U.S. Army Corps of Engineers

Omaha District
Offutt AFB, Nebraska

ROUND POND SAMPLING
FORMER AIR FORCE PLANT NO. 51
MONROE COUNTY
GREECE, NEW YORK

Contract No. DACA45-98-D-0004
Task Order No. 0011

FINAL

COLLECTION AND ANALYSIS REPORT

August 2003

01M-0007

WESTON SOLUTIONS
Restoring Resource Efficiency

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 8
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Erin M. Crotty
Commissioner

September 30, 2003

Mr. David J. Brouwer
Project Manager
U.S. Army Corps of Engineers
190 State Hwy. 18
Suite 202
East Brunswick, New Jersey 08816

Dear Mr. Brouwer:

RE: **Voluntary Cleanup Project**
Final Round Pond Sampling Collection and Analysis Report; August 2003
Former Air Force Plant 51 Site; VCP Site No: V00421-8
Town of Greece, Monroe County

The New York State Department of Environmental Conservation (the Department) has completed its review of the above-referenced document. In general, the report accurately documents field activities and the analytical data presented appears to be usable as qualified. Additionally, the Department believes that this investigation successfully achieved the original, Department approved, objectives which were to generate fish tissue concentration data for the New York State Department of Health to evaluate and determine if fish consumption advisories specific to Round Pond were needed and to generate data to help evaluate the ecological impacts of site contaminants. The Department did, however, identify several factual errors in the report and has prepared an Errata sheet (attached) to address them. The Errata sheet will be attached to the report and the package will be considered final and released to the public.

After the field work was completed, the U.S. Army Corps of Engineers "broadened" the objectives of the project. As the report correctly points out, the original sampling plan was not designed to support these new objectives. The Department did not approve these new objectives and the Department's acceptance of this report should not be considered as acceptance, approval, or endorsement of the broadened objectives, the methods used to achieve them, or the conclusions and recommendations based on them.

The Department does agree with the general conclusion that contaminants from the site have impacted the adjacent wetland, and possibly Round Pond and Round Pond Creek, and that additional

evaluation is necessary. The Department does not necessarily agree with the specific recommendations provided in the report for completing the evaluation. At a minimum, future activities must define the areal and vertical extent of site-related contaminants and further evaluate human health and ecological exposures to site contaminants. The Department looks forward to working with you and/or other parties on the completion of this assessment.

The Department understands that the U.S. Army Corps of Engineers is not expecting funding to perform the next phase of this assessment within the next three to five years. This site represents a significant threat to human health and/or the environment and the Department recommends an expedited approach to the investigation.

Please contact me at (585) 226-5357 if you have any questions regarding these comments or the attached Errata sheet.

Sincerely,

Frank Sowers, P.E.
Environmental Engineer 1

attachment

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ERRATA SHEET

The New York State Department of Environmental Conservation (DEC) is providing this errata sheet to correct significant factual errors contained in the U.S. Army Corps of Engineers Round Pond Sampling Collection and Analysis Report; August 2003, for the former Air Force Plant No. 51 site located in the Town of Greece, New York.

1. **Section 2.3 and 2.4:** The report indicates that the fish tissue samples were analyzed by an environmental laboratory certified by the National Environmental Laboratory Accreditation Program (NELAP). NELAP provides certifications for specific laboratory procedures. At this time, neither NELAP nor any other national organization provides laboratory certification for fish tissue analyses.

2. **Figure 2-3:** The sample identification numbers in Figure 2-3 do not match the sample identification numbers used in the rest of the report. The table below provides a cross-reference.

Sediment Sample Identification Cross-Reference

Figure 2-3 Sample Identification	Equivalent Sample Identification in Rest of Report
SD-001-AW-2	SD-002-AW-1
SD-001-AW-3	SD-003-AW-1
SD-001-AW-4	SD-004-AW-1
SD-001-AW-5	SD-005-AW-1

3. **Section 3.2.6:** An "*" belongs next to 1,1,2-Trichloroethane.

4. **Section 3.3.2 and Table 3-9:** Section 3.3.2 is based on Table 3-9. As correctly described throughout the report, 10 "site" sediment samples (plus a field duplicate) and 2 background sediment samples were collected. Table 3-9 was prepared using 9 site sediment samples and 3 background sediment samples. Apparently, sample SD-002-RCU-1-FS was mistakenly used as a background sample when Table 3-9 was completed. The sample results for SD-002-RCU-1-FS were elevated for several semi-volatile organic compounds including benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene. This error appears to then impact many of the other columns in Table 3-9 and could impact the evaluation presented in Section 3.3.2. The DEC is identifying these apparent errors as a courtesy to the reader. The DEC has not requested a revised Table 3-9 and Section 3.3.2 as this assessment was not part of the DEC approved scope-of-work.

5. **Section 3.3.3:** The report mis-characterizes the New York State fish consumption advisories that apply to Round Pond and Lake Ontario. The following table provides a complete list of fish consumption advisories that currently apply to Lake Ontario east of Point Breeze, including Round Pond and Round Pond Creek to the first barrier impassable by fish:

Fish Consumption Advisories For Lake Ontario East of Point Breeze
(Including Round Pond and Round Pond Creek)

Population	Advisory
Infants, children under the age of 15, and women of childbearing age	Eat no fish from these waters.
Other people	American eel, channel catfish, carp, lake trout over 25", brown trout over 20" and chinook salmon - EAT NONE**.** White perch, white sucker, rainbow trout, smaller lake trout, smaller brown trout and coho salmon over 25" - EAT NO MORE THAN ONE MEAL (½ pound) PER MONTH**.** All other species -EAT NO MORE THAN ONE MEAL PER WEEK (General Advisory)

Source: 2003-2004 Health Advisories: Chemicals in Sportfish & Game, NYSDOH.

This same advisory also applies to all other tributaries of Lake Ontario east of Point Breeze to the first barrier impassable by fish.

6. **Tables 3-4 and 3-8:** The following table should be used to correct the sediment criteria provided in Tables 3-4 and 3-8.

Compound	Benchmark	Reported Criteria (ug/g TOC)[1]	Actual Criteria (ug/g TOC)[1]
Total DDT	Wildlife Bioaccumulation Sediment Criteria	NBA	1
Dieldrin	Benthic Aquatic Chronic Toxicity Sediment Criteria	NBA	9
Total Aroclor	Benthic Aquatic Acute Toxicity Sediment Criteria	NBA	2760.8
	Benthic Aquatic Chronic Toxicity Sediment Criteria	NBA	19.3
	Wildlife Bioaccumulation Sediment Criteria	NBA	1.4
Hexachlorobutadiene (under semi-volatile organic compounds)	Benthic Aquatic Acute Toxicity Sediment Criteria	NBA	55
	Benthic Aquatic Chronic Toxicity Sediment Criteria	NBA	5.5
	Wildlife Bioaccumulation Sediment Criteria	NBA	4
Benzo(a)anthracene	Benthic Aquatic Chronic Toxicity Sediment Criteria	NBA	12

NBA - No benchmark available

1. The units ug/g (microgram per gram) and mg/kg (milligram per kilogram) are equivalent.

Additionally, there is a Benthic Aquatic Chronic Toxicity Sediment Criteria for total unchlorinated phenols of 0.5 ug/g TOC. The compound 4-methylphenol exceeded this criteria by itself in several sediment samples.

7. **Appendix B:** One of the photographs shows a fish in a net with the caption, "Example of specimen collected for fish sampling and analyses." The fish shown in the picture is a bowfin. The bowfin was not collected for analysis. The bowfin was photographed and released unharmed.

FINAL

COLLECTION AND ANALYSIS REPORT

ROUND POND SAMPLING
FORMER AIR FORCE PLANT NO. 51
MONROE COUNTY
GREECE, NEW YORK

Contract No. DACA45-98-D-0004
Task Order No. 0011 (Mod No. 01)

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
Omaha District

Offutt AFB, Nebraska

Prepared by:

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August 2003

W.O. No. 20074.515.011.6600

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LIST OF ACRONYMS

µg/kg	micrograms per kilogram
ASP-B	Analytical Services Protocol-Category B
CCME	Canadian Council of Ministers of the Environment
COPCs	contaminants of potential concern
COPECs	contaminants of potential ecological concern
CRDL	Contract-Required Detection Limit
DCE	dichloroethene
DDE	4,4'-1,1-dichloro-2,2-bis(p-chlorophenyl) ethylene
DOT	Department of Transportation
EPA	U.S. Environmental Protection Agency
EPCs	exposure point concentrations
FOD	frequency of detection
FSAP	Field Sampling and Analytical Plan
g/day	grams per day
GSA	General Services Administration
HQs	hazard quotients
HTRW	Hazardous, Toxic, and Radioactive Waste
IATA	International Air Transport Association
IRA	Interim Remedial Action
IRIS	Integrated Risk Information System
kg	kilogram
lb/week	pound per week
LCS	laboratory control sample
LEL	lower effect limit
MCWA	Monroe County Water Authority
mg	milligram
MS	matrix spike
MSD	matrix spike duplicate
NEA	Northern Ecological Associates, Inc.
NELAP	National Environmental Laboratory Accreditation Program
NOAA	National Oceanic and Atmospheric Administration
NOAEL	no observed adverse effect level
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OEES	Ogden Environmental and Energy Services, Inc.

LIST OF ACRONYMS
(concluded)

OMEE	Ontario Ministry of the Environment and Energy
ORNL	Oak Ridge National Laboratory
PAHs	polynuclear aromatic hydrocarbons
PCB	polychlorinated biphenyls
PEC	Probable Effects Concentration
PEL	Probable Effects Level
QAPP	Quality Assurance Project Plan
RAGS	Risk Assessment Guidance for Superfund
RBSC	risk-based screening concentration
RBC	risk-based concentration
RPD	relative percent difference
SAB	Science Advisory Board
SAP	Sampling and Analysis Plan
SCGs	Standards, Criteria, and Guidance
SLC	screening level concentration
SQGs	sediment quality guidelines
SQLs	sample quantitation limits
SQRT	Screening Quick Reference Table Values
STL	Severn Trent Laboratories
SVOCs	semi-volatile organic compounds
TAL	Target Analyte List
TCE	trichloroethene
TCL	Target Compound List
TGSCG	Technical Guidance for Screening Sediments
THQ	target hazard quotient
TOC	total organic carbon
TR	target risk
TWP	Task Work Plan
UCL	upper confidence limit
UETs	Upper Effects Threshold
USACE	U.S. Army Corps of Engineers
VC	vinyl chloride
VOCs	volatile organic compounds
$WESTON_{SM}$	Weston Solutions Inc.

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

1. OBJECTIVES

This Final Collection and Analysis Report (hereinafter, referred to as "Report") was prepared by Weston Solutions Inc. ($WESTON_{SM}$) for the U.S. Army Corps of Engineers (USACE) under the Rapid Response/Immediate Response Contract (No. DACA45-98-D-0004) for the Control/Remediation of Hazardous, Toxic, and Radioactive Waste (HTRW), Task Order No. 11. The Report summarizes the fish and sediment sampling activities performed between 10 June 2002 and 14 June 2002 at Round Pond and the associated streams and wetlands adjacent to the Former Air Force Plant No. 51 site, located in Monroe County, Greece, New York. Site activities were performed in accordance with the May 2002 Task Work Plan (TWP), Sampling and Analysis Plan (SAP) and the Site Safety and Health Plan for the USACE under the approval of the New York State Department of Environmental Conservation (NYSDEC) to evaluate constituents of concern in receptor areas based on the prior history of the site.

The original objective of this report was to "generate fish tissue data collected from Round Pond so that the state (i.e., New York State Department of Health; [NYSDOH]) could determine if fish consumption advisories specific to Round Pond should be developed" (USACE, 2002). Additionally, information was to be collected "to help evaluate the ecological impacts of site contaminants." These objectives were broadened to determine if contaminants detected in the former lagoon prior to remediation had potentially impacted wetlands to the southwest and Round Pond to the northeast, as well as to conduct preliminary risk assessments of potential impacts to humans and wildlife.

The original and expanded work completed for this project included the following tasks:

- Collection, analysis, and validation of fish filet samples from Round Pond and the associated streams and wetlands adjacent to the site to evaluate the potential for human exposure to contaminants through the ingestion of sport fish.
- Collection, analysis, and validation of whole body fish samples from Round Pond and the associated streams and wetlands adjacent to the site to collect information to evaluate the ecological impact of site contaminants (ecological assessment).

- Collection, analysis, and validation of sediment samples at Round Pond, Round Pond Creek, and the associated streams and wetlands adjacent to the site; three sediment samples were collected west and north of the former lagoon, and seven sediment samples were collected southwest and south of the former lagoon and facility.

- Background sediment sample collection in Buck Pond and Round Pond Creek (south of the confluence), and comparison with site-related data.

- Screening of lagoon pre-excavation sediment samples to obtain a preliminary estimate of the potential impact of the former lagoon (Area 1) on Round Pond and the adjacent streams and wetlands; this was performed through a simple screen of pre-excavation lagoon sediment data with sediment data collected from Round Pond and adjacent streams and wetlands.

- Preliminary human health screening assessment was conducted to estimate the potential for human exposure and risk through the direct contact of sediments from Round Pond and adjacent streams and wetlands from chemicals potentially migrating from the lagoon; this was addressed by comparing sediment data to state and federal risk-based concentrations (RBCs) and other health benchmarks.

- Preliminary ecological screening assessment was conducted to estimate the potential for adverse effects in terrestrial and avian species; this was addressed by comparing sediment data with screening benchmarks for protection of terrestrial and avian species.

- Preparation of a Collection and Analysis Report for submittal to USACE and NYSDEC that presents the results of these activities and that contains conclusions and recommendations as to the need for additional sampling and evaluation of Round Pond.

2. RESULTS AND DISCUSSION

2.1 GENERAL

The original intent of this project was to collect sediment and fish data to support preliminary ecological screening and potential development of fish advisories by NYSDEC and NYSDOH, respectively. Subsequently, WESTON was requested to perform the initial ecological screening based on criteria supplied by NYSDEC. Sediment and fish sampling strategy at Round Pond was based on that intent. The scope was later broadened by USACE to perform more detailed screening level human health and ecological risk assessments relative to the potential impact of the former lagoon on Round Pond and adjacent wetlands and streams. The original sampling

plan was not designed to support these latter tasks. Consequently, conclusions from this evaluation are preliminary and have a number of uncertainties.

2.2 HUMAN HEALTH AND ECOLOGICAL SCREENING

The first section of the report presents an evaluation of potential human health and ecological impacts of chemicals detected in fish and sediments of Round Pond and adjacent wetlands and streams. This evaluation was based on NYSDEC criteria. Additionally, the background fish and sediment data were compared to these criteria.

2.2.1 Fish Results

Mercury, Aroclor 1248, Aroclor 1254, Aroclor 1260, and a number of pesticides (most notably 4,4'-1,1-dichloro-2,2-bis(p-chlorophenyl) ethylene) were detected in both human exposure filet specimens and ecological exposure whole body specimens. Chemical concentrations in all of the human exposure fish filet samples were less than their respective Standards, Criteria, and Guidance (SCG). Lead was detected in one human exposure filet sample (FF-004-AW-00), but the concentration did not exceed the SCG for this constituent. Cadmium was not detected in any fish specimen (filet or whole body). Total polychlorinated biphenyls (PCBs) concentrations in whole body specimens of yellow perch (WB-006-RP-00, WB-007-RP-00, and WB-010-RP-00) exceeded the total PCB SCG for ecological exposure. Mercury was detected in only one whole body fish sample and moderately exceeded its ecological SCG.

Standards, Criteria, and Guidance were not exceeded by any chemical in any of the background filet data. Mercury was detected in every background filet and whole body specimen. One whole body sample contained mercury concentrations equal to the SCG (100 micrograms per kilogram). Aroclor 1254 concentrations exceeded the ecological exposure SCG in both whole body specimens from Buck Pond. Cadmium and lead were detected in every background sample. Cadmium did not exceed its SCG value. There was no SCG for lead. Many pesticide compounds were also detected in the background samples (most notably 4,4'-1,1-dichloro-2,2-bis(p-chlorophenyl) ethylene).

2.2.2 Sediment Results

The highest concentrations of inorganics detected in Round Pond sediments were found in the samples located within the wetlands adjacent to the former lagoon. Copper, lead, and zinc exceeded their respective Technical Guidance for Screening Sediments (TGSCS) benchmarks at each of the 10 sediment sample locations. Other inorganic chemicals that exceeded the TGSCS at some of the sediment sample locations included antimony, arsenic, cadmium, chromium, manganese, nickel, silver, and mercury. Thirty organic compounds also exceeded TGSCS values and included a number of pesticides, PCBs, several volatile organic compounds and several semi-volatile organic compounds.

The two background sediment samples were collected from Round Pond Creek south of the Lake Ontario Parkway and Buck Pond. Concentrations of chromium, copper, iron, lead, manganese, nickel, and zinc exceeded the TGSCS for inorganics in both background sediment samples. Arsenic exceeded the TGSCS low effect level (LEL) in the background sediment sample from Buck Pond. Organic compounds that exceeded the human health bioaccumulation sediment criteria for raw data included 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, TCE, vinyl chloride, trichloroethene, and benzo (a) pyrene. The concentration of 4,4'-DDD present in the background sediment sample of Round Pond Creek exceeded the TGSCS for organics by 2.6 times. Aroclors were not detected in the background sediment samples.

2.3 U.S. ENVIRONMENTAL PROTECTION AGENCY SCREENING RESULTS

The next section of the report presents the results of a preliminary risk screen according to general U.S. Environmental Protection Agency (EPA) risk assessment guidelines. A preliminary list of contaminants of potential concern (COPCs) and contaminants of potential ecological concern (COPECs) were generated using conventional screening methods. The Round Pond data were screened against benchmarks conventionally used in EPA risk assessments (e.g., EPA Region III RBCs, Canadian Council of Ministers of the Environment Probable Effects

Levels, Ontario Ministry of the Environment and Energy LELs). Sediment COPCs selected were:

- Vinyl chloride
- Benzo(a)pyrene
- Dibenz(a,h)anthracene
- Aroclor-1260
- Antimony
- Arsenic
- Cadmium
- Iron
- Lead
- Manganese

Sediment COPECs selected were:

- Acenapthene
- Fluorene
- Phenanthrene
- Fluoranthene
- Pyrene
- Benzo (a) anthracene
- Chrysene
- Benzo (k) fluoranthene
- Benzo (a) pyrene
- Indeno (1,2,3-cd) pyrene
- Dibenz (a,h) anthracene
- Benzo (ghi) perylene
- 4,4'-DDD
- 4,4'-DDE
- 4,4'-DDT
- Aldrin
- α-BHC
- β-BHC
- Dieldrin
- Endrin aldehyde
- Endrin ketone
- λ-BHC (Lindane)
- Aroclor-1254
- Aroclor-1260
- Arsenic
- Barium
- Cadmium
- Chromium
- Copper
- Iron
- Lead
- Manganese
- Nickel
- Selenium
- Silver
- Zinc
- Mercury
- Cyanide

Fish filet COPCs selected were:

- Mercury (bullheads, combined bass, perch)
- Aroclor-1248 (combined bass)
- Aroclor-1254 (bullheads, combined bass, perch)
- Aroclor-1260 (bullheads, combined bass, perch)
- Δ-BHC (combined bass, perch)
- 4,4'-DDE (bullheads, combined bass, perch)
- 4,4'-DDT (bullheads, combined bass)
- Dieldrin (bullheads, combined bass, perch)
- Heptachlor epoxide (bullheads, combined bass, perch)
- Heptachlor (perch)

Exposure point concentrations (EPCs) were calculated for the sediment and fish samples and compared to RBCs to estimate ratios. Sediment data were treated collectively without regard to location relative to the former lagoon. The human health direct contact results for sediments suggest that the site-wide risk and hazard index is in the acceptable risk and hazard index ranges. Fish risks and hazard indices were estimated to be much higher. However, these results are highly uncertain based on the low volume of data and the conservative benchmarks used to estimate cancer risks and toxicity to humans. Projected ecological hazards from sediment exposure were also relatively high, but again, the results are highly uncertain based on the same issues identified in the human health evaluation.

A qualitative comparison between site sediment and background sediment analytical data generally showed a similar range of concentrations for organics and metals for both COPCs and COPECs. Similar conclusions were drawn for comparison of site-related and background fish data. Some COPECs were not detected in background sediments (mercury, cyanide, cadmium). Statistical comparisons could not be performed due to small sample size for background data.

Polychlorinated biphenyl data were preliminarily assessed with respect to Great Lakes fish advisory guidelines and to NYSDEC fish advisories. In general, the tissue concentrations of fish caught from Round Pond and adjacent wetlands and streams would appear to require human consumption restrictions.

Preliminary estimates of ecological risks to piscivorous birds and mammals showed moderate to high hazard ratios for PCBs, and a number of persistent chlorinated pesticides. Mercury risks to

piscivorous wildlife were projected to be low. As indicated earlier, these results are highly uncertain, particularly with regard to the EPC calculations on small number of fish samples, absence of identified target species in the area, and use of the most restrictive benchmarks.

2.4 POTENTIAL LAGOON IMPACTS

The latter half of the report presents a preliminary evaluation of the potential impact of the lagoon on Round Pond sediment quality and on impacts to wildlife and humans. First, a list was compiled of all chemicals detected in pre-excavation lagoon sediment data that were also detected in Round Pond sediments. This initial evaluation yielded a much shorter list of potential chemicals of concern. This initial list consisted of the following chemicals:

- Trichloroethene
- Fluoranthene
- Fluorene
- Phenanthrene
- Pyrene
- Aroclor-1254
- Aroclor-1260
- Arsenic
- Barium
- Cadmium
- Chromium
- Copper
- Iron
- Lead
- Manganese
- Nickel
- Selenium
- Zinc
- Cyanide

Six chemicals were designated as unlikely to have migrated: 1,1-dichloroethene; 4-methyl-2-pentanone; di-n-butylphthalate; hexachlorobenzene; 2-methylnaphthalene; and 2,4,5-trichlorophenol.

Following an analysis of detection limits for the pre-excavation sediment data and the Round Pond sediment data, quantitative and several qualitative assessments were performed to

attempt to better define the potential impact of lagoon chemicals on Round Pond. This comparison did not contribute to a better understanding of possible impacts.

The last step was to re-evaluate these chemicals present in Round Pond sediments relative to potential ecological and human health impacts. Sediment samples were divided into three groups. Group 1 samples were located northeast of the former lagoon and in Round Pond proper. Group 2 samples were located immediately adjacent to the former lagoon wetlands, and Group 3 samples were located in Round Pond creek southwest of the former lagoon.

The results indicate that the wetlands sediment samples (Group 2) have the potential to significantly impact wildlife. The potential impacts of sediments from Group 1 and 2 were less significant, but still a potential concern. Chemicals in Group 2 sediments exceeded various NYSDEC criteria and other ecological benchmarks by one to four orders of magnitude for Aroclor 1254 (1 order) and 1260 (4 orders), several PAHs (2 orders), several metals including cadmium (2 orders), chromium (1 order), copper (1.5 orders), lead (1.3 orders), and zinc (1 order). The cadmium exceedance was probably an anomaly and should be eliminated from consideration until new samples are collected and analyzed.

Polychlorinated biphenyls exceeded human health sediment bioaccumulation criteria by a factor of approximately 107,000. Trichloroethene exceeded its sediment bioaccumulation ratio by 26 times.

3. CONCLUSIONS

Based on the results of this evaluation, it can be concluded that additional evaluation of Round Pond sediments, particularly in the adjacent wetlands, is required on the basis of screening against conservative ecological criteria. The former lagoon appears to have impacted this area in particular. However, there may be other contributing factors such as those presented in Subsection 5.3 of the Report that were not analyzed by WESTON under this task order.

Areas northeast and southwest of the former lagoon are less impacted but still of concern; it is more difficult to determine the contribution of the former lagoon to these more outlying areas. There is also a potential impact on piscivorous mammals and birds as indicated by the significant

exceedances of wildlife criteria. Additionally, fish contamination by PCBs and possibly by pesticides may require the development of fish advisories specific for the Round Pond area.

There are not sufficient data in sediments or fish to conduct quantitative screening risk assessments for wildlife or humans. Therefore, calculated ratios between chemical EPCs and benchmarks are highly uncertain in terms of their significance. Also, the volume of background data is inadequate for statistical comparisons with site data.

4. RECOMMENDATIONS

4.1 DATA SAMPLING NEEDS

The number of sediment and fish samples collected in Round Pond and background locations was not adequate for reliable statistical calculations to evaluate the impact of the former lagoon on Round Pond. Similarly, the risk calculations are highly uncertain in view of the small volume of site data. Additional background samples in sediments should also be collected to allow for more accurate characterization of site-related contamination.

The same metals evaluated in fish sample data from the last round of Round Pond sampling should be sufficient for both background and Round Pond evaluation since these represent metals with the greatest bioaccumulation potential. Polychlorinated biphenyls and pesticides should again be evaluated in the background samples.

Pesticides were not measured in the lagoon sediments, and therefore, there was no mechanism to determine if the former lagoon contributed to the pesticide contamination evident in Round Pond sediments or in fish samples.

Future sampling and analysis activity performed at the Site should be modified to reflect the data presented in this report. It would be more cost-effective to conduct a thorough sampling if the data were to be used in a site-specific risk assessment, and/or if a more detailed evaluation of potential lagoon impacts is desired. If additional screening is planned for the immediate future, sampling can be less intense and probably performed at the same locations as identified for this

Collection and Analysis Report. The additional data from could supplement the existing data and allow for more robust sample numbers to allow for a more reliable screening effort.

4.2 ECOLOGICAL AND HUMAN HEALTH RISK ISSUES

The predicted ecological and human health impacts of the potentially site-related chemicals in Round Pond were established on conservative screening values. These screening comparisons were made against restrictive (and species-specific) benchmarks. These species are not necessarily native to the Round Pond area. Further evaluation of the site is necessary to provide a more realistic assessment based upon the actual habitat. This assessment will be less conservative than the ecological assessment presented in this report.

Initial activities should focus on the following:

- Habitat survey – this will involve an on-site walk through of Round Pond as well as a review of historical information on threatened and endangered species in the area. This information will allow the identification of target species in the Round Pond vicinity and the types of fish that are preyed on by these species.
- Development of chemical doses to habitat-specific target species using food chain models.
- Development of relevant species-specific toxicity values for the COPECs – This will provide a more realistic estimate of risk to wildlife.
- Estimate the Ecological Effect Quotient, which is the ratio of the bioaccumulated dose from food chain modeling to species-specific toxicity value.

Additional detailed evaluation might be useful in order to develop a relevant site-specific estimate of ecological risk. These steps can be further discussed after review of this document by the USACE and NYSDEC. Note that these recommendations for further ecological evaluation should not be undertaken until the potential contribution of the lagoon on Round Pond is verified.

4.3 MISCELLANEOUS ISSUES

Watershed input from other sources may also explain the presence of other contaminants in round pond, such as trace metals and even heavy metals such as lead. Therefore, it is suggested

that watershed impacts and possible point sources be identified to characterize additional sources of background concentrations for COPCs and COPECs. This information should be readily available and could be summarized without extensive research.

It would be useful to perform a creel survey or examine previous records to determine if subsistence fishing occurs. Such a finding would place a higher level of concern on humans consuming caught fish from Round Pond.

SECTION 1

INTRODUCTION

1. INTRODUCTION

This Final Collection and Analysis Report was prepared by Weston Solutions Inc. (WESTON$_{SM}$) for the U.S. Army Corps of Engineers (USACE) under the Rapid Response/Immediate Response Contract (No. DACA45-98-D-0004) for the Control/Remediation of Hazardous, Toxic, and Radioactive Waste (HTRW), Task Order No. 11.

The Final Collection and Analysis Report summarizes the fish and sediment sampling activities that were performed at Round Pond and the associated streams and wetlands adjacent to the Former Air Force Plant No. 51 site, located in Monroe County, Greece, New York. All site activities were performed in accordance with the May 2002 Task Work Plan (TWP), Sampling and Analysis Plan (SAP) and the Site Safety and Health Plan for the USACE under the approval of the New York State Department of Environmental Conservation (NYSDEC) to evaluate constituents of concern in receptor areas based on the prior history of the site.

The original primary objective of this report as per the May 2002 TWP (USACE, 2002) was to "generate fish tissue data collected from Round Pond so that the state (i.e., New York State Department of Health [NYSDOH]) could determine if fish consumption advisories specific to Round Pond should be developed." Additionally, information was to be collected "to help evaluate the ecological impacts of site contaminants." The specific sampling processes and rationale were summarized in the sample work plan (USACE, 2002). These objectives were broadened in later discussions between WESTON and the USACE to determine if contaminants detected in the former lagoon prior to remediation had potentially impacted wetlands to the southwest and Round Pond to the northeast, as well as to conduct preliminary risk assessments of potential impacts to humans and wildlife.

1.1 SITE DESCRIPTION

The Former Air Force Plant No. 51 site, located north of the Lake Ontario State Parkway and adjacent to Dewey Avenue (see Figure 1-1) consists mainly of a manufacturing building within a

SOURCE
US DEPT. OF THE INTERIOR, GEOLOGICAL SURVEY
7.5 MINUTE SERIES (TOPOGRAPHIC)
ROCHESTER WEST, N.Y., 1971 (PR 1978)
BRADDOCK HEIGHTS, N.Y., 1971 (PR 1978)

GRAPHIC SCALE
2000 1000 0 1000 2000
APPROXIMATE SCALE IN FEET

FORMER AIR FORCE PLANT NO. 51
GREECE, NEW YORK

DEPARTMENT OF THE ARMY
OMAHA DISTRICT
CORPS OF ENGINEERS
OFFUTT AFB, NEBRASKA

ROUND POND SAMPLING
SITE LOCATION MAP

WESTON
MANAGERS DESIGNERS/CONSULTANTS
MANCHESTER NEW HAMPSHIRE

DRAWN BEG
DATE APR 2002
FIGURE NO. 1-1

M:\Design\DWG\ACOE\GREECE\FIG1-1A.DWG, Layout1, 04/16/2002 03:14:52 PM, GIRARDEB, 1:1

fenced in gravel lot. The Former Air Force property consists of approximately 44 acres and is currently distributed among three owners:

- 4800 Dewey Avenue Enterprises, Incorporated. (about 33.6 acres)
- WTB Development Corp. (about 6.3 acres)
- Monroe County Water Authority (about 4.1 acres)

The manufacturing building is currently leased to the Genesee Scrap and Tin Company and other commercial tenants. A former ship channel abuts the property to the north, wetlands to the west, Dewey Avenue to the east, and the Lake Ontario Parkway to the south.

For the purpose of the site investigations, Area 1 (formerly known as the lagoon site) is identified as the area located northwest of the Genesee Scrap Metal main building and consists of a 14,220 square feet surface impoundment that reportedly collected the discharge water from historic electroplating operations. Area 1 is bound to the east by the historical building, to the north and west by a chain link fence, and to the south by an arbitrary site perimeter line on the property owned by 4800 Dewey Avenue Enterprises, Inc. The primary receptors of contaminated surface water and sediments from Area 1 are wildlife species located in the freshwater wetland area to the west of the project site. The wetlands are hydraulically connected to Area 1 by a drainage swale that extends from the western end of the former lagoon.

The soil/sediment in the Area 1 lagoon was previously remediated down to (but not including) the groundwater table by WESTON as part of an Interim Remedial Action (IRA) (see *Final Interim Action Completion Report* dated 2001 October) and restored to existing grade. The IRA was accepted by NYSDEC on 10 January 2002. However, prior to the remediation, the lagoon previously discharged to a swale (drainage ditch) leading to the adjacent wetlands (Area 2) located outside the fenced in perimeter limits of the site. Both locations were previously sampled and identified as Areas of Concern by Ogden Environmental and Energy Services, Inc. (OEES) (Northern Ecological Associates, Inc. [NEA]/OEES, 2000; See Subsection 1.3).

The wetlands and several other receptor water bodies were the subject of this Task Order Modification for fish and sediment sampling. The other tributary that is identified in this report for sampling is Round Pond. Both Buck Pond and the upstream section of Round Pond Creek (south of the confluence) were sampled to collect background information on

the sediment and fish samples (see Figure 1-1). For reference purposes, Round Pond Creek (north of the confluence) is referred to as the associated streams and wetlands.

1.2 SITE BACKGROUND

According to the OEES report, Air Force Plant No. 51 was built for the production of ocean-going ships during World War II. Later, the Department of Defense produced B-52 bulkheads at the site. Lastly, it was utilized for the production of Talos ground-handling equipment, before its present use by the Genesee Scrap and Tin Company and other tenants.

In September 1959, care and custody of the site was accepted by the General Services Administration (GSA). On 10 March 1961, by quitclaim deed, the GSA conveyed 40.33 acres fee and 3.66 acres easement to the Monroe County Water Authority (MCWA). Later, on 7 November 1963, the MCWA, by quitclaim deed, conveyed 36.63 acres fee and 3.24 acres easement to 4800 Dewey Avenue, Inc. The current owner of the property, 4800 Dewey Avenue Enterprises, Inc. (a corporate relative of 4800 Dewey Avenue, Inc.) currently leases the property to the Genesee Scrap and Tin Company along with other commercial tenants. Genesee Scrap and Tin Company stores and repackages scrap and tin products for resale.

During the OEES investigation, sediment samples were collected from three locations within Area 1 at a depth of 0 to 6 inches. The sediment samples were analyzed for total metals, volatile organic compounds (VOCs), and cyanide. In addition, three surface water samples were also collected from Area 1 and analyzed for total metals and cyanide. Based on the investigation data, contaminants detected in Area 1 sediment included trichloroethene (TCE), cis-1,2-dichloroethene (DCE), vinyl chloride (VC), cadmium, chromium, copper, lead, nickel, zinc, and cyanide. Contaminants detected in Area 1 surface water included TCE, DCE, VC, cadmium, chromium, copper, and lead. These parameters (and their respective values) in addition to data contained in the OEES report (NEA/OEES, 2002) and additional site background data were utilized by USACE, NYSDEC, and WESTON in selecting and generating the sampling criteria for the fish and sediment sampling effort.

1.3 PROJECT OBJECTIVES

1.3.1 Task Overview

The expanded work completed for this project included the following tasks:

- Collection, analysis, and validation of fish filet samples from Round Pond and the associated streams and wetlands adjacent to the site to evaluate the potential for human exposure to contaminants through the ingestion of sport fish.
- Collection, analysis, and validation of whole body fish samples from Round Pond and the associated streams and wetlands adjacent to the site to collect information to evaluate the ecological impact of site contaminants (ecological assessment).
- Collection, analysis, and validation of sediment samples at Round Pond, Round Pond Creek, and the associated streams and wetlands adjacent to the site; three sediment samples were collected west and north of the former lagoon, and seven sediment samples were collected southwest and south of the former lagoon and facility (see Figure 2; WESTON, 2002).
- Background sediment sample collection in Buck Pond and Round Pond Creek (south of the confluence).
- Screening of lagoon pre-excavation sediment samples to assess potential migration of contaminants of concern into Round Pond and adjacent wetland areas.
- Preliminary screening of sediment data with respect to those contaminants potentially migrating into Round Pond relative to human health and ecological risk-based benchmark values.
- Preparation of a Collection and Analysis Report for submittal to USACE and NYSDEC that presents the results and provides conclusions and recommendations for additional sampling.

1.3.2 Fish Filet and Whole Fish Data

The primary target contaminants of concern for the fish filet and whole body sampling events are shown in Table 1-1. Volatile organic compounds and semi-volatile organic compounds (SVOCs) were not analyzed in fish samples (it was assumed that these compounds would not significantly bioaccumulate in fish).

Table 1-1

Target Contaminants for Fish Sampling

Analyte	Sample Media
Mercury	Fish Filet (Human Health)
	Whole Body Fish (Ecological Assessment)
Cadmium	Fish Filet (Human Health)
	Whole Body Fish (Ecological Assessment)
Lead	Fish Filet (Human Health)
	Whole Body Fish (Ecological Assessment)
Polychlorinated biphenyls (PCB)	Fish Filet (Human Health)
	Whole Body Fish (Ecological Assessment)
Pesticides	Fish Filet (Human Health)
	Whole Body Fish (Ecological Assessment)
% Lipids	Fish Filet (Human Health)
	Whole Body Fish (Ecological Assessment)

The expanded scope of the fish data evaluation included the following:

- A preliminary human health screening assessment was conducted to estimate the potential for human exposure and risk through the ingestion of sport fish from Round Pond and adjacent streams and wetlands; this was addressed by comparing fish filet data with state and federal risk-based concentrations (RBCs), and fish advisories and advisory guidelines where available.

- A preliminary ecological screening assessment was conducted to estimate the potential for adverse effects in piscivorous terrestrial and avian species; this was addressed by comparing whole fish tissue data with screening benchmarks for protection of terrestrial and avian species.

- A comparison of fish data with background data obtained from Buck Pond and the lower (southerly) portion of Round Pond Creek.

- Fish filet data were also compared with fish advisory guidelines and advisories where available.

1.3.3 Sediment Sampling

Sediment samples were collected at Round Pond and within the streams and wetlands adjacent to the Area 1 site. Background sediment samples were collected in Round Pond Creek (south of the confluence) and at Buck Pond. Sediments were analyzed for the full suite of VOCs, SVOCs, total organic carbon (TOC), Target Analyte List (TAL) Metals, PCB/pesticides, and cyanide. Sediment data were compared to appropriate ecological and human health benchmarks for bioaccumulation potential in fish.

In addition to the collection and analysis of sediment data from Round Pond and associated streams and wetlands, preliminary estimates of the potential for human health and ecological impacts were made:

- A preliminary human health screening assessment was conducted to estimate the potential for human exposure and risk through the direct contact of sediments from Round Pond and adjacent streams and wetlands; this was addressed by comparing sediment data to state and federal RBCs and other health benchmarks.
- A preliminary ecological screening assessment was conducted to estimate the potential for adverse effects in terrestrial and avian species; this was addressed by comparing sediment data with screening benchmarks for protection of terrestrial and avian species.
- A comparison of sediment data with background data obtained from Buck Pond and the lower (southerly) portion of Round Pond Creek.
- Another objective was to obtain a preliminary estimate of the potential impact of the former lagoon (Area 1) on Round Pond and the adjacent streams and wetlands; this was performed through a simple screen of pre-excavation lagoon sediment data with sediment data collected from Round Pond and adjacent streams and wetlands.

SECTION 2

SITE ACTIVITIES

2. SITE ACTIVITIES

2.1 COORDINATION AND SUPPORT

In order to complete the fish and sediment sampling, coordination was required between WESTON, USACE, NYSDEC, and local (site) representatives where applicable. A listing of primary project participants is included by name and discipline:

Company

Key Personnel	Position/Title
USACE	
David Brouwer	Project Manager
Andrew Winslow	Construction Manager /Contracting Officers Representative
James E. Beran	Rapid Chemist
NYSDEC	
Frank Sowers	Environmental Engineer I
Christina Dowd	Division of Fish, Wildlife, and Marine Resources
WESTON	
Christopher Kane	Project Manager
Bill Freeman/Diane Quigley	Project Chemists
Richard Flack	Site Manager/Project Scientist
Robert Wagner	Site Quality Control Officer/Assoc. Project Scientist
Lisa Todaro	Site Safety & Health Officer/Assoc. Project Engineer
Other Representatives	
Joe Albert	Monroe County Health Department
Joe Crua	NYSDOH
Tony Forti	NYSDOH

2.2 MOBILIZATION

Mobilization was performed by WESTON on 10 June 2002, to initiate activities associated with the sampling effort. The mobilization task included the procurement and delivery of sampling equipment, materials, and personnel necessary to implement all aspects of the work. Phased

mobilization of equipment was performed to ensure timely performance of site activities in accordance with the project schedule (Figure 2-1). This task also included obtaining permits necessary to implement the work. Prior to commencement of sampling activities, a scientific collector's license was obtained from the NYSDEC Division of Fish, Wildlife and Marine Resources. A New York fishing license was obtained by each WESTON employee involved in the human exposure, ecological assessment, and background sampling for fish and sediment media.

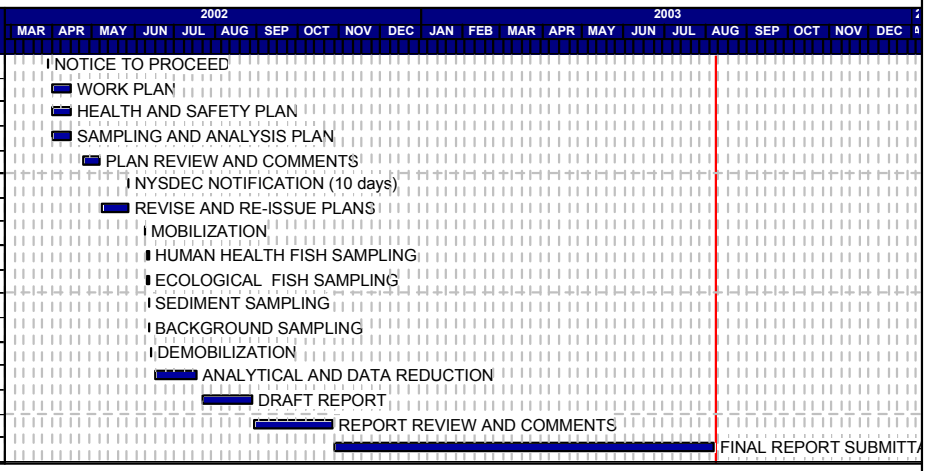
A Jon boat was utilized for the fish and sediment sampling in Round Pond, Buck Pond, and sections of Round Pond Creek (both upstream and downstream of the confluence). There were no known public boat launches for Round Pond and Round Pond Creek north of the Lake Ontario Parkway. Based on this, coordination with the owner of Dewey Self Storage at 4999 Dewey Avenue (Mr. Gus Ognenovski) was performed. Coordination was performed in advance to ensure access was approved at the non-public ramp. The public boat launch on Edgemere Drive was utilized to access Buck Pond for sampling.

