Data Sheet relates only to the specific material herein and does not relate to use in combination with any other material or in any process. The information set forth herein is based on technical data that Sika believes to be reliable as of the date hereof. Since conditions of use are outside our control, we make no warranties, express or implied and assume no liability in connection with any use of this information. Nothing herein is to be taken as a license to operate under or a recommendation to infringe any patents.

SIKA CORPORATION

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DIVISION 9 - FINISHES
Section 09830 Elastomeric Coatings

Part 1 - General

1.01 Summary

- A. This specification describes the coating of substrates with an elastomeric, crack bridging, anti-carbonation, protective coating.

1.02 Quality Assurance

- A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001:2008 certified and have in existence a recognized ongoing quality assurance independently audited on a regular basis.
- B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.
- C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.03 Delivery, Storage, and Handling

- A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.
- B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.
- C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

- A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 45°F (7°C) and rising.
- B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.05 Submittals

- A. Submit two copies of manufacturer's literature, to include: Product Data Sheets, and appropriate Material Safety Data Sheets (MSDS).

1.06 Warranty

- A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 - Products

2.01 Manufacturer

- A. **Sikagard 550W Elastocolor**, as manufactured by Sika Corporation, 1682 Marion Williamsport Road, Marion, Ohio, 43302 is considered to conform to the requirements of this specification.
- B. **Sikagard Elastic Base Coat (Smooth & Textured)**, as manufactured by Sika Corporation, 1682 Marion Williamsport Road, Marion, Ohio, 43302 is considered to conform to the requirements of this specification.
- C. **Sikagard 552W Primer or SikaLatex R**, as manufactured by Sika Corporation, 1682 Marion Williamsport Road, Marion, Ohio, 43302 is considered to conform to the requirements of this specification.

2.02 Materials

- A. Elastomeric Acrylic Coating:
 - 1.Product shall be 100% Acrylic Emulsion with the following properties:
 - a. Water vapor permeable
 - b. Can bridge dynamically moving cracks
 - c. Crack bridging properties maintained at low temperatures
 - d.The material shall be resistant to dirt pick-up and mildew
- B. Elastomeric Acrylic Smooth & Textured Base Coating:
 - 1.Product shall be 100% Acrylic Emulsion with the following properties:
 - a. Water vapor permeable
 - b. Can bridge dynamically moving cracks
 - c. Crack bridging properties maintained at low temperatures
- C. Adhesion Promoter / Surface Conditioner
 - 1.Product shall be a water-based, acrylic primer with the following properties:
 - a. Solids content 12.5% -20% by volume
 - b. Recoat time 4 – 24 hours

2.03 Performance Criteria

- A. Properties of the elastomeric Sikagard 550W Elastocolor acrylic coating:
1. Pot Life: indefinite
 2. Tack Free Time 6 Hours @ 73°F, 50% Relative Humidity. Final Cure < 24 Hours
 3. Carbon Dioxide Diffusion: μCO_2 214,000 Carbon Dioxide Diffusion Resistance at 16 mils (400 microns)
 $\text{SdCO}_2 = 299$ ft. (equivalent air thickness) i.e. Approx. 9-in. of standard concrete cover.
 4. Water Vapor Diffusion: $\mu\text{H}_2\text{O}$ 2,146 Water Vapor Diffusion Resistance at 16 mils $\text{SdH}_2\text{O} = 2.6$ ft. (0.8m)
(equivalent air thickness)
 5. Moisture Vapor permeability (ASTM E96) 14.5 perms
 6. Tensile Properties (ASTM D-412 Modified)
7 day-Tensile strength 190 psi (1.3 MPa) - Elongation at break 820% - 340% @ 0°F (-18°C)
 7. Crack Bridging(at 16 mils = 400 microns DFT)
 - a. Static (at -4°F/-20°C) 30 mils (0.75mm)
 - b. Dynamic>1000 cycles(at -4°F/-20°C) 12 mils (0.30mm)
 8. Resistance to wind driven rain (TT-C-555B): No passage of water through coating
 9. Weathering (ASTM G-23) 10,000 hours excellent, no chalking or cracking.
 10. Solids Content: by weight – 62% by volume – 55%
 11. Flame Spread and Smoke Development (ASTM E-84-94)
Flame Spread 5 Smoke Development 5 Class Rating A

Note: Tests above were performed with the material and curing conditions @ 71°F – 75°F and 45-55% relative humidity.

Part 3 – Execution

3.01 Surface Preparation

- A. Substrate must be clean, sound, and free of surface contaminants. Remove dust, laitance, grease, oils, curing compounds, form release agents and all foreign particles by mechanical means. Substrate shall be in accordance with ICRI Guideline No. 03732 for coatings and fall within CSP1 to CSP3.