2.3 HUMAN EXPOSURE FISH SAMPLING

This task included the collection of fish filet samples in Round Pond and associated streams and wetlands adjacent to the site. Fish specimens were collected using a boat mounted electroshocker and dip nets. The active sampling method of electroshocking was used to avoid deterioration of fishes before sample preparation, a situation that could have occurred if passive devices (e.g., entanglement nets, traps) were used. In addition, this collection method prevented by-catch mortality. Fishes within range of the electric field when triggered were momentarily stunned. Fishes that were not netted quickly recovered and swam away. Fishes that were netted were kept alive in 5-gallon containers until processed for shipment to the laboratory. Fish that were not retained for analysis were returned to the water. A final decision on which individual species to retain for analysis was made by NYSDEC biologists at the end of each daily sampling event. As a result of the holding time, there were some incidental mortalities that occurred.

FIGURE 2-1
ROUND POND FISH AND SEDIMENT SAMPLING
FORMER AF PLANT NO. 51, GREECE, NY

Act ID	Description	Orig Dur	Rem Dur	Early Start	Early Finish
1000	NOTICE TO PROCEED	1	0	29MAR02 A	29MAR02 A
1010	WORK PLAN	10	0	02APR02 A	16APR02 A
1020	HEALTH AND SAFETY PLAN	10	0	02APR02 A	16APR02 A
1030	SAMPLING AND ANALYSIS PLAN	10	0	02APR02 A	16APR02 A
1040	PLAN REVIEW AND COMMENTS	17	0	24APR02 A	07MAY02 A
1045	NYSDEC NOTIFICATION (10 days)	1	0	28MAY02 A	28MAY02 A
1050	REVISE AND RE-ISSUE PLANS	4	0	08MAY02 A	28MAY02 A
1060	MOBILIZATION	1	0	10JUN02 A	10JUN02 A
1070	HUMAN HEALTH FISH SAMPLING	5	0	11JUN02 A	13JUN02 A
1080	ECOLOGICAL FISH SAMPLING	5	0	11JUN02 A	13JUN02 A
1090	SEDIMENT SAMPLING	2	0	12JUN02 A	13JUN02 A
1100	BACKGROUND SAMPLING	1	0	12JUN02 A	13JUN02 A
1110	DEMOBILIZATION	1	0	14JUN02 A	14JUN02 A
1120	ANALYTICAL AND DATA	36	0	17JUN02 A	19JUL02 A
1130	DRAFT REPORT	10	0	22JUL02 A	29AUG02 A
1140	REPORT REVIEW AND COMMENTS	10	0	30AUG02 A	28OCT02 A
1150	FINAL REPORT SUBMITTAL	30	0	29OCT02 A	08AUG03 A



Start date	28FEB02
Finish date	08AUG03
Data date	08AUG03
Run date	07AUG03
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U.S. ARMY CORPS OF ENGINEERS, OMAHA DISTRICT
CONTRACT NO.: DACA45-98-D-0004

Prepared by:
Weston Solutions

Date	Revision	Checked	Approved
27APR02	1.0	CGK	
07MAY02	2.0	CGK	
15MAY02	3.0	CGK	
28AUG02	4.0/5.0	CGK	

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

As part of the basic study objective, WESTON collected a total of 20 fish filet samples, 10 specimens from Round Pond, and 10 specimens from the associated streams and wetlands adjacent to the site (independent of quality control [QC] samples). Prior to sample collection, target species were identified to establish consistency for obtaining the same species at each sample location. The target species for the human exposure sampling are species normally caught for human consumption and known to exist in Round Pond, which included brown bullhead (*Ictalurus nebulsous)*, largemouth bass (*Micropterus salmoides)*, smallmouth bass *(Micropterus dolomieui)*, rock bass (*Ambloplites rupestris*), and yellow perch (*Perca flavescens*). All fish collected during the human exposure-sampling event for analysis were identified, measured and weighed. This information is included in Table 2-1.

One largemouth bass, three smallmouth bass, one rock bass, and five brown bullheads were collected from Round Pond. Another five brown bullheads were collected from the associated streams and wetlands adjacent to the site, along with five yellow perch. A sample was defined as having enough fish biomass for each specified analysis. Each filet sample consisted of one fish individual of edible size.

All fish collected were analyzed for pesticides/PCBs, metals (cadmium, lead, and mercury), and percent lipids. The filet samples were analyzed for PCBs using U.S. Environmental Protection Agency (EPA) Method SW-846, 3540C/8082M; for pesticides using EPA Method 3540C/8081A; for mercury using EPA Method 7471A; and for cadmium and lead using EPA Method 3050B/6010B. The Soxhlet extraction was utilized, at the specific request of NYSDEC, in lieu of the sonication method for all tissue samples analyzed for pesticides/PCBs. The samples were analyzed by a Missouri River Division and National Environmental Laboratory Accreditation Program (NELAP)-certified environmental laboratory. Tier 3 validation was utilized. All data reports were validated in accordance with EPA National Functional Guidelines, and/or any relevant New York State guidance.

Human exposure sampling was performed in the water bodies shown in Figure 2-2. Final sampling locations were determined in the field by WESTON, USACE, and NYSDEC personnel based on pond and specie conditions.

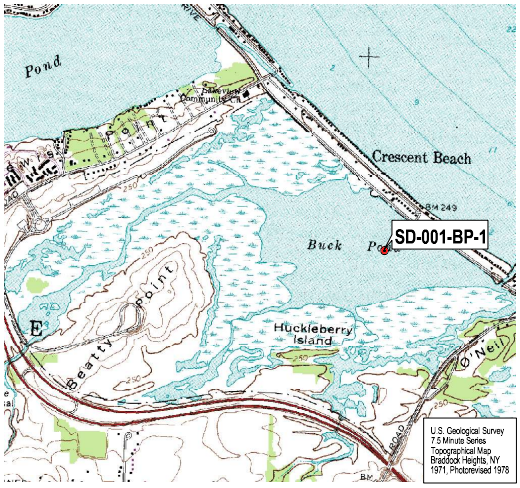
Table 2-1
Fish Samples
Former Air Force Plant No. 51
Monroe County
Greece, New York

Sample ID	Location	Specimen Common Name	Specimen Scientific Name	Length (mm)	Weight (grams)	Date Collected	Sample Prep Condition	Remarks
WB-001-RP-00	Round Pond	Brown Bullhead	*Ameiurus nebulsous*	280	400	06/11/02	Skin On	
WB-002-RP-00	Round Pond	Brown Bullhead	*Ameiurus nebulsous*	310	550	06/11/02	Skin On	
WB-003-RP-00	Round Pond	Brown Bullhead	*Ameiurus nebulsous*	275	500	06/11/02	Skin On	
WB-004-RP-00	Round Pond	Brown Bullhead	*Ameiurus nebulsous*	315	500	06/11/02	Skin On	
WB-005-RP-00	Round Pond	Brown Bullhead	*Ameiurus nebulsous*	336	550	06/11/02	Skin On	
WB-006-RP-00	Round Pond	Yellow Perch	*Perca flavescens*	266	200	06/11/02	Skin On & Scaled	Lab duplicate
WB-007-RP-00	Round Pond	Yellow Perch	*Perca flavescens*	223	134	06/11/02	Skin On & Scaled	
WB-008-RP-00	Round Pond	Yellow Perch	*Perca flavescens*	207	114	06/11/02	Skin On & Scaled	
WB-009-RP-00	Round Pond	Yellow Perch	*Perca flavescens*	209	114	06/11/02	Skin On & Scaled	
WB-010-RP-00	Round Pond	Yellow Perch	*Perca flavescens*	223	149	06/11/02	Skin On & Scaled	
FF-001-RP-00	Round Pond	Brown Bullhead	*Ameiurus nebulsous*	368	750	06/11/02	Skin Off	
FF-002-RP-00	Round Pond	Brown Bullhead	*Ameiurus nebulsous*	350	550	06/11/02	Skin Off	
FF-003-RP-00	Round Pond	Brown Bullhead	*Ameiurus nebulsous*	344	550	06/11/02	Skin Off	Tumor on belly and operculum
FF-004-RP-00	Round Pond	Brown Bullhead	*Ameiurus nebulsous*	342	600	06/11/02	Skin Off	
FF-005-RP-00	Round Pond	Brown Bullhead	*Ameiurus nebulsous*	379	800	06/11/02	Skin Off	Lesion on left operculum
FF-006-RP-00	Round Pond	Largemouth Bass	*Micropterus salmoides*	341	650	06/11/02	Skin On & Scaled	
FF-007-RP-00	Round Pond	Smallmouth Bass	*Micropterus dolomieui*	385	700	06/11/02	Skin On & Scaled	Lab duplicate
FF-008-RP-00	Round Pond	Smallmouth Bass	*Micropterus dolomieui*	334	500	06/11/02	Skin On & Scaled	
FF-009-RP-00	Round Pond	Smallmouth Bass	*Micropterus dolomieui*	296	400	06/11/02	Skin On & Scaled	
FF-010-RP-00	Round Pond	Rock Bass	*Ambloplites rupestris*	267	500	06/11/02	Skin On & Scaled	
WB-001-AW-00	Adjacent Wetland	Yellow Perch	*Perca flavescens*	184	70	06/12/02	Skin On & Scaled	
WB-002-AW-00	Adjacent Wetland	Yellow Perch	*Perca flavescens*	182	71	06/12/02	Skin On & Scaled	
WB-003-AW-00	Adjacent Wetland	Yellow Perch	*Perca flavescens*	190	77	06/12/02	Skin On & Scaled	
WB-004-AW-00	Adjacent Wetland	Yellow Perch	*Perca flavescens*	181	67	06/12/02	Skin On & Scaled	
WB-005-AW-00	Adjacent Wetland	Yellow Perch	*Perca flavescens*	184	69	06/12/02	Skin On & Scaled	
WB-006-AW-00	Adjacent Wetland	Brown Bullhead	*Ameiurus nebulsous*	347	650	06/12/02	Skin On	Lab duplicate
WB-007-AW-00	Adjacent Wetland	Brown Bullhead	*Ameiurus nebulsous*	313	400	06/12/02	Skin On	
WB-008-AW-00	Adjacent Wetland	Brown Bullhead	*Ameiurus nebulsous*	256	250	06/12/02	Skin On	
WB-009-AW-00	Adjacent Wetland	Brown Bullhead	*Ameiurus nebulsous*	310	500	06/12/02	Skin On	
WB-010-AW-00	Adjacent Wetland	Brown Bullhead	*Ameiurus nebulsous*	225	200	06/12/02	Skin On	
FF-001-AW-00	Adjacent Wetland	Brown Bullhead	*Ameiurus nebulsous*	258	250	06/12/02	Skin Off	
FF-002-AW-00	Adjacent Wetland	Brown Bullhead	*Ameiurus nebulsous*	245	250	06/12/02	Skin Off	
FF-003-AW-00	Adjacent Wetland	Brown Bullhead	*Ameiurus nebulsous*	252	250	06/12/02	Skin Off	
FF-004-AW-00	Adjacent Wetland	Brown Bullhead	*Ameiurus nebulsous*	333	500	06/12/02	Skin Off	
FF-005-AW-00	Adjacent Wetland	Yellow Perch	*Perca flavescens*	185	81	06/12/02	Skin On & Scaled	
FF-006-AW-00	Adjacent Wetland	Yellow Perch	*Perca flavescens*	190	82	06/12/02	Skin On & Scaled	
FF-007-AW-00	Adjacent Wetland	Yellow Perch	*Perca flavescens*	187	76	06/12/02	Skin On & Scaled	
FF-008-AW-00	Adjacent Wetland	Yellow Perch	*Perca flavescens*	182	76	06/12/02	Skin On & Scaled	
FF-009-AW-00	Adjacent Wetland	Yellow Perch	*Perca flavescens*	181	72	06/12/02	Skin On & Scaled	
FF-010-AW-00	Adjacent Wetland	Brown Bullhead	*Ameiurus nebulsous*	355	700	06/12/02	Skin Off	Lab duplicate
FF-001-RCU-00	Background Upstream of Round Pond Creek (South of Parkway)	Rock Bass	*Ambloplites rupestris*	200	187	06/12/02	Skin On & Scaled	
FF-002-RCU-00	Background Upstream of Round Pond Creek (South of Parkway)	Brown Bullhead	*Ameiurus nebulsous*	285	400	06/12/02	Skin Off	
FF-003-RCU-00	Background Upstream of Round Pond Creek (South of Parkway)	Smallmouth Bass	*Micropterus dolomieui*	267	300	06/12/02	Skin On & Scaled	
FF-004-RCU-00	Background Upstream of Round Pond Creek (South of Parkway)	Yellow Perch	*Perca flavescens*	208	105	06/12/02	Skin On & Scaled	
WB-001-RCU-00	Background Upstream of Round Pond Creek (South of Parkway)	Rock Bass	*Ambloplites rupestris*	181	142	06/14/02	Skin On & Scaled	
WB-002-RCU-00	Background Upstream of Round Pond Creek (South of Parkway)	Rock Bass	*Ambloplites rupestris*	192	151	06/14/02	Skin On & Scaled	
WB-003-RCU-00	Background Upstream of Round Pond Creek (South of Parkway)	Yellow Perch	*Perca flavescens*	172	73	06/12/02	Skin On & Scaled	
WB-004-RCU-00	Background Upstream of Round Pond Creek (South of Parkway)	Yellow Perch	*Perca flavescens*	162	57	06/12/02	Skin On & Scaled	
FF-001-BP-00	Background Buck Pond	Largemouth Bass	*Micropterus salmoides*	398	1100	06/13/02	Skin On & Scaled	
FF-002-BP-00	Background Buck Pond	Brown Bullhead	*Ameiurus nebulsous*	339	550	06/13/02	Skin Off	
WB-001-BP-00	Background Buck Pond	Largemouth Bass	*Micropterus salmoides*	391	800	06/13/02	Skin On & Scaled	
WB-002-BP-00	Background Buck Pond	Brown Bullhead	Ameiurus nebulsous	305	400	06/13/02	Skin On	

Note: All fish were collected using electroshocking method

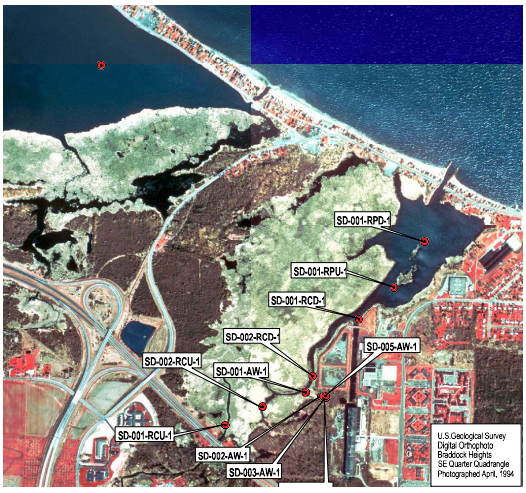
Buck Pond
Background Sediment
Sampling Locations

750 0 750 1500 2250 Feet

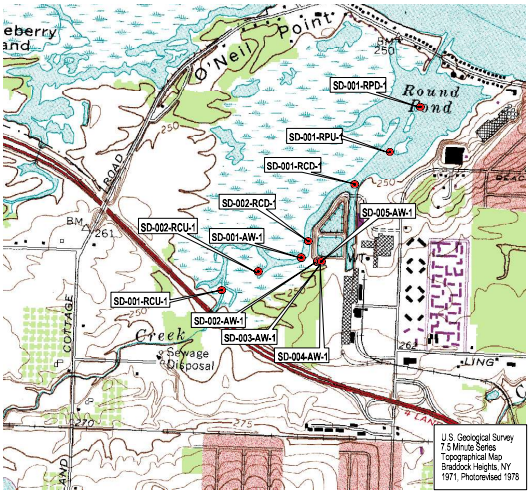


750 0 750 1500 2250 Feet

Round Pond
Sediment
Sampling Locations



1000 0 1000 2000 Feet



1000 0 1000 2000 Feet

FIGURE 2-2
SAMPLE LOCATION MAP

Former Air Force Plant 51
Greece, NY

LEGEND

Sediment
Sampling Locations

Sample	X-coord	Y-coord
SD-001-RPD-1	285315.76800	4794640.04066
SD-001-RPU-1	285170.74024	4794427.41889
SD-001-RCD-1	285005.92740	4794276.66471
SD-002-RCD-1	284786.22315	4794007.98100
SD-001-AW-1	284753.27535	4793930.40378
SD-002-RCU-1	284552.05231	4793864.63497
SD-001-RCU-1	284377.24555	4793777.61916
SD-004-AW-1	284848.66167	4793908.20960
SD-002-AW-1	284828.81104	4793912.54620
SD-003-AW-1	284839.81777	4793914.73527
SD-005-AW-1	284848.17502	4793914.25176
SD-001-BP-1	283794.01073	4795471.32673

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Samples were analyzed by Severn Trent Laboratories (STL), a NELAP-accredited laboratory. Severn Trent Laboratory submitted Analytical Services Protocol-Category B (ASP-B) data packages for this project. All data reports were validated in accordance with EPA National Functional Guidelines, and/or relevant New York State guidance.

All samples were packaged and labeled according to Guidelines for Fish Sampling at Air Force Plant No. 51, U.S. Department of Transportation (DOT), and International Air Transport Association (IATA) regulations. All samples were packaged with custody seals and shipped by an overnight courier.

2.4 ECOLOGICAL ASSESSMENT FISH SAMPLING

This task included the collection of whole body specimens in Round Pond and associated streams and wetlands adjacent to the site to help evaluate ecological impacts of the site contaminants.

In order to efficiently conduct field-sampling activities, WESTON performed the ecological assessment sampling concurrently with the human exposure sampling activity in Round Pond and the associated streams and wetlands adjacent to the site. Sample locations for the ecological assessment are the same as the human exposure sampling. These water bodies are shown in Figure 2-2. The specimens collected during the ecological assessment included: whole body fish specimens in order to compare with Standards, Criteria, and Guidance (SCG) values based on protection of fish-eating wildlife from toxic effects due to bioaccumulation of the contaminants. Weston Solutions, Inc. collected a total of 20 whole body specimens; 10 specimens from Round Pond, and 10 specimens from associated streams and wetlands adjacent to site (independent of QC samples). All fish collected for analysis were identified, measured and weighed. This information is included in Table 2-1.

Five yellow perch and five brown bullhead were collected from Round Pond. Another five yellow perch and five brown bullhead were collected from the associated streams and wetlands adjacent to the site. Each sample was analyzed for all target compounds. The whole fish specimens were analyzed for PCBs using EPA Method SW-846, 3540C/8082M; for pesticides using EPA Method 3540C/8081A; for mercury using EPA Method 7471A; for metals

(cadmium and lead) using EPA Method 3050B/6010B; and percent lipids. The Soxhlet extraction was utilized, at the specific request of NYSDEC, in lieu of the sonication method for all tissue samples analyzed for pesticides/PCBs. The sample locations for ecological sampling are shown in Figure 2-2. Final sampling locations were determined in the field by WESTON, USACE, and NYSDEC based on pond and specie conditions.

Samples were analyzed by STL, a NELAP-accredited laboratory. Severn Trent Laboratories submitted ASP-B data packages for this project. All data reports were validated in accordance with EPA National Functional Guidelines, and/or any relevant New York State guidance documents.

All samples were packaged and labeled according to Guidelines for Fish Sampling at Air Force Plant No. 51, DOT, and IATA regulations. All samples were packaged with custody seal and shipped by an overnight courier.

2.5 SEDIMENT SAMPLING

This task included the collection of sediment samples in Round Pond and associated streams and wetlands adjacent to the site. The sediment samples were analyzed for VOCs, SVOCs, TOC, Pesticides/PCBs, TAL metals, and cyanide.

Upon completion of the human exposure and ecological assessment sampling activities, sediment samples were collected. The objective of the sediment sampling was to obtain additional information regarding the fate and transport of site contaminants relative to the Area 1 (former lagoon) contaminants. The information was used to support the evaluation of human health and ecological exposure scenarios. A total of 10 sediment samples were collected during this activity. Two sediment samples were collected from Round Pond and a total of eight samples were collected from streams and wetlands adjacent to the site. Information pertaining to the sample identification number, sample date, and sample depth are included in Table 2-2. All sediment sample locations and coordinates are shown in Figures 2-2 and 2-3. Due to the scale of Figure 2-2, a separate drawing is included to delineate the

Table 2-2
Sediment Samples
Former Air Force Plant No. 51
Monroe County
Greece, New York

Sample ID	Location	Depth (ft.)	Date Sampled
SD-001-RPD-1-FS	Round Pond - Downstream	0.0-0.5	6/13/2002
SD-001-RPU-1-FS	Round Pond - Upstream	0.0-0.5	6/13/2002
SD-001-RCD-1-FS	Round Pond Creek - Downstream	0.0-0.5	6/13/2002
SD-002-RCD-1-FS	Round Pond Creek - Downstream	0.0-0.5	6/13/2002
SD-001-RCU-1-FS	Background Round Pond Creek - Upstream	0.0-0.5	6/13/2002
SD-002-RCU-1-FS	Round Pond Creek - Upstream	0.0-0.5	6/13/2002
SD-001-AW-1-FS	Adjacent Wetland (close to outfall of AF bldg No. 51)	0.0-0.5	6/13/2002
SD-002-AW-1-FS	Adjacent Wetland (close to outfall of AF bldg No. 51)	0.0-0.5	6/13/2002
SD-003-AW-1-FS	Adjacent Wetland (close to outfall of AF bldg No. 51)	0.0-0.5	6/13/2002
SD-003-AW-1-DP	Adjacent Wetland (close to outfall of AF bldg No. 51)	0.0-0.5	6/13/2002
SD-004-AW-1-FS	Adjacent Wetland (close to outfall of AF bldg No. 51)	0.0-0.5	6/13/2002
SD-005-AW-1-FS	Adjacent Wetland (close to outfall of AF bldg No. 51)	0.0-0.5	6/13/2002
SD-001-BP-1-FS	Background Buck Pond	0.0-0.5	6/13/2002

Note - Exact locations of the sediment samples were measured with a GPS.

FIGURE 2-3
Associated Wetland Sediment Sampling Locations

Former Air Force Plant 51
Greece, NY

LEGEND

Sediment Sampling Locations

Sample	X-coord	Y-coord
SD-001-AW-1	284753.27535	4793930.40378
SD-001-AW-2	284828.81104	4793912.54620
SD-001-AW-3	284839.81777	4793914.73527
SD-001-AW-4	284848.66167	4793908.20960
SD-001-AW-5	284848.17502	4793914.25176

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Associated Wetland sediment sample locations (Figure 2-3). The actual locations of the sediment sample locations were verified in the field utilizing a Global Positioning System unit. Personnel collecting sediment samples in the adjacent wetlands utilized waders and other appropriate sampling equipment to obtain the samples in the proposed locations.

A jon boat was utilized to collect sediment samples in Round Pond and its associated streams. The sediment samples were analyzed for Target Compound List (TCL)-VOCs using EPA Method 3540C/8260B; for TCL-SVOCs using EPA Method 3540C/8270C; for PCBs using EPA Method SW-846, 3540C/8082; for pesticides using EPA Method 3540C/8081A; for TAL metals using EPA Method 3050B/6010B; for TOC using the Lloyd Kahn Method; and for cyanide using EPA Method 9010B. The sediment samples were shipped to STL for analysis. Tier 3 validation was utilized. All data reports were validated in accordance with EPA Nationals Functional Guidelines, and/or any relevant New York State guidance.

2.6 BACKGROUND SAMPLING

This task included the collection of background fish specimens from Buck Pond and Round Pond Creek south of the Lake Ontario Parkway. Background sediment samples were collected from Buck Pond and Round Pond Creek (south of the confluence). The samples were analyzed and validated for the same analytical parameters as specified in the above sections.

A total of six filet and six whole fish background specimens were collected during the project (Table 2-1). This includes two fish filet specimen for human exposure (one largemouth bass and one brown bullhead) and two whole fish specimen for ecological assessment (one largemouth bass and one brown bullhead) in Buck Pond (Figure 2-2). Four fish filet specimen samples for human exposure (one rock bass, one yellow perch, one brown bullhead, and one smallmouth bass) and four whole body specimen samples for ecological assessment (two rock bass and two yellow perch) from the Round Pond Creek south of the Lake Ontario Parkway (Figure 2-2). The fish specimen samples were analyzed for metals (mercury, cadmium, lead), pesticides, PCBs, and percent lipids.

Two sediment background samples were collected (Figure 2-2). One sample (SD-RCU-001-FS) was collected from Round Pond Creek south of the confluence, and one sample

(SD-001-BP-1-FS) was collected in Buck Pond (Figure 2-2). The sediment samples were analyzed for the same primary parameters; TOC, VOCs, SVOCs, pesticides/PCBs, TAL metals, and cyanide.

SECTION 3

ANALYTICAL SUMMARY AND SCREENING RESULTS

3. ANALYTICAL SUMMARY AND SCREENING RESULTS

3.1 OBJECTIVES

The initial objective of this report was to collect fish tissue and sediment data from Round Pond so that New York State could determine if fish consumption advisories specific to Round Pond should be developed, and to evaluate initially the potential for ecological impacts of site contaminants by comparison with several NYSDEC standards. The sampling processes and rationales were summarized in the sample work plan (USACE, 2002).

U.S. Army Corps of Engineers subsequently broadened the initial scope by requesting WESTON to conduct a preliminary assessment of potential impacts to humans and wildlife. Conventional EPA screening was conducted for these tasks. U.S. Army Corps of Engineers was also interested in performing a preliminary evaluation of those chemicals that could be identified as originating from the former lagoon (pre-excavation data).

3.2 NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION STANDARDS

This subsection presents the analytical results of the fish and sediment sampling, and preliminarily evaluates the potential for their impact on human health and the environment by comparing the data to New York State standards (described below).

3.2.1 Human Exposure Results – Fish Filet Data

Fish filet data were compared with SCG values. Standards, Criteria, and Guidelines for comparison to fish filet data were provided to WESTON by NYSDEC (NYSDEC, 2002a). Standards, Criteria, and Guidelines are promulgated requirements and non-promulgated guidance that govern site activities, and that are used by the NYSDEC and other decision makers at various stages in the investigation and remediation of a site (NYSDEC, 2002b).

Chemical concentrations in the 20 filet samples and two duplicate samples collected from Round Pond and its associated streams and wetlands did not exceed any of the provided SCG

values for mercury, cadmium, and PCBs (Table 3-1; Appendix A). Standards, Criteria, and Guidelines values for lead and pesticides were not available. Cadmium was not detected in any of the sampled fish, while mercury was detected in all of the samples collected. Lead was detected only in one sample (FF-004-AW-00). Aroclors 1248, 1254 and 1260 were the only PCBs detected in the fish samples. The highest concentration of any of the PCBs was Aroclor 1254 found in a largemouth bass filet (FF-006-RP-00) from Round Pond. The concentration of this sample was 300 micrograms per kilogram (µg/kg), but this concentration was still more than six times less than its respective SCG. Many pesticides were detected in the fish filet samples, with some pesticides detected in every sample. The most prevalent pesticide was 4,4'-1,1-dichloro-2,2-bis(p-chlorophenyl) ethylene (DDE), detected in every filet sample at concentrations higher than any other pesticide detected. However, none of the fish filet samples exceeded their respective SCGs. All human exposure fish filet analytical results are included in Appendix A of this report.

3.2.2 Ecological Exposure Results – Whole Body Fish Data

Standards, Criteria, and Guidelines values for comparison to whole fish samples were additionally provided by NYSDEC (NYSDEC, 2002a). These SCGs are based on protection of piscivorous wildlife from toxic effects due to bioaccumulation of the contaminant (NYSDEC, 2002a). The 20 whole body specimens and two duplicate samples collected from Round Pond and its associated streams and wetlands adjacent to the site had some exceedances of the SCGs for total PCBs and mercury, but not for cadmium (Table 3-2; Appendix A). Standards, Criteria, and Guidelines values in whole fish samples for lead and pesticides were not available. Cadmium and lead were not detected in any of the sampled fish, while mercury was detected in all but one sample. Mercury was detected in one sample (WB-001-AW-00) at a concentration of 130 µg/kg, which exceeded the SCG for mercury (100 µg/kg). Total PCB exceedances occurred only in the yellow perch specimens. Two yellow perch samples (WB-006-RP-00 and WB-007-RP-00) that exceeded the total PCB SCG had detections of Aroclor-1254 and 1260, while another two yellow perch samples (WB-006-RP-00-DUP and WB-010-RP-00) that exceeded the SCG only had detections of Aroclor 1254 only. The yellow perch samples with the highest concentration of total PCBs (WB-006-RP-00 and WB-007-RP-00) exceeded the SCG of 100 µg/kg by 5.1 times. Many pesticides were detected in

samples, and some were detected in every sample. The most prevalent pesticide was 4,4'-DDE, detected in every filet sample at concentrations higher than any other pesticide detected. All of the whole body fish tissue analytical results are included in Appendix A.

3.2.3 Sediment Results

Sediment samples were compared with NYSDEC *Technical Guidance for Screening Sediments* (TGSCG) values (http://www.dec.state.ny.us/website/dfwmr/habitat/seddoc.pdf) for non-polar organic chemicals and metals as directed by the state (NYSDEC, 2002a). The TGSCGs are prepared to identify areas of sediment contamination and to make a preliminary assessment of the risk posed by the contamination to human health and the environment. Non-polar organic contaminant criteria are derived using the equilibrium partitioning approach, which has now been endorsed by the EPA Science Advisory Board. This approach predicts the concentration of biologically available contaminant and relates it to potential toxicity and bioaccumulation by using existing New York State water quality standards and guidance values established for the water column to derive a sediment criterion. U.S. Environmental Protection Agency water quality criteria are used only when New York State has not published a standard or guidance value for a particular compound. Water quality criteria for bioaccumulation proposed by the Divisions of Fish and Wildlife and Marine Resources are used when no New York State water quality standard or guidance value for bioaccumulation has been developed. Metals criteria are derived from the Ministry of Ontario guidelines and the National Oceanic & Atmospheric Administration (NOAA) data that make use of the screening level approach. This methodology measures the concentration of contaminants present in areas where ecological impacts have been noted, and correlates the contaminant concentration with the severity of the impact.

Sediment criteria for non-polar organic chemicals are located in Table 1 of the above-mentioned web site and are as follows:

- Human Health Bioaccumulation Sediment Criteria
- Benthic Acute Toxicity Sediment Criteria
- Benthic Aquatic Chronic Toxicity Criteria
- Wildlife Bioaccumulation Sediment Criteria

Sediment criteria for metals are found in Table 2 of the above-mentioned website, and consist of:

- TGSCS Low Effect Level (LEL) Sediment Criteria
- TGSCS Severe Effect Level Sediment Criteria

The 11 sediment samples (including one duplicate sample) collected from Round Pond and its associated streams and wetlands adjacent to the site showed some exceedances of the TGSCS values for metals (Table 3-3; Appendix A). Copper, lead, and zinc exceeded their respective TGSCS benchmarks at each sediment sampling location. Other chemicals that exceeded at some of the locations were antimony, arsenic, cadmium, chromium, iron, manganese, nickel, silver, and mercury. The highest concentrations of the chemicals that exceeded the TGSCS were all detected in the samples located in the wetlands adjacent to the plant (Refer to Figure 2-2 and Table 3-3; Appendix A).

A number of organic compounds detected in the 11 sediments had exceedances in comparison to the NYSDEC TGSCS (Table 3-4; Appendix A). Organic sediment data were normalized for TOC content, because the TGSCS criteria are expressed as TOC normalized values. This conversion was performed by dividing the raw sediment data point by the TOC value (milligram [mg] carbon per kilogram [kg] sediment) at that same location. A conversion factor was used to express the data as mg chemical per kg organic carbon. Constituents exceeding the guidelines at some of the sample locations are:

- Total DDT
- Aldrin*
- Chlordane*
- Dieldrin
- Endosulfan I*
- Endosulfan II*
- Endosulfan sulfate*
- Heptachlor*
- Heptachlor epoxide*
- Chlorobenzene*
- Hexachlorobutadiene
- Isopropylbenzene*
- Tetrachloroethene*
- Trichloroethene
- Vinyl chloride
- Bis(2-chloroethyl) ether*
- Azobenzene*
- Hexachlorobenzene*

- Toxaphene*
- Total PCBs
- 1,1,2,2-Tetrachloroethane*
- 1,1-Dichloroethene*
- 1,2-Dichloroethane*, [a]
- Benzene*
- Carbon tetrachloride*
- Benzidine*
- Benzo(a)anthracene
- Chrysene
- Benzo(b)Fluoranthene
- Benzo(k)fluoranthene
- Benzo(a)pyrene
- Indeno(1,2,3-cd)pyrene

* Indicates that the chemical was not detected in any sample, but the detection limit exceeded the benchmark.

[a] The parameter, 1,2-dichloroethane-d4 was detected above the human health bioaccumulation sediment criteria at each sampling location. However, this compound is a surrogate spike added by the analytical laboratory; therefore, it is not considered a constituent of potential concern (COPC). The normalized data for all background organic samples are included in Appendix A. All analytical results for the sediment samples are included in Appendix A.

3.2.4 Human Exposure Background – Fish Filet Data

Four filet samples were collected from Round Pond Creek just north of the Lake Ontario Parkway (rock bass, brown bullhead, smallmouth bass, and yellow perch), and two filet samples were collected from Buck Pond (largemouth bass and brown bullhead). Mercury, cadmium, lead, PCBs and a number of pesticides were detected in samples from both background areas (Table 3-5; Appendix A). Mercury was detected in all of the filet samples. Aroclors 1254 and 1260 were the only PCBs detected in the fish samples. Some pesticides were detected in all samples. The most prevalent pesticide was 4,4'-DDE, detected in every filet sample at concentrations higher than any other pesticide analyzed. All analytical results for the human exposure background samples are included in Appendix A.

Standards, Criteria, and Guidelines for mercury, cadmium, and PCBs in fish filets were not exceeded by any fish sample in either Round Pond Creek or Buck Pond (Table 3-5; Appendix A). Standards, Criteria, and Guidelines values for lead and pesticides were not available.

3.2.5 Ecological Exposure Background - Whole Body Fish Data

Four whole body specimens were collected from Round Pond Creek just north of the Lake Ontario Parkway (same fish species as human exposure samples). Four samples were collected from Buck Pond (2 brown bullheads and 2 yellow perches). All analytical results for the ecological exposure background samples are summarized in Table 3-6, Appendix A.

Mercury was detected in all background whole body specimens. One fish sample from Round Pond Creek (WB-002-RCU-00) had a mercury level equal to the SCG (100 μg/kg). Cadmium concentrations in all background samples (both areas) were less than its SCG. Lead was detected in one background sample (WB-001-RCU-00), but there is no SCG value available. Aroclors 1254 and 1260 were the only PCBs detected in the background ecological fish samples. Concentrations of total PCBs in both specimens from Buck Pond (WB-001-BP-00 and WB-002-BP-00) exceeded the PCB SCG by a factor of approximately 2 to 2.3. One PCB sample from Round Pond Creek exceeded its SCG by a factor of 1.2. Many pesticide constituents were detected in the whole body fish samples, and some compounds were detected in every sample. One pesticide constituent, 4,4'-DDE, was detected in every fish sample at concentrations greater than any other pesticide constituent.

3.2.6 Sediment Background

The two background sediment samples collected from Round Pond Creek just north of the Lake Ontario Parkway and from Buck Pond had exceedances of the NYSDEC TGSCS (LEL) for metals (Table 3-7, Appendix A). The severe effect level TGSCS values were not exceeded in any sample. Arsenic exceeded its TGSCS in Round Pond Creek only. Cadmium and mercury exceeded their TGSCS values in Buck Pond only. The following metals exceeded their respective TGSCS values in both background areas: chromium, copper, iron, lead, manganese, nickel, and zinc. For those metals that exceeded their LEL TGSCS, the highest metal concentrations were generally in Buck Pond.

The two sediment samples collected from Round Pond Creek just north of the Lake Ontario Parkway and Buck Pond also had exceedances in comparison to the NYSDEC TGSCS sediment criteria for organics (Table 3-8; Appendix A). Organic data were converted to

TOC-normalized data so that comparisons to TOC-normalized TGSCS values could be performed. This conversion was made by dividing the data at a particular location by the TOC concentration of that same location. An appropriate conversion factor was used to express the data as milligram chemical per kilogram organic carbon. The normalized data for all background organic samples is included in Appendix A. Shaded values in Table 3-8 indicate that the chemical exceeded at the minimum its most restrictive TGSCS. Organic constituents exceeding the guidelines at some of the sample locations were:

- Total DDT
- Chlordane*
- Dieldrin*
- Endosulfan sulfate*
- Heptachlor*
- Heptachlor epoxide*
- Toxaphene*
- 1,1,2,2-Tetrachloroethane*
- 1,1,2-Trichloroethane
- 1,1-Dichloroethene*
- Benzene*
- Carbon tetrachloride*
- Hexachlorobutadiene*
- Vinyl chloride*
- Bis(2-chloroethyl) ether*
- Azobenzene*
- Hexachlorobenzene*
- Benzidine*
- Benzo(a)anthracene*
- Chrysene
- Benzo(b)Fluoranthene*
- Benzo(k)fluoranthene*
- Indeno(1,2,3-cd)pyrene.*

* Indicates that chemical was not detected in any sample, but detection limit exceeded benchmark.

Most chemicals exceeded their sediment criteria in both Round Pond Creek and Buck Pond. Aroclors were not detected in any of the background sediment samples.

3.3 EPA RISK-BASED CONCENTRATIONS AND ECOLOGICAL VALUES

3.3.1 Approach

The purpose of this subsection was to conduct a preliminary conventional human health and ecological screening evaluation to determine if there are potential health impacts from sediment and fish contamination in Round Pond and associated streams and wetlands. Preliminary lists COPCs for human health evaluation, and contaminants of potential ecological concern (COPECs) for ecological evaluation were developed following conventional EPA risk assessment guidelines (EPA, 1989, 1993, 1997, 1998). The following approach was taken:

- Sediment and fish data (brown bullheads, combined bass species, and yellow perch) from Round Pond and associated streams and wetlands were summarized.
- The maximum detected concentration of each chemical from each medium was compared with human health and ecological RBCs as discussed in the following subsections.
- A qualitative background evaluation of fish filet, whole body fish and sediment sample results was performed. Quantitative statistical comparisons (i.e., Mann-Whitney *U* test) with site data could not be confidently performed due to small sample size.
- Included as a second tier to the screening evaluation, exposure point concentrations (EPCs) were calculated for each chemical and medium for further comparison with RBCs and ecological benchmarks. The EPC is the lower value of the 95% upper concentration limit (UCL) of the mean or the maximum detected concentration for a given chemical in a medium (EPA, 1992a). Data sets for each chemical were tested for normality using the Shapiro-Wilk *W*-test (Gilbert, 1987) before applying the appropriate equation to calculate the EPC (EPA, 1992a).
    - Ratios of the EPCs to the benchmarks were calculated to provide a preliminary level of concern. Ratios of less than one suggest minimal impacts. Note that these ratios are based on a limited number of data points and on conservative screening level health benchmarks (e.g., using residential soil RBCs against sediment concentrations). Therefore, there is significant uncertainty in the interpretation of these results.

Preliminary lists of COPCs for sediments and fish were prepared according to EPA Region III (EPA, 1993). There are no sediment screening benchmarks for direct contact by humans. Screening followed EPA guidelines with slight modifications (EPA, 1993). Human health

screening values used were the EPA Region III RBCs for residential soil ingestion and fish ingestion (EPA, 2002). The target risk (TR) level for soil exposure was adjusted upward by a factor of 10, in order to yield a risk-based screening concentration (RBSC) that reflected a more realistic exposure level for sediment contacts. A target hazard quotient (THQ) of 1 was retained as they are presented in EPA Region III's RBC table. This human health screening approach for sediments has been acceptable in EPA Region III in the past. The RBSCs are the more restrictive of the cancer (C) or non-cancer (N)-based values. The Comprehensive Environmental Response, Compensation, and Liability Act/Resource Conservation and Recovery Act Corrective Level of 400 mg/kg (residential soils) was used for lead. For fish, RBSCs were developed from the EPA Region III RBC table using a TR of 1E-06 and an adjusted THQ of 0.1 (EPA, 2002).

Fish data were also compared to state fishing advisories or guidelines where available to provide a preliminary view of potential human health impacts from sportfish consumption.

A preliminary list of COPECs was prepared according to the *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments* (EPA, 1997). The maximum sediment concentration of each detected chemical was compared with the lowest of following chemical-specific screening benchmarks:

- Canadian Council of Ministers of the Environment (CCME, 1995 and 2001), *Probable Effects Level (PEL)*. Canadian Council of Ministers of the Environment (CCME, 2001)—*Canadian Sediment Quality Guidelines*. The Water Quality Guidelines Task Group of CCME developed PELs for the protection of aquatic life for freshwater sediments using a combination of the National Status and Trends Program approach and the Spiked-Sediment Toxicity Test approach (CCME, 1995). Probable Effects Levels are numerical limits recommended to support and maintain aquatic life associated with bed sediments. Concentrations of a specific chemical greater than its PEL have been determined to cause an adverse effect on aquatic life.