3.02 Mixing and Application

- A. Mixing: Stir materials to ensure uniformity using a low speed (400-600 rpm) drill and paddle. To minimize color variation, blend two batches of material.(boxing)
- B. Crack detail: Recommended application temperatures 40° - 100°F (4⁰-38⁰)

Small defects and cracks (non-structural): Cracks 10 – 20 mils. Apply Surface Filler “Brush Grade” generously over the center of the cracks. Feather material to zero over a two-inch wide area. Allow a minimum 24 hours to cure before overcoating.

Large defects and cracks (non-structural): Cracks >20mils. Rout to 1/4-in wide by 1/4-in. deep. Blow out cut with oil-free compressed air. Fill slot with Surface Filler “Knife Grade” allowing for a small crest to remain. This will compensate for any shrinkage that might occur. **NOTE:** *Sikaflex-1a,-2c, or -15LM, polyurethane sealant may be used in place of Knife Grade Surface Filler.* Allow 24 hours-minimum cure before over coating.
- C. Coating Application: Apply by brush, roller, or spray over entire area moving in one direction. A minimum of two coats are required. Each coat should be applied at a rate not to exceed 100 sq. ft. per gallon. Total dry film thickness shall be a minimum 8 - 10 dry mils per coat. Allow a minimum of 2 hours prior to re-coating.
- D. When applying the coating, never stop the application until the entire surface has been coated. Always stop application at an edge, corner, or joint. Never let a previously coated film dry; always coat into a wet film. Always apply the coating at a 45° angle to an edge, corner, or joint.
- E. If substrate has been previously coated and presents a “chalky” condition, apply 1 coat of Sikagard 552W or SikaLatex R, primer/surface conditioner by brush, roller, or spray at a rate not to exceed 300 sq. ft. per gallon.
- F. Adhere to all limitations and cautions for the elastomeric acrylic coating in the manufacturers printed literature.

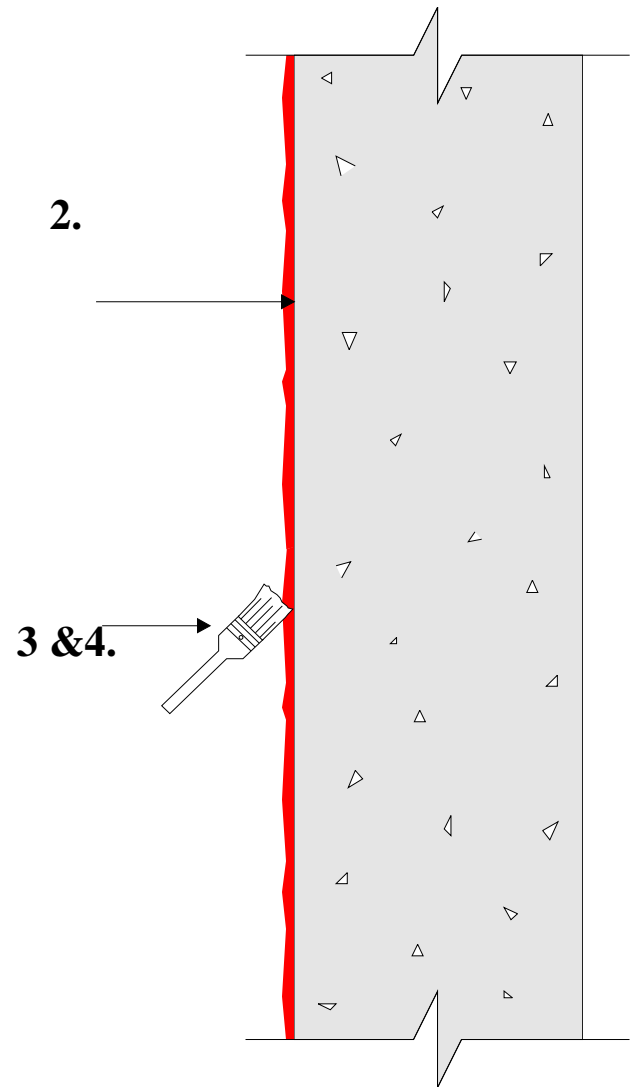
3.03 Cleaning

- A. The uncured elastomeric acrylic coating can be cleaned from tools with water. The cured elastomeric acrylic coating can only be removed mechanically.
- B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

SC-058

Sikagard® 550W Elastocolor, Anti-Carbonation Crack-bridging Coating

1. Substrate must be dry, clean and sound.
2. Condition surface with Sikagard 552W or SikaLatex R(as needed)
3. Apply base coating as needed
4. Apply Sikagard 550W Elastocolor by brush, roller or spray over entire area moving in one direction.