- Ontario Ministry of the Environment and Energy (OMEE, 1993). *Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario*. Ontario Ministry of the Environment and Energy provides LELs for various metals, pesticides, PCBs, and polynuclear aromatic hydrocarbons (PAHs) in freshwater sediments. Lowest effect levels represent the level of contamination that is not expected to have an effect on the majority of sediment-dwelling organisms. Lowest effect levels are based on the 5^{th} percentile of the screening level concentration (SLC). The SLC is based on the occurrence of benthic in faunal species and concentrations of contaminants, and is an estimate of the highest concentration of a

contaminant that can be tolerated by a specific proportion of benthic species (Neff et al., 1986).

- McDonald *et al*. (2000), *Probable Effects Concentration* (PEC) - MacDonald et al. developed consensus-based sediment quality guidelines (SQGs) in order to focus agreement among the numerous criteria from various federal, state, and provincial agencies. Threshold Effect Concentrations and PECs were developed for 28 contaminants of concern, including PAHs, PCBs, pesticides, and metals. These resultant SQGs were evaluated for reliability using available sediment chemistry and toxicity data from field studies throughout the United States, and the authors concluded that the majority of the SQGs provided a reliable basis for assessing sediment quality conditions in freshwater systems.

- National Oceanographic and Atmospheric Administration (NOAA, 1999), *Screening Quick Reference Table Values (SQRT)* – The Coastal Preservation and Restoration Division of NOAA developed these screening values in order to identify coastal resources and habitats that could be affected by hazardous waste sites. National Oceanographic and Atmospheric Administration indicates that these values are intended for preliminary screening purposes only. National Oceanographic and Atmospheric Administration included several different values to consider for the evaluation of freshwater sediments, including PELs, threshold effect levels, and Upper Effects Threshold (UETs). The PEL SQRT values have been used for this analysis since these values represent the lowest concentration at which effects can be expected to be observed. The PEL SQRT values are comparable to the CCME and OMEE values included in the sediment evaluation. Probable Effects Levels are based on benthic community metrics and toxicity test results.

Whole body fish tissue samples were compared with no observed adverse effect level (NOAEL) based food concentration values for piscivorous mammals and birds obtained from Table 12 in the Oak Ridge National Laboratory (ORNL), *Toxicological Benchmarks for Wildlife*, 1996 Revision (ORNL, 1996). The lowest benchmark for potential piscivorous receptors such as mink, river otter, king fisher, great blue heron, and osprey was used to compare Round Pond and background (Buck Pond) whole body fish tissue sample results.

For estimation of potential ecological impacts of sediments, a ratio of the EPC to the lowest ecological benchmark for sediments or fish was calculated. As with the human health screening evaluation, there is significant uncertainty in these results based on the factors discussed above, as well as inadequate information about habitats and target species.

3.3.2 Human Health and Ecological Sediments Results

Table 3-9 (Appendix A) summarizes the sediment data and the comparisons with human health and ecological benchmarks. Based on comparison of the maximum detected values with benchmarks, a preliminary list of COPCs was developed:

- Vinyl chloride
- Benzo(a)pyrene
- Dibenz(a,h)anthracene
- Aroclor-1260
- Antimony
- Arsenic
- Cadmium
- Iron
- Lead
- Manganese

Exposure point concentrations for all COPCs, except for manganese, exceeded their respective RBSCs. The ratios of the EPCs to the RBSCs are shown in the column next to the screening toxicity value (Table 3-9) and are summarized below. Most of the exceedances were marginal:

- Vinyl chloride (1.1)
- Benzo(a)pyrene (3.2)
- Dibenz(a,h)anthracene (6.3)
- Aroclor-1260 (2.4)
- Antimony (2.8)
- Arsenic (1.7)
- Cadmium (1.8)
- Iron (1.6)
- Lead (2.5)

Note that in many cases, the EPCs for both organic and inorganic compounds defaulted to their maximum detected levels**.**

The EPC exceedances likely reflect residential exposures, even though the TR and THQ levels were raised. Residential exposure assumptions of 350 days per year for 30 years are extremely conservative for the type of contact that would be expected at Round Pond. Further, cancer-based RBSCs (i.e., those footnoted with a 'C') are based on age-adjusted calculations, thus taking into account both a young child and adult exposure over a lifetime. Because of the conservative

nature of the screening benchmarks in terms of exposure, and in view of the fact that the occasional visitor to Round Pond would likely have a significantly lower level of exposure, it is unlikely that these sediment exceedances are of any concern for recreational fishermen or swimmers.

Contaminants of potential ecological concern preliminarily selected for sediments are shown below and are also summarized in Table 3-9:

- Acenapthene
- Fluorene
- Phenanthrene
- Fluoranthene
- Pyrene
- Benzo (a) anthracene
- Chrysene
- Benzo (k) fluoranthene
- Benzo (a) pyrene
- Indeno (1,2,3-cd) pyrene
- Dibenz (a,h) anthracene
- Benzo (ghi) perylene
- 4,4'-DDD
- 4,4'-DDE
- 4,4'-DDT
- Aldrin
- α-BHC
- β-BHC
- Dieldrin
- Endrin aldehyde
- Endrin ketone
- λ-BHC (Lindane)
- Aroclor-1254
- Aroclor-1260
- Arsenic
- Barium
- Cadmium
- Chromium
- Copper
- Iron
- Lead
- Manganese
- Nickel
- Selenium
- Silver
- Zinc
- Mercury
- Cyanide

A number of chemicals did not have sediment benchmarks available for comparison; these were mostly SVOCs other than pesticides and PAHs. Therefore, this list of COPECs may be underestimated.

The ratio of exceedance of the EPC relative to the lowest ecological benchmark for a given COPEC is shown in the third to the last column (Table 3-9). A number of the EPCs for the COPECs exceeded their lowest benchmark. Again, note that the EPCs of many COPECs defaulted to the maximum detected level.

A visual comparative inspection of the ranges of detected chemical concentrations (normalized for organic carbon content) in sediments for Round Pond and associated wetlands and streams versus background data (lower Round Pond Creek and Buck Pond) suggests that all human health COPCs, except for Aroclor 1254 and Aroclor 1260, were similar. Aroclors were not detected in background sediments. In view of the small number of sediment background samples (n=2), it is uncertain whether this visual inspection is valid.

The ranges of organics selected as COPECs similarly showed a close similarity to background ranges. Inorganic compounds whose Round Pond and associated wetlands and streams maximum detections exceeded the maximum background detections included barium, chromium, lead, magnesium, manganese, nickel, vanadium, and zinc. Some COPECs were not detected in the limited number of background samples (i.e., mercury, cyanide, and cadmium). As with human health COPCs, the low background sample population size (n=2) indicates that a statistical analysis will not yield any confident conclusions.

3.3.3 Fish Filet Results

Tables 3-10, 3-11 and 3-12 summarize the fish filet chemical detections for the brown bullhead, combined bass species, and yellow perch, respectively. Constituents of potential concern were selected by comparing the maximum detected value to RBSCs. COPCs for each species are shown in yellow on the respective table in Appendix A, and are summarized below:

- Mercury (bullheads, combined bass, perch)
- Aroclor-1248 (combined bass)
- Aroclor-1254 (bullheads, combined bass, perch)
- Aroclor-1260 (bullheads, combined bass, perch)
- Δ-BHC (combined bass, perch)
- 4,4'-DDE (bullheads, combined bass, perch)
- 4,4'-DDT (bullheads, combined bass)
- Dieldrin (bullheads, combined bass, perch)

- Heptachlor epoxide (bullheads, combined bass, perch)
- Heptachlor (perch)

The EPCs for most chemicals in all species were less than the maximum detected value. The EPC for each detected chemical in the fish filets of each species was compared with its respective RBSC for fish ingestion (i.e., EPA Region III RBCs at a TR of 1E-06 or an THQ of 0.1; EPA, 2002). Ratios of the EPC to the RBSC suggested total cancer risks from fish consumption (for each species) by an age-adjusted resident would be in the range of 1E-04 to 1E-03. Ratios based on non-cancer effects were only calculated for mercury. The ratios suggest there would be an estimated HI of 0.3 to 1 for mercury (Tables 3-10 to 3-12). Since the RBSCs are primarily intended for screening evaluations (i.e., are very conservative), estimating risks using these benchmarks may yield unrealistically high ratios. Note that the cancer risks associated with the use of EPA Region III RBCs for fish consumption are predicated on the annualized consumption rate of 54 grams per day (g/day) of edible fish tissue, 350 days per year, for 30 years. This level of exposure likely overestimates the typical exposure potential of recreational fishermen at Round Pond. It is currently not known to WESTON if subsistence fishermen use Round Pond.

Polychlorinated biphenyl data were further compared with fish advisories based on the Great Lakes Protocol (GLSFATF, 1993). No fish advisories or guidelines from New York State were located that specifically related to the area in the vicinity of Round Pond, Greece, New York. However, some recommendations for the white perch in Lake Ontario east and west of Point Breeze were identified and, according to NYSDEC, are applicable to Round Pond. These guidelines/advisories are discussed below.

- The Great Lakes Protocol (GLSFATF, 1993) provides a health risk assessment based approach to derive fish advisories due to PCB contamination. New York State does not use this approach, but for the purpose of this report WESTON did an analysis to determine what the fish advisories would be if they were based on the Great Lakes approach. Based on comparison with the Great Lakes Protocol fish consumption advisories for PCBs (GLSFATF, 1993), the following restrictions on consumption could be applied by New York State on the basis of the PCB data detected in fish filets obtained from Round Pond samples. It should be noted that a larger data set would probably be necessary to evaluate whether such an advisory was warranted. It is also important to note that fish consumption advisories could also be applied to the background site.

- Brown bullhead – Do not consume more than one meal per week because of PCB contamination [Group 2, Great Lakes Protocol (GLSFATF)].

- Combined bass – Do not consume more than one meal per month because of PCB contamination (Group 3, GLSFATF).

- Yellow perch – Unrestricted consumption based on PCB levels (Group 1, GLSFATF).

- New York State 2002-2003 fish advisories (Department of Health) are available for white perch caught in Lake Ontario, either "east or west of Breeze Point" (NYSDOH, 2002). For points west of Breeze point, New York State indicates that white perch are not to be consumed because of contamination with PCBs, Mirex, and dioxin. For points east of Breeze Point, white perch are only to be consumed at one meal per month because of the same three compounds. In addition, fish consumption advisories consisting of "Eat none" are in place for all of Lake Ontario for American eel, channel catfish, carp, lake trout over 25 inches, brown trout over 20 inches, and Chinook salmon. A less restrictive advisory of no more than one meal per month is in place for white sucker, rainbow trout, smaller lake trout, smaller brown trout, and Coho salmon over 25 inches.

- A general New York State advisory for sportfish is to eat no more than one meal (one-half pound) per week of fish taken from freshwaters of the state (NYSDEC, 2003). An annualized rate of 54 g/day would be equivalent to approximately 0.79 pound per week (lb/week).

- There were not a sufficient number of background samples to make confident statistical comparisons with all fish species caught in Round Pond. However, it was noted that the maximum detected levels in Round Pond fish species exceeded their maximum background concentrations for all COPCs, and also for several chemicals not selected as COPCs. Brown bullheads were of greatest concern in this regard because the EPCs (which were generally less than the maximum detected value) exceeded the maximum reported fish background levels.

3.3.4 Ecological Whole Body Fish Results

Tables 3-13 and 3-14 summarize the brown bullhead and yellow perch whole body sample results for detected constituents. The exposure point concentrations were compared with the lowest ORNL NOAEL-based food benchmarks for piscivorous mammals or birds. Only DDT and its metabolites exceeded their respective NOAEL-based benchmarks for the belted kingfisher. No observed adverse effect level-based hazard quotients (HQs) (the ratio of EPCs to benchmarks) based on brown bullhead consumption ranged from 1.2 for 4,4'-DDT to 7.8 for 4,4'-DDE. Hazard quotients for DDT and its metabolites based on yellow perch consumption by

belted kingfisher ranged from 2.6 for 4,4'-DDD to 18.9 for 4,4'-DDE. In addition, the NOAEL-based HQ for mercury exceeded slightly exceeded unity (1.16) for the river otter. Further comparisons of Round Pond whole body tissue concentrations of those constituents exceeding the NOAEL-based benchmarks with their respective lowest observed adverse effect level based benchmarks indicated that the only HQ that exceeded unity was 4,4'-DDE (HQ of 2.1) in the yellow perch whole body sample.

3.4 POTENTIAL LAGOON IMPACT

3.4.1 Approach

This subsection provides a preliminary assessment of the potential impact of lagoon sediments (prior to remediation) on Round Pond and adjacent wetlands and stream areas (hereinafter referred to as "Round Pond sediments"). The approach involved several simple qualitative and quantitative comparisons, and only represents a preliminary screening assessment. These steps were:

- Qualitative designation of potential migration
- Qualitative evaluation of lagoon and Round Pond sample detection limits
- Statistical comparison of lagoon and Round Pond data
- Preliminary human health and ecological screening

3.4.2 Qualitative Designation of Migration Potential

Table 3-15 (Appendix A) is a summary of all of the sediment data from the lagoon (pre-excavation prior to remediation) and Round Pond. It was assumed that these detected chemicals represented a "fingerprint" that could be matched with those chemicals detected in Round Pond. The frequencies of detection, ranges of detections and the ranges of sample quantitation limits (SQLs) for each of these chemicals were summarized for the lagoon and then Round Pond. The next to last column of Table 3-15 indicates if a given contaminant detected in Round Pond sediments was also detected in the lagoon, and thus may have been transported to Round Pond. The bases for the designations "N", "U", and "P" listed in Table 3-15 are strictly qualitative and are based on best professional judgment.

- The designation "N" (no) indicates that it is UNLIKELY that the lagoon contaminant migrated to Round Pond. The rationale for this designation was that the chemical was not detected in Round Pond or associated areas.

- A designation "U" (unknown) indicates it is NOT CERTAIN if the lagoon contaminant migrated to Round Pond. This designation was assigned if the frequency of detection (FOD) in either Round Pond or the lagoon was no greater than approximately 15%.

- The designation "P" (potential) indicates it is POSSIBLE that the Round Pond contaminant migrated from the lagoon. This designation was used when there appeared to be overlap of concentration ranges in Round Pond and the lagoon and where the FOD was approximately 20% or greater.

The comparison is simplistic and ignores hydrogeological factors, other sources of contamination of Round Pond, and fate and transport processes that may have influenced migration from the lagoon to Round Pond. In view of the small sample number in the pre-excavation Round Pond sediments, this simple designation is very preliminary and has many uncertainties.

Shaded areas on Table 3-15 designate those chemicals in Round Pond that may be "possible" or "uncertain" contaminants that were transported from the lagoon. All metals detected in Round Pond were also detected in the lagoon, and thus are designated as "possible" contaminants. Several organic compounds were also in that category:

- All metals (on Table 3-15)*
- 1,2-Dichloroethene (total)
- Acetone
- Trichloroethene
- Fluoranthene
- Fluorene
- Phenanthrene
- Aroclor 1254
- Aroclor 1260

* Note that several inorganic compounds detected in Round Pond sediments were not detected in the lagoon samples. These were: antimony, beryllium, cyanide mercury, silver, and thallium.

Aroclor 1260 was not detected in the lagoon pre-excavation samples; however, it was included as a "U" (uncertain) in Table 3-15, Appendix A. Aroclor 1254 was detected in the lagoon and Round Pond, and Aroclor 1260 was detected in Round Pond sediments. Based on the uncertainty in the evaluation of Aroclor chromatograms, it was decided to include Aroclor 1260 as a

potentially site-related contaminant in Round Pond sediments. Note that the ranges of SQLs for Aroclor 1260 in the lagoon and Round Pond were very close.

Six chemicals were designated as "unlikely to have migrated" from the lagoon because they were not detected in Round Pond and low frequencies of detection in the lagoon:

- 1,1-Dichloroethene
- 4-Methyl-2-pentanone
- Di-n-butylphthalate
- Hexachlorobenzene
- 2-Methylnaphthalene
- 2,4,5-Trichlorophenol

3.4.2 Qualitative Evaluation of Sample Detection Limits

Weston Solutions, Inc. reviewed the range of detected SQLs reported for the chemicals in the lagoon and Round Pond to determine if the sensitivities of the analytical methods used for each data set were similar. Higher SQL ranges in the Round Pond data would suggest that non-detects in Round Pond may have been falsely reported, or that detections may have been missed. Inspection of Table 3-15 shows that SQL ranges for all organic compounds were similar for both the lagoon and Round Pond. One sample location in the lagoon pre-excavation sample set showed a very high SQL (55 mg/kg) for VOCs. This may been due to laboratory dilution or some other analytical difficulty that had to be addressed. The remaining VOC SQLs were in the same range as those reported for Round Pond. Sample quantitation limits were not reported for arsenic and cyanide in the pre-excavation lagoon data. Surrogate SQLs were obtained from other studies WESTON has performed. For arsenic, SQLs of approximately 0.6 mg/kg are consistently reported. For cyanide, SQLs ranging from 0.12 to 0.16 mg/kg are consistently reported. WESTON used an average SQL for cyanide of 0.14 mg/kg.

3.4.3 Statistical Evaluation of Lagoon and Round Pond Sediment Data

Any chemical designated as "Uncertain" or "Possible" was further assessed by performing a statistical comparison of lagoon and Round Pond data using a rank sum test (Mann-Whitney *U* test; Gilbert, 1987). A probability level of 0.05 was chosen as the level of significance. The preliminary statistical comparisons are shown in Table 3-16 (Appendix A). Additional data and

comparisons were placed in the table to supplement any conclusions reached from the statistical tests. It was reasoned that apparent differences, similarities or trends in the relationships of chemical levels in Round Pond and the lagoon might support or refute potential migration. Therefore, the following information was summarized in Table 3-16:

- The mean of available background concentrations. The background samples from Buck Pond and Round Pond Creek were considered as a single population for the purposes of this table. This may oversimplify any conclusions drawn from comparing background to potentially lagoon-related contaminants in Round Pond.
- The means and standard deviations of the chemical concentrations. Non-detects were treated as one-half of the SQL according to Risk Assessment Guidance for Superfund (RAGS) guidance (EPA, 1989). The data ranges were presented in Table 3-15.
- The abbreviation "NS" indicates that there was no significant difference in the range of pre-excavation sediment data from the lagoon and the sediment data in Round Pond.
- The abbreviation "S" indicates that the range of concentrations of a specific chemical in the lagoon is significantly different from the range in Round Pond. Shaded rows indicate chemical data sets in the lagoon and Round Pond area that were statistically different.
- Locations of maximum mean level and maximum detected levels.
- The ratio of mean lagoon to mean Round Pond sediment data.

Several observations were noted on inspection of this table:

- Statistical significance was demonstrated for a number of organic compounds and metals. Of the 16 compounds showing statistical significance, the maximum detections of six chemicals were found in the lagoon, and the maximum detections of 10 chemicals were in Round Pond. For most of these chemicals, the means were relatively higher when the maximum detections were higher.
- There was no apparent trend in the gradients of concentrations in Round Pond versus the lagoon. For example, naphthalene, TCE, dibenzofuran and fluoranthene were statistically different in the lagoon versus Round Pond. However, the means were lower in Round Pond relative to the lagoon for trichloroethene and naphthalene, and were relatively higher for dibenzofuran and fluoranthene.
- There was no apparent relationship of the location of the maximum mean and maximum detected levels of each chemical to statistical significance between the two groups.

- Similarly, there was no apparent statistical relationship of the ratio of the mean lagoon to mean Round Pond level of any chemical.

- The ratio of the means of chemicals in the lagoon to those in Round Pond were generally less than one. Of those chemicals showing statistical significance, only TCE, cadmium, selenium and cyanide had ratios greater than unity (239, 13.4, 1.7, 6.4, and 4.2, respectively).

Therefore, this analysis did not clearly define the potential impact of lagoon on Round Pond and associated wetlands and streams.

3.4.4 Comparisons With Ecological and Human Health Benchmarks

3.4.4.1 Approach

Tables 3-17 and 3-18 summarize the potential ecological and human health impacts, respectively, of the organic and inorganic chemicals detected in Round Pond that may have migrated from pre-excavation lagoon sediments. Earlier in the report, each sample was individually compared with critical benchmarks and criteria. To provide a more defined view of areas of potential contamination and impact, the Round Pond sediment data were grouped according to their relative location and direction from the former lagoon. Refer to Figure 2-2 for exact locations of sediment samples.

- Group 1. Samples northwest of lagoon, including SD-001-RPD-1; SD-001-RPU-1; SD-001-RCD-1.

- Group 2. Samples immediately adjacent to the lagoon, including SD-002-AW-1; SD-003-AW-1; SD-004-AW-1; SD-005-AW-1; SD-002-RCD-1.

- Group 3. Samples southwest of lagoon including, SD-001-AW-1; SD-002-RCU-1.

The arithmetic mean and maximum detected level of each chemical (EPCs could not be calculated from these smaller subsets of data) designated as “possible” or “uncertain” in terms of migratory potential was compared to several ecological and human health benchmarks. Ratios

were then calculated for the maximum detected level in each group to its respective benchmark. In Table 3-17, the following ecological benchmarks were evaluated:

- OMEE LELs
- MacDonald *et al* Sediment Benchmarks
- NOAA-SQRT Benchmarks
- TGSCS LEL

There were several groups of ecological benchmarks that were not available for the organic and inorganic chemicals selected for evaluation. These included the Wildlife Bioaccumulation Sediment Criteria and the Benthic Aquatic Chronic Toxicity Sediment Criteria.

In Table 3-18, the following human health benchmarks were evaluated:

- Human Health Bioaccumulation Sediment Criteria
- EPA Region III Residential Soil RBCs at TR, 1E-05 and THQ, 1

Ratios greater than unity show that the maximum detected level in any group exceeds its benchmark. Segregating the sediment samples in this manner should more accurately pinpoint where potential ecological or human health effects may be a concern.

3.4.5.2 Potential Ecological Impacts

Table 3-17 summarizes the potential ecological impacts of the three groups of sediment data from Round Pond. The maximum detected concentrations were compared to several benchmarks. Several observations are noted on inspection of the table:

- Exceedances of all benchmarks and criteria by the maximum detected concentrations were greatest for Group 2 (those adjacent to the former lagoon). This observation would be expected given the close proximity of Group 2 sample locations to the site. Generally, the smaller ratios for Groups 1 and 3 were similar. This suggests that potential ecological impacts distal to the site are similar whether upstream or downstream. It also suggests a gradual dilution as chemicals migrate from the site. Based on these observations alone, it appears that the lagoon may have been the primary source of these chemicals.

- Ontario Ministry of Environment and Energy LEL comparisons resulted in the highest exceedances relative to the other benchmarks and criteria used (i.e., they are the most restrictive benchmarks available). The TGSCS criteria for metals are apparently based on the OMOE LEL values (ratios and criteria are identical except for cyanide).

- For most chemicals evaluated, arithmetic mean concentrations were generally never greater than approximately 50% of the maximum detected value. Therefore, large ratios calculated on the basis of the maximum detected values are reasonable approximations of the means for the available data

- Based on OMEE LEL benchmarks, Aroclors showed exceedance ratios of 21 (Aroclor 1254), 17,175 (Aroclor 1260), and 631 (Aroclor 1260). Comparison with the NOAA-SQRT values resulted in much lower ratios, but the distribution pattern of exceedances was the same

- Based on OMEE LEL benchmarks, PAH exceedance ratios ranged from 22 to 323. The highest exceedances were noted for Group 2. The chemicals in excess were fluorene, phenanthrene, fluoranthene and pyrene. Comparison with the NOAA-SQRT values resulted in much lower ratios, but the distribution pattern of exceedances was the same.

- Based on OMEE LEL benchmarks, exceedance ratios for metals were much lower relative to exceedances of the same sediment benchmarks (e.g., OMOE LEL) by organic compounds. For most chemicals, these exceedances ranged from 1 to 32. In general, Group 2 showed the highest levels of exceedance relative to Groups 1 and 3. Comparison with the NOAA-SQRT values resulted in much lower ratios, but the distribution pattern of exceedances was the same.

- There was one exception to the general observations noted above for the metals. Cadmium had the highest level of exceedance of all metals (232). This maximum level exceedance was observed in the wetlands SW at location SD-001-AW-1-FS (i.e., Group 3).

- Based on ratios of the maximum detected concentrations to OMEE LELs (the lowest benchmark) and TGSCS LEL Criteria, the following metals at the Group 2 locations showed exceedance ratios (in parentheses) in descending order: copper (42), cadmium (38), lead (32), cyanide (22), zinc (8.7) and chromium (6.7). Exceedances at Groups 1 and 3 locations for these metals were markedly lower, a general pattern that has been observed for all chemicals.

3.4.4.2 Potential Human Health Impacts

Table 3-18 summarizes the comparison of the maximum detected chemical concentrations in Groups 1, 2 and 3 with Human Health Bioaccumulation Sediment Criteria and EPA Region III RBCs for residential soils (modified to reflect sediment exposure as discussed previously). The following observations were noted:

- The maximum concentration of total PCBs (as Aroclors) exceeded the sediment criteria by over a 107,000 times in the Group 2 locations. Exceedances of approximately 1,500 to 4,000 were noted in Groups 1 and 3, respectively. This

indicates the bioaccumulation potential for PCBs in aquatic organisms and the higher food chain, and the potential impact on humans ingesting fish. As noted earlier, the PCB EPCs of the collective Round Pond fish filet samples greatly exceeded the fish consumption RBC (EPA Region III) and qualified for several fish advisories.

- Trichloroethene showed a 26-fold exceedance of its sediment criterion in Group 2. Groups 1 and 3 were insignificant. These data are suggestive of some impact of the former lagoon as the Group 2 wetland and stream samples are immediately adjacent to the area. As previously noted, the mean TCE concentration at Group 2 was very close to the maximum.

  - Although TCE is not as persistent as some chlorinated semivolatile organic compounds (e.g., chlorinated pesticides, PCBs; ATSDR, 1997), levels in sediments could persist for significant lengths of time, particularly if there is a continuing source. Trichloroethene does not bioaccumulate significantly in wildlife according to some sources (ATSDR, 2001).

- There were no sediment criteria for the metals.

- Comparison with the adjusted EPA Region III RBCs showed that there were no potentially significant impacts to humans through direct contact with sediments.

  - Trichloroethene had an exceedance ratio of 3.3. The large exceedance of human health criteria by TCE and its potential to be present in deeper sediments (pre-excavation samples were collected down to 4 inches) (NYSDEC, 2003) suggest that TCE sediment data in Round Pond may require further evaluation.

  - Several metals (lead, arsenic, iron, and manganese) had slight exceedances, but no greater than approximately three.

3.5 UNCERTAINTIES

3.5.1 Sample Data

The number of sediment samples collected in Round Pond and background locations was not sufficient for reliable statistical calculations to evaluate the impact of the former lagoon on Round Pond. Even the qualitative comparisons of background to Round Pond samples are limited in terms of definitive conclusions. The small sample number also results uncertainty in looking for a “fingerprint” or marker chemicals that could help identify those chemicals from the pre-excavation lagoon samples that may have impacted Round Pond.

Uncertainties also arose in attempting to estimate cancer risks to humans (i.e., fish consumption) and toxicity to aquatic and terrestrial wildlife. The EPCs calculated for sediment contaminants (i.e., the 95% UCLs) in the lagoon or Round Pond samples sometimes defaulted to or were close to the maximum detected level. This indicates that the sample number should be larger in order to obtain a more accurate estimate of the true mean (EPA, 1992a). In terms of ecological risk potential, EPCs of site-wide data (as was calculated in the EPA screen) that were compared to benchmarks for protection of terrestrial species do not give a reliable view of potential risk to a given target species. Depending on which species would be identified as critical to that area, EPCs may have to be developed for more defined exposure areas (e.g., based on the species home range). The volume of data would not support such an EPC calculation. Therefore, any potential risk calculations performed in this report are highly uncertain.

3.5.2 Ecological Benchmarks and Criteria

A large number of organic compounds detected in Round Pond and the lagoon do not have chronic ecological screening benchmarks with which to compare to their sediment concentrations. Therefore, there is a high uncertainty level regarding the potential impacts of these chemicals at a screening level. Relative toxicity factors would have to be developed for these chemicals based on the identified target species in the area. This step is time-intensive and beyond the scope of a screening level assessment.

3.5.3 Trichloroethene

U.S. Environmental Protection Agency recently published the *Draft Trichloroethylene Health Risk Assessment* (EPA, 2001), which serves as the basis for draft proposed oral and inhalation cancer slope factors. Although not yet approved for inclusion in the *Integrated Risk Information System* (IRIS) (EPA, 2003a), the changes potentially impact the level of carcinogenic risk potential in humans. The oral slope factor is approximately 36 times more potent than the provisional value conventionally used to develop human health benchmarks and quantitative risk estimates. Therefore, the potential impact to human health of TCE contamination in Round Pond sediments may be underestimated in this report depending on whether the new number is promulgated.

The trichloroethene risk assessment is published as an "External Review Draft" and is still undergoing the review process within EPA. The TCE risk assessment is associated with a high level of scientific uncertainty within EPA and the scientific community. EPA's Science Advisory Board (SAB) raised a number of significant questions on the derivation of the CSF and has requested EPA to re-evaluate their study in a number of areas (SAB, 2002). A recent announcement from NCEA (EPA, 2003b) indicates that EPA will address the SAB comments; however, because the SAB comments are extensive and there will be more review cycles, EPA estimates that it will require at least 18 months from June 2003 before the TCE risk assessment is finalized and a TCE CSF appears on IRIS.

The Superfund Technical Support Center has continued to recommend the use of the withdrawn value until a reassessment of the carcinogenicity of TCE is completed (as cited in EPA, 2002b).

3.5.4 Polychlorinated Biphenyls

Aroclor 1254 was detected in both lagoon and Round Pond sediments. The mean levels were almost the same in the lagoon and Round Pond. Aroclor-1254 slightly exceeded unity for the most restrictive ecological benchmark. It was not detected in background sediment samples. It was not of concern from a direct contact human health perspective. In view of the minor exceedances of sediment criteria and wildlife benchmarks, the necessity to remediate Round Pond sediments on the basis of wildlife effects does not seem warranted and remediation of sediments on the basis of Aroclor-1254 contamination does not seem warranted. It exceeded the fish consumption advisory guidelines (Great Lakes Protocol) for bullheads, combined bass and yellow perch in either or both Group 1 and 2. Background filet levels of Aroclor-1254 in bullheads also exceeded fish advisory guidelines (Great Lakes Protocol), but panfish and game fish levels other than bullheads were lower in filets than Round Pond samples in various fish species. Given the uncertainty of the PCB source, the exceedances of fish consumption advisories for bullheads are possibly a result of sources other than Round Pond. Bullheads tend to be bottom feeders and consume plants and incidental amounts of sediment and may be exposed to sources closer to Lake Ontario.

Aroclor 1260 was not detected in the pre-excavation sediment samples from the lagoon, but it was detected in Round Pond sediments. It was included in the list of potential site-related contaminants based on uncertainties in Aroclor analysis, and as a result of the observation that Aroclor 1254 was detected in both areas. Aroclor 1260 in the Round Pond sediments significantly exceeded unity (1,520) for the most restrictive ecological benchmark, and slightly exceeded unity for human health direct contact. It was not detected in background sediment samples. Background filets of bass exceeded fish consumption advisories as well as Round Pond samples. Background filet levels of Aroclor-1260 were close to Round Pond values in bullheads and bass. In view of the similar background levels in fish, and the fact that Aroclor-1260 was not detected in lagoon sediments, it could be preliminarily argued that the lagoon is not a significant source of the Aroclor-1260. It is possible that there may be other site-related or non-site-related sources that need further evaluation.

3.5.5 Metals

Conclusions drawn from this report of the potential for lagoon impacts on Round Pond (particularly Round Pond proper) are limited without a detailed evaluation of former site operations, historical and anecdotal information about spills, and contributions of other potential sources of contamination other than the lagoon and former site operations. Metals are common by-products of many industrial operations. Metals may also deposit in surface waters as a result of air emissions from incineration processes long distances away. Without more robust sampling in Round Pond and background areas, any conclusions drawn on lagoon impact are highly uncertain.

It was noted in the results that one cadmium sediment sample had a very high ratio relative to OMEE LELs in the wetlands southwest of the former lagoon (SD-001-AW-1-FS). However, this result is uncertain because the sample concentration was reported as 139(J) mg/kg. A “J” value is an estimated value below the confident sample detection limit. This situation commonly occurs when samples are diluted because of matrix interference during analysis. The anomalous nature of this sample is further indicated by three observations: 1) cadmium was not detected in Round Pond fish filets or whole body fish samples for bullhead, bass or perch; 2) the remaining eight sediment samples ranged from ND to 23 mg/kg; and 3) no other chemical in Group 3

showed this level of exceedance – Group 2, which is adjacent to former lagoon, had the highest levels and exceedances for all chemicals. It is very likely this sample is an outlier and should be eliminated.

3.5.6 Pesticides

Pesticides were analyzed and detected in various Round Pond and background sediment and fish samples; however, pesticides were not analyzed in pre-excavation or post-excavation lagoon sediments. Weston Solutions, Inc. does not have any knowledge of the site being associated with pesticide use. Presence of pesticide levels in Round Pond sediments and fish would be expected to some extent as a result of pesticide runoff from residential, industrial and agricultural uses in the area. The extent to which the lagoon or other potential sources contribute to the presence of pesticides in Round Pond sediments cannot be determined with certainty.

SECTION 4

QUALITY CONTROL

4. QUALITY CONTROL

4.1 QUALITY CONTROL PROCEDURES AND RESULTS

Quality Control was monitored throughout the project in accordance with the project TWP and Quality Assurance Project Plan (QAPP). The on-site QC Officer was responsible for ensuring that sample quality and integrity were maintained in accordance with the project QAPP. Concurrent with ensuring QAPP implementation, additional data was generated to document site information. This included:

- Completion of Biota Collection Records
- Collection of Water Quality Data
- Collection of digital site photos
- Completion of chain of custody forms
- Preparation of Data Review Checklists and Case Narratives
- Preparation of daily reports

This supplementary information is included in Appendix B.

4.2 DEPARTURES FROM APPROVED METHODS AND/OR PLANS

Subsection 3.2 of the Field Sampling and Analytical Plan (FSAP) described the scope of work for the project. The original scope for fish collection described a strategy for collecting fish from two locations in Round Pond. On-site Representatives from WESTON, USACE, and NYSDEC agreed that because of the nature of electro-fishing and distribution of fish, that Round Pond would be considered one sample location versus two. In addition, after electro-fishing was initiated and some fish were captured, all representatives agreed that the segregation of fish known to accumulate pesticides/PCBs versus fish known to accumulate metals (cadmium, lead, and mercury) was not practicable, and therefore all fish collected were analyzed for pesticides/PCBs and metals (cadmium, lead, and mercury).

The target species identified in Table 4-2 of the SAP were utilized as a guide; however, the actual fish samples collected were based on the available specie populations at each receptor area at the time of sampling. The actual listing of species caught for both human health and ecological sampling is included in Table 2-1.

Subsection 4.1 of the FSAP described the sediment sampling strategy for the project. This section states that all sediment samples were to be collected with a 6-inch by 6-inch ponar dredge. However, conditions in the adjacent wetlands did not require the use of a jon boat, subsequently sediment samples from this area were collected using dedicated and sterile disposable scoops, and pans. In addition, this section states that VOCs and SVOCs were to be collected using Encore samplers (Method 5035). Only VOCs were collected using Encore samplers.

4.3 DATA VALIDATION

Data validation/evaluation was completed by a qualified scientist/chemist after the data packages had been received from the laboratory.

The validation/evaluation procedures employed consisted of the following activities for confirmation soil/sediment, water, and fish species samples (as applicable for the type of analysis):

- Review of chain-of-custody documents to verify sample identities.
- Review of sample login documents to verify any potential problems with custody seals, container integrity, sample preservation, labeling, etc.
- Review of trip blank data to identify any potential problems with sample container contamination, preservative contamination, laboratory reagent water contamination, or cross-contamination between samples during transport.
- Review of method blank data to determine the presence of any sources of contamination in the analytical process.
- Review the matrix spike (MS) data to evaluate the potential for matrix effects and as a measure of analytical accuracy. Matrix spike recoveries will be compared against laboratory acceptance criteria to determine if they are within or outside of warning and control limits for percent recoveries.
- Review of MS/matrix spike duplicate (MSD) data to evaluate sample homogeneity and as a measure of analytical precision. Matrix spike/matrix spike duplicate data will be compared to laboratory acceptance criteria for the maximum relative percent difference (RPD).

- Review of any blank spike data (if available) as a measure of analytical accuracy. Blank spike recoveries will be compared against laboratory acceptance criteria to determine if they are within or outside of warning and control limits for percent recoveries.

- Review of blank spike and blank spike duplicate data (if available) as a measure of analytical precision. Blank spike and blank spike duplicate data will be compared to laboratory acceptance criteria for the maximum RPD.

- Review of standard reference material or laboratory control sample (LCS) data (if available) as a measure of analytical accuracy. Standard reference material and LCS data will be compared to the certified acceptable ranges of analytical values.

- Review of sample and sample duplicate data (if available) as a measure of sample homogeneity and as a measure of analytical precision. Sample and sample duplicate data will be compared against the laboratory acceptance criteria for the maximum RPD.

- Review of surrogate recovery data to access extraction efficiency, effectiveness of sample introduction, and possible loss during cleanup activities. Surrogate recoveries will be compared to laboratory acceptance criteria to determine if they are within or outside of acceptable limits.

- Review of sample dates, extraction/digestion dates, and analysis dates to determine if maximum holding times were met or exceeded.

- Identification and reporting any potential problems, such as MS or RPD values outside of acceptance criteria.

The validated data that is referenced and summarized in this report has been reviewed in accordance with EPA National Functional Guidelines. Where applicable, the data has been flagged in order to qualify the listed concentration(s). A list of data qualifiers is contained in Appendix A of this report for reference purposes following analytical tables. In addition, a Data Review Checklist, and Case Narrative for each SCG is included in this Appendix B.

The significant comments are summarized below for the particular data packages reviewed for the site activities that are described in this report. A copy of the validated "raw" laboratory data packages was submitted previously to USACE on 26 September 2002 and NYSDEC on 10 October 2002.

SDG 88401:

- Several pesticide results were estimated (J) or rejected (R) due to percent differences between column results (pesticide analysis is performed on dual column confirmation) exceeding 25% (J qualifier) or 100% (R qualifier).
- Field duplicate results for Aroclor 1260 did not meet the RPD criteria of 50% resulting in both samples being estimated.
- No qualifiers were added to the metal analyses.

SDG 88408:

- Cadmium was found in the equipment blank at a concentration of .037 mg/kg. The detection limit for this analyte was raised to .185 mg/kg. All positive results for cadmium were estimated and raised to non-detected due to the equipment blank contamination. In addition, Cadmium yielded an unacceptable RPD for one duplicate field sample.
- All lead samples in this SDG were estimated due to recoveries of 124.2% and 122.5% in the Contract-Required Detection Limit (CRDL) standard. All samples that were less than 3 times the CRDL were estimated.
- There were no laboratory duplicates or MS/MSD's with this SDG.
- Pesticides analysis exhibiting interference with delta-BHC Heptachlor were "P" flagged.
- Sample No. WB-008-AW-00 was re-extracted for pesticides and reported as such since surrogate percent recoveries were outside QC limits.
- Polychlorinated biphenyl analysis in biota samples yielded peaks that did not exactly match Aroclors in the calibration standards. Patterns which most closely resembled the calibration standards were chose for quantitation.

SDG 88418:

- Due to method blank contamination, several sample results were qualified as undetected (U) for the common laboratory contaminants methylene chloride, acetone, 2-butanone, and bis (2-ethylhexyl)phthalate where the concentration found in the

sample was less than 10 times that found in the method blank (except for 2-butanone which is five times).

- Naphthalene was also detected in the semi-volatile method blank and qualified as undetected in samples where the concentration was reported less than five times that found in the method blank.

- Several samples had surrogate and internal standard recoveries outside acceptable QC ranges. These samples were re-extracted and/or reanalyzed and the reanalysis was reported in cases where recoveries came into compliance. In most cases, re-extraction and reanalysis yielded similar results due to matrix interferences. In these cases, qualifiers were applied to the data indicating a low or high bias. Please refer to the Data Qualifier Summary Page for specific qualifier information.

- Some of the metal results were estimated based on low percent solids and specific analytes were estimated due to matrix spike recoveries and field duplicate criteria not meeting QC criteria.

SDG 88424:

- Several pesticide results were estimated (J) or rejected (R) due to percent differences between column results (pesticide analysis is performed on dual column confirmation) exceeding 25% (J qualifier) or 100% (R qualifier).

- Field duplicate results for Aroclor 1254 and Aroclor 1260 did not meet the RPD criteria of 50% resulting in both samples being estimated.

- Two pesticide compounds did not meet MS/MSD spike recovery limits resulting in the qualifying of these two pesticides in the unspiked sample.

- Due to lead and cadmium contamination found in the metals equipment blank, several cadmium and lead results were qualified as undetected (U) in the samples.

SECTION 5

SUMMARY AND CONCLUSIONS

5. SUMMARY AND CONCLUSIONS

5.1 GENERAL

The original intent of this project was to collect sediment and fish data to support preliminary ecological screening and potential development of fish advisories by NYSDEC and NYSDOH, respectively. Subsequently, WESTON was requested to perform the initial ecological screening based on criteria supplied by NYSDEC. Sediment and fish sampling strategy at Round Pond was based on that intent. The scope was later broadened by USACE to perform more detailed screening level human health and ecological risk assessments relative to the potential impact of the former lagoon on Round Pond and adjacent wetlands and streams. The original sampling plan was not designed to support these latter tasks. Consequently, conclusions from this evaluation are preliminary and have a number of uncertainties.