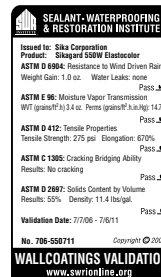


Concrete Restoration Systems by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071

Product Data Sheet
Edition 7.9.2008
Identification no. 06E2
Sikagard 550W Elastocolor

Sikagard® 550W Elastocolor

High performance, anti-carbonation, crack-bridging coating



Description	Sikagard 550W Elastocolor is a elastomeric, crack-bridging, anti-carbonation, acrylic protective coating. Sikagard 550W Elastocolor provides protection to reinforced concrete from the ingress of carbon dioxide and other aggressive gasses. It offers high resistance to chlorides and other waterborne salts and excellent UV light resistance. Sikagard 550W Elastocolor will not act as vapor barrier and will enhance the aesthetic appearance of the structure.
Where to Use	Protective, crack-bridging coating for concrete, mortar, stucco, masonry, and exterior finishing systems subject to cracking/dynamic movement. On building and civil engineering structures subject to cracking. As the top coat in complete repair and protection systems.
Advantages	<ul style="list-style-type: none"> ■ Can bridge dynamically moving cracks ■ Excellent carbonation barrier ■ Water vapor permeable ■ Provides resistance to weathering, frost and deicing salts ■ Crack bridging properties maintained at low temperatures ■ Excellent long term UV light resistance ■ Can be applied by brush, roller, or airless spray ■ Good color stability ■ Extremely resistant to dirt pick up and mildew ■ Nontoxic, nonflammable as a system ■ Easily maintained silk finish
Coverage	Theoretical yield per coat: 100 sq. ft./gal/coat. Recommended 'wet' film thickness: 16 mils/coat. Recommended 'dry' film thickness: 8 mils/coat. Normal coating system is two coats at a total dry film thickness of 16 mils. Consumption is dependent on porosity of substrate. In addition, allowance must be made for surface profile, unavoidable variation in applied film thickness, loss and waste. Sikagard Elastic Base Coat can be used as a first coat in a two coat system of Sikagard 550W Elastocolor.
Packaging	5 gallon, re-closable plastic pails.

Typical Data (Material and curing conditions at 73°F (23°C) and 50% R.H.)

Shelf Life	2 years in original unopened container.			
Storage Conditions	Store dry at 40°-95°F (4°-35°C) Condition material to 60°-75°F (15°-25° C) before using. Protect from freezing. If frozen discard.			
Colors	469 standard colors. Custom color-matching available.			
Pot Life	Indefinite, provided proper care is taken in protecting the system from moisture, freezing, contamination, or evaporation.			
Solids Content	by weight	by volume		
Smooth 550W	62%	55%		
Sikagard 552W	20%	17%		
Tensile Properties (ASTM D-412 modified)				
Tensile Strength	190 psi			
Elongation at Break	820% at 73°F (23°C)			
Tensile Strength at 0°F (-18°C)	1000 psi			
Elongation at Break at 0°F (-18°C)	340%			
Waiting Time (between coats) and Curing Rates	45°F (8°C)	68°F (20°C)	85°F (30°C)	
Sikagard 552W Primer+Sikagard 550W	24 hours	12 hours	6 hours	
Sikagard 550W	12 hours	8 hours	6 hours	
Rain resistant (at 75% R.H.)	24 hours	4 hours	2 hours	
(Note: Overcoating old coatings will increase the waiting times by 100%)				
Water Vapor Diffusion (at 16 mils = 400 microns dry film thickness)				
μ - value H ₂ O (diffusion coefficient) = 2,146				
SdH ₂ O (equivalent air thickness) = 2.6 ft. (0.8 m)				
Carbon dioxide diffusion (at 16 mils = 400 microns dry film thickness)				
*After 2,000 hours				
μ - value CO ₂ (diffusion coefficient) = 214,000				
R (equivalent air thickness) = 299 ft. (91 m)				
Sc (Equivalent concrete thickness) = 9 inches (23 cm)				
*accelerated weathering				
Crack-Bridging (at 16 mils = 400 microns DFT)				
Static (at -4°F/-20°C) 30 mils (0.75 mm)				
Dynamic>1000 cycles (at -4°F/-20°C) 12 mils (0.3 mm)				
Moisture Vapor Permeability (ASTM E-96) 14.5 Perms				
Resistance to Wind Driven Rain (TT-C-555B) No passage of water through the coating				
Flame Spread and Smoke Development (ASTM E-84-94)				
Flame Spread: 5 Smoke Development: 5 Class Rating: A				
Weathering (ASTM G-23) 10,000 hours Excellent, no chalking or cracking				