5.2 HUMAN HEALTH AND ECOLOGICAL SCREENING

The first section of the report summarized the potential human health and ecological impacts of chemicals detected in fish and sediments of Round Pond and adjacent wetlands and streams. This evaluation was based on NYSDEC criteria. Additionally, the background fish and sediment data were compared to these criteria.

5.1.1 Fish Results

Mercury, Aroclor 1248, Aroclor 1254, Aroclor 1260, and a number of pesticides (most notably 4,4'-DDE) were detected in both human exposure filet specimens and ecological exposure whole body specimens. Chemical concentrations in all of the human exposure fish filet samples were less than their respective SCGs. Lead was detected in one human exposure filet sample (FF-004-AW-00), but the concentration did not exceed the SCG for this constituent. Cadmium was not detected in any fish specimen (filet or whole body). Total PCBs concentrations in whole body specimens of yellow perch (WB-006-RP-00, WB-007-RP-00, and WB-010-RP-00) exceeded the total PCB SCG for ecological exposure. Mercury was detected in only one whole body fish sample and moderately exceeded its ecological SCG.

Standards, Criteria, and Guidelines were not exceeded by any chemical in any of the background filet data. Mercury was detected in every background filet and whole body specimen. One whole body sample contained mercury concentrations equal to the SCG (100 μg/kg). Aroclor 1254 concentrations exceeded the ecological exposure SCG in both whole body specimens from Buck Pond. Cadmium and lead were detected in every background sample. Cadmium did not exceed its SCG value. There was no SCG for lead. Many pesticide compounds were also detected in the background samples (most notably 4,4'-DDE).

5.1.2 Sediments

The highest concentrations of inorganics detected in Round Pond sediments were found in the samples located within the wetlands adjacent to the former lagoon. Copper, lead, and zinc exceeded their respective TGSCS benchmarks at each of the 10 sediment sample locations. Other inorganic chemicals that exceeded the TGSCS values at some of the sediment sample locations include antimony, arsenic, cadmium, chromium, manganese, nickel, silver, and mercury. Thirty organic compounds also exceeded TGSCS values and included a number of pesticides, PCBs, several VOCs and several SVOCs.

The two background sediment samples were collected from Round Pond Creek south of the Lake Ontario Parkway and Buck Pond. Concentrations of chromium, copper, iron, lead, manganese, nickel, and zinc exceeded the TGSCS for inorganics in both background sediment samples. Arsenic exceeded the TGSCS LEL in the background sediment sample from Buck Pond. Organic compounds that exceeded the human health bioaccumulation sediment criteria for raw data included 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, TCE, VC, and benzo (a) pyrene. The concentration of 4,4'-DDD present in the background sediment sample of Round Pond Creek exceeded the TGSCS for organics by 2.6 times. Aroclors were not detected in the background sediment samples.

5.2 U.S. ENVIRONMENTAL PROTECTION AGENCY SCREENING RESULTS

The next section of the report presented the results of a preliminary risk screen according to general EPA risk assessment guidelines. A preliminary list of COPCs and COPECs was

generated using conventional screening methods. The Round Pond data were screened against benchmarks conventionally used in EPA risk assessments (e.g., EPA Region III RBCs, CCME PELs, OMEE LELs). Sediment COPCs selected were:

- Vinyl chloride
- Benzo(a)pyrene
- Dibenz(a,h)anthracene
- Aroclor-1260
- Antimony
- Arsenic
- Cadmium
- Iron
- Lead
- Manganese

Sediment COPECs selected were:

- Acenapthene
- Fluorene
- Phenanthrene
- Fluoranthene
- Pyrene
- Benzo (a) anthracene
- Chrysene
- Benzo (k) fluoranthene
- Benzo (a) pyrene
- Indeno (1,2,3-cd) pyrene
- Dibenz (a,h) anthracene
- Benzo (ghi) perylene
- 4,4'-DDD
- 4,4'-DDE
- 4,4'-DDT
- Aldrin
- α-BHC
- β-BHC
- Dieldrin
- Endrin aldehyde
- Endrin ketone
- λ-BHC (Lindane)
- Aroclor-1254
- Aroclor-1260
- Arsenic
- Barium
- Cadmium
- Chromium
- Copper
- Iron
- Lead
- Manganese
- Nickel
- Selenium
- Silver
- Zinc
- Mercury
- Cyanide

Fish filet COPCs selected were:

- Mercury (bullheads, combined bass, perch)
- Aroclor-1248 (combined bass)
- Aroclor-1254 (bullheads, combined bass, perch)
- Aroclor-1260 (bullheads, combined bass, perch)
- Δ-BHC (combined bass, perch)
- 4,4'-DDE (bullheads, combined bass, perch)
- 4,4'-DDT (bullheads, combined bass)
- Dieldrin (bullheads, combined bass, perch)
- Heptachlor epoxide (bullheads, combined bass, perch)
- Heptachlor (perch)

Exposure point concentrations were calculated for the sediment and fish samples and compared to RBCs to estimate ratios. Sediment data were treated collectively without regard to location relative to the former lagoon. The human health direct contact results for sediments suggest that the site-wide risk and hazard index is within the acceptable risk and hazard index ranges. Fish risks and hazard indices were estimated to be much higher. However, these results are highly uncertain based on the low volume of data and the conservative benchmarks used to estimate cancer risks and toxicity to humans. Projected ecological hazards from sediment exposure were also relatively high, but the results are also highly uncertain based on the same issues identified in the human health evaluation.

A qualitative comparison between site sediment and background sediment analytical data generally showed a similar range of concentrations for organics and metals for both COPCs and COPECs. Similar conclusions were drawn for comparison of site-related and background fish data. Some COPECs were not detected in background sediments (mercury, cyanide, cadmium). Statistical comparisons could not be performed due to small sample size for background data.

Polychlorinated biphenyl data were preliminarily assessed with respect to Great Lakes fish advisory guidelines and to NYSDEC fish advisories. In general, the tissue concentrations of fish caught from Round Pond and adjacent wetlands and streams would appear to require human consumption restrictions.

Preliminary estimates of ecological risks to piscivorous birds and mammals showed moderate to high hazard ratios for PCBs, and a number of persistent chlorinated pesticides. Mercury risks to

piscivorous wildlife were projected to be low. As indicated earlier, these results are highly uncertain, particularly with regard to the EPC calculations on small number of fish samples, absence of identified target species in the area, and use of the most restrictive benchmarks.

5.3 POTENTIAL LAGOON IMPACTS

The latter half of the report presents a preliminary evaluation of the potential impact of the lagoon on Round Pond sediment quality and on impacts to wildlife and humans. First, a list was compiled of all chemicals detected in pre-excavation lagoon sediment data that were also detected in Round Pond sediments. This initial evaluation yielded a much shorter list of potential chemicals of concern. This initial list consisted of the following chemicals:

- Trichloroethene
- Fluoranthene
- Fluorene
- Phenanthrene
- Pyrene
- Aroclor-1254
- Aroclor-1260
- Arsenic
- Barium
- Cadmium
- Chromium
- Copper
- Iron
- Lead
- Manganese
- Nickel
- Selenium
- Zinc
- Cyanide

Six chemicals were designated as unlikely to have migrated: 1,1-dichloroethene; 4-methyl-2-pentanone; di-n-butylphthalate; hexachlorobenzene; 2-methylnaphthalene; and 2,4,5-trichlorophenol.

Following an analysis of detection limits for the pre-excavation sediment data and the Round Pond sediment data, quantitative and several qualitative assessments were performed to

attempt to better define the potential impact of lagoon chemicals on Round Pond. This comparison did not contribute to a better understand of possible impact.

The last step was to re-evaluate these chemicals present in Round Pond sediments relative to potential ecological and human health impacts. Sediment samples were divided into three groups. Group 1 samples were located northeast of the former lagoon and in Round Pond proper. Group 2 samples were located immediately adjacent to the former lagoon wetlands, and Group 3 samples were located in Round Pond creek southwest of the former lagoon.

The results indicate that the wetlands sediment samples (Group 2) have the potential to significantly impact wildlife. The potential impacts of sediments from Group 1 and 2 were less significant, but still a potential concern. Chemicals in Group 2 sediments exceeded various NYSDEC criteria and other ecological benchmarks by one to four orders of magnitude for Aroclor 1254 (1 order) and 1260 (4 orders), several PAHs (2 orders), several metals including cadmium (2 orders), chromium (1 order), copper (1.5 orders), lead (1.3 orders), and zinc (1 order). The cadmium exceedance was probably an anomaly and should be eliminated from consideration until new samples are collected and analyzed.

Polychlorinated biphenyls exceeded human health sediment bioaccumulation criteria by a factor of approximately 107,000. Trichloroethene exceeded its sediment bioaccumulation ratio by 26 times.

5.4 CONCLUSIONS

Based on the results of this evaluation, it can be concluded that additional evaluation of Round Pond sediments, particularly in the adjacent wetlands, is required on the basis of screening against conservative ecological criteria. The former lagoon appears to have impacted this area in particular. However, there may be other contributing factors such as those presented in Subsection 5.3 of the report that were not analyzed by WESTON under this task order. Areas northeast and southwest of the former lagoon are less impacted but still of concern; it is more difficult to determine the contribution of the former lagoon to these more outlying areas. There is also a potential impact on piscivorous mammals and birds as indicated by the significant

exceedances of wildlife criteria. Additionally, fish contamination by PCBs and possibly by pesticides may require the development of fish advisories specific for the Round Pond area.

There are not sufficient data in sediments or fish to conduct quantitative screening risk assessments for wildlife or humans. Therefore, calculated ratios between chemical EPCs and benchmarks are highly uncertain in terms of their significance. Also, the volume of background data is inadequate for statistical comparisons with site data.

SECTION 6

RECOMMENDATIONS

6. RECOMMENDATIONS

6.1 DATA SAMPLING NEEDS

The number of sediment and fish samples collected in Round Pond and background locations was not adequate for reliable statistical calculations to evaluate the impact of the former lagoon on Round Pond. Similarly, the risk calculations are highly uncertain in view of the small volume of site data. Additional background samples in sediments should also be collected to allow for more accurate characterization of site-related contamination.

The same metals evaluated in fish sample data from the last round of Round Pond sampling should be sufficient for both background and Round Pond evaluation since these represent metals with the greatest bioaccumulation potential. Polychlorinated Biphenyls and pesticides should again be evaluated in the background samples.

Pesticides were not measured in the lagoon sediments, and therefore, there was no mechanism to determine if the former lagoon was responsible for pesticide contamination evident in Round Pond sediments or in fish samples.

Future sampling and analysis activity performed at the Site should be modified to reflect the data presented in this report. It would be more cost-effective to conduct a thorough sampling if the data were to be used in a site-specific risk assessment, and/or if a more detailed evaluation of potential lagoon impacts is desired. If limited screening is planned for the immediate future, sampling can be less intense and probably performed at the same locations as identified for this Collection and Analysis Report. The additional data can be used to supplement the existing data and allow for more robust sample numbers to allow for a more reliable screening effort.

6.2 ECOLOGICAL AND HUMAN HEALTH RISK ISSUES

The predicted ecological and human health impacts of the potentially site-related chemicals in Round Pond were established on conservative screening values. These screening comparisons were made against restrictive (and species-specific) benchmarks. These species are not necessarily native to the Round Pond area. Further evaluation of the site is necessary to provide a

more realistic assessment based upon the actual habitat. This assessment will be less conservative than the ecological assessment presented in this report.

Initial activities should focus on the following:

- Habitat survey – this will involve an on-site walk through of Round Pond as well as a review of historical information on threatened and endangered species in the area. This information will allow the identification of target species in the Round Pond vicinity and the types of fish that are preyed on by these species.
- Development of chemical doses to habitat-specific target species using food chain models.
- Development of relevant species-specific toxicity values for the COPECs – This will provide a more realistic estimate of risk to wildlife.
- Estimate the Ecological Effect Quotient, which is the ratio of the bioaccumulated dose from food chain modeling to species-specific toxicity value.

Additional detailed evaluation might be useful in order to develop a relevant site-specific estimate of ecological risk. These steps can be further discussed after review of this document by the USACE and NYSDEC. Note that these recommendations for further ecological evaluation should not be undertaken until the potential contribution of the lagoon on Round Pond is verified.

6.2 MISCELLANEOUS ISSUES

Watershed input from other sources may also explain the presence of other contaminants in Round Pond, such as trace metals and even heavy metals such as lead. Therefore, it is suggested that watershed impacts and possible point sources be identified to characterize additional sources of background concentrations for COPCs and COPECs. This information should be readily available and could be summarized without extensive research.

It would be useful to perform a creel survey or examine previous records to determine if subsistence fishing occurs. Such a finding would place a higher level of concern on humans consuming caught fish from Round Pond.

SECTION 7

REFERENCES

7. REFERENCES

ATSDR (Agency for Toxic Substances and Disease Registry). 1997. *Toxicological Profile for Trichloroethylene. Atlanta, GA.* September, 1997.

CCME (Canadian Council Ministers of the Environment). 2001. *Canadian Sediment Quality Guidelines for the Protection of Aquatic Life: Summary Tables*. Available online: http://www2.ec.gc.ca/ceqg-rcqe/English/Pdf/sediment_summary_table.htm.

CCME (Canadian Council Ministers of the Environment). 1995. *Protocol for the Derivation of Canadian Sediment Quality Guidelines for the Protection of Aquatic Life.* CCME EPC-98E. Prepared by the Technical Secretariat of the Water Quality Guidelines Task Group, Winnipeg, Manitoba. 38p.

Day Engineering, P.C. *Preliminary Scope of Work Site Investigation*, September 1992.

EPA (U.S. Environmental Protection Agency). 2003a. *Integrated Risk Information System (IRIS).* Peer-reviewed toxicity database maintained by the U.S. Environmental Protection Agency, Washington, DC. Accessed 20 January 2003.

EPA (U.S. Environmental Protection Agency). 2003b. *IRIS Toxicological Review and Summary Documents for Trichloroethylene*. National Center for Environmental Assessment. http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=22536.

EPA (U.S. Environmental Protection Agency). 2002a. *Risk-Based Concentration Tables*. EPA Region III, Philadelphia, PA 19104. 9 October 2002.

EPA (U.S. Environmental Protection Agency). 2002b. *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance).* November 2002. EPA530-F-02-052.

EPA (U.S. Environmental Protection Agency). 2001. *Draft Trichloroethylene Health Risk Assessment: Synthesis and Characterization*. Office of Research and Development, Washington, D.C.20460. EPA600/P-01/002A. August 2001.

EPA (U.S. Environmental Protection Agency). 1998. *Guidelines for Ecological Risk Assessment*. Risk Assessment Forum, U.S. Environmental Protection Agency, Washington, DC. EPA/630/R-95/002F.

EPA (U.S. Environmental Protection Agency). 1997. *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments.* Interim Final. Prepared by U.S. EPA, Environmental Response Team, Edison, NJ. 5 June 1997. EPA 540-R-97-006.

EPA (U.S. Environmental Protection Agency). 1993a. *Selecting Exposure Routes and Contaminants of Concern by Risk-Based Screening*. EPA Region III, Hazardous Waste Management Division, Office of Superfund Programs, Philadelphia, PA. EPA/903/R-93-001.

EPA (U.S. Environmental Protection Agency). 1993b. *Wildlife Exposure Factors Handbook*, Volumes I and II. EPA/600/R-93/187a, EPA/600/R-93/187.

EPA (U.S. Environmental Protection Agency). 1993c. *Great Lakes Water Quality Initiative Criteria Documents for the Protection of Aquatic Life in Ambient Water* – Draft. PB93-154656. National Technical Information Service. Springfield, VA. February 1993.

EPA (U.S. Environmental Protection Agency). 1992a. *Supplemental Guidance to RAGS: Calculating the Concentration Term*. Publication 9285.7-081. Office of Solid Waste and Emergency Response. May 1992.

EPA (U.S. Environmental Protection Agency). 1992b. *Framework for Ecological Risk Assessment*. Risk Assessment Forum. EPA/630/R-92/001.

EPA (U.S. Environmental Protection Agency). 1989a. *Risk Assessment Guidance for Superfund (RAGS),* Volume I, *Human Health Evaluation Manual (Part A).* Interim Final. EPA/540/1-89/002. Office of Solid Waste and Emergency Response, Washington, DC.

EPA (U.S. Environmental Protection Agency). 1989b. *Ecological Assessment of Hazardous Waste Sites: A Field and Laboratory Reference Document.* EPA/600/3-89/013.

Gilbert, Richard O. 1987. *Statistical Methods for Environmental Pollution Monitoring.* Van Nostrand Reinhold Company, Inc., New York, NY.

GLSFATF (Great Lakes Sport Fish Advisory Task Force). 1993. *Protocol for a Uniform Great Lakes Sport Fish Consumption Advisory*. September 1993.

NYSDOH (New York State Department of Health). 2002. *2002-2003 Health Advisories – Chemicals in Sportfish and Gam*e.

MacDonald, D.D., C.G. Ingersoll, and T.A. Berger. 2000. *"Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems."* Arch. Environ. Contam. Toxicol. 39: 20-31.

NEA/OEES (Northern Ecological Associates, Inc. and Ogden Environmental and Energy Services, Inc.) 2000. *Final Former Air Force Plant No. 51 HTRW Investigation*, April 2000.

NOAA (National Oceanic & Atmospheric Administration). 1999. *NOAA Screening Quick Reference Tables*. Hazmat Report 99-1. Online: http://response.restoration.noaa.gov/cpr/sediment/squirt/squirt.pdf. September 1999. 12 pp.

NYSDEC (New York State Department of Environmental Conservation). 2003. Comments on Collection and Analysis Report, December 2002, addressed to D. Brouwer (USACE) from Frank Sowers (NYSDEC). February 24, 2003.

NYSDEC (New York State Department of Environmental Conservation). 2002a. Response to April 2002 Draft Work Plan for Fish and Sediment Sampling at Round Pond and Round Pond Creek. December 2002, addressed to R. Gajdek (USACE) from Frank Sowers (NYSDEC). May 7, 2002.

NYSDEC (New York State Department of Environmental Conservation). 2002b. *Draft DER-10 Technical Guidance for Site Investigation and Remediation*. NYSDEC, Division of Environmental Remediation. December 15, 2002.

NYSDEC (New York State Department of Environmental Conservation). 1999. *Technical Guidance for Screening Contaminated Sediments*.Division of Fish, Wildlife, and Marine Resources January 25, 1999.

NYSDEC (New York State Department of Environmental Conservation). 1998. *Ambient Water Quality Standards and Guidance Values and Ground Water Effluent Limitations*. Division of Water. Technical and Operational Guidance Series (1.1.1), (Revised January 1999, November 1999).

NYSDEC (New York State Department of Environmental Conservation). 1994. *Revised TAGM – Determination of Soil Cleanup Objectives and Cleanup Levels*. Division of Hazardous Waste Remediation. AGM HWR-94-4046. (January 24, 1994).

OMEE (Ontario Ministry of the Environment and Energy). 1993. *Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario*. Log 92-2309-067. Water Resources Branch, Ontario Ministry of the Environment. August 1993.

ORNL (Oak Ridge National Laboratory). 1996. *Toxicological Benchmarks for Wildlife: 1996 Revision.* ES/ER/TM-86/R3. Environmental Restoration Program, ORNL, Oak Ridge, TN.

SAB (Science Advisory Board). 2002. *Review of Draft Trichloroethylene Health Risk Assessment: Synthesis and Characterization: An EPA Science Advisory Board Report* USEPA Science Advisory EPA-SAB-EHC-03-002 Environmental Board (1400A) December 2002 Protection Agency Washington, DC *www.epa.gov/sab*

USACE (United States Army Corps of Engineers). 2002. Final Task Work Plan, Task Order No. 0011, Contract No. DACA45-98-D-0004, Former Air Force Plant No. 51, Greece, NY, Fort Crook Area Office (USAED), May 28, 2002.

APPENDIX A

ANALYTICAL DATA AND DATA QUALIFIERS

Round Pond

Data Validation Qualifiers

J[1] Estimate result due to percent difference between pesticide column results being greater than 25%. Lab qualified result with a "P."
SDGs: 88401, 88408, 88424, 88418

R[1] Reject result due to percent difference between column results being greater than 100%. Lab qualified result with a "P."
SDGs: 88401, 88408, 88424, 88418

J[2] Estimate 1254 & 1260 results in samples WB-006-RP-00 and -00DUP since RPD criteria for field duplicates was not met (greater than 50%).
SDGs: 88401, 88408.

J[2] Estimate 1254 and 1260 results in samples WB-006-AW-00 and -00DUP since RPD criteria for field duplicates was not met.
SDG: 88424

J[3] Estimate results since MS/MSD recovery criteria was not met. (Sample WB-001-BP-00)
SDGs: 88424, 88418

J[4]/UJ[4] Estimate results since volatile surrogate recoveries were outside QC limits.
SDG: 88418

J[5]/UJ[5] Estimate all results due to percent moisture being greater than 70%.
SDG: 88418

U[6] Qualify methylene chloride and/or acetone as non-detected since it was detected in the method blank.
SDG: 88418

U[7] Qualify 2-butanone as non-detected since it was detected in the methanol blank.
SDG: 88418

U[8] Qualify naphthalene as non-detected since it was detected in the blank.
SDG: 88418

U[9] Raise the detection limit for all cadmium results since it was detected in the equipment blank.
SDG: 88408

J^{10}/UJ^{10} Estimate all results less than 3x CRDL for lead since the CRDL criteria were not met.
SDG: 88408

J^{11} Estimate all positive results for cadmium since the RPD criteria for field duplicates was not met (greater than50%).
SDG: 88408

U^{12} Raise the detection limit for all cadmium and lead results since they were detected in the equipment blank.
SDG: 88418

J^{13}/UJ^{13} Estimate all results less than 3x CRDL for lead since the CRDL criteria were not met.
SDG: 88418

J^{14}/UJ^{14} Estimate all positive and non-detected results for selenium since the matrix spike criteria was not met.
SDG: 88418

J^{15} Estimate all positive results for sodium and cyanide since the RPD criteria for field duplicates was not met.
SDG: 88418

J^{16} The serial dilution criteria were not met for zinc. All positive results have been estimated.
SDG: 88418

J17/UJ17 Estimate all benzidine results since the calibration criteria were not met.
SDG: 88418

J18/UJ18 Estimate all results since the internal standard criteria were not met.

Table 3-1
Fish Fillet Samples For Human Exposure Assessment
Former Air Force Plant No. 51
Monroe County
Greece, New York

Parameters	Units	SCG	Total No. of Samples	Number of samples with Detections	Maximum Detected	No. of Samples Above SCG	FF-001-RP-00	FF-002-RP-00	FF-003-RP-00	FF-004-RP-00	FF-005-RP-00	FF-006-RP-00	FF-007-RP-00
Metals													
Mercury	µg/Kg	1,000	22	22	430	0	93	76	130	81	130	230	230
Cadmium	µg/Kg	1,000	22	0	ND	0	ND	ND	ND	ND	ND	ND	70 U[9]
Lead	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND	ND
Polychlorinated Biphenyls													
Aroclor-1016	µg/Kg	NA	22	0	ND	NA	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Aroclor-1221	µg/Kg	NA	22	0	ND	NA	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Aroclor-1232	µg/Kg	NA	22	0	ND	NA	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Aroclor-1242	µg/Kg	NA	22	0	ND	NA	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Aroclor-1248	µg/Kg	NA	22	1	280	NA	15 U	15 U	15 U	15 U	15 U	280	15 U
Aroclor-1254	µg/Kg	NA	22	17	300	NA	40	52	15 U	77	48	300	220
Aroclor-1260	µg/Kg	NA	22	15	170	NA	26	60	17	49	32	110 J[1]	170
Total Aroclor	µg/Kg	2,000	22	18	690	0	73.5	119.5	32	133.5	87.5	690	397.5
Pesticides													
4,4'-DDD	µg/Kg	NBA	22	15	12	NA	7.3	3.2	2 U	9.8	5.5	12	12
4,4'-DDE	µg/Kg	NBA	22	22	100	NA	33	22	10	49	29	100	89
4,4'-DDT	µg/Kg	NBA	22	10	17	NA	6.6	4.6	3	14	5.3 J[1]	15	R[1]
Total DDT	µg/Kg	NBA	22	22	127	NA	46.9	29.8	14	72.8	39.8	127	101
alpha-Chlordane	µg/Kg	NBA	22	13	4.2 J	NA	3 J[1]	1.4 J[1]	1.1 J[1]	R[1]	2.8 J[1]	0.5 U	0.5 U
Chlordane	µg/Kg	NBA	22	0	ND	NA	5 U	5 U	5 U	ND	5 U	5 U	5 U
gamma-Chlordane	µg/Kg	NBA	22	5	7.5	NA	0.5 U	0.5 U	0.5 U	ND	1.3 J[1]	7.5 J[1]	6.7 J[1]
Heptachlor	µg/Kg	NBA	22	0	ND	NA	0.5 U	0.5 U	0.5 U	ND	0.5 U	0.5 U	0.5 U
Heptachlor epoxide	µg/Kg	NBA	22	13	5.7	NA	2.4	1.1	0.5 U	ND	1.8	5.6 J[1]	5.7 J[1]
Total Chlordane	µg/Kg	NBA	22	13	13.35	NA	5.65	2.75 J[1]	1.6 J[1]	ND	5.9	13.35 J[1]	12.65 J[1]
alpha-BHC	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND	ND
beta-BHC	µg/Kg	NBA	22	2	4.1	NA	ND	ND	ND	ND	ND	ND	4.1
delta-BHC	µg/Kg	NBA	22	1	7.9	NA	ND	ND	ND	ND	ND	ND	ND
gamma-BHC (Lindane)	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND	ND
Total BHC	µg/Kg	NBA	22	3	8.1	NA	ND	ND	ND	ND	ND	ND	4.1
Aldrin	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND	ND
Decachlorobiphenyl	µg/Kg	NBA	22	22	10	NA	7.6	7.5	6.8	9.1	8.2	9	8
delta-BHC	µg/Kg	NBA	22	5	7.9	NA	ND	ND	ND	ND	ND	ND	ND
Dieldrin	µg/Kg	NBA	22	18	16	NA	5.3	2.3	ND	8.4	4	ND	16
Endosulfan I	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	µg/Kg	NBA	22	2	4.2	NA	ND	ND	ND	ND	ND	ND	ND
Endrin	µg/Kg	NBA	22	1	5.1	NA	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND	ND
Tetrachloro-m-xylene	µg/Kg	NBA	22	22	11	NA	8	6.8	7	9.3	7.8	11	7.5
Toxaphene	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND	ND

Table 3-1
Fish Fillet Samples For Human Exposure Assessment
Former Air Force Plant No. 51
Monroe County
Greece, New York

Parameters	Units	SCG	FF-007-RP-00-DP	FF-008-RP-00	FF-009-RP-00	FF-010-RP-00	FF-001-AW-00	FF-002-AW-00	FF-003-AW-00	FF-004-AW-00	FF-005-AW-00	FF-006-AW-00
Metals												
Mercury	µg/Kg	1,000	210	290	190	430	21	29	37	200	81	160
Cadmium	µg/Kg	1,000	37 U[9]	ND	ND	ND	45 U[6]	ND	33 U[9]	40 U[9]	50 U[6]	ND
Lead	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	720 J[10]	ND	ND
Polychlorinated Biphenyls												
Aroclor-1016	µg/Kg	NA	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Aroclor-1221	µg/Kg	NA	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Aroclor-1232	µg/Kg	NA	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Aroclor-1242	µg/Kg	NA	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Aroclor-1248	µg/Kg	NA	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Aroclor-1254	µg/Kg	NA	150	140	110	71	26	32	17	41	45	15 U
Aroclor-1260	µg/Kg	NA	100	98	70	50	15 U	15 U	15 U	25	17	15 U
Total Aroclor	µg/Kg	2,000	257.5	245.5	187.5	128.5	41	47	32	73.5	69.5	22.5
Pesticides												
4,4'-DDD	µg/Kg	NBA	8.1	2 U	11	2 U	3.2	2 U	2 U	3.6	5.3	2 U
4,4'-DDE	µg/Kg	NBA	61	52	70	33	15	8.1	5.5	16	30	4.4
4,4'-DDT	µg/Kg	NBA	R[1]	R[1]	17 J[1]	8.1 J[1]	2 U	2 U	2 U	2 U	3.6 J[1]	2 U
Total DDT	µg/Kg	NBA	69.1	53	98	42.1	19.2	10.1	7.5	20.6	38.9	6.4
alpha-Chlordane	µg/Kg	NBA	0.5 U	0.5 U	0.5 U	3.6 J[1]	1.2	1.2	1.1	ND	2.3 J[1]	ND
Chlordane	µg/Kg	NBA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	ND	5 U	ND
gamma-Chlordane	µg/Kg	NBA	0.5 U	3.7 J[1]	5.3 J[1]	2.4 J[1]	0.5 U	0.5 U	0.5 U	ND	0.5 U	ND
Heptachlor	µg/Kg	NBA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	ND	0.5 U	ND
Heptachlor epoxide	µg/Kg	NBA	3.8 J[1]	0.5 U	0.5 U	2.7	1.4	0.5 U	0.5 U	ND	3.2	ND
Total Chlordane	µg/Kg	NBA	4.3 J[1]	4.2 J[1]	5.8 J[1]	8.7 J[1]	2.85	1.7	1.6	ND	4.15	ND
alpha-BHC	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
beta-BHC	µg/Kg	NBA	2.9	ND	ND	ND	ND	ND	ND	ND	ND	ND
delta-BHC	µg/Kg	NBA	R[1]	ND	ND	ND	ND	ND	ND	ND	R[1]	6.9
gamma-BHC (Lindane)	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2
Total BHC	µg/Kg	NBA	2.9	ND	ND	ND	ND	ND	ND	ND	ND	8.1
Aldrin	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Decachlorobiphenyl	µg/Kg	NBA	7.7	7.5	10	7.9	5.6	5.7	5.8	6.1	6.6	6.6
delta-BHC	µg/Kg	NBA	R[1]	ND	ND	ND	ND	ND	ND	ND	R[1]	6.9
Dieldrin	µg/Kg	NBA	10	8	12	6 J[1]	3	2.4	ND	ND	7.6	2.4
Endosulfan I	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	4.2	ND
Endrin	µg/Kg	NBA	5.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloro-m-xylene	µg/Kg	NBA	6.9	8.3	10	8.4	5.4	5.6	5.9	6	6.8	7.1
Toxaphene	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 3-1
Fish Fillet Samples For Human Exposure Assessment
Former Air Force Plant No. 51
Monroe County
Greece, New York

Parameters	Units	SCG	FF-007-AW-00	FF-008-AW-00	FF-009-AW-00	FF-010-AW-00	FF-010-AW-00-DP
Metals							
Mercury	µg/Kg	1,000	94	98	90	89	92
Cadmium	µg/Kg	1,000	36 U[9]	31 U[9]	29 U[9]	35 U[9]	34 U[9]
Lead	µg/Kg	NBA	ND	ND	ND	ND	ND
Polychlorinated Biphenyls							
Aroclor-1016	µg/Kg	NA	15 U	15 U	15 U	7.5 U	15 U
Aroclor-1221	µg/Kg	NA	15 U	15 U	15 U	7.5 U	15 U
Aroclor-1232	µg/Kg	NA	15 U	15 U	15 U	7.5 U	15 U
Aroclor-1242	µg/Kg	NA	15 U	15 U	15 U	7.5 U	15 U
Aroclor-1248	µg/Kg	NA	15 U	15 U	15 U	7.5 U	15 U
Aroclor-1254	µg/Kg	NA	15 U	15 U	15 U	67 J[1]	46 J[1]
Aroclor-1260	µg/Kg	NA	15 U	15 U	15 U	69	48
Total Aroclor	µg/Kg	2,000	22.5	22.5	22.5	139.75	101.5
Pesticides							
4,4'-DDD	µg/Kg	NBA	2.4	2.6	1 U	8.6	4.7
4,4'-DDE	µg/Kg	NBA	9.4	9.4	11	36	31
4,4'-DDT	µg/Kg	NBA	2 U	2 U	2.4 J[1]	1 U	R[1]
Total DDT	µg/Kg	NBA	12.8	13	13.9	45.1	35.7
alpha-Chlordane	µg/Kg	NBA	0.5 U	2 J[1]	1.9 J[1]	4.2 J[1]	3.6 J[1]
Chlordane	µg/Kg	NBA	5 U	5 U	5 U	5 U	5 U
gamma-Chlordane	µg/Kg	NBA	0.5 U	0.5 U	0.5 U	0.5 U	1.7 J[1]
Heptachlor	µg/Kg	NBA	R[1]	0.5 U	0.5 U	0.5 U	0.5 U
Heptachlor epoxide	µg/Kg	NBA	1.3	1.6	2.3	0.5 U	1.6
Total Chlordane	µg/Kg	NBA	1.8	3.85	4.45	4.7 J[1]	6.9
alpha-BHC	µg/Kg	NBA	ND	ND	ND	ND	ND
beta-BHC	µg/Kg	NBA	ND	ND	ND	ND	ND
delta-BHC	µg/Kg	NBA	R[1]	R[1]	R[1]	ND	R[1]
gamma-BHC (Lindane)	µg/Kg	NBA	ND	ND	ND	ND	ND
Total BHC	µg/Kg	NBA	ND	ND	ND	ND	ND
Aldrin	µg/Kg	NBA	ND	ND	ND	ND	ND
Decachlorobiphenyl	µg/Kg	NBA	7.7	6.5	6.3	7.9	6.9
delta-BHC	µg/Kg	NBA	R[1]	R[1]	R[1]	ND	R[1]
Dieldrin	µg/Kg	NBA	3.3	4.8	6.1	5.3	4.4
Endosulfan I	µg/Kg	NBA	ND	ND	ND	ND	ND
Endosulfan II	µg/Kg	NBA	ND	ND	ND	ND	ND
Endosulfan sulfate	µg/Kg	NBA	ND	ND	2.3	ND	ND
Endrin	µg/Kg	NBA	ND	ND	ND	ND	ND
Endrin aldehyde	µg/Kg	NBA	ND	ND	ND	ND	ND
Endrin ketone	µg/Kg	NBA	ND	ND	ND	ND	ND
Methoxychlor	µg/Kg	NBA	ND	ND	ND	ND	ND
Tetrachloro-m-xylene	µg/Kg	NBA	7.5	6.2	6.2	7.2	6.9
Toxaphene	µg/Kg	NBA	ND	ND	ND	ND	ND

DP = Lab Duplicate
J = Estimated Value
mg/Kg = milligrams per kilogram
NBA = No Benchmark Available
NA = Not Applicable
ND = Not Detected
SCG = Standards, Criteria, and Guidance values
Fish samples are reported on a wet weight basis
PCB concentrations were calculated based on the total of any reported value(s) and half the reported detection limit for aroclors 1248, 1254, and 1260
µg/Kg = micrograms per kilogram

Table 3-2
Whole Body Fish Samples for Ecological Exposure Assessment
Former Air Force Plant No. 51
Monroe County
Greece, New York

Parameters	Units	SCG	Total No. of Samples	Number of samples with Detections	Maximum Detected	No. of Samples Above SCG	WB-001-RP-00	WB-002-RP-00	WB-003-RP-00	WB-004-RP-00	WB-005-RP-00	WB-006-RP-00
Metals												
Mercury	µg/Kg	100	22	20	130	1	ND	56	34	53	72	57
Cadmium	µg/Kg	3,500	22	9	100	0	ND	ND	ND	ND	ND	ND
Lead	µg/Kg	NBA	22	5	250	NA	ND	ND	ND	ND	ND	ND
Polychlorinated Biphenyls												
Aroclor-1016	µg/Kg	NA	22	0	ND	NA	ND	ND	ND	ND	ND	ND
Aroclor-1221	µg/Kg	NA	22	0	ND	NA	ND	ND	ND	ND	ND	ND
Aroclor-1232	µg/Kg	NA	22	0	ND	NA	ND	ND	ND	ND	ND	ND
Aroclor-1242	µg/Kg	NA	22	0	ND	NA	ND	ND	ND	ND	ND	ND
Aroclor-1248	µg/Kg	NA	22	0	ND	NA	ND	ND	ND	ND	ND	ND
Aroclor-1254	µg/Kg	NA	22	22	350	NA	95	45	33	71	31 J[1]	340 J[2]
Aroclor-1260	µg/Kg	NA	22	18	170	NA	37	19 J[1]	ND	42	45	170 J[1,2]
Total Aroclor	µg/Kg	100	22	22	510	12	132	64	33	113	76	510 J[1,2]
Pesticides												
4,4'-DDD	µg/Kg	NBA	22	20	25	NA	11	18	22	8.2	6.3	ND
4,4'-DDE	µg/Kg	NBA	22	22	170	NA	48	55	76	29	43	130
4,4'-DDT	µg/Kg	NBA	22	13	33	NA	10	9.5	ND	7.4	9.4	33 J[1]
Total DDT	µg/Kg	NBA	22	22	195	NA	69	82.5	98	44.6	58.7	163
Aldrin	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND
alpha-BHC	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND
alpha-Chlordane	µg/Kg	NBA	22	15	9.4	NA	2.8 J[1]	9.4 J[1]	ND	4.6 J[1]	3 J[1]	ND
beta-BHC	µg/Kg	NBA	22	5	3.5	NA	2.1	ND	ND	ND	ND	ND
Chlordane	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND
Decachlorobiphenyl	µg/Kg	NBA	22	22	9.3	NA	7.4	7.7	8.3	5.2	9.3	7.2 J
delta-BHC	µg/Kg	NBA	22	2	11	NA	ND	ND	ND	ND	ND	ND
Dieldrin	µg/Kg	NBA	22	14	30	NA	7.6	11	ND	6	5.3	25
Endosulfan I	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	µg/Kg	NBA	22	3	4.5	NA	ND	ND	ND	ND	ND	ND
Endrin	µg/Kg	NBA	22	1	ND	NA	ND	ND	ND	ND	ND	ND
Endrin aldehyde	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND
Endrin ketone	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND
gamma-BHC (Lindane)	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND
gamma-Chlordane	µg/Kg	NBA	22	14	13	NA	2.4 J[1]	4.6 J[1]	ND	ND	ND	12 J[1]
Heptachlor	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	µg/Kg	NBA	22	17	4.8	NA	ND	4.7	ND	2.6	2.2	ND
Methoxychlor	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND
Tetrachloro-m-xylene	µg/Kg	NBA	22	22	11	NA	7.3	7.4	8.1	5.6	8.4	10 J
Toxaphene	µg/Kg	NBA	22	0	ND	NA	ND	ND	ND	ND	ND	ND

Table 3-2
Whole Body Fish Samples for Ecological Exposure Assessment
Former Air Force Plant No. 51
Monroe County
Greece, New York

Parameters	Units	SCG	WB-006-RP-00-DP	WB-007-RP-00	WB-008-RP-00	WB-009-RP-00	WB-010-RP-00	WB-001-AW-00	WB-002-AW-00	WB-003-AW-00	WB-004-AW-00
Metals											
Mercury	µg/Kg	100	60	68	69	55	66	130	83	67	59
Cadmium	µg/Kg	3,500	ND	ND	ND	ND	ND	54 U[9]	43 U[9]	34 U[9]	42 U[9]
Lead	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Polychlorinated Biphenyls											
Aroclor-1016	µg/Kg	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1221	µg/Kg	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1232	µg/Kg	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1242	µg/Kg	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1248	µg/Kg	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1254	µg/Kg	NA	190 J[1,2]	350	81	100 J[1]	120	25	98	49	31
Aroclor-1260	µg/Kg	NA	86 J[1,2]	160	54	50	84	22 J[1]	62	29	ND
Total Aroclor	µg/Kg	100	276 J[1,2]	510	135	150	204	47	160	78	31
Pesticides											
4,4'-DDD	µg/Kg	NBA	ND	25	7.8	10	7.9	5.1	18	11	6.6
4,4'-DDE	µg/Kg	NBA	140	170	37	66	44	20	71	34	31
4,4'-DDT	µg/Kg	NBA	32 J[1]	R[1]	7.5 J[1]	R[1]	R[1]	3.8 J[1]	7.8 J[1]	5.2 J[1]	4.5 J[1]
Total DDT	µg/Kg	NBA	172	195	52.3	76	51.9	28.9	96.8	50.2	42.1
Aldrin	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND
alpha-Chlordane	µg/Kg	NBA	ND	R[1]	ND	R[1]	R[1]	5 J[1]	3.6 J[1]	3.5 J[1]	3.4 J[1]
beta-BHC	µg/Kg	NBA	ND	ND	ND	3.5	3	R[1]	ND	ND	ND
Chlordane	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Decachlorobiphenyl	µg/Kg	NBA	8 J	6.8 J	9.1	8.4	9.1	7.3	5.6	5.1	5.1
delta-BHC	µg/Kg	NBA	ND	ND	ND	ND	ND	R[1]	ND	7.7	11
Dieldrin	µg/Kg	NBA	27	30	8.2	14	12	14	12	9.4	8.9
Endosulfan I	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	µg/Kg	NBA	ND	ND	ND	ND	ND	4.5	ND	ND	3.8
Endrin	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	µg/Kg	NBA	ND	ND	ND	ND	4.4	ND	ND	ND	ND
Endrin ketone	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-BHC (Lindane)	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	µg/Kg	NBA	12 J[1]	13 J[1]	2.8 J[1]	5.4 J[1]	4.1 J[1]	1.7 J[1]	ND	ND	1.2 J[1]
Heptachlor	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	µg/Kg	NBA	ND	ND	2.2 J[1]	4.3 J[1]	3.1 J[1]	4.5	4.8	3.7	3.3
Methoxychlor	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloro-m-xylene	µg/Kg	NBA	9.6 J	11	9.5	7.6	8.9	7.5	6	5.4	5
Toxaphene	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 3-2
Whole Body Fish Samples for Ecological Exposure Assessment
Former Air Force Plant No. 51
Monroe County
Greece, New York

Parameters	Units	SCG	WB-005-AW-00	WB-006-AW-00	WB-006-AW-00-DP	WB-007-AW-00	WB-008-AW-00	WB-009-AW-00	WB-010-AW-00
Metals									
Mercury	µg/Kg	100	52	69	51	ND	23	27	30
Cadmium	µg/Kg	3,500	30 U[9]	100 U[12]	92 U[12]	ND	ND	54 U[12]	79 U[12]
Lead	µg/Kg	NBA	ND	250 U[12]	220 U[12]	240 U[9]	ND	150 U[12]	160 U[12]
Polychlorinated Biphenyls									
Aroclor-1016	µg/Kg	NA	ND	ND	ND	ND	ND	ND	ND
Aroclor-1221	µg/Kg	NA	ND	ND	ND	ND	ND	ND	ND
Aroclor-1232	µg/Kg	NA	ND	ND	ND	ND	ND	ND	ND
Aroclor-1242	µg/Kg	NA	ND	ND	ND	ND	ND	ND	ND
Aroclor-1248	µg/Kg	NA	ND	ND	ND	ND	ND	ND	ND
Aroclor-1254	µg/Kg	NA	28	64 J[1,2]	27 J[2]	53	45	75	18
Aroclor-1260	µg/Kg	NA	ND	49 J[2]	22 J[1,2]	62	36	44	ND
Total Aroclor	µg/Kg	100	28	113 J[2]	49 J[2]	115	81	119	18
Pesticides									
4,4'-DDD	µg/Kg	NBA	7.1	5.4	3.3	2.9	4.5	5.6	4.6
4,4'-DDE	µg/Kg	NBA	36	26	15	17	22	22	18
4,4'-DDT	µg/Kg	NBA	5.3 J[1]	R[1]	ND	ND	ND	6.5	ND
Total DDT	µg/Kg	NBA	48.4	31.4	18.3	19.9	26.5	34.1	22.6
Aldrin	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND
alpha-Chlordane	µg/Kg	NBA	3.6 J[1]	3.4 J[1]	2	1.5 J[1]	2.7 J[1]	3.4	3.5 J[1]
beta-BHC	µg/Kg	NBA	ND	ND	1 J	ND	R[1]	ND	1 J
Chlordane	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND
Decachlorobiphenyl	µg/Kg	NBA	6.6	6.1	6.7	7.7	6.6	6.2	6.7
delta-BHC	µg/Kg	NBA	R[1]	ND	ND	ND	R[1]	ND	ND
Dieldrin	µg/Kg	NBA	11	5.9	3.7	3	3.3	7.6	5.2
Endosulfan I	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	µg/Kg	NBA	4.1	ND	ND	ND	ND	ND	ND
Endrin	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND
gamma-BHC (Lindane)	µg/Kg	NBA	R[1]	ND	ND	ND	ND	ND	ND
gamma-Chlordane	µg/Kg	NBA	ND	1.6 J[1]	ND	ND	1.2 J[1]	1.3 J[1]	1.6
Heptachlor	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	µg/Kg	NBA	4.4	2	1.2	1.2	1.4	3	1.6
Methoxychlor	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND
Tetrachloro-m-xylene	µg/Kg	NBA	7.3	5.5	6.1	6.8	5.9	5.6	6.2
Toxaphene	µg/Kg	NBA	ND	ND	ND	ND	ND	ND	ND

J = Estimated Value
mg/Kg = milligrams per kiligram
NA = Not Applicable
NBA = No Benchmark Available
ND = Not Detected
SCG = Standards, Criteria, and Guidance values
Fish samples are reported on a wet weight basis
PCB concentrations were calculated based on the total of any reported value(s). Only aroclors 1254 and 1260 were detected.
µg/Kg = micrograms per kiligram

Table 3-3
Inorganic Sediment Samples
Former Air Force Plant No. 51
Monroe County
Greece, New York

Parameters	Units	TGSCS Low Effect Level (mg/kg)	TGSCS Severe Effect Level (mg/kg)	Total No. of Samples	Number of samples with Detections	Maximum Detected	No. of Samples Above TGSCS	SD-001-RPD-1-FS
Metals								
Aluminum	mg/Kg	NBA	NBA	11	11	16,100	NA	14500.0
Antimony	mg/Kg	2.0	25	11	9	86.4	5	1.6 J[14]
Arsenic	mg/Kg	6.0	33	11	10	10.4	5	5.8 J[13]
Barium	mg/Kg	NBA	NBA	11	11	127	NA	84.4
Beryllium	mg/Kg	NBA	NBA	11	2	0.6	NA	ND
Cadmium	mg/Kg	0.60	9.0	11	6	139	6	ND
Calcium	mg/Kg	NBA	NBA	11	11	70,100	NA	26600.0
Chromium	mg/Kg	26	110	11	11	230	8	40.0
Cobalt	mg/Kg	NBA	NBA	11	3	9.9	NA	ND
Copper	mg/Kg	16	110	11	11	682	10	41.2
Iron	mg/Kg	20,000	40,000	11	11	53,100	7	20700.0
Lead	mg/Kg	31	110	11	11	989	10	51.5
Magnesium	mg/Kg	NBA	NBA	11	11	31,400	NA	6820.0
Manganese	mg/Kg	460	1,100	11	11	1,830	7	594.0
Nickel	mg/Kg	16	50	11	11	128	8	23.6
Potassium	mg/Kg	NBA	NBA	11	11	2,770	NA	2160.0
Selenium	mg/Kg	NBA	NBA	11	11	2.8	NA	1.2 J[14]
Silver	mg/Kg	1.0	2.2	11	5	4.1	5	3.3
Sodium	mg/Kg	NBA	NBA	11	9	758	NA	155.0 J[15]
Thallium	mg/Kg	NBA	NBA	11	1	0.8	NA	ND
Vanadium	mg/Kg	NBA	NBA	11	11	49.7	NA	20.5
Zinc	mg/Kg	120	270	11	11	1,040	10	279 J[16]
Mercury	mg/Kg	0.15	1.3	11	10	1.30	5	0.12
Cyanide	mg/Kg	NBA	NBA	11	1	2.20	NA	ND

Table 3-3
Inorganic Sediment Samples
Former Air Force Plant No. 51
Monroe County
Greece, New York

Parameters	Units	TGSCS Low Effect Level (mg/kg)	TGSCS Severe Effect Level (mg/kg)	SD-001-RPU-1-FS	SD-001-RCD-1-FS	SD-002-RCD-1-FS	SD-001-AW-1-FS	SD-002-AW-1-FS
Metals								
Aluminum	mg/Kg	NBA	NBA	8210.0	16100.0	7070.0	11100.0 J[5]	11200.0 J[5]
Antimony	mg/Kg	2.0	25	0.9 J[14]	2.9 J[14]	0.9 J[14]	ND UJ[5,14]	8.7 J[5,14]
Arsenic	mg/Kg	6.0	33	2.6 J[13]	8.2 J[14]	4.1 J[13]	5.6 J[5]	10.4 J[5]
Barium	mg/Kg	NBA	NBA	68.6	84.0	71.5	127.0 J[5]	101.0 J[5]
Beryllium	mg/Kg	NBA	NBA	ND	ND	ND	0.6 J[5]	0.6 J[5]
Cadmium	mg/Kg	0.60	9.0	ND	ND	ND	139.0 J[5]	3.0 J[5]
Calcium	mg/Kg	NBA	NBA	22900.0	20600.0	22800.0	20100.0 J[5]	43200.0 J[5]
Chromium	mg/Kg	26	110	20.0	33.4	17.6	230.0 J[5]	51.4 J[5]
Cobalt	mg/Kg	NBA	NBA	ND	ND	ND	6.1 J[5]	9.9 J[5]
Copper	mg/Kg	16	110	26.7	42.4	32.6	94.6 J[5]	490.0 J[5]
Iron	mg/Kg	20,000	40,000	15500.0	19200.0	14700.0	26300.0 J[5]	44100.0 J[5]
Lead	mg/Kg	31	110	34.3	39.4	35.2	103.0 J[5]	937.0 J[5]
Magnesium	mg/Kg	NBA	NBA	5210.0	6010.0	4700.0	5480.0 J[5]	24400.0 J[5]
Manganese	mg/Kg	460	1,100	392.0	593.0	422.0	710.0 J[5]	547.0 J[5]
Nickel	mg/Kg	16	50	13.3	26.9	12.3	29.7 J[5]	49.2 J[5]
Potassium	mg/Kg	NBA	NBA	1560.0	1930.0	1370.0	2510.0 J[5]	2770.0 J[5]
Selenium	mg/Kg	NBA	NBA	0.7 J[14]	1.1 J[14]	0.8 J[14]	2.8 J[5,14]	2.8 J[5,14]
Silver	mg/Kg	1.0	2.2	ND	ND	2.6	4.0 J[5]	3.7 J[5]
Sodium	mg/Kg	NBA	NBA	266.0 J[15]	220.0 J[15]	363.0 J[15]	758.0 J[5,15]	610.0 J[5,15]
Thallium	mg/Kg	NBA	NBA	ND	ND	ND	ND UJ[5]	0.8 J[5]
Vanadium	mg/Kg	NBA	NBA	15.8	20.4	15.4	25.0 J[5]	49.7 J[5]
Zinc	mg/Kg	120	270	221 J[16]	229 J[16]	223 J[16]	448 J[5,15]	995 J[5,16]
Mercury	mg/Kg	0.15	1.3	ND	0.13	0.09	0.17 J[5]	1.20 J[5]
Cyanide	mg/Kg	NBA	NBA	ND	ND	ND	ND J[5]	ND

Table 3-3
Inorganic Sediment Samples
Former Air Force Plant No. 51
Monroe County
Greece, New York

Parameters	Units	TGSCS Low Effect Level (mg/kg)	TGSCS Severe Effect Level (mg/kg)	SD-003-AW-1-FS	SD-003-AW-1-DP	SD-004-AW-1-FS	SD-005-AW-1-FS	SD-002-RCU-1-FS
Metals								
Aluminum	mg/Kg	NBA	NBA	8420.0	9050.0 J[5]	11400.0	17100.0	3,430
Antimony	mg/Kg	2.0	25	5.0 J[14]	ND J[5,14]	5.2 J[14]	86.4 J[14]	1.0 J[14]
Arsenic	mg/Kg	6.0	33	6.5	5.7 J[5,13]	6.4	6.1	ND
Barium	mg/Kg	NBA	NBA	85.2	83.8 J[5]	121.0	57.3	31.3
Beryllium	mg/Kg	NBA	NBA	ND	ND J[5]	ND	ND	ND
Cadmium	mg/Kg	0.60	9.0	3.6	4.5 J[5]	22.8	3.7	0.2 U[12]
Calcium	mg/Kg	NBA	NBA	35300.0	33700.0 J[5]	59500.0	70100.0	10,400
Chromium	mg/Kg	26	110	67.6	70.3 J[5]	67.1	175.0	7.0
Cobalt	mg/Kg	NBA	NBA	ND	ND J[5]	ND	7.5	ND
Copper	mg/Kg	16	110	433.0	578.0 J[5]	294.0	682.0	5.9
Iron	mg/Kg	20,000	40,000	29300.0	31400.0 J[5]	34900.0	53100.0	7,900
Lead	mg/Kg	31	110	762.0	989.0 J[5]	508.0	512.0	9.2
Magnesium	mg/Kg	NBA	NBA	19700.0	19700.0 J[5]	25600.0	31400.0	3,030
Manganese	mg/Kg	460	1,100	465.0	367.0 J[5]	1830.0	528.0	153
Nickel	mg/Kg	16	50	48.7	59.4 J[5]	42.4	128.0	5.5
Potassium	mg/Kg	NBA	NBA	2100.0	2210.0 J[5]	2010.0	ND	715
Selenium	mg/Kg	NBA	NBA	2.2 J[14]	2.1 J[5,14]	2.0 J[14]	1.0 J[14]	0.4 J[14]
Silver	mg/Kg	1.0	2.2	ND	ND J[5]	4.1	ND	ND
Sodium	mg/Kg	NBA	NBA	ND J[15]	ND J[5,15]	574.0 J[15]	208.0 J[15]	73.6 J[15]
Thallium	mg/Kg	NBA	NBA	ND	ND J[5]	ND	ND	ND
Vanadium	mg/Kg	NBA	NBA	36.8	44.2 J[5]	37.0	31.1	7.8
Zinc	mg/Kg	120	270	854 J[16]	1,040 J[5,16]	716 J[16]	729 J[16]	76 J[16]
Mercury	mg/Kg	0.15	1.3	1.30	1.30	0.57	0.28	ND
Cyanide	mg/Kg	NBA	NBA	ND	2.20 J[5,15]	ND	ND	ND

DP = Lab Duplicate
J = Estimated Value
mg/Kg = milligrams per kiligram
NBA = No Benchmark Available
ND = Not Detected
TGSCS = New York State Departmnt of Environmental Conservation Technical Guidance for Screening Sediments

Table 3-4
ORGANIC SEDIMENT SAMPLES
FORMER AIR FORCE PLANT NO. 51
MONROE COUNTY
GREECE, NEW YORK

Parameters	Units	Human Health Bioaccumulation Sediment Criteria (mg/kg)	Benthic Aquatic Acute Toxicity Sediment Criteria (mg/kg)	Benthic Aquatic Chronic Toxicity Sediment Criteria (mg/kg)	Wildlife Bioaccumulation Sediment Criteria (mg/kg)	Total Number of Samples	SD-001-RPD-1-FS Raw Data	SD-001-RPD-1-FS TOC Normalized[a]	SD-001-RPU-1-FS Raw Data	SD-001-RPU-1-FS TOC Normalized[a]
Miscellaneous										
Solids, Percent	%	NBA	NBA	NBA	NBA	11	36.3	36.3	41.1	41.1
TOC	mg/Kg	NBA	NBA	NBA	NBA	11	52,700	52,700	55,800	55,800
Pesticides										
4,4'-DDD	mg/Kg	NA	NBA	NBA	1.0	11	0.009 U	0.175 U	0.008 U	0.145 U
4,4'-DDE	mg/Kg	NA	NBA	NBA	1.0	11	0.014	0.266	0.008 U	0.145 U
4,4'-DDT	mg/Kg	NA	1,100	1.0	1.0	11	0.009 U	0.175 U	0.008 U	0.145 U
Total DDT	mg/Kg	**0.01**	NBA	NBA	NBA	11	0.023	0.440	0.012 U	0.218 U
Aldrin*	mg/Kg	**0.1**	NBA	NBA	0.77	11	0.005 U	0.087 U	0.004 U	0.073 U
alpha-BHC	mg/Kg	NBA	NBA	NBA	NBA	11	0.005 U	0.087 U	0.004 U	0.073 U
alpha-Chlordane	mg/Kg	NBA	NBA	NBA	NBA	11	0.005 U	0.087 U	0.004 U	0.073 U
beta-BHC	mg/Kg	NBA	NBA	NBA	NBA	11	0.009	R[1]	0.016	0.287 J[1]
Chlordane	mg/Kg	**0.001**	**1.4**	**0.03**	**0.006**	11	0.046 U	0.873 U	0.041 U	0.735 U
delta-BHC	mg/Kg	NBA	NBA	NBA	NBA	11	0.005 U	0.087 U	0.004 U	0.073 U
Dieldrin*	mg/Kg	**0.1**	NBA	NBA	0.77	11	0.009 U	0.175 U	0.008 U	0.145 U
Endosulfan I	mg/Kg	NBA	0.78	**0.03**	NBA	11	0.005 U	0.087 U	0.004 U	0.073 U
Endosulfan II	mg/Kg	NBA	0.78	**0.03**	NBA	11	0.009 U	0.175 U	0.008 U	0.145 U
Endosulfan sulfate	mg/Kg	NBA	0.78	**0.03**	NBA	11	0.009 U	0.175 U	0.008 U	0.145 U
Endrin	mg/Kg	0.8	NBA	4.0	0.8	11	0.009 U	0.175 U	0.008 U	0.145 U
Endrin aldehyde	mg/Kg	NBA	NBA	NBA	NBA	11	0.009 U	0.175 U	0.008 U	0.145 U
Endrin ketone	mg/Kg	NBA	NBA	NBA	NBA	11	0.009 U	0.175 U	0.008 U	0.145 U
gamma-BHC (Lindane)	mg/Kg	NBA	NBA	NBA	NBA	11	0.005 U	0.087 U	0.004 U	0.073 U
gamma-Chlordane	mg/Kg	NBA	NBA	NBA	NBA	11	0.005 U	0.087 U	0.004 U	0.073 U
Heptachlor*	mg/Kg	**0.0008**	13.1	**0.1**	**0.03**	11	0.0046 U	0.087 U	0.0041 U	0.073 U
Heptachlor epoxide*	mg/Kg	**0.0008**	13.1	**0.1**	**0.03**	11	0.0046 U	0.087 U	0.0041 U	0.073 U
Methoxychlor	mg/Kg	NBA	NBA	NBA	NBA	11	0.046 U	0.873 U	0.041 U	0.735 U
Toxaphene*	mg/Kg	**0.02**	**3.2**	**0.005**	**0.01**	11	0.460 U	8.729 U	0.410 U	7.348 U
Polychlorinated Biphenyls										
Aroclor-1016	mg/Kg	NBA	NBA	NBA	NBA	11	0.046 U	ND U	0.041 U	ND U
Aroclor-1221	mg/Kg	NBA	NBA	NBA	NBA	11	0.046 U	ND U	0.041 U	ND U
Aroclor-1232	mg/Kg	NBA	NBA	NBA	NBA	11	0.046 U	ND U	0.041 U	ND U
Aroclor-1242	mg/Kg	NBA	NBA	NBA	NBA	11	0.046 U	ND U	0.041 U	ND U
Aroclor-1248	mg/Kg	NBA	NBA	NBA	NBA	11	0.046 U	ND U	0.041 U	ND U
Aroclor-1254	mg/Kg	NBA	NBA	NBA	NBA	11	0.058	1.10	0.041 U	ND U
Aroclor-1260	mg/Kg	NBA	NBA	NBA	NBA	11	0.046 U	ND U	0.041 U	ND U
Total Aroclor	mg/kg	**0.0008**	NBA	NBA	NBA	11	0.081	1.1	0.041 U	ND U

Table 3-4
ORGANIC SEDIMENT SAMPLES
FORMER AIR FORCE PLANT NO. 51
MONROE COUNTY
GREECE, NEW YORK

Parameters	Units	Human Health Bioaccumulation Sediment Criteria (mg/kg)	Benthic Aquatic Acute Toxicity Sediment Criteria (mg/kg)	Benthic Aquatic Chronic Toxicity Sediment Criteria (mg/kg)	Wildlife Bioaccumulation Sediment Criteria (mg/kg)	Total Number of Samples	SD-001-RPD-1-FS Raw Data	SD-001-RPD-1-FS TOC Normalized[a]	SD-001-RPU-1-FS Raw Data	SD-001-RPU-1-FS TOC Normalized[a]
Volatile Organic Compounds										
1,1,1,2-Tetrachloroethane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,1,1-Trichloroethane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,1,2,2-Tetrachloroethane	mg/Kg	**0.3**	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,1,2-Trichloroethane	mg/Kg	0.6	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,1-Dichloroethane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,1-Dichloroethene	mg/Kg	**0.02**	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,1-Dichloropropene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,2,3-Trichlorobenzene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,2,3-Trichloropropane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,2,4-Trichlorobenzene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,2,4-Trimethylbenzene	mg/Kg	NBA	1,631	186	NBA	11	0.0079 J	0.150 UJ[a]	0.018 J	0.323 UJ[a]
1,2-Dibromo-3-Chloropropane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,2-Dibromoethane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,2-Dichlorobenzene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,2-Dichloroethane	mg/Kg	**0.7**	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,2-Dichloroethene (total)	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,2-Dichloropropane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,3,5-Trimethylbenzene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 J	0.323 UJ[a]
1,3-Dichlorobenzene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,3-Dichloropropane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,4-Dichlorobenzene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
1,4-Dioxane	mg/Kg	NBA	NBA	NBA	NBA	11	1 U	18.975 UJ[a]	0.88 U	15.771 UJ[a]
2,2-Dichloropropane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
2-Butanone	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
2-Chlorotoluene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
2-Hexanone	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
4-Chlorotoluene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
4-Isopropyltoluene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
4-Methyl-2-pentanone	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Acetone	mg/Kg	NBA	NBA	NBA	NBA	11	0.96	18.216 EJ[a]	0.82	14.695 EJ[a]
Acrolein	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Acrylonitrile	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Allyl Chloride	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Benzene	mg/Kg	**0.6**	NBA	NBA	NBA	11	0.0037 J	0.070 UJ[a]	0.018 J	0.323 UJ[a]
Bromobenzene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Bromochloromethane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Bromodichloromethane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Bromoform	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]

Table 3-4
ORGANIC SEDIMENT SAMPLES
FORMER AIR FORCE PLANT NO. 51
MONROE COUNTY
GREECE, NEW YORK

Parameters	Units	Human Health Bioaccumulation Sediment Criteria (mg/kg)	Benthic Aquatic Acute Toxicity Sediment Criteria (mg/kg)	Benthic Aquatic Chronic Toxicity Sediment Criteria (mg/kg)	Wildlife Bioaccumulation Sediment Criteria (mg/kg)	Total Number of Samples	SD-001-RPD-1-FS Raw Data	SD-001-RPD-1-FS TOC Normalized[a]	SD-001-RPU-1-FS Raw Data	SD-001-RPU-1-FS TOC Normalized[a]
Bromomethane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Carbon Disulfide	mg/Kg	NBA	NBA	NBA	NBA	11	0.0067 J	0.127 J	0.0087 J	0.156 J
Carbon Tetrachloride	mg/Kg	**0.6**	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Chlorobenzene	mg/Kg	NBA	34.6	**3.5**	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Chloroethane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Chloroform	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Chloromethane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Chloroprene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
cis-1,2-Dichloroethene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
cis-1,3-Dichloropropene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
cis-1,4-Dichloro-2-butene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Dibromochloromethane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Dibromomethane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Dichlorodifluoromethane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Ethyl Methacrylate	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Ethylbenzene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Freon TF	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Hexachlorobutadiene	mg/Kg	**0.3**	55	**5.5**	**4.0**	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Isobutyl Alcohol	mg/Kg	NBA	NBA	NBA	NBA	11	1.0 U	18.975 UJ[a]	0.88 U	15.771 UJ[a]
Isopropylbenzene	mg/Kg	NBA	105	**12**	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Methacrylonitrile	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Methyl Iodide	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Methyl Methacrylate	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Methyl-t-Butyl Ether	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Methylene Chloride	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
n-Butylbenzene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
n-Propylbenzene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Naphthalene	mg/Kg	NBA	258	30	NBA	11	0.02 JU	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Propionitrile	mg/Kg	NBA	NBA	NBA	NBA	11	0.083 U	1.575 UJ[a]	0.071 U	1.272 UJ[a]
sec-Butylbenzene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Styrene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
tert-Butylbenzene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Tetrachloroethene	mg/Kg	**0.8**	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Tetrahydrofuran	mg/Kg	NBA	NBA	NBA	NBA	11	0.2 U	3.795 UJ[a]	0.18 U	3.226 UJ[a]
Toluene	mg/Kg	NBA	235	49	NBA	11	0.0059 J	0.112 J[a]	0.017	0.305 J
trans-1,2-Dichloroethene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
trans-1,3-Dichloropropene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
trans-1,4-Dichloro-2-butene	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]
Trichloroethene	mg/Kg	**2.0**	NBA	NBA	NBA	11	0.02 U	0.380 UJ[a]	0.018 U	0.323 UJ[a]

Table 3-4
ORGANIC SEDIMENT SAMPLES
FORMER AIR FORCE PLANT NO. 51
MONROE COUNTY
GREECE, NEW YORK

Parameters	Units	Human Health Bioaccumulation Sediment Criteria (mg/kg)	Benthic Aquatic Acute Toxicity Sediment Criteria (mg/kg)	Benthic Aquatic Chronic Toxicity Sediment Criteria (mg/kg)	Wildlife Bioaccumulation Sediment Criteria (mg/kg)	Total Number of Samples	SD-001-RPD-1-FS Raw Data	SD-001-RPD-1-FS TOC Normalized[a]	SD-001-RPU-1-FS Raw Data	SD-001-RPU-1-FS TOC Normalized[a]
Trichlorofluoromethane	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[d]	0.018 U	0.323 UJ[d]
Vinyl Acetate	mg/Kg	NBA	NBA	NBA	NBA	11	0.02 U	0.380 UJ[d]	0.018 U	0.323 UJ[d]
Vinyl Chloride	mg/Kg	**0.07**	NBA	NBA	NBA	11	0.02 U	0.380 UJ[d]	0.018 U	0.323 UJ[d]
Xylene (m,p)	mg/Kg	NBA	833	92	NBA	11	0.0078 J	0.148 UJ[d]	0.018 J	0.323 UJ[d]
Xylene (o)	mg/Kg	NBA	833	92	NBA	11	0.02 U	0.380 UJ[d]	0.018 J	0.323 UJ[d]
Xylene (total)	mg/Kg	NBA	833	92	NBA	11	0.0079 J	0.150 UJ[d]	0.018 J	0.323 UJ[d]
Semi-Volatile Organic Compounds										
N-Nitrosodimethylamine	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Pyridine	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Aniline	mg/kg	NBA	NBA	NBA	NBA	11	2.3 U	43.643 U	2 U	35.842 U
Phenol	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
bis(2-Chloroethyl) Ether	mg/kg	**0.03**	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
2-Chlorophenol	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
1,3 - Dichlorobenzene	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
1,4 - Dichlorobenzene	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Benzyl Alcohol	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
1,2 - Dichlorobenzene	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
2-Methylphenol	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
2,2'- oxybis (1 - Chloropropane)	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
4 - Methylphenol	mg/kg	NBA	NBA	NBA	NBA	11	0.42 J	7.970 J	0.41 J	7.348 J
N-Nitroso-di-n-propylamine	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Hexachloroethane	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Nitrobenzene	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Isophorone	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
2-Nitrophenol	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
2,4 - Dimethylphenol	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
bis (2 - Chloroethoxy) methane	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Benzoic Acid	mg/kg	NBA	NBA	NBA	NBA	11	2.3 U	43.643 U	2 U	35.842 U
2,4 Dichlorophenol	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
1,2,4 - Trichlorobenzene	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Naphthalene	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
4 - Chloroaniline	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Hexachlorobutadiene	mg/kg	**0.3**	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
4 - Chloro - 3- methylphenol	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
2 - Methylnaphthalene	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Hexachlorocyclopentadiene	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
2,4,6 - Trichlorophenol	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
2,4,5 - Trichlorophenol	mg/kg	NBA	NBA	NBA	NBA	11	2.3 U	43.643 U	2 U	35.842 U
2 - Chloronaphthalene	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U

Table 3-4
ORGANIC SEDIMENT SAMPLES
FORMER AIR FORCE PLANT NO. 51
MONROE COUNTY
GREECE, NEW YORK

Parameters	Units	Human Health Bioaccumulation Sediment Criteria (mg/kg)	Benthic Aquatic Acute Toxicity Sediment Criteria (mg/kg)	Benthic Aquatic Chronic Toxicity Sediment Criteria (mg/kg)	Wildlife Bioaccumulation Sediment Criteria (mg/kg)	Total Number of Samples	SD-001-RPD-1-FS Raw Data	SD-001-RPD-1-FS TOC Normalized[a]	SD-001-RPU-1-FS Raw Data	SD-001-RPU-1-FS TOC Normalized[a]
2 - Nitroaniline	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	2 U	35.842 U
Dimethylphthalate	mg/kg	NBA	NBA	NBA	NBA	11	2.3 U	43.643 U	0.8 U	14.337 U
Acenaphthylene	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
2,6 - Dinitrotoluene	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
3 - Nitroaniline	mg/kg	NBA	NBA	NBA	NBA	11	2.3 U	43.643 U	2 U	35.842 U
Acenaphthene	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
2,4 - Dinitrophenol	mg/kg	NBA	NBA	NBA	NBA	11	2.3 U	43.643 U	2 U	35.842 U
Dibenzofuran	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
4 - Nitrophenol	mg/kg	NBA	NBA	NBA	NBA	11	2.3 U	43.643 U	2 U	35.842 U
2,4 - Dinitrotoluene	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Diethylphthalate	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Flourene	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.045 J	0.806 J
4 - Chlorophenyl - phenylether	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
4 - Nitroaniline	mg/kg	NBA	NBA	NBA	NBA	11	2.3 U	43.643 U	2 U	35.842 U
4,6 - Dinitro - 2 - methylphenol	mg/kg	NBA	NBA	NBA	NBA	11	2.3 U	43.643 U	2 U	35.842 U
N - nitrosodiphenylamine (1)	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Azobenzene	mg/kg	**1.0**	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
4 - Bromophenyl - phenylether	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Hexachlorobenzene	mg/kg	**0.15**	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Pentachlorophenol	mg/kg	NBA	NBA	NBA	NBA	11	2.3 U	43.643 U	2 U	35.842 U
Phenanthrene	mg/kg	NBA	NBA	NBA	NBA	11	0.14 J	2.657 J	0.7 J	12.545 J
Anthracene	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.092 J	1.649 J
Carbazole	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.14 J	2.509 J
Di - n- butylphthalate	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Flouranthene	mg/kg	NBA	NBA	NBA	NBA	11	0.3 J	5.693 J	1.5	26.882
Benzidine	mg/kg	**0.003**	NBA	NBA	NBA	11	2.3 U	43.643 UJ[17]	2 U	35.842 UJ[17]
Pyrene	mg/kg	NBA	NBA	NBA	NBA	11	0.24 J	4.554 J	1.1	19.713
Butylbenzylphthalate	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Benzo (a) anthracene	mg/kg	**1.3**	NBA	NBA	NBA	11	0.092 J	1.746 J	0.43 J	7.706 J
3,3' - Dichlorobenzidine	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.8 U	14.337 U
Chrysene	mg/kg	**1.3**	NBA	NBA	NBA	11	0.17 J	3.226 J	0.91	16.308
bis (2-Ethylhexyl) phthalate	mg/kg	NBA	NBA	NBA	NBA	11	0.92 JB	17.457 J[19]	0.32 JB	5.735 J[19]
Di-n-octylphthalate	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.042 J	0.753 J
Benzo (b) fluoranthene	mg/kg	**1.3**	NBA	NBA	NBA	11	0.16 J	3.036 J	0.97	17.384
Benzo (k) fluoranthene	mg/kg	**1.3**	NBA	NBA	NBA	11	0.13 J	2.467 J	0.7 J	12.545 J
Benzo (a) pyrene	mg/kg	**1.3**	NBA	NBA	NBA	11	0.11 J	2.087 J	0.58 J	10.394 J
Indeno (1,2,3 - cd) pyrene	mg/kg	**1.3**	NBA	NBA	NBA	11	0.093 J	1.765 J	0.35 J	6.272 J
Dibenz (a,h) anthracene	mg/kg	NBA	NBA	NBA	NBA	11	0.92 U	17.457 U	0.12 J	2.151 J
Benzo (g,h,I) perylene	mg/kg	NBA	NBA	NBA	NBA	11	0.12 J	2.277 J	0.39 J	6.989 J

Table 3-4
ORGANIC SEDIMENT SAMPLES
FORMER AIR FORCE PLANT NO. 51
MONROE COUNTY
GREECE, NEW YORK

Parameters	Units	SD-001-RCD-1-FS Raw Data	SD-001-RCD-1-FS TOC Normalized[a]	SD-002-RCD-1-FS Raw Data	SD-002-RCD-1-FS TOC Normalized[a]	SD-001-AW-1-FS Raw Data	SD-001-AW-1-FS TOC Normalized[a]	SD-002-AW-1-FS Raw Data	SD-002-AW-1-FS TOC Normalized[a]
Miscellaneous									
Solids, Percent	%	30	30	49.9	49.9	13.4	13.4	22.7	22.7
TOC	mg/Kg	53,500	53,500	26,000	26,000	206,000	206,000 J[5]	195,000	195,000 J[5]
Pesticides									
4,4'-DDD	mg/Kg	0.011 U	0.206 U	0.007 U	0.258 U	0.026 U	0.126 UJ[5]	0.014 U	0.072 UJ[5]
4,4'-DDE	mg/Kg	0.011 U	0.206 U	0.007 U	0.258 U	0.026 U	0.126 UJ[5]	0.014 U	0.072 UJ[5]
4,4'-DDT	mg/Kg	0.011 U	0.206 U	0.007 U	0.258 U	0.026 U	0.126 UJ[5]	0.041	0.210 J[1]
Total DDT	mg/Kg	0.017 U	0.308 U	0.010 U	0.387 U	0.039 U	0.189 UJ[5]	0.055	0.282
Aldrin*	mg/Kg	0.006 U	0.105 U	0.003 U	0.127 U	0.013 U	0.063 UJ[5]	0.010	R[1]
alpha-BHC	mg/Kg	0.006 U	0.105 U	0.003 U	0.127 U	0.013 U	0.063 UJ[5]	0.007 U	0.037 UJ[5]
alpha-Chlordane	mg/Kg	0.006 U	0.105 U	0.003 U	0.127 U	0.013 U	0.063 UJ[5]	0.007 U	0.037 UJ[5]
beta-BHC	mg/Kg	0.010	R[1]	0.007	0.281 J[1]	0.038	R[1]	0.017	0.087
Chlordane	mg/Kg	0.056 U	1.047 U	0.033 U	1.269 U	0.130 U	0.631 UJ[5]	0.072 U	0.369 UJ[5]
delta-BHC	mg/Kg	0.006 U	0.105 U	0.003 U	0.127 U	0.013 U	0.063 UJ[5]	0.007 U	0.037 UJ[5]
Dieldrin*	mg/Kg	0.011 U	0.206 U	0.007 U	0.258 U	0.026 U	0.126 UJ[5]	0.027	0.138 J[1]
Endosulfan I	mg/Kg	0.006 U	0.105 U	0.003 U	0.127 U	0.013 U	0.063 UJ[5]	0.007 U	0.037 UJ[5]
Endosulfan II	mg/Kg	0.011 U	0.206 U	0.007 U	0.258 U	0.026 U	0.126 UJ[5]	0.014 U	0.072 UJ[5]
Endosulfan sulfate	mg/Kg	0.011 U	0.206 U	0.007 U	0.258 U	0.026 U	0.126 UJ[5]	0.014 U	0.072 UJ[5]
Endrin	mg/Kg	0.011 U	0.206 U	0.007 U	0.258 U	0.026 U	0.126 UJ[5]	0.014 U	0.072 UJ[5]
Endrin aldehyde	mg/Kg	0.011 U	0.206 U	0.007 U	0.258 U	0.026 U	0.126 UJ[5]	0.049	R[1]
Endrin ketone	mg/Kg	0.011 U	0.206 U	0.007 U	0.258 U	0.026 U	0.126 UJ[5]	0.014 U	0.072 UJ[5]
gamma-BHC (Lindane)	mg/Kg	0.008	0.140 J[1]	0.003 U	0.127 U	0.013 U	0.063 UJ[5]	0.007 U	0.037 UJ[5]
gamma-Chlordane	mg/Kg	0.006 U	0.105 U	0.003 U	0.127 U	0.013 U	0.063 UJ[5]	0.007 U	0.037 UJ[5]
Heptachlor*	mg/Kg	0.0056 U	0.105 U	0.0033 U	0.127 U	0.013 U	0.063 UJ[5]	0.0072 U	0.037 UJ[5]
Heptachlor epoxide*	mg/Kg	0.0056 U	0.105 U	0.0033 U	0.127 U	0.013 U	0.063 UJ[5]	0.0072 U	0.037 UJ[5]
Methoxychlor	mg/Kg	0.056 U	1.047 U	0.033 U	1.269 U	0.130 U	0.631 UJ[5]	0.072 U	0.369 UJ[5]
Toxaphene*	mg/Kg	0.560 U	10.467 U	0.330 U	12.692 U	1.300 U	6.311 UJ[5]	0.720 U	3.692 UJ[5]
Polychlorinated Biphenyls									
Aroclor-1016	mg/Kg	0.056 U	ND U	0.033 U	ND U	0.13 U	ND U	0.72 U	ND U
Aroclor-1221	mg/Kg	0.056 U	ND U	0.033 U	ND U	0.13 U	ND U	0.72 U	ND U
Aroclor-1232	mg/Kg	0.056 U	ND U	0.033 U	ND U	0.13 U	ND U	0.72 U	ND U
Aroclor-1242	mg/Kg	0.056 U	ND U	0.033 U	ND U	0.13 U	ND U	0.72 U	ND U
Aroclor-1248	mg/Kg	0.056 U	ND U	0.033 U	ND U	0.13 U	ND U	0.72 U	ND U
Aroclor-1254	mg/Kg	0.067	1.252	0.033 U	ND U	0.13 U	ND U	0.72 U	ND U
Aroclor-1260	mg/Kg	0.056 U	ND U	0.033 U	ND U	0.65	3.155	5.4	27.692
Total Aroclor	mg/kg	0.095	1.252	0.033	ND U	0.715	3.16	5.760	27.69

Table 3-4
ORGANIC SEDIMENT SAMPLES
FORMER AIR FORCE PLANT NO. 51
MONROE COUNTY
GREECE, NEW YORK

Parameters	Units	SD-001-RCD-1-FS Raw Data	SD-001-RCD-1-FS TOC Normalized[a]	SD-002-RCD-1-FS Raw Data	SD-002-RCD-1-FS TOC Normalized[a]	SD-001-AW-1-FS Raw Data	SD-001-AW-1-FS TOC Normalized[a]	SD-002-AW-1-FS Raw Data	SD-002-AW-1-FS TOC Normalized[a]
Volatile Organic Compounds									
1,1,1,2-Tetrachloroethane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,1,1-Trichloroethane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,1,2,2-Tetrachloroethane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,1,2-Trichloroethane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,1-Dichloroethane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,1-Dichloroethene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,1-Dichloropropene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,2,3-Trichlorobenzene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,2,3-Trichloropropane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,2,4-Trichlorobenzene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,2,4-Trimethylbenzene	mg/Kg	0.031 J	0.579 UJ[4]	0.0056 J	0.215 J	0.06 J	0.291 UJ[4,5]	0.038 J	0.195 J
1,2-Dibromo-3-Chloropropane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,2-Dibromoethane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,2-Dichlorobenzene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,2-Dichloroethane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,2-Dichloroethene (total)	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	1.1	5.641 J[4,5]
1,2-Dichloropropane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,3,5-Trimethylbenzene	mg/Kg	0.031 U	0.579 UJ[4]	0.003 J	0.115 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 J	0.195 UJ[4,5]
1,3-Dichlorobenzene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,3-Dichloropropane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,4-Dichlorobenzene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
1,4-Dioxane	mg/Kg	1.6 U	29.907 UJ[4]	0.62 U	23.846 UJ[4]	3 U	14.563 UJ[4,5]	1.9 U	9.744 UJ[4,5]
2,2-Dichloropropane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
2-Butanone	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.092	0.447 UJ[7], J[4,5]	0.038 U	0.195 UJ[4,5]
2-Chlorotoluene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
2-Hexanone	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
4-Chlorotoluene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
4-Isopropyltoluene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
4-Methyl-2-pentanone	mg/Kg	0.0076 U	0.142 J	0.012 U	0.462 UJ[4]	0.012 U	0.058 J	0.038 U	0.195 UJ[4,5]
Acetone	mg/Kg	0.31	5.794 J[4]	0.036	1.385 UJ[6],J[4]	2.2	10.680 J[4,5]	0.23	1.179 J[4,5]
Acrolein	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Acrylonitrile	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Allyl Chloride	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Benzene	mg/Kg	0.0065 J	0.121 J	0.003 J	0.115 J	0.06 U	0.291 UJ[4,5]	0.011 J	0.056 J
Bromobenzene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Bromochloromethane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Bromodichloromethane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Bromoform	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]