Sika®

How to Use

Surface preparation	All surfaces to be coated must be dry, clean, sound, and frost free with curing compound residues and any other foreign matter removed. An open textured sandpaper like surface is ideal (CSP-3). Where necessary, surfaces should be prepared mechanically by blast cleaning or high speed pressure waterjetting. Allow adequate time for drying. Bugholes, cracks or irregularities of substrate should be filled and leveled with SikaTop, MonoTop or acrylic surface fillers as appropriate.
Priming	All porous areas or concrete with excessive porosity should be primed using Sikagard 552W Primer or SikaLatex R to allow easy application of Sikagard 550W Elastocolor.
Mixing	Stir all materials to ensure uniformity using a slow speed (400-600 rpm) drill and ½" jiffy style mixing paddle. To minimize color variation when using multiple units, blend two pails of Sikagard 550W Elastocolor. Use one pail and maintain the second pail to repeat this procedure (boxing) for the entire application.
Application	Any areas of glass or other surfaces should be masked. Recommended application temperatures (ambient and substrate) 45° - 95°F (7°-35°C). Sikagard 550W Elastocolor can be applied by brush, roller, or spray over entire area moving in one direction. At lower temperatures and high humidity, waiting time will be prolonged. At higher temperatures, work carefully to maintain a wet edge. As with all coatings job site mock-ups should always be completed to confirm acceptability of workmanship and material. NOTE: To achieve a dry film thickness of 16 mils, two coats should be anticipated. For maximum adhesion, (especially on porous substrates) the use of Sikagard 552W is recommended. Sikagard 552W primer can be applied by brush or roller. Brushing provides more even and pore free coats and better penetration.
Limitations	<ul style="list-style-type: none"> ■ Not designed for use as a traffic bearing surface ■ Substrates must be dry prior to application ■ Minimum age of concrete prior to application is 14 days, depending on curing and drying conditions (moisture content must be below 5%) ■ Minimum age of SikaTop or MonoTop prior to application is three days, depending on curing and drying conditions (moisture content must be below 5%) ■ Allow sufficient time for substrate to dry after rain or other inclement conditions ■ Protect from freezing. If frozen, discard ■ Sikagard 550W Elastocolor should not be applied at relative humidity greater than 90%, or if rain is forecast within the specified rain resistance period ■ Maximum crack width 1/32" ■ During application, regular monitoring of the wet film thickness and material consumption is advised to ensure that the correct layer thickness is achieved. When over-coating existing coatings, compatibility and adhesion testing is recommended ■ When over-coating Sikaflex sealants, a prime coat of Sikagard 550W Elastocolor accent base coat may be necessary over the sealant to minimize dirt pick up on cured coating. ■ Do not store Sikagard 550W Elastocolor in direct sunlight for prolonged periods ■ Strong winds can cause shrinkage if material is applied at lower temperatures ■ Ensure that the primer is thoroughly dry before over-coating to prevent formation of bubbles and blisters, particularly in warmer weather ■ Not recommended for roofing
Caution	IRRITANT: Contains Zinc Oxide (CAS #1314-13-2). May cause eye/skin/respiratory irritation. May be harmful if swallowed. Strictly follow all usage, handling and storage instructions.
Handling and Storage	Avoid direct contact. Wear personal protective equipment (chemical resistant goggles/gloves/clothing) to prevent direct contact with skin and eyes. Use only in well ventilated areas. Open doors and windows during use. Use a properly fitted NIOSH respirator if ventilation is poor. Wash thoroughly with soap and water after use. Remove contaminated clothing and launder before reuse.
First Aid	Eyes: Hold eyelids apart and flush thoroughly with water for 15 minutes. Skin: Remove contaminated clothing. Wash skin thoroughly for 15 minutes with soap and water. Inhalation: Remove to fresh air. Ingestion: Do not induce vomiting. Dilute with water. Contact physician. In all cases contact a physician immediately if symptoms persist.
Clean Up	Use personal protective equipment (chemical resistant gloves/ goggles/clothing). Without direct contact, remove spilled or excess product and placed in suitable sealed container. Dispose of excess product and container in accordance with applicable environmental regulations.

KEEP CONTAINER TIGHTLY CLOSED • KEEP OUT OF REACH OF CHILDREN • NOT FOR INTERNAL CONSUMPTION • FOR INDUSTRIAL USE ONLY

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