Table 3-4
ORGANIC SEDIMENT SAMPLES
FORMER AIR FORCE PLANT NO. 51
MONROE COUNTY
GREECE, NEW YORK

Parameters	Units	SD-001-RCD-1-FS Raw Data	SD-001-RCD-1-FS TOC Normalized[a]	SD-002-RCD-1-FS Raw Data	SD-002-RCD-1-FS TOC Normalized[a]	SD-001-AW-1-FS Raw Data	SD-001-AW-1-FS TOC Normalized[a]	SD-002-AW-1-FS Raw Data	SD-002-AW-1-FS TOC Normalized[a]
Bromomethane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Carbon Disulfide	mg/Kg	0.015 J	0.280 J	0.0094 J	0.362 J	0.073 J	0.354 J[4,5]	0.038	0.195 J
Carbon Tetrachloride	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Chlorobenzene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Chloroethane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Chloroform	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Chloromethane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Chloroprene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
cis-1,2-Dichloroethene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	1	5.128 J[4,5]
cis-1,3-Dichloropropene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
cis-1,4-Dichloro-2-butene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Dibromochloromethane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Dibromomethane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Dichlorodifluoromethane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Ethyl Methacrylate	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Ethylbenzene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Freon TF	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Hexachlorobutadiene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Isobutyl Alcohol	mg/Kg	1.6 U	29.907 UJ[4]	0.62 U	23.846 UJ[4]	3 U	14.563 UJ[4,5]	1.9 U	9.744 UJ[4,5]
Isopropylbenzene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Methacrylonitrile	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Methyl Iodide	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Methyl Methacrylate	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Methyl-t-Butyl Ether	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Methylene Chloride	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 J	0.291 U[6]	0.038 J	0.195 UJ[4,5]
n-Butylbenzene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
n-Propylbenzene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Naphthalene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Propionitrile	mg/Kg	0.12 U	2.243 UJ[4]	0.05 U	1.923 UJ[4]	0.24 U	1.165 UJ[4,5]	0.15 U	0.769 UJ[4,5]
sec-Butylbenzene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Styrene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
tert-Butylbenzene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Tetrachloroethene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.38 U	1.949 UJ[4,5]
Tetrahydrofuran	mg/Kg	0.31 U	5.794 UJ[4]	0.12 U	4.615 UJ[4]	0.6 U	2.913 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Toluene	mg/Kg	0.032	0.598 J[4]	0.0084 J	0.323 J	0.26	1.262 J[4,5]	0.13	0.667 J[4,5]
trans-1,2-Dichloroethene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.044	0.226 J[4,5]
trans-1,3-Dichloropropene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
trans-1,4-Dichloro-2-butene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Trichloroethene	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 J	0.291 UJ[4,5]	0.07	0.359 J[4,5]

Table 3-4
ORGANIC SEDIMENT SAMPLES
FORMER AIR FORCE PLANT NO. 51
MONROE COUNTY
GREECE, NEW YORK

Parameters	Units	SD-001-RCD-1-FS Raw Data	SD-001-RCD-1-FS TOC Normalized[a]	SD-002-RCD-1-FS Raw Data	SD-002-RCD-1-FS TOC Normalized[a]	SD-001-AW-1-FS Raw Data	SD-001-AW-1-FS TOC Normalized[a]	SD-002-AW-1-FS Raw Data	SD-002-AW-1-FS TOC Normalized[a]
Trichlorofluoromethane	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Vinyl Acetate	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Vinyl Chloride	mg/Kg	0.031 U	0.579 UJ[4]	0.012 U	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Xylene (m,p)	mg/Kg	0.031 U	0.579 UJ[4]	0.0069 J	0.265 J	0.06 U	0.291 UJ[4,5]	0.02 J	0.103 J
Xylene (o)	mg/Kg	0.031 U	0.579 UJ[4]	0.012 J	0.462 UJ[4]	0.06 U	0.291 UJ[4,5]	0.038 U	0.195 UJ[4,5]
Xylene (total)	mg/Kg	0.031 U	0.579 UJ[4]	0.007	0.269 J	0.06 U	0.291 UJ[4,5]	0.02 J	0.103 J
Semi-Volatile Organic Compounds									
N-Nitrosodimethylamine	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Pyridine	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Aniline	mg/kg	2.8 U	52.336 U	1.7 U	65.385 UJ[5]	6.4 U	31.068 UJ[5]	3.6 U	18.462 UJ[5]
Phenol	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
bis(2-Chloroethyl) Ether	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
2-Chlorophenol	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
1,3 - Dichlorobenzene	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
1,4 - Dichlorobenzene	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Benzyl Alcohol	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
1,2 - Dichlorobenzene	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
2-Methylphenol	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
2,2'- oxybis (1 - Chloropropane)	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
4 - Methylphenol	mg/kg	1.5	28.037	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
N-Nitroso-di-n-propylamine	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Hexachloroethane	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Nitrobenzene	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Isophorone	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
2-Nitrophenol	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
2,4 - Dimethylphenol	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
bis (2 - Chloroethoxy) methane	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Benzoic Acid	mg/kg	0.44 J	8.224 J	0.48 J	18.462 J[5]	2.1 J	10.194 J[5]	0.67 J	3.436 J[5]
2,4 Dichlorophenol	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
1,2,4 - Trichlorobenzene	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Naphthalene	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
4 - Chloroaniline	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Hexachlorobutadiene	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
4 - Chloro - 3- methylphenol	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
2 - Methylnaphthalene	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Hexachlorocyclopentadiene	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
2,4,6 - Trichlorophenol	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
2,4,5 - Trichlorophenol	mg/kg	2.8 U	52.336 U	1.7 U	65.385 UJ[5]	6.4 U	31.068 UJ[5]	3.6 U	18.462 UJ[5]
2 - Chloronaphthalene	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]

Table 3-4
ORGANIC SEDIMENT SAMPLES
FORMER AIR FORCE PLANT NO. 51
MONROE COUNTY
GREECE, NEW YORK

Parameters	Units	SD-001-RCD-1-FS Raw Data	SD-001-RCD-1-FS TOC Normalized[a]	SD-002-RCD-1-FS Raw Data	SD-002-RCD-1-FS TOC Normalized[a]	SD-001-AW-1-FS Raw Data	SD-001-AW-1-FS TOC Normalized[a]	SD-002-AW-1-FS Raw Data	SD-002-AW-1-FS TOC Normalized[a]
2 - Nitroaniline	mg/kg	1.1 U	20.561 U	1.7 U	65.385 UJ[5]	6.4 U	31.068 UJ[5]	3.6 U	18.462 UJ[5]
Dimethylphthalate	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Acenaphthylene	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
2,6 - Dinitrotoluene	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	3.6 U	18.462 UJ[5]
3 - Nitroaniline	mg/kg	2.8 U	52.336 U	1.7 U	65.385 UJ[5]	6.4 U	31.068 UJ[5]	1.4 U	7.179 UJ[5]
Acenaphthene	mg/kg	1.1 U	20.561 U	0.033 J	1.269 UJ[5]	2.5 U	12.136 UJ[5]	3.6 U	18.462 UJ[5]
2,4 - Dinitrophenol	mg/kg	2.8 U	52.336 U	1.7 U	65.385 UJ[5]	6.4 U	31.068 UJ[5]	1.4 U	7.179 UJ[5]
Dibenzofuran	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
4 - Nitrophenol	mg/kg	2.8 U	52.336 U	1.7 U	65.385 UJ[5]	6.4 U	31.068 UJ[5]	3.6 U	18.462 UJ[5]
2,4 - Dinitrotoluene	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Diethylphthalate	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Flourene	mg/kg	1.1 U	20.561 U	0.053 J	2.038 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
4 - Chlorophenyl - phenylether	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	3.6 U	18.462 UJ[5]
4 - Nitroaniline	mg/kg	2.8 U	52.336 U	1.7 U	65.385 UJ[5]	6.4 U	31.068 UJ[5]	3.6 U	18.462 UJ[5]
4,6 - Dinitro - 2 - methylphenol	mg/kg	2.8 U	52.336 U	1.7 U	65.385 UJ[5]	6.4 U	31.068 UJ[5]	1.4 U	7.179 UJ[5]
N - nitrosodiphenylamine (1)	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Azobenzene	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
4 - Bromophenyl - phenylether	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Hexachlorobenzene	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Pentachlorophenol	mg/kg	2.8 U	52.336 U	1.7 U	65.385 UJ[5]	6.4 U	31.068 UJ[5]	3.6 U	18.462 UJ[5]
Phenanthrene	mg/kg	0.14 J	2.617 J	0.66	25.385 UJ[5]	0.51 J	2.476 UJ[5]	0.68 J	3.487 UJ[5]
Anthracene	mg/kg	1.1 U	20.561 U	0.074 J	2.846 UJ[5]	2.5 U	12.136 UJ[5]	0.096 J	0.492 UJ[5]
Carbazole	mg/kg	1.1 U	20.561 U	0.082 J	3.154 UJ[5]	0.12 J	0.583 UJ[5]	1.4 U	7.179 UJ[5]
Di - n- butylphthalate	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Flouranthene	mg/kg	0.34 J	6.355 J	1.4	53.846 UJ[5]	1.2 J	5.825 J	1.9	9.744 J[5]
Benzidine	mg/kg	2.8 U	52.336 UJ[17]	1.7 U	65.385 UJ[5,17]	6.4 U	31.068 UJ[5, 10]	3.6 U	18.462 UJ[5, 10]
Pyrene	mg/kg	0.26 J	4.860 J	0.95	36.538 J[5]	0.84 J	4.078 J	1.1 J	5.641 J
Butylbenzylphthalate	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Benzo (a) anthracene	mg/kg	0.13 J	2.430 J	0.37 J	14.231 J	0.28 J	1.359 J	0.68 J	3.487 J
3,3' - Dichlorobenzidine	mg/kg	1.1 U	20.561 U	0.66 U	25.385 UJ[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Chrysene	mg/kg	0.22 J	4.112 J	0.82	31.538 J[5]	0.77 J	3.738 J	0.9 J	4.615 J
bis (2-Ethylhexyl) phthalate	mg/kg	1.1 U	20.561 J[19]	0.27 JB	10.385 J	0.3 JB	1.456 J	0.36 JB	1.846 J
Di-n-octylphthalate	mg/kg	1.1 U	20.561 U	0.66 U	25.385 J[5]	2.5 U	12.136 UJ[5]	1.4 U	7.179 UJ[5]
Benzo (b) fluoranthene	mg/kg	0.21 J	3.925 J	0.93	35.769 J[5]	0.74 J	3.592 J	1.2 J	6.154 J
Benzo (k) fluoranthene	mg/kg	0.2 J	3.738 J	0.74	28.462 J[5]	0.52 J	2.524 J	1.2 J	6.154 J
Benzo (a) pyrene	mg/kg	0.16 J	2.991 J	0.53 J	20.385 J[5]	0.4 J	1.942 J	0.81 J	4.154 J
Indeno (1,2,3 - cd) pyrene	mg/kg	0.12 J	2.243 J	0.25 J	9.615 J[5]	0.27 J	1.311 J	0.28 J	1.436 J
Dibenz (a,h) anthracene	mg/kg	1.1 J	20.561 J	0.07 J	2.692 J[5]	2.5 U	12.136 UJ[5]	0.088 J	0.451 UJ[5]
Benzo (g,h,I) perylene	mg/kg	0.14 J	2.617 J	0.26 J	10.000 J[5]	0.27 J	1.311 J	0.29 J	1.487 J

Table 3-4
ORGANIC SEDIMENT SAMPLES
FORMER AIR FORCE PLANT NO. 51
MONROE COUNTY
GREECE, NEW YORK

Parameters	Units	SD-003-AW-1-FS Raw Data	SD-003-AW-1-FS TOC Normalized[a]	SD-003-AW-1-DP Raw Data	SD-003-AW-1-DP TOC Normalized[a]	SD-004-AW-1-FS Raw Data	SD-004-AW-1-FS TOC Normalized[a]	SD-005-AW-1-FS Raw Data	SD-005-AW-1-FS TOC Normalized[a]	SD-002-RCU-1-FS Raw Data	SD-002-RCU-1-FS TOC Normalized[a]
Miscellaneous											
Solids, Percent	%	30.5	30.5	26.5	26.5	37.1	37.1	72.7	72.7	67	67
TOC	mg/Kg	188,000	188,000 J[5]	171,000	171,000 J[5]	101,000	101,000	88,500	88,500	15,100	15,100
Pesticides											
4,4'-DDD	mg/Kg	0.016	0.085	0.013 U	0.076 UJ[5]	0.018 U	0.178 U	0.008	R[1]	0.005 U	0.331 U
4,4'-DDE	mg/Kg	0.011 U	0.059 U	0.013 U	0.076 UJ[5]	0.022	0.218	0.005 U	0.052 U	0.005 U	0.331 U
4,4'-DDT	mg/Kg	0.044	0.234	0.031	0.181 J[1,5]	0.100	0.990	0.027	0.305 J[1]	0.005 U	0.331 U
Total DDT	mg/Kg	0.066	0.348	0.044	0.257 J[5]	0.131	1.297	0.038	0.331	0.008 U	0.497 U
Aldrin*	mg/Kg	0.008	0.040	0.008	R[1]	0.009 U	0.089 U	0.009	0.106	0.004	0.258
alpha-BHC	mg/Kg	0.010	0.051	0.009	0.055 J[1,5]	0.011	0.109	0.004	0.040	0.003	0.219 J[1]
alpha-Chlordane	mg/Kg	0.006 U	0.030 U	0.006 U	0.037 UJ[5]	0.009 U	0.089 U	0.002 U	0.026 U	0.003 U	0.166 U
beta-BHC	mg/Kg	0.008	0.044	0.006 U	0.037 UJ[5]	0.009 U	0.089 U	0.002 U	0.026 U	0.003 U	0.166 U
Chlordane	mg/Kg	0.056 U	0.298 U	0.064 U	0.374 UJ[5]	0.090 U	0.891 U	0.023 U	0.260 U	0.025 U	1.656 U
delta-BHC	mg/Kg	0.006 U	0.030 U	0.006 U	0.037 UJ[5]	0.009 U	0.089 U	0.002 U	0.026 U	0.004	0.265
Dieldrin*	mg/Kg	0.027	0.144	0.020	0.117 J[5]	0.038	0.376 J[1]	0.019	0.215	0.005 U	0.331 U
Endosulfan I	mg/Kg	0.006 U	0.030 U	0.006 U	0.037 UJ[5]	0.009 U	0.089 U	0.002 U	0.026 U	0.003 U	0.166 U
Endosulfan II	mg/Kg	0.011 U	0.059 U	0.013 U	0.076 UJ[5]	0.018 U	0.178 U	0.005 U	0.052 U	0.005 U	0.331 U
Endosulfan sulfate	mg/Kg	0.011 U	0.059 U	0.013 U	0.076 UJ[5]	0.018 U	0.178 U	0.005 U	0.052 U	0.005 U	0.331 U
Endrin	mg/Kg	0.011 U	0.059 U	0.013 U	0.076 UJ[5]	0.018 U	0.178 U	0.005 U	0.052 U	0.005 U	0.331 U
Endrin aldehyde	mg/Kg	0.044	0.234	0.035	R[1]	0.056	0.554	0.018	R[1]	0.005 U	0.331 U
Endrin ketone	mg/Kg	0.011 U	0.059 U	0.013 U	0.076 UJ[5]	0.018 U	0.178 U	0.007	R[1]	0.005 U	0.331 U
gamma-BHC (Lindane)	mg/Kg	0.006 U	0.030	0.006 U	0.037 UJ[5]	0.009 U	0.089 U	0.002 U	0.026 U	0.003 U	0.166 U
gamma-Chlordane	mg/Kg	0.008	0.041	0.006 U	0.037 UJ[5]	0.009 U	0.089 U	0.003	R[1]	0.003 U	0.166 U
Heptachlor*	mg/Kg	0.0056 U	0.030 U	0.0064 U	0.037 UJ[5]	0.0090 U	0.089 U	0.0023 U	0.026 U	0.003 U	0.166 U
Heptachlor epoxide*	mg/Kg	0.0056 U	0.030 U	0.0064 U	0.037 UJ[5]	0.0090 U	0.089 U	0.0023 U	0.026 U	0.003 U	0.166 U
Methoxychlor	mg/Kg	0.056 U	0.298 U	0.064 U	0.374 UJ[5]	0.090 U	0.891 U	0.030	0.339 J[1]	0.025 U	1.656 U
Toxaphene*	mg/Kg	0.560 U	2.979 U	0.640 U	3.743 UJ[5]	0.900 U	8.911 U	0.230 U	2.599 U	0.250 U	16.556 U
Polychlorinated Biphenyls											
Aroclor-1016	mg/Kg	0.56 U	ND U	0.64 U	ND U	0.22 U	ND U	0.68 U	ND U	0.025 U	ND U
Aroclor-1221	mg/Kg	0.56 U	ND U	0.64 U	ND U	0.22 U	ND U	0.68 U	ND U	0.025 U	ND U
Aroclor-1232	mg/Kg	0.56 U	ND U	0.64 U	ND U	0.22 U	ND U	0.68 U	ND U	0.025 U	ND U
Aroclor-1242	mg/Kg	0.56 U	ND U	0.64 U	ND U	0.22 U	ND U	0.68 U	ND U	0.025 U	ND U
Aroclor-1248	mg/Kg	0.56 U	ND U	0.64 U	ND U	0.22 U	ND U	0.68 U	ND U	0.025 U	ND U
Aroclor-1254	mg/Kg	0.56 U	ND U	0.64 U	ND U	0.22 U	ND U	0.68 U	ND U	0.025 U	ND U
Aroclor-1260	mg/Kg	5.0	26.596 J[3]	5.8	33.918	2.9	28.713	7.6	85.876	0.025 U	ND U
Total Aroclor	mg/kg	5.280	26.6	6.120	33.92	3.010	28.71	7.940	85.88	0.025 U	ND U

Table 3-4
ORGANIC SEDIMENT SAMPLES
FORMER AIR FORCE PLANT NO. 51
MONROE COUNTY
GREECE, NEW YORK

Parameters	Units	SD-003-AW-1-FS Raw Data	SD-003-AW-1-FS TOC Normalized[a]	SD-003-AW-1-DP Raw Data	SD-003-AW-1-DP TOC Normalized[a]	SD-004-AW-1-FS Raw Data	SD-004-AW-1-FS TOC Normalized[a]	SD-005-AW-1-FS Raw Data	SD-005-AW-1-FS TOC Normalized[a]	SD-002-RCU-1-FS Raw Data	SD-002-RCU-1-FS TOC Normalized[a]
Volatile Organic Compounds	———										
1,1,1,2-Tetrachloroethane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
1,1,1-Trichloroethane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
1,1,2,2-Tetrachloroethane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
1,1,2-Trichloroethane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
1,1-Dichloroethane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
1,1-Dichloroethene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
1,1-Dichloropropene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
1,2,3-Trichlorobenzene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.27 J	3.051 J	0.008 U	0.530 UJ[4]
1,2,3-Trichloropropane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
1,2,4-Trichlorobenzene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.2 J	2.260 J	0.008 U	0.530 UJ[4]
1,2,4-Trimethylbenzene	mg/Kg	0.013 J	0.069 J[4]	3.1 U	18.129 UJ[5]	0.0048 J	0.048 J[4]	0.72 U	8.136 U	0.003 J	0.212 J[4]
1,2-Dibromo-3-Chloropropane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.14 J	1.582 J	0.008 U	0.530 UJ[4]
1,2-Dibromoethane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
1,2-Dichlorobenzene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
1,2-Dichloroethane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
1,2-Dichloroethene (total)	mg/Kg	3.3	17.553 EJ[4]	9.0	52.632 J[5]	0.052	0.515 J[4]	0.82	9.266	0.008 U	0.530 UJ[4]
1,2-Dichloropropane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
1,3,5-Trimethylbenzene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 J	0.530 UJ[4]
1,3-Dichlorobenzene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
1,3-Dichloropropane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
1,4-Dichlorobenzene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
1,4-Dioxane	mg/Kg	1.4 U	7.447 UJ[4]	160 U	935.673 UJ[5]	1.1 U	10.891 UJ[4]	36 U	406.780 U	0.380 U	25.166 UJ[4]
2,2-Dichloropropane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
2-Butanone	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.018 J	0.178 J[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
2-Chlorotoluene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
2-Hexanone	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
4-Chlorotoluene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
4-Isopropyltoluene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
4-Methyl-2-pentanone	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Acetone	mg/Kg	2.8 EU	14.894 EJ[4]	3.1 U	18.129 UJ[5]	0.15	1.485 J[4]	0.72 U	8.136 U	0.027	1.788 BJ[4]
Acrolein	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Acrylonitrile	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Allyl Chloride	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Benzene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.002 J	0.139 J
Bromobenzene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Bromochloromethane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Bromodichloromethane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Bromoform	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]

Table 3-4
ORGANIC SEDIMENT SAMPLES
FORMER AIR FORCE PLANT NO. 51
MONROE COUNTY
GREECE, NEW YORK

Parameters	Units	SD-003-AW-1-FS Raw Data	SD-003-AW-1-FS TOC Normalized[a]	SD-003-AW-1-DP Raw Data	SD-003-AW-1-DP TOC Normalized[a]	SD-004-AW-1-FS Raw Data	SD-004-AW-1-FS TOC Normalized[a]	SD-005-AW-1-FS Raw Data	SD-005-AW-1-FS TOC Normalized[a]	SD-002-RCU-1-FS Raw Data	SD-002-RCU-1-FS TOC Normalized[a]
Bromomethane	~~mg/Kg~~	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Carbon Disulfide	mg/Kg	0.22	1.170 J[4]	3.1 U	18.129 UJ[5]	0.013 J	0.129 J[4]	0.72 U	8.136 U	0.008 J	0.536 J[4]
Carbon Tetrachloride	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Chlorobenzene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Chloroethane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Chloroform	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Chloromethane	mg/Kg	0.19	1.011 J[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Chloroprene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
cis-1,2-Dichloroethene	mg/Kg	3.3	17.553 EJ[4]	8.3	48.538 J[5]	0.052	0.515 J[4]	0.76	8.588	0.008 U	0.530 UJ[4]
cis-1,3-Dichloropropene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
cis-1,4-Dichloro-2-butene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Dibromochloromethane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Dibromomethane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Dichlorodifluoromethane	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Ethyl Methacrylate	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Ethylbenzene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Freon TF	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Hexachlorobutadiene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.2 J	2.260 J	0.008 U	0.530 UJ[4]
Isobutyl Alcohol	mg/Kg	1.4 U	7.447 UJ[4]	160 U	935.673 UJ[5]	1.1 U	10.891 UJ[4]	36 U	406.780 U	0.380 U	25.166 UJ[4]
Isopropylbenzene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Methacrylonitrile	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Methyl Iodide	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Methyl Methacrylate	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Methyl-t-Butyl Ether	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Methylene Chloride	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.0044 J	0.044 J[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
n-Butylbenzene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
n-Propylbenzene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Naphthalene	mg/Kg	0.0062 JU	0.033 UJ[8,4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.33 J	3.729 J	0.008 U	0.530 UJ[4]
Propionitrile	mg/Kg	0.11 U	0.585 UJ[4]	13 U	76.023 UJ[5]	0.087 U	0.861 UJ[4]	2.9 U	32.768 U	0.030 U	1.987 UJ[4]
sec-Butylbenzene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Styrene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
tert-Butylbenzene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Tetrachloroethene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Tetrahydrofuran	mg/Kg	0.28 U	1.489 UJ[4]	31 U	181.287 UJ[5]	0.22 U	2.178 UJ[4]	7.2 U	81.356 U	0.076 U	5.033 UJ[4]
Toluene	mg/Kg	0.013 J	0.069 J[4]	3.1 U	18.129 UJ[5]	0.02 J	0.198 J[4]	0.72 U	8.136 U	0.006 J	0.417 J[4]
trans-1,2-Dichloroethene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
trans-1,3-Dichloropropene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 UJ[4]	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
trans-1,4-Dichloro-2-butene	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 U	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Trichloroethene	mg/Kg	0.075	0.399 J[4]	2.7 J	15.789 J[5]	0.0088 J	0.087 J	4.6	51.977	0.008 U	0.530 UJ[4]

Table 3-4
ORGANIC SEDIMENT SAMPLES
FORMER AIR FORCE PLANT NO. 51
MONROE COUNTY
GREECE, NEW YORK

Parameters	Units	SD-003-AW-1-FS Raw Data	SD-003-AW-1-FS TOC Normalized[a]	SD-003-AW-1-DP Raw Data	SD-003-AW-1-DP TOC Normalized[a]	SD-004-AW-1-FS Raw Data	SD-004-AW-1-FS TOC Normalized[a]	SD-005-AW-1-FS Raw Data	SD-005-AW-1-FS TOC Normalized[a]	SD-002-RCU-1-FS Raw Data	SD-002-RCU-1-FS TOC Normalized[a]
Trichlorofluoromethane	mg/Kg	0.22	1.170 J[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 U	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Vinyl Acetate	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 U	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Vinyl Chloride	mg/Kg	0.98	5.213 J[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 U	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Xylene (m,p)	mg/Kg	0.034	0.181 J[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 U	0.72 U	8.136 U	0.004 J	0.245 J[4]
Xylene (o)	mg/Kg	0.028 U	0.149 UJ[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 U	0.72 U	8.136 U	0.008 U	0.530 UJ[4]
Xylene (total)	mg/Kg	0.034	0.181 J[4]	3.1 U	18.129 UJ[5]	0.022 U	0.218 U	0.72 U	8.136 U	0.004 J	0.252 J[4]
Semi-Volatile Organic Compounds											
N-Nitrosodimethylamine	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
Pyridine	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
Aniline	mg/kg	14 U	74.468 U	16 U	93.567 UJ[5]	2.2 U	21.782 U	1.1 U	12.429 U	1.200 U	79.470 U
Phenol	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
bis(2-Chloroethyl) Ether	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
2-Chlorophenol	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
1,3 - Dichlorobenzene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
1,4 - Dichlorobenzene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
Benzyl Alcohol	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
1,2 - Dichlorobenzene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
2-Methylphenol	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
2,2'- oxybis (1 - Chloropropane)	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
4 - Methylphenol	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.67 J	6.634 J	0.45 U	5.085 U	0.490 U	32.450 U
N-Nitroso-di-n-propylamine	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
Hexachloroethane	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
Nitrobenzene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
Isophorone	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
2-Nitrophenol	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
2,4 - Dimethylphenol	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
bis (2 - Chloroethoxy) methane	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
Benzoic Acid	mg/kg	14 U	74.468 U	16 U	93.567 UJ[5]	0.33 J	3.267 J	1.1 U	12.429 U	0.150 J	9.934 J
2,4 Dichlorophenol	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
1,2,4 - Trichlorobenzene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
Naphthalene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.09 J	1.017 J	0.490 U	32.450 U
4 - Chloroaniline	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
Hexachlorobutadiene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
4 - Chloro - 3- methylphenol	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
2 - Methylnaphthalene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.059 U	0.667 U	0.490 U	32.450 U
Hexachlorocyclopentadiene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
2,4,6 - Trichlorophenol	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U
2,4,5 - Trichlorophenol	mg/kg	14 U	74.468 U	16 U	93.567 UJ[5]	2.2 U	21.782 U	1.1 U	12.429 U	1.200 U	79.470 U
2 - Chloronaphthalene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 U	0.490 U	32.450 U

Table 3-4
ORGANIC SEDIMENT SAMPLES
FORMER AIR FORCE PLANT NO. 51
MONROE COUNTY
GREECE, NEW YORK

Parameters	Units	SD-003-AW-1-FS Raw Data	SD-003-AW-1-FS TOC Normalized[a]	SD-003-AW-1-DP Raw Data	SD-003-AW-1-DP TOC Normalized[a]	SD-004-AW-1-FS Raw Data	SD-004-AW-1-FS TOC Normalized[a]	SD-005-AW-1-FS Raw Data	SD-005-AW-1-FS TOC Normalized[a]	SD-002-RCU-1-FS Raw Data	SD-002-RCU-1-FS TOC Normalized[a]
2 - Nitroaniline	mg/kg	14 U	74.468 U	16 U	93.567 UJ[5]	2.2 U	21.782 U	1.1 U	12.429 U	1.200 U	79.470 U
Dimethylphthalate	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 UJ[18]	0.490 U	32.450 U
Acenaphthylene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 UJ[18]	0.490 U	32.450 U
2,6 - Dinitrotoluene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 UJ[18]	0.490 U	32.450 U
3 - Nitroaniline	mg/kg	5.5 U	29.255 U	16 U	93.567 UJ[5]	2.2 U	21.782 U	1.1 U	12.429 UJ[18]	1.200 U	79.470 U
Acenaphthene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.05 J	0.495 J	0.3 J	3.390 J	0.490 U	32.450 U
2,4 - Dinitrophenol	mg/kg	5.5 U	29.255 U	16 U	93.567 UJ[5]	2.2 U	21.782 U	1.1 U	12.429 UJ[18]	1.200 U	79.470 U
Dibenzofuran	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.15 J	1.695 J	0.490 U	32.450 U
4 - Nitrophenol	mg/kg	5.5 U	29.255 U	16 U	93.567 UJ[5]	2.2 U	21.782 U	1.1 U	12.429 UJ[18]	1.200 U	79.470 U
2,4 - Dinitrotoluene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 UJ[18]	0.490 U	32.450 U
Diethylphthalate	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 UJ[18]	0.490 U	32.450 U
Flourene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.059 J	0.584 J	0.25 J	2.825 J	0.026 J	1.722 J
4 - Chlorophenyl - phenylether	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 UJ[18]	0.490 U	32.450 U
4 - Nitroaniline	mg/kg	14 U	74.468 U	16 U	93.567 UJ[5]	2.2 U	21.782 U	1.1 U	12.429 UJ[18]	1.200 U	79.470 U
4,6 - Dinitro - 2 - methylphenol	mg/kg	14 U	74.468 U	16 U	93.567 UJ[5]	2.2 U	21.782 U	1.1 U	12.429 UJ[18]	1.200 U	79.470 U
N - nitrosodiphenylamine (1)	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 UJ[18]	0.490 U	32.450 U
Azobenzene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 UJ[18]	0.490 U	32.450 U
4 - Bromophenyl - phenylether	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 UJ[18]	0.490 U	32.450 U
Hexachlorobenzene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 UJ[18]	0.490 U	32.450 U
Pentachlorophenol	mg/kg	14 U	74.468 U	16 U	93.567 UJ[5]	2.2 U	21.782 U	1.1 U	12.429 UJ[18]	1.200 U	79.470 U
Phenanthrene	mg/kg	0.77 J	4.096 J	0.69 J	4.035 UJ[5]	0.67 J	6.634 J	6.2 EY	70.056 EJ[18]	0.480 J	31.788 J
Anthracene	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.14 J	1.386 J	0.45 U	5.085 UJ[18]	0.059 J	3.907 J
Carbazole	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.14 J	1.386 J	0.77	8.701 J[18]	0.067 J	4.437 J
Di - n- butylphthalate	mg/kg	5.5 U	29.255 U	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.45 U	5.085 UJ[18]	0.490 U	32.450 U
Flouranthene	mg/kg	2.4 J	12.766 J	1.8 J	10.526 UJ[5]	1.7	16.832	6.7 EY	75.706 EJ[18]	0.930	61.589
Benzidine	mg/kg	14 U	74.468 UJ[17]	16 U	93.567 UJ[17]	2.2 U	21.782 UJ[17]	1.1 U	12.429 UJ[17,18]	1.200 U	79.470 UJ[17]
Pyrene	mg/kg	1.7 J	9.043 J	1.1 J	6.433 J[5]	0.092	0.911	14 EY	158.192 UJ[18]	0.640	42.384
Butylbenzylphthalate	mg/kg	5.5 U	29.255 U	6.3 U	36.842 J[5]	0.89 U	8.812 U	0.45 U	5.085 UJ[18]	0.490 U	32.450 U
Benzo (a) anthracene	mg/kg	5.5 U	29.255 U	0.64 J	3.743 J[5]	0.065 J	0.644 J	3.8 EY	42.938 UJ[18]	0.290 J	19.205 J
3,3' - Dichlorobenzidine	mg/kg	5.5 U	29.255 U	6.3 U	36.842 J[5]	0.89 U	8.812 U	0.45 U	5.085 UJ[18]	0.490 U	32.450 U
Chrysene	mg/kg	5.5 U	29.255 U	0.95 J	5.556 J[5]	0.82 J	8.119 J	3.7 EY	41.808 UJ[18]	0.570	37.748
bis (2-Ethylhexyl) phthalate	mg/kg	5.5 U	29.255 U	6.3 U	36.842 J[5]	0.46 JB	4.554 J	3.3 B	37.288 UJ[18]	0.490 U	32.450 J
Di-n-octylphthalate	mg/kg	5.5 U	29.255 U	6.3 U	36.842 J[5]	0.89 U	8.812 U	0.45 U	5.085 UJ[18]	0.490 U	32.450 U
Benzo (b) fluoranthene	mg/kg	1.7 J	9.043 J	1.7 JY	9.942 J[5]	1.4 Y	13.861 Y	6.7 EY	75.706 EYJ[18]	0.640	42.384
Benzo (k) fluoranthene	mg/kg	2 J	10.638 J	6.3 U	36.842 J[5]	0.89 U	8.812 U	0.45 U	5.085 UJ[18]	0.510	33.775
Benzo (a) pyrene	mg/kg	1.2 J	6.383 J	0.86 J	5.029 J[5]	0.7 J	6.931 J	3.3	37.288 UJ[18]	0.380 J	25.166 J
Indeno (1,2,3 - cd) pyrene	mg/kg	0.28 J	1.489 J	0.4 J	2.339 J	0.17 J	1.683 J	1.1	12.429 UJ[18]	0.170 J	11.258 J
Dibenz (a,h) anthracene	mg/kg	5.5 J	29.255 J	6.3 U	36.842 UJ[5]	0.89 U	8.812 U	0.56	6.328 UJ[18]	0.058 J	3.841 J
Benzo (g,h,I) perylene	mg/kg	0.57 J	3.032 J	0.41 J	2.398 J	0.17 J	1.683 J	1.2	13.559 UJ[18]	0.170 J	11.258 J

DP = Lab Duplicate
J = Estimated Value
mg/Kg = milligrams per kiligram
NA = Not Applicable
NBA = No Benchmark Available
ND = Not Detected
µg/Kg = micrograms per kiligram
PCB concentrations were calculated based on the total of any reported value(s) and half the reported detection limit for aroclors 1254, and 1260
* STL reported "U" values in some samples at concentrations greater than the SCG, however, Aldrin and dieldrin MDLs were established at .0066 mg/kg and .0107 mg/kg respectively (< SCG), MDL's could not be established at levels below the SCG for heptaclor, heptachlor expoxide or toxaphene, therefore results were qualified at the MDL as undetected.
Note: Except for TOC, the mg/Kg units used in these tables represent milligrams per kilogram of organic carbon and not milligrams per kilogram of sample

Table 3-5
Fish Fillet Background Samples For Human Assessment
Monroe County
Greece, New York

Parameters	Units	SCG	Total No. of Samples	Number of samples with Detections	Maximum Detected	No. of Samples Above SCG	FF-001-RCU-00	FF-002-RCU-00	FF-003-RCU-00	FF-004-RCU-00	FF-001-BP-00	FF-002-BP-00
Metals												
Mercury	µg/Kg	1,000	6	6	240	0	120	35	160	100	240	120
Cadmium	µg/Kg	1,000	6	6	86	0	48 U12	63 U12	86 U12	82 U12	61 U12	74 U12
Lead	µg/Kg	NBA	6	6	170	NA	150 U12	170 U12	120 U12	110 U12	80 U12	96 U12
Polychlorinated Biphenyls												
Aroclor-1016	µg/Kg	NA	6	0	ND	0	15 U	15 U	15 U	15 U	15 U	15 U
Aroclor-1221	µg/Kg	NA	6	0	ND	0	15 U	15 U	15 U	15 U	15 U	15 U
Aroclor-1232	µg/Kg	NA	6	0	ND	0	15 U	15 U	15 U	15 U	15 U	15 U
Aroclor-1242	µg/Kg	NA	6	0	ND	0	15 U	15 U	15 U	15 U	15 U	15 U
Aroclor-1248	µg/Kg	NA	6	0	ND	0	15 U	15 U	15 U	15 U	15 U	15 U
Aroclor-1254	µg/Kg	NA	6	5	120	0	30	15 U	120	34 J[1]	110	70
Aroclor-1260	µg/Kg	NA	6	3	69	0	15 U	15 U	69 J[1]	15 U	47	35
Total Aroclor	µg/Kg	2,000	6	5	196.5	0	45	22.5	196.5	49	164.5	112.5
Pesticides												
4,4'-DDD	µg/Kg	NBA	6	5	17	NA	2.4	2.9	2 U	3.2	8	17
4,4'-DDE	µg/Kg	NBA	6	6	61	NA	13	12	34	26	48	61
4,4'-DDT	µg/Kg	NBA	6	2	4.3	NA	3.4 J[1]	2 U	R[1]	4.3 J[1]	R[1]	2 U
Total DDT	µg/Kg	NBA	6	6	79	NA	18.8	15.9	35	33.5	56	79
alpha-Chlordane	µg/Kg	NBA	6	2	1.3	NA	1.3 J[1]	1.3	0.5 U	R[1]	0.5 U	R[1]
Chlordane	µg/Kg	NBA	6	0	ND	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	ND
gamma-Chlordane	µg/Kg	NBA	6	2	2.9	NA	0.5 U	0.5 U	2.8 J[1]	0.5 U	2.9	ND
Heptachlor	µg/Kg	NBA	6	0	ND	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	ND
Heptachlor epoxide	µg/Kg	NBA	6	5	2.7	NA	1.9	1.3	2.7	1.9	2.5 J[1]	ND
Total Chlordane	µg/Kg	NBA	6	5	5.75	NA	3.45	2.85	5.75	2.15	5.65	ND
alpha-BHC	µg/Kg	NBA	6	0	ND	NA	0.5 U	ND	ND	ND	ND	0.5 U
beta-BHC	µg/Kg	NBA	6	1	1	NA	1 J[1]	ND	ND	ND	ND	0.5 U
delta-BHC	µg/Kg	NBA	6	1	5.7	NA	0.5 U	ND	ND	ND	ND	5.7
gamma-BHC (Lindane)	µg/Kg	NBA	6	1	1.2	NA	1.2	ND	ND	ND	ND	0.5 U
Total BHC	µg/Kg	NBA	6	1	2.45	NA	2.45	ND	ND	ND	ND	5.95
Aldrin	µg/Kg	NBA	6	0	ND	NA	ND	ND	ND	ND	ND	ND
Decachlorobiphenyl	µg/Kg	NBA	6	6	7.9	NA	6.9	7.7	7.2	7	7.9	7.7
Dieldrin	µg/Kg	NBA	6	6	7.6	NA	4.9	3.9	7.6	5.1	6.3	7
Endosulfan I	µg/Kg	NBA	6	0	ND	NA	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/Kg	NBA	6	0	ND	NA	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	µg/Kg	NBA	6	0	ND	NA	ND	ND	ND	ND	ND	ND
Endrin	µg/Kg	NBA	6	0	ND	NA	ND	ND	ND	ND	ND	ND
Endrin aldehyde	µg/Kg	NBA	6	0	ND	NA	ND	ND	ND	ND	ND	ND
Endrin ketone	µg/Kg	NBA	6	0	ND	NA	ND	ND	ND	ND	ND	ND
gamma-BHC (Lindane)	µg/Kg	NBA	6	1	1.2	NA	1.2	ND	ND	ND	ND	0.5 U
Methoxychlor	µg/Kg	NBA	6	0	ND	NA	ND	ND	ND	ND	ND	ND
Tetrachloro-m-xylene	µg/Kg	NBA	6	6	8.2	NA	8.2	7.2	7.6	7.2	7.3	7.1
Toxaphene	µg/Kg	NBA	6	0	ND	NA	ND	ND	ND	ND	ND	ND

J = Estimated Value
mg/Kg = milligrams per kiligram
NA = Not Applicable
NBA = No Benchmark Available
ND = Not Detected

SCG = Standards, Criteria, and Guidance values

Fish samples are reported on a wet weight basis
PCB concentrations were calculated based on the total of any reported value(s) and half the reported detection limit for aroclors 1248, 1254, and 1260
µg/Kg = micrograms per kiligram

Table 3-6
Whole Body Background Fish Samples For Ecological Exposure Assessment
Former Air Force Plant No. 51
Monroe County
Greece, New York

Parameters	Units	SCG	Total No. of Samples	Number of samples with Detections	Maximum Detected	No. of Samples Above SCG	WB-001-RCU-00	WB-002-RCU-00	WB-003-RCU-00	WB-004-RCU-00	WB-001-BP-00	WB-002-BP-00
Metals												
Mercury	µg/Kg	100	6	5	100	1	76	100	42	33	85	ND
Cadmium	µg/Kg	3,500	6	6	1400	0	1400 U12	98 U12	93 U12	90 U12	70 U12	48 U12
Lead	µg/Kg	NBA	6	6	480	NA	480	190 U12	190 U12	210 U12	99 U12	150 U12
Polychlorinated Biphenyls												
Aroclor-1016	µg/Kg	NA	6	0	ND	0	ND	ND	ND	ND	ND	ND
Aroclor-1221	µg/Kg	NA	6	0	ND	0	ND	ND	ND	ND	ND	ND
Aroclor-1232	µg/Kg	NA	6	0	ND	0	ND	ND	ND	ND	ND	ND
Aroclor-1242	µg/Kg	NA	6	0	ND	0	ND	ND	ND	ND	ND	ND
Aroclor-1248	µg/Kg	NA	6	0	ND	0	ND	ND	ND	ND	ND	ND
Aroclor-1254	µg/Kg	NA	6	6	170	0	61	81	25	59	170	120
Aroclor-1260	µg/Kg	NA	6	4	83	0	32	43	ND	ND	66	83
Total Aroclor	µg/Kg	100	6	6	236	3	93	124	25	59	236	203
Pesticides												
4,4'-DDD	µg/Kg	NBA	6	5	22	NA	R[1]	4.5	10	15	22	7.1
4,4'-DDE	µg/Kg	NBA	6	6	130	NA	21	29	44	56	130 J[3]	54
4,4'-DDT	µg/Kg	NBA	6	3	10	NA	9 J[1]	5.6	ND	ND	ND	10
Total DDT	µg/Kg	NBA	6	6	152	NA	30	39.1	54	71	152	71.1
Aldrin	µg/Kg	NBA	6	1	1.3	NA	ND	1.3 J[1]	ND	ND	ND	ND
alpha-BHC	µg/Kg	NBA	6	1	1.5	NA	1.5 J[1]	ND	ND	ND	ND	ND
alpha-Chlordane	µg/Kg	NBA	6	3	9.9	NA	R[1]	2.5 J[1]	6.5 J[1]	9.9 J[1]	ND	ND
beta-BHC	µg/Kg	NBA	6	2	1.9	NA	1.9	1.7 J[1]	ND	ND	ND	ND
Chlordane	µg/Kg	NBA	6	0	ND	NA	ND	ND	ND	ND	ND	ND
Decachlorobiphenyl	µg/Kg	NBA	6	6	8.6	NA	6.4	5.4	6.7	7.8	7.1	8.6
delta-BHC	µg/Kg	NBA	6	1	1.4	NA	1.4 J[1]	ND	ND	ND	ND	R[1]
Dieldrin	µg/Kg	NBA	6	5	26	NA	8.8	10	16	26	13	ND
Endosulfan I	µg/Kg	NBA	6	0	ND	NA	ND	ND	ND	ND	ND	ND
Endosulfan II	µg/Kg	NBA	6	0	ND	NA	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	µg/Kg	NBA	6	1	2.3	NA	ND	2.3	ND	ND	ND	ND
Endrin	µg/Kg	NBA	6	1	2.3	NA	ND	2.3	ND	ND	ND	ND
Endrin aldehyde	µg/Kg	NBA	6	2	2.1	NA	2.1	2.1	ND	ND	ND	ND
Endrin ketone	µg/Kg	NBA	6	0	ND	NA	ND J[1]	ND	ND	ND	ND	ND
gamma-BHC (Lindane)	µg/Kg	NBA	6	1	1.6	NA	1.6 J[1]	ND	ND	ND	ND	ND
gamma-Chlordane	µg/Kg	NBA	6	3	7.2	NA	1.4 J[1]	ND	ND	3.5 J[1]	7.2 J[1,3]	ND
Heptachlor	µg/Kg	NBA	6	0	ND	NA	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	µg/Kg	NBA	6	5	9.3	NA	2.9	3.4	4.6	9.3	6 J[1]	R[1]
Methoxychlor	µg/Kg	NBA	6	0	ND	NA	ND	ND	ND	ND	ND	ND
Tetrachloro-m-xylene	µg/Kg	NBA	6	6	9.5	NA	6.4	5.6 J[1]	6.2	7	9.5	6.9
Toxaphene	µg/Kg	NBA	6	0	ND	NA	ND	ND	ND	ND	ND	ND

J = Estimated Value
mg/Kg = milligrams per kiligram
NA = Not Applicable
NBA = No Benchmark Available
ND = Not Detected
SCG = Standards, Criteria, and Guidance values
Fish samples are reported on a wet weight basis
µg/Kg = micrograms per kiligram

Table 3-7
Exceedences
Inorganic Background Sediment Samples
Former Air Force Plant No. 51
Monroe County
Greece, New York

Parameters	Units	TGSCS Low Effect Level (mg/kg)	TGSCS Severe Effect Level (mg/kg)	Total No. of Samples	Maximum Detected	No. of Samples Above TGSCS	SD-001-RCU-1-FS	SD-001-BP-1-FS
Metals								
Aluminum	mg/Kg	NBA	NBA	2	22,700	NA	13,800 J[5]	22,700 J[5]
Antimony	mg/Kg	2.0	25	2	ND	0	ND J[5,14]	ND J[5,14]
Arsenic	mg/Kg	6.0	33	2	6.00	1	6.00 J[5,13]	5.10 J[5]
Barium	mg/Kg	NBA	NBA	2	254	NA	137 J[5]	254 J[5]
Beryllium	mg/Kg	NBA	NBA	2	1.00	NA	ND J[5]	1.00 J[5]
Cadmium	mg/Kg	0.60	9.0	2	0.84	1	ND J[5]	0.84 J[5]
Calcium	mg/Kg	NBA	NBA	2	58,600	NA	22,000 J[5]	58,600 J[5]
Chromium	mg/Kg	26	110	2	32.7	2	27.20 J[5]	32.70 J[5]
Cobalt	mg/Kg	NBA	NBA	2	12.7	NA	ND J[5]	12.70 J[5]
Copper	mg/Kg	16	110	2	44.2	2	37.20 J[5]	44.20 J[5]
Iron	mg/Kg	20,000	40,000	2	36,000	2	27,100 J[5]	36,000 J[5]
Lead	mg/Kg	31	110	2	67.8	2	67.80 J[5]	65.50 J[5]
Magnesium	mg/Kg	NBA	NBA	2	9,120	NA	5,370 J[5]	9,120 J[5]
Manganese	mg/Kg	460	1,100	2	1,050	2	508 J[5]	1,050 J[5]
Nickel	mg/Kg	16	50	2	34.6	2	19.90 J[5]	34.60 J[5]
Potassium	mg/Kg	NBA	NBA	2	4,050	NA	2,440 J[5]	4,050 J[5]
Selenium	mg/Kg	NBA	NBA	2	2.5	NA	ND J[5,14]	2.50 J[5]
Silver	mg/Kg	1.0	2.2	2	ND	0	ND J[5]	ND J[5]
Sodium	mg/Kg	NBA	NBA	2	1,690	NA	ND J[5,15]	1,690 J[5,15]
Thallium	mg/Kg	NBA	NBA	2	ND	NA	ND J[5]	ND J[5]
Vanadium	mg/Kg	NBA	NBA	2	33.4	NA	24.00 J[5]	33.40 J[5]
Zinc	mg/Kg	120	270	2	218	2	218 J[5,16]	192 J[5,16]
Mercury	mg/Kg	0.15	1.3	2	0.24	1	ND J[5]	0.24 J[5]
Cyanide	mg/Kg	NBA	NBA	2	ND	NA	ND J[5]	ND J[5]

J = Estimated Value
mg/Kg = milligrams per kiligram
NBA = No Benchmark Available
ND = Not Detected
TGSCS = New York State Departmnt of Environmental Conservation Technical Guidance for Screening Sediments

Table 3-8
Organic Background Sediment Samples
Former Air Force Plant No. 51
Monroe County
Greece, New York

Parameters	Units	Human Health Bioaccumulation Sediment Criteria (mg/kg)	Benthic Aquatic Acute Toxicity Sediment Criteria (mg/kg)	Benthic Aquatic Chronic Toxicity Sediment Criteria (mg/kg)	Wildlife Bioaccumulation Sediment Criteria (mg/kg)	Total Number of Samples	SD-001-RCU-1-FS Raw Data	SD-001-RCU-1-FS TOC Normalized[a]	SD-001-BP-1-FS Raw Data	SD-001-BP-1-FS TOC Normalized[a]
Miscellaneous										
Solids, Percent	%	NBA	NBA	NBA	NBA	2	23.6	23.6	13.7	13.7
TOC	mg/Kg	NBA	NBA	NBA	NBA	2	124,000	124,000 J[5]	187,000	187,000 J[5]
Pesticides										
4,4'-DDD	mg/Kg	NA	NBA	NBA	1.0	2	0.0260	0.210 J[5]	0.024 U	0.128 UJ[5]
4,4'-DDE	mg/Kg	NA	NBA	NBA	1.0	2	0.04	0.323 J[5]	0.024 U	0.128 UJ[5]
4,4'-DDT	mg/Kg	NA	1,100	1.0	1.0	2	0.014 U	0.113 UJ[5]	0.024 U	0.128 UJ[5]
Total DDT	mg/kg	**0.01**	NBA	NBA	NBA	2	0.080	0.645 J[5]	0.036 U	0.193 UJ[5]
Aldrin	mg/Kg	0.1	NBA	NBA	0.77	2	0.0069 U	0.056 UJ[5]	0.012 U	0.064 UJ[5]
alpha-BHC	mg/Kg	NBA	NBA	NBA	NBA	2	0.016	R[1]	0.012 U	0.064 UJ[5]
alpha-Chlordane	mg/Kg	NBA	NBA	NBA	NBA	2	0.0069 U	0.056 UJ[5]	0.012 U	0.064 UJ[5]
beta-BHC	mg/Kg	NBA	NBA	NBA	NBA	2	0.015	R[1]	0.012 U	0.064 UJ[5]
Chlordane	mg/Kg	**0.001**	1.4	**0.03**	**0.006**	2	0.069 U	0.556 UJ[5]	0.120 U	0.642 UJ[5]
delta-BHC	mg/Kg	NBA	NBA	NBA	NBA	2	0.0069 U	0.056 UJ[5]	0.012 U	0.064 UJ[5]
Dieldrin	mg/Kg	**0.1**	NBA	NBA	0.77	2	0.014 U	0.113 UJ[5]	0.024 U	0.128 UJ[5]
Endosulfan I	mg/Kg	NBA	0.78	0.03	NBA	2	0.0069 U	0.056 UJ[5]	0.012 U	0.064 UJ[5]
Endosulfan II	mg/Kg	NBA	0.78	0.03	NBA	2	0.014 U	0.113 UJ[5]	0.024 U	0.128 UJ[5]
Endosulfan sulfate	mg/Kg	NBA	0.78	**0.03**	NBA	2	0.014 U	0.113 UJ[5]	0.024 U	0.128 UJ[5]
Endrin	mg/Kg	0.8	NBA	4.0	0.8	2	0.014 U	0.113 UJ[5]	0.024 U	0.128 UJ[5]
Endrin aldehyde	mg/Kg	NBA	NBA	NBA	NBA	2	0.014 U	0.113 UJ[5]	0.024 U	0.128 UJ[5]
Endrin ketone	mg/Kg	NBA	NBA	NBA	NBA	2	0.014 U	0.113 UJ[5]	0.024 U	0.128 UJ[5]
gamma-BHC (Lindane)	mg/Kg	NBA	NBA	NBA	NBA	2	0.0092	0.074 J[1]	0.012 U	0.064 UJ[5]
gamma-Chlordane	mg/Kg	NBA	NBA	NBA	NBA	2	0.0069 U	0.056 UJ[5]	0.012 U	0.064 UJ[5]
Heptachlor	mg/Kg	**0.0008**	13.1	0.1	**0.03**	2	0.0069 U	0.056 UJ[5]	0.012 U	0.064 UJ[5]
Heptachlor epoxide	mg/Kg	**0.0008**	13.1	0.1	**0.03**	2	0.0069 U	0.056 UJ[5]	0.012 U	0.064 UJ[5]
Methoxychlor	mg/Kg	NBA	NBA	NBA	NBA	2	0.069 U	0.556 UJ[5]	0.120 U	0.642 UJ[5]
Toxaphene	mg/Kg	**0.02**	**3.2**	**0.005**	**0.01**	2	0.69 U	5.565 UJ[5]	1.200 U	6.417 UJ[5]
Polychlorinated Biphenyls										
Aroclor-1016	mg/Kg	NBA	NBA	NBA	NBA	2	0.069 U	ND U	0.12 U	ND U
Aroclor-1221	mg/Kg	NBA	NBA	NBA	NBA	2	0.069 U	ND U	0.12 U	ND U
Aroclor-1232	mg/Kg	NBA	NBA	NBA	NBA	2	0.069 U	ND U	0.12 U	ND U
Aroclor-1242	mg/Kg	NBA	NBA	NBA	NBA	2	0.069 U	ND U	0.12 U	ND U
Aroclor-1248	mg/Kg	NBA	NBA	NBA	NBA	2	0.069 U	ND U	0.12 U	ND U
Aroclor-1254	mg/Kg	NBA	NBA	NBA	NBA	2	0.069 U	ND U	0.12 U	ND U
Aroclor-1260	mg/Kg	NBA	NBA	NBA	NBA	2	0.069 U	ND U	0.12 U	ND U
Total Aroclor	mg/kg	0.0008	NBA	NBA	NBA	2	0.069 U	ND U	0.12 U	ND U
Volatile Organic Compounds										
1,1,1,2-Tetrachloroethane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,1,1-Trichloroethane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,1,2,2-Tetrachloroethane	mg/Kg	**0.3**	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,1,2-Trichloroethane	mg/Kg	**0.6**	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,1-Dichloroethane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,1-Dichloroethene	mg/Kg	**0.02**	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,1-Dichloropropene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,2,3-Trichlorobenzene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,2,3-Trichloropropane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,2,4-Trichlorobenzene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]

Table 3-8
Organic Background Sediment Samples
Former Air Force Plant No. 51
Monroe County
Greece, New York

Parameters	Units	Human Health Bioaccumulation Sediment Criteria (mg/kg)	Benthic Aquatic Acute Toxicity Sediment Criteria (mg/kg)	Benthic Aquatic Chronic Toxicity Sediment Criteria (mg/kg)	Wildlife Bioaccumulation Sediment Criteria (mg/kg)	Total Number of Samples	SD-001-RCU-1-FS Raw Data	SD-001-RCU-1-FS TOC Normalized[a]	SD-001-BP-1-FS Raw Data	SD-001-BP-1-FS TOC Normalized[a]
1,2,4-Trimethylbenzene	mg/Kg	NBA	1,631	186	NBA	2	0.028 J	0.226 J	0.120 U	0.642 UJ[4,5]
1,2-Dibromo-3-Chloropropane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,2-Dibromoethane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,2-Dichlorobenzene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,2-Dichloroethane	mg/Kg	0.7	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,2-Dichloroethene (total)	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,2-Dichloropropane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,3,5-Trimethylbenzene	mg/Kg	NBA	NBA	NBA	NBA	2	0.0098 J	0.079 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,3-Dichlorobenzene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,3-Dichloropropane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,4-Dichlorobenzene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
1,4-Dioxane	mg/Kg	NBA	NBA	NBA	NBA	2	1.5 U	12.097 UJ[4,5]	6.200 U	33.155 UJ[4,5]
2,2-Dichloropropane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
2-Butanone	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
2-Chlorotoluene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
2-Hexanone	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
4-Chlorotoluene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
4-Isopropyltoluene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
4-Methyl-2-pentanone	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Acetone	mg/Kg	NBA	NBA	NBA	NBA	2	0.67	5.403 J[4,5]	0.470 U	2.513 J[4,5]
Acrolein	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Acrylonitrile	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Allyl Chloride	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Benzene	mg/Kg	**0.6**	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Bromobenzene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Bromochloromethane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Bromodichloromethane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Bromoform	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Bromomethane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Carbon Disulfide	mg/Kg	NBA	NBA	NBA	NBA	2	0.049	0.395 J	0.025 J	0.134 J
Carbon Tetrachloride	mg/Kg	**0.6**	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Chlorobenzene	mg/Kg	NBA	34.6	3.5	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Chloroethane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Chloroform	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Chloromethane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Chloroprene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
cis-1,2-Dichloroethene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
cis-1,3-Dichloropropene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
cis-1,4-Dichloro-2-butene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Dibromochloromethane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Dibromomethane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Dichlorodifluoromethane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Ethyl Methacrylate	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Ethylbenzene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]

Table 3-8
Organic Background Sediment Samples
Former Air Force Plant No. 51
Monroe County
Greece, New York

Parameters	Units	Human Health Bioaccumulation Sediment Criteria (mg/kg)	Benthic Aquatic Acute Toxicity Sediment Criteria (mg/kg)	Benthic Aquatic Chronic Toxicity Sediment Criteria (mg/kg)	Wildlife Bioaccumulation Sediment Criteria (mg/kg)	Total Number of Samples	SD-001-RCU-1-FS Raw Data	SD-001-RCU-1-FS TOC Normalized[a]	SD-001-BP-1-FS Raw Data	SD-001-BP-1-FS TOC Normalized[a]
Freon TF	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Hexachlorobutadiene	mg/Kg	**0.3**	55	5.5	4.0	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Isobutyl Alcohol	mg/Kg	NBA	NBA	NBA	NBA	2	1.5 U	12.097 UJ[4,5]	6.200 U	33.155 UJ[4,5]
Isopropylbenzene	mg/Kg	NBA	105	12	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Methacrylonitrile	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Methyl Iodide	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Methyl Methacrylate	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Methyl-t-Butyl Ether	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Methylene Chloride	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
n-Butylbenzene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
n-Propylbenzene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Naphthalene	mg/Kg	NBA	258	30	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Propionitrile	mg/Kg	NBA	NBA	NBA	NBA	2	0.12 U	0.968 UJ[4,5]	0.500 U	2.674 UJ[4,5]
sec-Butylbenzene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Styrene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
tert-Butylbenzene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Tetrachloroethene	mg/Kg	0.8	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Tetrahydrofuran	mg/Kg	NBA	NBA	NBA	NBA	2	0.3 U	2.419 UJ[4,5]	1.200 U	6.417 UJ[4,5]
Toluene	mg/Kg	NBA	235	49	NBA	2	0.013 J	0.105 J	0.120 U	0.642 UJ[4,5]
trans-1,2-Dichloroethene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
trans-1,3-Dichloropropene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
trans-1,4-Dichloro-2-butene	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Trichloroethene	mg/Kg	2.0	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Trichlorofluoromethane	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Vinyl Acetate	mg/Kg	NBA	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Vinyl Chloride	mg/Kg	**0.07**	NBA	NBA	NBA	2	0.03 U	0.242 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Xylene (m,p)	mg/Kg	NBA	833	92	NBA	2	0.02 J	0.161 J	0.120 U	0.642 UJ[4,5]
Xylene (o)	mg/Kg	NBA	833	92	NBA	2	0.0077 J	0.062 UJ[4,5]	0.120 U	0.642 UJ[4,5]
Xylene (total)	mg/Kg	NBA	833	92	NBA	2	0.028 J	0.226 J	0.120 U	0.642 UJ[4,5]
Semi-Volatile Organic Compounds										
N-Nitrosodimethylamine	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Pyridine	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Aniline	mg/kg	NBA	NBA	NBA	NBA	2	3.4 U	27.419 UJ[5]	5.900 U	31.551 UJ[5]
Phenol	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
bis(2-Chloroethyl) Ether	mg/kg	**0.03**	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
2-Chlorophenol	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
1,3 - Dichlorobenzene	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
1,4 - Dichlorobenzene	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Benzyl Alcohol	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
1,2 - Dichlorobenzene	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
2-Methylphenol	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
2,2'- oxybis (1 - Chloropropane)	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
4 - Methylphenol	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]

Table 3-8
Organic Background Sediment Samples
Former Air Force Plant No. 51
Monroe County
Greece, New York

Parameters	Units	Human Health Bioaccumulation Sediment Criteria (mg/kg)	Benthic Aquatic Acute Toxicity Sediment Criteria (mg/kg)	Benthic Aquatic Chronic Toxicity Sediment Criteria (mg/kg)	Wildlife Bioaccumulation Sediment Criteria (mg/kg)	Total Number of Samples	SD-001-RCU-1-FS Raw Data	SD-001-RCU-1-FS TOC Normalized[a]	SD-001-BP-1-FS Raw Data	SD-001-BP-1-FS TOC Normalized[a]
N-Nitroso-di-n-propylamine	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Hexachloroethane	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Nitrobenzene	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Isophorone	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
2-Nitrophenol	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
2,4 - Dimethylphenol	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
bis (2 - Chloroethoxy) methane	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Benzoic Acid	mg/kg	NBA	NBA	NBA	NBA	2	3.4 U	27.419 UJ[5]	5.900 U	31.551 UJ[5]
2,4 Dichlorophenol	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
1,2,4 - Trichlorobenzene	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Naphthalene	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
4 - Chloroaniline	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Hexachlorobutadiene	mg/kg	**0.3**	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
4 - Chloro - 3- methylphenol	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
2 - Methylnaphthalene	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Hexachlorocyclopentadiene	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
2,4,6 - Trichlorophenol	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
2,4,5 - Trichlorophenol	mg/kg	NBA	NBA	NBA	NBA	2	3.4 U	27.419 UJ[5]	5.900 U	31.551 UJ[5]
2 - Chloronaphthalene	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
2 - Nitroaniline	mg/kg	NBA	NBA	NBA	NBA	2	3.4 U	27.419 UJ[5]	5.900 U	31.551 UJ[5]
Dimethylphthalate	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Acenaphthylene	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
2,6 - Dinitrotoluene	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
3 - Nitroaniline	mg/kg	NBA	NBA	NBA	NBA	2	3.4 U	27.419 UJ[5]	5.900 U	31.551 UJ[5]
Acenaphthene	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
2,4 - Dinitrophenol	mg/kg	NBA	NBA	NBA	NBA	2	3.4 U	27.419 UJ[5]	5.900 U	31.551 UJ[5]
Dibenzofuran	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
4 - Nitrophenol	mg/kg	NBA	NBA	NBA	NBA	2	3.4 U	27.419 UJ[5]	5.900 U	31.551 UJ[5]
2,4 - Dinitrotoluene	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Diethylphthalate	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Flourene	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
4 - Chlorophenyl - phenylether	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
4 - Nitroaniline	mg/kg	NBA	NBA	NBA	NBA	2	3.4 U	27.419 UJ[5]	5.900 U	31.551 UJ[5]
4,6 - Dinitro - 2 - methylphenol	mg/kg	NBA	NBA	NBA	NBA	2	3.4 U	27.419 UJ[5]	5.900 U	31.551 UJ[5]
N - nitrosodiphenylamine (1)	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Azobenzene	mg/kg	**1.0**	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
4 - Bromophenyl - phenylether	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Hexachlorobenzene	mg/kg	**0.15**	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Pentachlorophenol	mg/kg	NBA	NBA	NBA	NBA	2	3.4 U	27.419 UJ[5]	5.900 U	31.551 UJ[5]
Phenanthrene	mg/kg	NBA	NBA	NBA	NBA	2	0.19 J	1.532 J	2.400 U	12.834 UJ[5]
Anthracene	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Carbazole	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Di - n- butylphthalate	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Flouranthene	mg/kg	NBA	NBA	NBA	NBA	2	0.38 J	3.065 UJ[5]	2.400 U	12.834 UJ[5]
Benzidine	mg/kg	**0.003**	NBA	NBA	NBA	2	3.4 U	27.419 UJ[5,17]	5.900 U	31.551 UJ[5,17]
Pyrene	mg/kg	NBA	NBA	NBA	NBA	2	0.35 J	2.823 J	2.400 U	12.834 UJ[5]
Butylbenzylphthalate	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Benzo (a) anthracene	mg/kg	**1.3**	NBA	NBA	NBA	2	0.089 U	0.718 J	2.400 U	12.834 UJ[5]
3,3' - Dichlorobenzidine	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Chrysene	mg/kg	**1.3**	NBA	NBA	NBA	2	0.19 J	1.532 J	2.400 U	12.834 UJ[5]
bis (2-Ethylhexyl) phthalate	mg/kg	NBA	NBA	NBA	NBA	2	1.4 BJ	11.290 UJ[5]	2.400 U	12.834 UJ[5]

Table 3-8
Organic Background Sediment Samples
Former Air Force Plant No. 51
Monroe County
Greece, New York

Parameters	Units	Human Health Bioaccumulation Sediment Criteria (mg/kg)	Benthic Aquatic Acute Toxicity Sediment Criteria (mg/kg)	Benthic Aquatic Chronic Toxicity Sediment Criteria (mg/kg)	Wildlife Bioaccumulation Sediment Criteria (mg/kg)	Total Number of Samples	SD-001-RCU-1-FS Raw Data	SD-001-RCU-1-FS TOC Normalized[a]	SD-001-BP-1-FS Raw Data	SD-001-BP-1-FS TOC Normalized[a]
Di-n-octylphthalate	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Benzo (b) fluoranthene	mg/kg	**1.3**	NBA	NBA	NBA	2	0.15 J	1.210 J	2.400 U	12.834 UJ[5]
Benzo (k) fluoranthene	mg/kg	**1.3**	NBA	NBA	NBA	2	0.14 J	1.129 J	2.400 U	12.834 UJ[5]
Benzo (a) pyrene	mg/kg	**1.3**	NBA	NBA	NBA	2	0.097 J	0.782 J	2.400 U	12.834 UJ[5]
Indeno (1,2,3 - cd) pyrene	mg/kg	**1.3**	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Dibenz (a,h) anthracene	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]
Benzo (g,h,I) perylene	mg/kg	NBA	NBA	NBA	NBA	2	1.4 U	11.290 UJ[5]	2.400 U	12.834 UJ[5]

J = Estimated Value
mg/Kg = milligrams per kiligram
NBA = No Benchmark Available
NA=Not Applicable
ND = Not Detected

[a] Sediment data was converted to bulk sediment values by dividing it by the respective percent TOC from each sediment sample.

* STL reported "U" values in some samples at concentrations greater than the SCG, however, Aldrin and dieldrin MDLs were established at .0066 mg/kg and .0107 mg/kg respectively (< SCG), MDL's could not be established at levels below the SCG for heptaclor, heptachlor expoxide or toxaphene, therefore results were qualified at the MDL as undetected.

Note: Except for TOC, the mg/Kg units used in these tables represent milligrams per kilogram of organic carbon and not milligrams per kilogram of sample

Table 3-9
Sediment Screening
Former Air Force Plant No. 51
Monroe County
Greece, New York

Detected Chemicals	Units	Number of Samples	Range of Site Concentrations (mg/kg)	Exposure Point Concentration[a]	Human Health Benchmarks Region 3 RBSC Residential Soil[b] (mg/kg)		Ratio of EPC to RBSC	Ecological Benchmarks CCME PEL[c] (mg/kg)	OMOE LEL[d] (mg/kg DW)	MacDonald, Ingersoll, and Berger PEC[e] (mg/kg)	NOAA SQRT Values Freshwater Sediments PEL[f] (mg/kg DW)	Lowest Ecological Benchmark (mg/kg)	Ratio of EPC to Lowest Ecological Benchmark	Number of Background Samples	Range of Background Concentrations (mg/kg)
1,2,3-Trichlorobenzene	mg/kg	9	0.27 - 0.27	0.27	NA		---	NA	NA	NA	NA	NA	---	3	ND
1,2,4-Trichlorobenzene	mg/kg	9	0.2 - 0.2	0.2	782	N	0.00026	NA	NA	NA	NA	NA	---	3	ND
1,2,4-Trimethylbenzene	mg/kg	9	0.0048 - 0.025	0.025	3,911	N	0.000006	NA	NA	NA	NA	NA	---	3	0.004 - 0.028
1,2-Dibromo-3-Chloropropane	mg/kg	9	0.14 - 0.14	0.14	4.56	C	0.031	NA	NA	NA	NA	NA	---	3	ND
1,2-Dichlorobenzene-D4	mg/kg	9	0.11 - 29	29	7,039	N	0.0041	NA	NA	NA	NA	NA	---	3	0.07 - 1.1
1,2-Dichloroethane-D4	mg/kg	9	0.037 - 34	34	70.2	C	0.48	NA	NA	NA	NA	NA	---	3	0.023 - 0.86
1,2-Dichloroethene (Total)	mg/kg	9	0.052 - 9.0	9.0	704	N	0.013	NA	NA	NA	NA	NA	---	3	ND
1,3,5-Trimethylbenzene	mg/kg	9	0.003 - 0.0073	0.0073	3,911	N	0.000002	NA	NA	NA	NA	NA	---	3	0.0016 - 0.0098
2-Butanone	mg/kg	9	0.018 - 0.071	0.071	46,929	N	0.000002	NA	NA	NA	NA	NA	---	3	ND
Acetone	mg/kg	9	0.048 - 2.3	2.3	7,821	N	0.00029	NA	NA	NA	NA	NA	---	3	0.021 - 0.67
Benzene	mg/kg	9	0.0024 - 0.016	0.016	120	C	0.00013	NA	NA	NA	NA	NA	---	3	0.0022 - 0.0022
Bromofluorobenzene	mg/kg	9	0.14 - 28	28	NA		---	NA	NA	NA	NA	NA	---	3	0.084 - 1.3
Carbon Disulfide	mg/kg	9	0.0044 - 0.22	0.22	7,821	N	0.000028	NA	NA	NA	NA	NA	---	3	0.0062 - 0.049
Chloromethane	mg/kg	9	0.19 - 0.19	0.19	491	C	0.00039	NA	NA	NA	NA	NA	---	3	ND
Cis-1,2-Dichloroethene	mg/kg	9	0.052 - 8.3	8.3	782	N	0.011	NA	NA	NA	NA	NA	---	3	ND
Hexachlorobutadiene	mg/kg	9	0.2 - 0.2	0.2	81.9	C	0.0024	NA	NA	NA	NA	NA	---	3	ND
Methylene Chloride	mg/kg	9	0.0044 - 0.013	0.013	852	C	0.000015	NA	NA	NA	NA	NA	---	3	ND
Naphthalene	mg/kg	9	0.33 - 0.33	0.33	1,564	N	0.00021	0.39	NA	0.56	NA	0.39	0.84	3	ND
Toluene	mg/kg	9	0.01 - 0.5	0.5	15,643	N	0.000032	NA	NA	NA	NA	NA	---	3	0.0076 - 0.013
Toluene-D8	mg/kg	9	0.15 - 30	30	15,643	N	0.0019	NA	NA	NA	NA	NA	---	3	0.09 - 1.3
Trans-1,2-Dichloroethene	mg/kg	9	0.058 - 0.058	0.058	1,564	N	0.000037	NA	NA	NA	NA	NA	---	3	ND
Trichloroethene	mg/kg	9	0.0088 - 4.6	4.6	16	C	0.29	NA	NA	NA	NA	NA	---	3	ND
Trichlorofluoromethane	mg/kg	9	0.22 - 0.22	0.22	23,464	N	9.4E-06	NA	NA	NA	NA	NA	---	3	ND
Vinyl Chloride	mg/kg	9	0.98 - 0.98	0.98	0.9	C	1.1	NA	NA	NA	NA	NA	---	3	ND
Xylene (M,P)	mg/kg	9	0.0078 - 0.034	0.034	156,429	N	2.2E-07	NA	NA	NA	NA	NA	---	3	0.005 - 0.02
Xylene (O)	mg/kg	9	0.0031 - 0.0032	0.0032	156,429	N	2.0E-08	NA	NA	NA	NA	NA	---	3	0.0077 - 0.0077
Xylene (Total)	mg/kg	9	0.0079 - 0.034	0.034	156,429	N	2.2E-07	NA	NA	NA	NA	NA	---	3	0.0051 - 0.028
TOC	mg/kg	9	26,000 - 206,000	149,270	NA		---	NA	NA	NA	NA	NA	---	3	15,100 - **187,000**

Table 3-9
Sediment Screening
Former Air Force Plant No. 51
Monroe County
Greece, New York

Detected Chemicals	Units	Number of Samples	Range of Site Concentrations (mg/kg)	Exposure Point Concentration[a]	Human Health Benchmarks		Ratio of EPC to RBSC	Ecological Benchmarks				Lowest Ecological Benchmark (mg/kg)	Ratio of EPC to Lowest Ecological Benchmark	Number of Background Samples	Range of Background Concentrations (mg/kg)
					Region 3 RBSC Residential Soil[b] (mg/kg)			CCME PEL[c] (mg/kg)	OMOE LEL[d] (mg/kg DW)	MacDonald, Ingersoll, and Berger PEC[e] (mg/kg)	NOAA SQRT Values Freshwater Sediments PEL[f] (mg/kg DW)				
4 - Methylphenol	mg/kg	9	0.41 - 1.5	1.5	391	N	0.003836	NA	NA	NA	NA	NA	---	3	ND
Benzoic Acid	mg/kg	9	0.33 - 2.1	2.1	312,857	N	6.7E-06	NA	NA	NA	NA	NA	---	3	0.15 - 0.15
Naphthalene	mg/kg	9	0.09 - 0.09	0.09	1,564	N	5.75E-05	0.39	NA	0.561	NA	NA	---	3	ND
Acenaphthene	mg/kg	9	0.03 - 0.3	0.3	4,693	N	6.39E-05	0.089	NA	NA	NA	0.089	3.3745782	3	ND
Dibenzofuran	mg/kg	9	0.15 - 0.15	0.15	313	N	0.000479	NA	NA	NA	NA	NA	---	3	ND
Fluorene	mg/kg	9	0.045 - 0.25	0.25	3,129	N	7.99E-05	0.1440	0.19	0.536	NA	0.144	1.7361111	3	0.026 - 0.026
Phenanthrene	mg/kg	9	0.14 - 0.77	0.77	NA		---	0.52	0.56	1.17	0.52	0.52	1.5	3	0.19 - 0.48
Anthracene	mg/kg	9	0.074 - 0.14	0.14	23,464	N	5.97E-06	0.25	0.22	0.85	NA	0.220	0.6363636	3	0.06 - 0.06
Carbazole	mg/kg	9	0.082 - 0.77	0.77	319	C	0.002411	NA	NA	NA	NA	NA	---	3	0.07 - 0.07
Fluoranthene	mg/kg	9	0.3 - 2.4	2.11	3,129	N	0.000673	2.3550	0.75	2.23	2.3550	0.750	2.8083976	3	0.38 - 0.93
Pyrene	mg/kg	9	0.092 - 1.7	1.7	2,346	N	0.000725	0.88	0.49	1.52	0.875	0.490	3.47	3	0.35 - 0.64
Benzo (a) anthracene	mg/kg	9	0.065 - 0.68	0.68	8.75	C	0.077717	0.3850	0.32	1.05	0.3850	0.320	2.125	3	0.29 - 0.29
Chrysene	mg/kg	9	0.17 - 0.95	0.95	875	C	0.0011	0.86	0.34	1.29	0.86	0.34	2.79	3	0.19 - 0.57
Di-n-octylphthalate	mg/kg	9	0.042 - 0.042	0.042	1,564	N	2.68E-05	NA	NA	NA	NA	NA	---	3	ND
Benzo (b) fluoranthene	mg/kg	9	0.16 - 1.7	1.7	8.75	C	0.194293	NA	NA	NA	NA	NA	---	3	0.15 - 0.64
Benzo (k) fluoranthene	mg/kg	9	0.13 - 2.0	1.05	87	C	0.012043	NA	0.24	NA	NA	0.240	4.3903381	3	0.14 - 0.51
Benzo (a) pyrene	mg/kg	9	0.11 - 3.3	2.84	0.87	C	3.24043	0.7820	0.37	1.45	0.7820	0.370	7.6628928	3	0.10 - 0.38
Indeno (1,2,3 - cd) pyrene	mg/kg	9	0.093 - 1.1	0.64	8.75	C	0.073617	NA	0.2	NA	NA	0.200	3.2206092	3	0.17 - 0.17
Dibenz (a,h) anthracene	mg/kg	9	0.07 - 5.5	5.5	0.87	C	6.28595	0.1350	0.06	NA	NA	0.060	91.666667	3	0.06 - 0.06
Benzo (g,h,I) perylene	mg/kg	9	0.12 - 1.2	0.71	NA		---	NA	0.17	NA	NA	0.170	4.182234	3	0.17 - 0.17
4,4'-DDD	mg/kg	9	0.0083 - 0.016	0.011	26.6	C	0.0004	0.0085	0.008	0.029	0.0085	0.008	1.3	3	**0.026 - 0.026**
4,4'-DDE	mg/kg	9	0.014 - 0.022	0.013	18.8	C	0.00067	0.0068	0.005	0.031	0.0068	0.005	2.5	3	**0.04 - 0.04**
4,4'-DDT	mg/kg	9	0.027 - 0.1	0.1	18.8	C	0.0053	0.0048	0.007	0.063	4.45	0.0048	21	3	ND
Aldrin	mg/kg	9	0.0076 - 0.0096	0.0072	0.38	C	0.019	NA	0.002	NA	NA	0.002	3.6	3	0.0039 - 0.0039
alpha-BHC	mg/kg	9	0.0035 - 0.011	0.0090	1.01	C	0.0089	NA	0.006	NA	NA	0.006	1.5	3	0.003 - **0.016**
beta-BHC	mg/kg	9	0.0073 - 0.038	0.038	3.55	C	0.0107	NA	0.005	NA	NA	0.005	7.6	3	0.015 - 0.015
Decachlorobiphenyl	mg/kg	9	0.023 - 0.091	0.058	NA		---	NA	NA	NA	NA	NA	---	3	0.017 - **0.088**

Table 3-9
Sediment Screening
Former Air Force Plant No. 51
Monroe County
Greece, New York

Detected Chemicals	Units	Number of Samples	Range of Site Concentrations (mg/kg)	Exposure Point Concentration[a]	Human Health Benchmarks Region 3 RBSC Residential Soil[b] (mg/kg)		Ratio of EPC to RBSC	Ecological Benchmarks CCME PEL[c] (mg/kg)	OMOE LEL[d] (mg/kg DW)	MacDonald, Ingersoll, and Berger PEC[e] (mg/kg)	NOAA SQRT Values Freshwater Sediments PEL[f] (mg/kg DW)	Lowest Ecological Benchmark (mg/kg)	Ratio of EPC to Lowest Ecological Benchmark	Number of Background Samples	Range of Background Concentrations (mg/kg)
Dieldrin	mg/kg	9	0.019 - 0.038	0.023	0.4	C	0.058	0.0067	0.002	0.061	0.0067	0.002	11	3	ND
Endrin Aldehyde	mg/kg	9	0.018 - 0.056	0.056	23.5	N	0.0024	0.062	0.003	0.21	0.062	0.003	19	3	ND
Endrin Ketone	mg/kg	9	0.0066 - 0.0066	0.0066	23.5	N	0.00028	0.062	0.003	0.207	0.062	0.003	2.2	3	ND
gamma-BHC (Lindane)	mg/kg	9	0.0075 - 0.0075	0.0049	4.91	C	0.0010	0.0014	0.003	0.0045	0.0014	0.0014	3.6	3	**0.0092** - **0.0092**
gamma-Chlordane	mg/kg	9	0.0032 - 0.0078	0.0051	18.2	C	0.00028	0.0089	0.007	0.018	0.0089	0.007	0.73	3	ND
Methoxychlor	mg/kg	9	0.03 - 0.03	0.03	391	N	0.000077	NA	NA	NA	NA	NA	---	3	ND
Tetrachloro-M-Xylene	mg/kg	9	0.017 - 0.089	0.057	NA		---	NA	NA	NA	NA	NA	---	3	0.019 - **0.09**
Aroclor-1254	mg/kg	9	0.058 - 0.067	0.067	3.19	C	0.021	0.34	0.06	0.68	0.28	0.06	1.1	3	ND
Aroclor-1260	mg/kg	9	0.65 - 7.6	7.6	3.19	C	2.4	0.28	0.005	0.68	0.28	0.005	1,520	3	ND
Aluminum	mg/kg	9	7,070 - 17,100	13,899	78,214	N	0.18	NA	NA	NA	25,500	25,500	0.55	3	3,430 - **22,700**
Antimony	mg/kg	9	86.4 - 86.4	86.4	31.3	N	2.8	NA	NA	NA	NA	NA	---	3	ND
Arsenic	mg/kg	9	2.6 - 10.4	7.38	4.26	C	1.7	17	6.0	33	17	6.0	1.23	3	6.0 - 6.0
Barium	mg/kg	9	57.3 - 121	94	5,475	N	0.017	NA	NA	NA	48	48	1.96	3	31.3 - **254**
Cadmium	mg/kg	9	3.0 - 139	139	78.2	N	1.8	3.5	0.6	4.98	3.53	0.6	232	3	ND
Calcium	mg/kg	9	20,100 - 70,100	51,887	NUT		---	NUT	NUT	NUT	NUT	NA	---	3	10,400 - **58,600**
Chromium	mg/kg	9	17.6 - 230	203	235	N	0.86	90	26	111	90	26	7.79	3	7.0 - 32.7
Cobalt	mg/kg	9	7.5 - 7.5	5.0	1,564	N	0.0032	NA	50	NA	NA	50	0.1	3	ND
Copper	mg/kg	9	26.7 - 682	682	3,129	N	0.22	197	16	149	197	16	42.6	3	5.9 - 44.2
Iron	mg/kg	9	14,700 - 53,100	36,974	23,464	N	1.6	NA	20,000	NA	188,400	20,000	1.85	3	7,900 - 36,000
Lead[g]	mg/kg	9	34.3 - 989	989	400		2.5	91.3	31	128	91.3	31	31.9	3	9.2 - 67.8
Magnesium	mg/kg	9	4,700 - 31,400	31,400	NUT		---	NUT	NUT	NUT	NUT	NA	---	3	3,030 - 9,120

Table 3-9
Sediment Screening
Former Air Force Plant No. 51
Monroe County
Greece, New York

Detected Chemicals	Units	Number of Samples	Range of Site Concentrations (mg/kg)	Exposure Point Concentration[a]	Human Health Benchmarks		Ratio of EPC to RBSC	Ecological Benchmarks				Lowest Ecological Benchmark (mg/kg)	Ratio of EPC to Lowest Ecological Benchmark	Number of Background Samples	Range of Background Concentrations (mg/kg)
					Region 3 RBSC Residential Soil[b] (mg/kg)			CCME PEL[c] (mg/kg)	OMOE LEL[d] (mg/kg DW)	MacDonald, Ingersoll, and Berger PEC[e] (mg/kg)	NOAA SQRT Values Freshwater Sediments PEL[f] (mg/kg DW)				
Manganese	mg/kg	9	367 - 1,830	954	1,564	N	0.61	NA	460	NA	NA	460	2.07	3	153 - **1,050**
Nickel	mg/kg	9	12.3 - 128	85.6	1,564	N	0.055	NA	16	48.6	35.9	16	5.35	3	5.5 - 34.6
Potassium	mg/kg	9	1,370 - 2,770	2,161	NUT		---	NUT	NUT	NUT	NUT	NA	---	3	715 - **4,050**
Selenium	mg/kg	9	1.0 - 2.8	1.8	391	N	0.0046	NA	NA	NA	1.0	1.0	1.8	3	ND
Silver	mg/kg	9	2.6 - 4.1	2.75	391	N	0.007	NA	0.5	NA	NA	0.5	5.5	3	ND
Vanadium	mg/kg	9	15.4 - 49.7	35.1	548	N	0.064	NA	NA	NA	57	57	0.62	3	7.8 - 24
Zinc	mg/kg	9	221 - 1,040	730	23,464	N	0.031	315	120	459	315	120	6.08	3	75.8 - 218
Mercury	mg/kg	9	0.085 - 1.3	1.3	23.5	N	0.055	0.49	0.2	1.06	0.49	0.2	6.5	3	ND
Cyanide	mg/kg	9	2.2 - 2.2	1.68	NA		---	NA	0.1	NA	NA	0.1	16.8	3	ND

a = Nondetects were included at half the sample quantitation limit.

b = EPA Region 3 Risk-Based Screening Concentrations, October 2002.

c = Canadian Council of Ministers of the Environment. 1999. Canadian Sediment Quality Guidelines for the Protection of Aquatic Life.

d = Ontario Ministry of the Environment. 1993. *Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario.*
LELs are based on the 5th percentile of the Screening Level Concentration (SLC) except where noted otherwise.

e = MacDonald, D.D., C.G. Ingersoll, and T.A. Berger. 2000. "Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems."

f = NOAA (National Oceanic and Atmospheric Administration). September 1999. NOAA Screening Quick Reference Tables. Hazmat Report 99-1. Available Online: http://response.restoration.noaa.gov/cpr/sediment/squirt/squirt.pdf

g = The CERCLA/RCRA Corrective Action Level of 400 mg/kg is used to screen lead.

C = Carcinogenic, with a Target Risk of 1.0E-05.

EPC = Exposure Point Concentration.

N = Noncarcinogenic, with a Target Hazard Quotient of 1.0.

NA = Not analyzed.

ND = Not detected.

NUT = Essential nutrient.

Bold = Maximum Background Concentration exceeds site EPC.

= Yellow shading indicates exceedances of both the Maximum Concentration and EPC.

= Orange shading indicates exceedances of only the Maximum Concentration.

Table 3-10
Brown Bullhead Fillet Screening
Former Air Force Plant No. 51
Monroe County
Greece, New York

Detected Chemicals	Units	Number of Samples	Range of Site Concentrations (mg/kg)	Exposure Point Concentration[a]	Human Health Benchmarks Region 3 RBSC Fish[b] (mg/kg)		Ratio of EPC to RBSC	Great Lakes Consumption Advisory Grouping[c]	Number of Background Samples	Range of Background Concentrations (mg/kg)
Mercury	mg/kg	10	0.021 - 0.2	0.12	0.041	N	2.97	---	2	0.035 - 0.12
Lead	mg/kg	10	0.72 - 0.72	0.2	NA		---	---	2	ND
Aroclor-1254	mg/kg	10	0.017 - 0.077	0.051	0.0016	C	32.6	Group 2	2	**0.07** - **0.07**
Aroclor-1260	mg/kg	10	0.017 - 0.069	0.041	0.0016	C	25.9	Group 1	2	0.035 - 0.035
4,4'-DDD	mg/kg	10	0.0032 - 0.0098	0.0063	0.013	C	0.48	---	2	0.0029 - **0.017**
4,4'-DDE	mg/kg	10	0.0055 - 0.049	0.03	0.0093	C	3.25	---	2	0.012 - **0.061**
4,4'-DDT	mg/kg	10	0.0027 - 0.014	0.011	0.0093	C	1.18	---	2	ND
alpha-Chlordane	mg/kg	10	0.0011 - 0.0042	0.0027	0.009	C	0.3	---	2	0.0013 - **0.004**
Decachlorobiphenyl	mg/kg	10	0.0056 - 0.0091	0.0077	NA		---	---	2	0.0077 - 0.0077
delta-BHC	mg/kg	10	0.0014 - 0.0014	0.00091	0.0018	C	0.52	---	2	**0.006** - **0.006**
Dieldrin	mg/kg	10	0.0023 - 0.0084	0.0047	0.0002	C	23.8	---	2	0.0039 - **0.007**
gamma-Chlordane	mg/kg	10	0.0013 - 0.0017	0.0011	0.009	C	0.13	---	2	ND
Heptachlor Epoxide	mg/kg	10	0.0011 - 0.0024	0.0015	0.00035	C	4.37	---	2	0.0013 - 0.0013
Tetrachloro-M-Xylene	mg/kg	10	0.0054 - 0.0093	0.0076	NA		---	---	2	0.0071 - 0.0072
%Lipids Determination	%	10	0.3 - 2.4	1.25	NA		---	---	2	0.7 - **1.8**

a = Nondetects were included at half the sample quantitation limit.

b = EPA Region 3 Risk-Based Screening Concentrations, October 2002.

c = Protocol for a Uniform Great Lakes Sport Fish Consumption Advisory, September 1993.

Group 1 = Unrestricted consumption, raw fish fillet with 0.0 - 0.05 mg/kg of PCB.

Group 2 = One meal per week (52 meals per year), raw fish fillet with 0.051 - 0.2 mg/kg of PCB.

C = Carcinogenic, with a Target Risk of 1.0E-06.

EPC = Exposure Point Concentration.

N = Noncarcinogenic, with a Target Hazard Quotient of 0.1.

NA = Not analyzed.

ND = Not detected.

Bold = Maximum Background Concentration exceeds site EPC.

= Yellow shading indicates exceedances of both the Maximum Concentration and EPC.

= Orange shading indicates exceedances of only the Maximum Concentration.

Table 3-11
Combined Bass Species Fillet Screening
Former Air Force Plant No. 51
Monroe County
Greece, New York

Detected Chemicals	Units	Number of Samples	Range of Site Concentrations (mg/kg)	Exposure Point Concentration[a]	Human Health Benchmarks Region 3 RBSC Fish[b] (mg/kg)		Ratio of EPC to RBSC	Great Lakes Consumption Advisory Grouping[c]	Number of Background Samples	Range of Background Concentrations (mg/kg)
Mercury	mg/kg	5	0.19 - 0.43	0.36	0.041	N	8.95	---	3	0.12 - 0.24
Aroclor-1248	mg/kg	5	0.28 - 0.28	0.18	0.0016	C	113	Group 2	2	ND
Aroclor-1254	mg/kg	5	0.071 - 0.3	0.25	0.0016	C	155	Group 3	3	0.03 - 0.12
Aroclor-1260	mg/kg	5	0.05 - 0.17	0.14	0.0016	C	90.9	Group 2	3	0.047 - 0.069
4,4'-DDD	mg/kg	5	0.0081 - 0.012	0.012	0.013	C	0.91	---	3	0.0024 - 0.008
4,4'-DDE	mg/kg	5	0.033 - 0.1	0.09	0.0093	C	9.7	---	3	0.013 - 0.048
4,4'-DDT	mg/kg	5	0.0081 - 0.017	0.016	0.0093	C	1.73	---	3	0.0034 - 0.0076
alpha-Chlordane	mg/kg	5	0.0036 - 0.0036	0.0031	0.009	C	0.34	---	3	0.0013 - 0.0013
beta-BHC	mg/kg	5	0.0029 - 0.0041	0.003	0.0018	C	1.72	---	3	0.001 - 0.001
Decachlorobiphenyl	mg/kg	5	0.0075 - 0.01	0.0094	NA		---	---	3	0.0069 - 0.0079
delta-BHC	mg/kg	5	0.0037 - 0.0037	0.0031	0.0018	C	1.78	---	3	ND
Dieldrin	mg/kg	5	0.006 - 0.016	0.012	0.0002	C	61.9	---	3	0.0049 - 0.0076
Endrin	mg/kg	5	0.0051 - 0.0051	0.0051	0.041	N	0.13	---	3	ND
gamma-Chlordane	mg/kg	5	0.0024 - 0.0075	0.0071	0.009	C	0.79	---	3	0.0028 - 0.0029
Heptachlor Epoxide	mg/kg	5	0.0027 - 0.0057	0.005	0.00035	C	14.4	---	3	0.0019 - 0.0027
Tetrachloro-M-Xylene	mg/kg	5	0.0069 - 0.011	0.01	NA		---	---	3	0.0073 - 0.0082
%Lipids Determination	%	5	1.0 - 2.6	2.3	NA		---	---	3	1.4 - 2.0

a = Nondetects were included at half the sample quantitation limit.
b = EPA Region 3 Risk-Based Screening Concentrations, October 2002.
c = Protocol for a Uniform Great Lakes Sport Fish Consumption Advisory, September 1993.
Group 2 = One meal per week (52 meals per year), raw fish fillet with 0.051 - 0.2 mg/kg of PCB.
Group 3 = One meal per month (12 meals per year), raw fish fillet with 0.21 - 1.0 mg/kg of PCB.
C = Carcinogenic, with a Target Risk of 1.0E-06.
EPC = Exposure Point Concentration.
N = Noncarcinogenic, with a Target Hazard Quotient of 0.1.
NA = Not analyzed.
ND = Not detected.
Bold = Maximum Background Concentration exceeds site EPC.
= Yellow shading indicates exceedances of both the Maximum Concentration and EPC.
= Orange shading indicates exceedances of only the Maximum Concentration.

Table 3-12
Yellow Perch Fillet Screening
Former Air Force Plant No. 51
Monroe County
Greece, New York

Detected Chemicals	Units	Number of Samples	Range of Site Concentrations (mg/kg)	Exposure Point Concentration[a]	Human Health Benchmarks Region 3 RBSC Fish[b] (mg/kg)		Ratio of EPC to RBSC	Great Lakes Consumption Advisory Grouping[c]	Number of Background Samples	Range of Background Concentrations (mg/kg)
Mercury	mg/kg	5	0.081 - 0.16	0.14	0.041	N	3.52	---	1	0.1 - 0.1
Aroclor-1254	mg/kg	5	0.045 - 0.045	0.045	0.0016	C	28.5	Group 1	1	0.034 - 0.034
Aroclor-1260	mg/kg	5	0.017 - 0.017	0.015	0.0016	C	9.58	Group 1	1	ND
4,4'-DDD	mg/kg	5	0.0024 - 0.0053	0.0041	0.013	C	0.31	---	1	0.0032 - 0.0032
4,4'-DDE	mg/kg	5	0.0044 - 0.03	0.03	0.0093	C	3.23	---	1	0.026 - 0.026
4,4'-DDT	mg/kg	5	0.0024 - 0.0036	0.0036	0.0093	C	0.39	---	1	**0.004** - **0.004**
alpha-Chlordane	mg/kg	5	0.0019 - 0.0023	0.0023	0.009	C	0.25	---	1	0.0021 - 0.0021
Decachlorobiphenyl	mg/kg	5	0.0063 - 0.0077	0.0073	NA		---	---	1	0.007 - 0.007
delta-BHC	mg/kg	5	0.0038 - 0.0069	0.0066	0.0018	C	3.77	---	1	ND
Dieldrin	mg/kg	5	0.0024 - 0.0076	0.0068	0.0002	C	34.7	---	1	0.0051 - 0.0051
Endosulfan Sulfate	mg/kg	5	0.0023 - 0.0042	0.0042	NA		---	---	1	ND
gamma-BHC (Lindane)	mg/kg	5	0.0012 - 0.0012	0.0011	0.0024	C	0.44	---	1	ND
Heptachlor	mg/kg	5	0.0011 - 0.0011	0.00097	0.0007	C	1.39	---	1	ND
Heptachlor Epoxide	mg/kg	5	0.0013 - 0.0032	0.0028	0.00035	C	7.95	---	1	0.0019 - 0.0019
Tetrachloro-M-Xylene	mg/kg	5	0.0062 - 0.0075	0.0073	NA		---	---	1	0.0072 - 0.0072
%Lipids Determination	%	5	1.0 - 2.6	2.3	NA		---	---	1	1.3 - 1.3

a = Nondetects were included at half the sample quantitation limit.

b = EPA Region 3 Risk-Based Screening Concentrations, October 2002.

c = Protocol for a Uniform Great Lakes Sport Fish Consumption Advisory, September 1993.

Group 1 = Unrestricted consumption, raw fish fillet with 0.0 - 0.05 mg/kg of PCB.

C = Carcinogenic, with a Target Risk of 1.0E-06.

EPC = Exposure Point Concentration.

N = Noncarcinogenic, with a Target Hazard Quotient of 0.1.

NA = Not analyzed.

ND = Not detected.

BOLD = Maximum Background Concentration exceeds site EPC.

= Yellow shading indicates exceedances of both the Maximum Concentration and EPC.

= Orange shading indicates exceedances of only the Maximum Concentration.

Table 3-13
Brown Bullhead Whole Body Screening
Former Air Force Plant No. 51
Monroe County
Greece, New York

Detected Chemicals	Units	Number of Samples	Range of Site Concentrations (mg/kg)	Exposure Point Concentration[a]	Ecological Benchmarks					Number of Background Samples	Range of Background Concentrations (mg/kg)
					ORNL Food Based NOAEL[b] (mg/kg)	Ratio of EPC to NOAEL	ORNL Food Based LOAEL[b] (mg/kg)	Ratio of EPC to LOAEL	Endpoint Species		
Mercury	mg/kg	10	0.023 - 0.072	0.05	0.079	0.63	0.13	0.38	River Otter	1	ND
Aroclor-1254	mg/kg	10	0.018 - 0.095	0.067	0.36	0.19	3.55	0.019	Belted Kingfisher	1	**0.12** - **0.12**
Aroclor-1260	mg/kg	10	0.019 - 0.062	0.045	0.36	0.128	3.55	0.013	Belted Kingfisher	1	**0.083** - **0.083**
4,4'-DDD	mg/kg	10	0.0029 - 0.022	0.015	0.006	2.51	0.055	0.27	Belted Kingfisher	1	0.0071 - 0.0071
4,4'-DDE	mg/kg	10	0.015 - 0.076	0.047	0.006	7.81	0.055	0.85	Belted Kingfisher	1	**0.054** - **0.054**
4,4'-DDT	mg/kg	10	0.0024 - 0.01	0.0074	0.006	1.23	0.055	0.13	Belted Kingfisher	1	**0.01** - **0.01**
alpha-Chlordane	mg/kg	10	0.0015 - 0.0094	0.0052	4.2	0.0012	21.1	0.00025	Belted Kingfisher	1	ND
beta-BHC	mg/kg	10	0.001 - 0.0021	0.0015	1.63	0.0009	8.13	0.00018	River Otter	1	ND
Decachlorobiphenyl	mg/kg	10	0.0052 - 0.0093	0.0078	---	---	---	---	---	1	**0.0086** - **0.0086**
delta-BHC	mg/kg	10	0.0013 - 0.0013	0.0013	0.1	0.013	1.0	0.0013	Mink	1	**0.0054** - **0.0054**
Dieldrin	mg/kg	10	0.003 - 0.011	0.0072	0.081	0.089	0.81	0.0088	River Otter	1	ND
gamma-Chlordane	mg/kg	10	0.0012 - 0.0046	0.0028	4.2	0.0007	21.1	0.00013	Belted Kingfisher	1	ND
Heptachlor Epoxide	mg/kg	10	0.0012 - 0.0047	0.0028	0.53	0.0053	5.29	0.00053	River Otter	1	0.0023 - 0.0023
Tetrachloro-M-Xylene	mg/kg	10	0.0055 - 0.0084	0.0073	---	---	---	---	River Otter	1	0.0069 - 0.0069
%Lipids Determination	%	10	0.5 - 2.6	1.74	---	---	---	---	---	1	0.8 - 0.8

a = Nondetects were included at half the sample quantitation limit.

b = Sample, B.E., D.M. Opresko, and G.W. Suter II. Toxicological Benchmarks for Wildlife: 1996 Revision. Oak Ridge National Laboratories.

EPC = Exposure Point Concentration.

NA = Not analyzed.

ND = Not detected.

Bold = Maximum Background Concentration exceeds site EPC.

= Yellow shading indicates exceedances of both the Maximum Concentration and EPC.

= Orange shading indicates exceedances of only the Maximum Concentration.

Table 3-14
Yellow Perch Whole Body Screening
Former Air Force Plant No. 51
Monroe County
Greece, New York

Detected Chemicals	Units	Number of Samples	Range of Site Concentrations (mg/kg)	Exposure Point Concentration[a]	Ecological Benchmarks					Number of Background Samples	Range of Background Concentrations (mg/kg)		
					ORNL Food Based NOAEL[b] (mg/kg)	Ratio of EPC to NOAEL	ORNL Food Based LOAEL[b] (mg/kg)	Ratio of EPC to LOAEL	Endpoint Species				
Mercury	mg/kg	10	0.052 - 0.13	0.084	0.079	1.06	0.132	0.63	River Otter	2	0.033	-	0.042
Aroclor-1254	mg/kg	10	0.025 - 0.35	0.33	0.36	0.93	3.55	0.093	Belted Kingfisher	2	0.025	-	0.059
Aroclor-1260	mg/kg	10	0.022 - 0.17	0.098	0.36	0.277	3.55	0.028	Belted Kingfisher	2	ND		
4,4'-DDD	mg/kg	10	0.0051 - 0.025	0.015	0.006	2.56	0.055	0.28	Belted Kingfisher	2	0.01	-	0.015
4,4'-DDE	mg/kg	10	0.02 - 0.17	0.11	0.006	18.9	0.055	2.06	Belted Kingfisher	2	0.044	-	0.056
4,4'-DDT	mg/kg	10	0.0038 - 0.033	0.024	0.006	3.96	0.055	0.43	Belted Kingfisher	2	ND		
alpha-Chlordane	mg/kg	10	0.0028 - 0.011	0.0075	4.2	0.0018	21.1	0.00035	Belted Kingfisher	2	0.0065	-	**0.0099**
beta-BHC	mg/kg	10	0.0014 - 0.0035	0.0035	1.63	0.0021	8.13	0.00043	River Otter	2	ND		
Decachlorobiphenyl	mg/kg	10	0.0051 - 0.0091	0.0079	---	---	---	---	---	2	0.0067	-	0.0078
delta-BHC	mg/kg	10	0.0073 - 0.012	0.0077	0.1	0.077	1.0	0.0075	Mink	2	ND		
Dieldrin	mg/kg	10	0.0082 - 0.03	0.02	0.081	0.24	0.81	0.024	River Otter	2	0.016	-	**0.026**
Endosulfan Sulfate	mg/kg	10	0.0038 - 0.0045	0.0045	0.61	0.0074	---	---	---	2	ND		
Endrin Aldehyde	mg/kg	10	0.0044 - 0.0044	0.0044	0.02	0.22	0.197	0.022	Belted Kingfisher	2	ND		
gamma-BHC (Lindane)	mg/kg	10	0.0028 - 0.0028	0.0028	3.95	0.0007	39.5	0.000071	Belted Kingfisher	2	ND		
gamma-Chlordane	mg/kg	10	0.0012 - 0.013	0.012	4.2	0.0029	21.1	0.00057	Belted Kingfisher	2	0.0035	-	0.0035
Heptachlor Epoxide	mg/kg	10	0.0022 - 0.0048	0.0046	0.53	0.0086	5.29	0.00086	River Otter	2	**0.0046**	-	**0.0093**
Tetrachloro-M-Xylene	mg/kg	10	0.005 - 0.011	0.009	---	---	---	---	River Otter	2	0.0062	-	0.007
%Lipids Determination	%	10	2.0 - 7.5	5.61	---	---	---	---	---	2	2.6	-	3.6

a = Nondetects were included at half the sample quantitation limit.

b = Sample, B.E., D.M. Opresko, and G.W. Suter II. Toxicological Benchmarks for Wildlife: 1996 Revision. Oak Ridge National Laboratories.

EPC = Exposure Point Concentration.

NA = Not analyzed.

ND = Not detected.

Bold = Maximum Background Concentration exceeds site EPC.

= Yellow shading indicates exceedances of both the Maximum Concentration and EPC.

= Orange shading indicates exceedances of only the Maximum Concentration.

Table 3-15

Comparison of Round Pond and Lagoon (Pre-Excavation) Data
Former Air Force Plant No. 51
Monroe County
Greece, New York

Chemicals[a]	Round Pond			Lagoon			Potential Site-Related Chemicals (N,U,P)	Notes
	Frequency of Detected Concentrations (mg/kg)	Range of Detected Concentrations (mg/kg)	Range of[b] Sample Quantitation Limits (mg/kg)	Frequency of Detected Concentrations (mg/kg)	Range of Detected Concentrations (mg/kg)	Range of[b] Sample Quantitation Limits (mg/kg)		
Organics								
1,1-Dichloroethene	ND	ND	0.012 - 3.1	1 / 10	0.004 - 0.004	0.006 - 55	N	ND-RP
1,2-Dichloroethane	9 / 9	0.037 - 34	0.012 - 3.1	1 / 10	9.9 - 9.9	0.006 - 55	U	Low FOD
1,2-Dichloroethene (total)	4 / 9	0.052 - 9.0	0.012 - 0.063	3 / 10	5.0 - 51	0.008 - 55	P	
4-Methyl-2-pentanone	ND	ND	0.012 - 3.1	1 / 10	3.0 - 3.0	0.008 - 55	N	ND-RP
Acetone	7 / 9	0.048 - 2.3	0.72 - 3.1	2 / 10	0.008 - 0.041	0.039 - 55	P	
Naphthalene	1 / 9	0.33 - 0.33	0.0037 - 3.1	6 / 10	0.11 - 0.38	0.4 - 0.64	U	Low FOD
Trichloroethene	5 / 9	0.0088 - 4.6	0.012 - 0.029	8 / 10	0.006 - 820	0.031 - 0.099	P	
Dibenzofuran	1 / 9	0.15 - 0.15	0.66 - 5.9	2 / 10	0.061 - 0.061	0.4 - 1.1	U	Low FOD
Di-n-butyl phthalate	ND	-	0.45 - 5.9	2 / 10	0.092 - 0.092	0.4 - 1.1	N	ND-RP
Fluoranthene	8 / 9	0.3 - 2.1	6.7 - 6.7	2 / 10	0.097 - 0.13	0.39 - 1.1	P	
Fluorene	4 / 9	0.045 - 0.25	0.92 - 5.9	2 / 10	0.049 - 0.09	0.4 - 1.1	P	
Hexachlorobenzene	ND	-	0.45 - 5.9	6 / 10	0.11 - 0.25	0.4 - 0.64	N	ND-RP
2-Methylnaphthalene	ND	-	0.059 - 5.9	7 / 10	0.05 - 1.4	0.5 - 0.64	N	ND-RP
Phenanthrene	8 / 9	0.14 - 0.73	6.2 - 6.2	3 / 10	0.046 - 0.12	0.4 - 1.1	P	
Pyrene	8 / 9	0.092 - 1.4	14 - 14	1 / 10	0.12 - 0.12	0.087 - 1.1	U	ND-L
2,4,5-Trichlorophenol	ND	-	1.1 - 15	1 / 10	1.5 - 1.5	0.79 - 2.3	N	ND-RP
Polychlorinated Biphenyls								
Aroclor-1254	2 / 9	0.058 - 0.067	0.033 - 0.72	6 / 10	0.093 - 0.41	0.039 - 0.052	P	
Aroclor-1260	5 / 9	0.650 - 7.600	0.033 - 0.056	ND	ND	0.039 - 0.11	U	ND-L[c]
Metals								
Aluminum	9 / 9	7,070 - 17,100	-	4 / 4	5,600 - 7,400	-	P	
Arsenic	8 / 9	2.6 - 10.4	5.6 - 5.6	2 / 4	2.0 - 5.0	-	P	
Barium	8 / 9	57.3 - 121	127 - 127	4 / 4	65 - 120	-	P	
Cadmium	5 / 9	3.0 - 139	0.64 - 1.1	4 / 4	6.6 - 710	-	P	
Calcium	9 / 9	20,100 - 70,100	-	4 / 4	31,000 - 41,000	-	P	
Chromium	9 / 9	17.6 - 230	-	4 / 4	27 - 1,100	-	P	
Cobalt	1 / 9	7.5 - 7.5	5 - 9.9	4 / 4	6.0 - 8.0	-	P	
Copper	9 / 9	26.7 - 682	-	4 / 4	13 - 71	-	P	
Iron	9 / 9	14,700 - 53,100	-	4 / 4	14,000 - 17,000	-	P	
Lead	9 / 9	34.3 - 989	-	4 / 4	10 - 82	-	P	
Magnesium	9 / 9	4,700 - 31,400	-	4 / 4	6,000 - 11,000	-	P	
Manganese	9 / 9	367 - 1,830	-	4 / 4	300 - 450	-	P	
Nickel	9 / 9	12.3 - 128	-	4 / 4	11 - 16	-	P	

Table 3-15

Comparison of Round Pond and Lagoon (Pre-Excavation) Data
Former Air Force Plant No. 51
Monroe County
Greece, New York

Chemicals[a]	Round Pond			Lagoon			Potential Site-Related Chemicals (N,U,P)	Notes
	Frequency of Detected Concentrations (mg/kg)	Range of Detected Concentrations (mg/kg)	Range of[b] Sample Quantitation Limits (mg/kg)	Frequency of Detected Concentrations (mg/kg)	Range of Detected Concentrations (mg/kg)	Range of[b] Sample Quantitation Limits (mg/kg)		
Organics								
1,1-Dichloroethene	ND	ND	0.012 - 3.1	1 / 10	0.004 - 0.004	0.006 - 55	N	ND-RP
1,2-Dichloroethane	9 / 9	0.037 - 34	0.012 - 3.1	1 / 10	9.9 - 9.9	0.006 - 55	U	Low FOD
1,2-Dichloroethene (total)	4 / 9	0.052 - 9.0	0.012 - 0.063	3 / 10	5.0 - 51	0.008 - 55	P	
4-Methyl-2-pentanone	ND	ND	0.012 - 3.1	1 / 10	3.0 - 3.0	0.008 - 55	N	ND-RP
Acetone	7 / 9	0.048 - 2.3	0.72 - 3.1	2 / 10	0.008 - 0.041	0.039 - 55	P	
Potassium	7 / 9	1,370 - 2,770	603 - 2510	4 / 4	670 - 1,000	-	P	
Selenium	4 / 9	1.0 - 2.8	0.74 - 2.8	4 / 4	7.0 - 9.0	-	P	
Sodium	ND	ND	155 - 796	3 / 4	190 - 370	-	N	ND-RP
Vanadium	8 / 9	15.4 - 49.7	25 - 25	4 / 4	19 - 32	-	P	
Zinc	9 / 9	221 - 1,040	-	4 / 4	54 - 680	-	P	
Cyanide	1 / 9	2.2 - 2.2	0.63 - 3.6	9 / 10	2.0 - 7.0	-	P	

Footnotes:

[a] Chemicals shown are those chemicals detected in the lagoon

[b] Detection limits for nondetects

[c] Analytical technique for identifying Aroclors is sometimes uncertain

NA = Not analyzed/not available
ND = Not Detected
ND-RP = Not detected in Round Pond sediments
ND-L = Not detected in Lagoon pre-excavation sediments
U = Unknown if site related
Low FOD = Low frequency of detection in either Round Pond or Lagoon
P = Possibly site-related
N = Probably not site-related

Table 3-16

Statistical Comparison of Chemical Concentrations in Round Pond and Lagoon

Chemical	Background Mean	Arithmetic Mean [a] ± Standard Deviation Round Pond (mg/kg)	Arithmetic Mean [a] ± Standard Deviation Lagoon (mg/kg)	Statistical Analysis Result [b]	Location of Maximum Mean Level	Location of Maximum Detected Level	Ratio of Mean Lagoon to Mean Round Pond
1,2-Dichloroethene (total)	-	1.4 ± 3.0	12.2 ± 15.9	NS	L	L	8.51
Acetone	0.35	0.70 ± 0.73	7.5 ± 9.0	NS	L	RP	10.80
Naphthalene	-	0.13 ± 0.26	0.22 ± 0.09	S	L	L	1.66
Trichloroethene	-	0.84 ± 1.7	200 ± 267	S	L	L	238.76
Dibenzofuran	-	0.80 ± 0.86	0.29 ± 0.17	S	RP	RP	0.36
Fluoranthene	0.66	1.5 ± 0.93	0.26 ± 0.13	S	RP	RP	0.17
Fluorene	0.026	0.70 ± 0.93	0.29 ± 0.17	NS	RP	RP	0.41
Phenanthrene	0.34	0.81 ± 0.89	0.25 ± 0.14	S	RP	RP	0.31
Pyrene	-	1.4 ± 2.1	0.26 ± 0.14	S	RP	RP	0.18
Aroclor-1254	-	0.15 ± 0.14	0.15 ± 0.14	NS	L	L	0.98
Aluminum	13065	11,713 ± 3,526	6,525 ± 822	S	RP	RP	0.56
Arsenic	6	5.8 ± 2.49	2.1 ± 2.1	S	RP	RP	0.35
Barium	143	81.8 ± 20	85 ± 24.8	NS	L	RP	1.04
Cadmium	-	19.4 ± 45	259 ± 312	S	L	L	13.38
Calcium	34500	35,589 ± 18,343	34,750 ± 4,500	NS	RP	RP	0.98
Chromium	19.9	78.2 ± 74	403 ± 497	NS	RP	L	5.16
Cobalt	-	4.0 ± 1.57	6.8 ± 1.0	S	L	L	1.67
Copper	25.1	245.4 ± 255	32.3 ± 27.1	NS	L	RP	0.13
Iron	21950	28,761 ± 13,247	15,000 ± 1,414	S	RP	RP	0.52
Lead	38.5	344 ± 374	36.5 ± 31.5	S	RP	RP	0.11
Magnesium	6075	14,369 ± 10,773	7,875 ± 2,211	NS	RP	RP	0.55
Manganese	602	670 ± 447	365 ± 72.3	S	RP	RP	0.54
Nickel	20.1	42.2 ± 35	13.8 ± 2.1	NS	RP	RP	0.33
Potassium	2383	1,724 ± 706	785 ± 147	S	RP	RP	0.46
Selenium	-	1.2 ± 0.89	8.0 ± 0.8	S	L	L	6.40
Vanadium	15.9	27.0 ± 13	23.5 ± 5.8	NS	RP	RP	0.87
Zinc	147	532 ± 319	349 ± 261	NS	RP	RP	0.66
Cyanide	-	0.93 ± 0.65	3.9 ± 2.1	S	L	L	4.17

[a] Nondetects were included at half the sample quantitation limit to calculate means

[b] Right-tailed Mann-Whitney U-Test at 95% confidence level. This is a rank sum test that compares ranges of values. Means and standard deviations are shown for information purposes only

ND = Not detected.

NS = Not significantly different ($p > 0.05$)

S = Significantly different ($p < 0.05$)

L = Lagoon

RP = Round Pond

TABLE 3-17

Assessment of Round Pond Sediment Contaminants That Potentially Migrated from Lagoon

Chemical	Sediment Bioaccumulation Ratio NYSDEC-TGSCS[b]	Human Health Toxicity Quotient[a] EPA 3 Soil[c,d]		Ecological Effects Quotient[a] Lowest Ecological Benchmark[c,e]
1,2-Dichloroethene (total)	NBA	0.013	N	NBA
Acetone	NBA	0.00029	N	NBA
Naphthalene	NBA	0.00021	N	0.84
Trichloroethene	26	0.29	C	NBA
Dibenzofuran	NBA	0.00048	N	NBA
Fluoranthene	NBA	0.00067	N	2.8
Fluorene	NBA	0.00008	N	1.7
Phenanthrene	NBA	NBA		1.5
Pyrene	NBA	0.00072	N	3.5
Aroclor-1254	NBA	0.021	C	1.1
Aroclor-1260	NBA	2.4	C	1,520
Aluminum	NBA	0.18	N	0.55
Arsenic	1.2	1.7	C	1.2
Barium	NBA	0.017		2.0
Cadmium	232	1.8	N	232
Calcium	NBA	NBA		NBA
Chromium	7.8	0.86	N	7.8
Cobalt	NBA	0.0032	N	0.1
Copper	43	0.22	N	43
Iron	1.8	1.6	N	1.8
Lead	32	2.5		32
Magnesium	NBA	NBA		NBA
Manganese	2.1	0.61	N	2.1
Nickel	5.4	0.055	N	5.4
Potassium	NBA	NBA		NBA
Selenium	NBA	0.0046	N	1.8
Vanadium	NBA	0.064	N	0.62
Zinc	6.1	0.031	N	6.1
Cyanide	NBA	NBA		17

Footnotes:

[a] Ratio of EPC to chemical-specific guideline or criteria

[b] Sediment organic data were normalized to TOC

[c] Human Health Toxicity Quotients and Ecological Effects Quotients based on EPC of raw data

[d] Modified from EPA Region III RBC Table (EPA, 2002). Target risks of 1E-05 and Target Hazard Quotient of 1

[e] Lowest ecological benchmarks were obtained for Table 3-9.

Data were compared to CCME PEL, OMOE LEL, McDonald PEC and NOAA SQRT.

NBA = No benchmarks available

C = Carcinogen (TR, 1E-05)

NC = Systemic toxicant (THQ,1)

Shaded values show ratios greater than 1

APPENDIX B

SUPPLEMENTARY QUALITY CONTROL DATA

BIOTA COLLECTION RECORDS

Sample Collection

BIOTA COLLECTION RECORD

Site name and number or project location: Former Air Force Plant No. 51 (Round Pond) DEC Region _____
Collections made by (names): Bob Wagner, Rich Flack, Lisa Todaro (Weston Solutions)

Preservation method: ☑ Freezing; ☐ Other _____
Waterbody: Round Pond.

Lab Use only Lab Number	Sample or Tag number	Species	Date Taken	Location	Method of Collection	Length (mm)	Weight (grams)	Remarks
	WB-001-RP-00	Bullhead (Brown)	6/11/02	Round Pond	Electroshock	280	400	
	WB-002-RP-00	Brown bullhead	6/11/02	Round Pond	Electroshock	310	550	
	WB-003-RP-00	Brown bullhead	6/11/02	Round Pond	Electroshock	275	500	
	WB-004-RP-00	Brown bullhead	6/11/02	Round Pond	Electroshock	315	500	
	WB-005-RP-00	Brown bullhead.	6/11/02	Round Pond	Electroshock	336	550	
	FF-001-RP-00	Brown bullhead	6/11/02	Round Pond	Electroshock	368	750	
	FF-002-RP-00	Brown bullhead	6/11/02	Round Pond	"	350	550	
	FF-003-RP-00	Brown bullhead	6/11/02	Round Pond	"	344	550	tumor on belly tumor on operculum flap
	FF-004-RP-00	Brown bullhead	6/11/02	Round Pond	"	342	600	
	FF-005-RP-00	Brown bullhead	6/11/02	Round Pond	Electroshock	379	800	lesion on left operculum flap MS/MSD

Sample Collection

BIOTA COLLECTION RECORD

Site name and number or project location: Former Air Force Plant NO. 57 DEC Region _____
Collections made by (names): Lisa Todaro, Rich Flack, Bob Wagner

Preservation method: ☑ Freezing; ☐ Other _____
Waterbody: Round Pond

Lab Use only Lab Number	Sample or Tag number	Species	Date Taken	Location	Method of Collection	Length (mm)	Weight (grams)	Remarks
	WB-006-RP-OD	yellow perch	6/11/02	Round Pond	Electroshock	206	200	lab duplicate
	WB-007-RP-OD	yellow perch				223	134	
	WB-008-RP-OD	yellow perch				207	114	
	WB-009-RP	yellow perch				209	114	
	WB-010-RP-OD	yellow perch				223	149	
	FF-006-RP	Large mouth bass				341	650	
	FF-007-RP	small mouth bass				395	700	
	FF-008-RP	small mouth bass				334	500	
	FF-009-RP	small mouth bass				296	400	
	FF-010-RP	Rock bass	6/11/02	Round Pond	Electroshock	267	500	

Bullhead size req = >6 in
Yellow perch req = >6 in (human health)

Tony = 518 402-7832 (7815).

Appendix A. Sample Collection

BIOTA COLLECTION RECORD

Site name and number or project location: Former Air Force Plant No. 51 DEC Region _____
Collections made by (names): Rich Flack

Preservation method: ☒ Freezing; ☐ Other _____
Waterbody: Wetland (adjacent) upstream of Round ~~Pond~~ Pond.

Lab Use only Lab Number	Sample or Tag number	Species	Date Taken	Location	Method of Collection	Length (mm)	Weight (grams)	Remarks
	FF-001-AW-00	Brown Bullhead	6/12/02	Adjacent wetland.	Electroshock	258	250	
	FF-002-AW-00	Brown Bullhead	6/12/02	Adjacent wetland	Electroshock	245	250	
	FF-003-AW-00	Brown Bullhead	6/12/02	Adjacent wetland	" "	252	250	
	FF-004-AW-00	Brown Bullhead.	6/12/02	Adjacent wetland	Electroshock	333	500	
	FF-005-AW-00	yellow perch	6/12/02	" "	Electroshock	185	81	
	FF-006-AW-00	yellow perch	6/12/02	" "	" "	190	82	
	FF-007-AW-00	yellow perch	6/12/02	" "	" "	187	76	
	FF-008-AW	yellow perch	6/12/02	" "	" "	182	76	
	FF-009-AW	yellow perch	6/12/02	Adjacent wetland	Electroshock	181	72	
	FF-010-AW-00	Brown Bullhead	6/12/02	Adjacent wetland	Electroshock	355	700	

Appendix A. Sample Collection

BIOTA COLLECTION RECORD

Site name and number or project location: Former Air Force Plant No. 51 DEC Region _____
Collections made by (names): L. Tedaro, Rich Flack, Bob Wagner

Preservation method: ☑ Freezing; ☐ Other
Waterbody: Wetland (adjacent) upstream of Round Pond.

Lab Use only Lab Number	Sample or Tag number	Species	Date Taken	Location	Method of Collection	Length (mm)	Weight (grams)	Remarks
	WB-001-AW-00	yellow perch	6/12/02	Adj. wetland	Electroshock	184	70	
	WB-002-AW-00	yellow perch	6/12/02	" "	" "	182	71	
	WB-003-AW-00	yellow perch	6/12/02	" "	" "	190	77	
	WB-004-AW-00	yellow perch	6/12/02	" "	" "	181	67	
	WB-005-AW-00	yellow perch	6/12/02	Adjacent wetland	Electroshock	194	69	

Appendix A. Sample Collection

BIOTA COLLECTION RECORD

Site name and number or project location: Former Air Force Plant No. 51 DEC Region _____
Collections made by (names): Lisa Todaro, Rich Flack, Bob Wagner

Preservation method: ☑ Freezing; ☐ Other _____
Waterbody: Adjacent Wetland upstream of Round Pond.
and Background Round Pond Creek upstream.

Lab Use only Lab Number	Sample or Tag number	Species	Date Taken	Location	Method of Collection	Length (mm)	Weight (grams)	Remarks
	WB-006-AW-00	Brown Bullhead	6/12/02	Adjacent Wetland	Electroshock	347	650	Lab Duplicate
	WB-007-AW-00	Brown Bullhead	6/12/02			313	400	
	WB-008-AW-00	Brown Bullhead				256	250	
	WB-009-AW-00	Brown Bullhead				310	500	
	WB-010-AW-00	Brown Bullhead	6/12/02	Adjacent Wetland	Electroshock	225	200	
	FF-001-RCW-00	Rock Bass	6/12/02	Background Rd Pond Crk Upstr.	Electroshock	200	187	
	FF-002-RCW-00	Bullhead	6/12/02	Background Rd Pond Crk	" "	285	400	
	FF-003-RCW-00	Small Mouth Bass	6/12/02	" "	" "	267	300	
	FF-004-RCW-00	Yellow Perch	6/12/02	" "	" "	208	105	
	~~FF-0~~ (81)							

Appendix A. Sample Collection

BIOTA COLLECTION RECORD

Site name and number or project location: Former Air Force Plant No. 51. DEC Region _____
Collections made by (names): L. Todaro, Rich Flack, Bob Wagner

Preservation method: ☑ Freezing; ☐ Other _____
Waterbody: (Background Samples) Upstream of Round Pond Creek. (at Fork travel right) and Buck Pond.

Lab Use only Lab Number	Sample or Tag number	Species	Date Taken	Location	Method of Collection	Length (mm)	Weight (grams)	Remarks
	WB-001-RCH-00	Rock Bass	6/14/02	Background Round Pd Crk up.	Electroshock	181	142	
	WB-002-RCH-00	Rock Bass	6/14/02	" "	Electroshock	192	151	
	WB-003-RCH-00	yellow perch	6/12/02	" "	Electroshock Shock 60	172	73	
	WB-004-RCH-00	yellowperch	6/12/02	Background Round Pd Crk up	Electroshock	162	57	
	FF-001-BP-00	largemouth bass	6/13/02	Buck Pond	Electroshock	398	1100g	
	FF-002-BP-00	Bullhead	6/13/02	Buck Pond	Electroshock	339	550	
	WB-001-BP-00	Largemouth bass	6/13/02	Buck Pond	Electroshock	391	800	MS/MSD
	WB-002-BP-00	bullhead	6/13/02	Buck Pond	Electroshock	305	400	
	WB-003-BP-00	Pumpkin Seed	6/13/02	Buck Pond	Electroshock	193	188	sample held at Lab

WATER QUALITY DATA

Summary of Water Quality Results[a]

Location	Temperature (^{O}C)	Conductivity (µs/cm)	Salinity (ppt)	Dissolved Oxygen (mg/L)	pH	Turbidity (ntu)
AW001	18.27	16.70	0.95	5.33	7.48	565.4
RPD001	19.12	16.61	0.96	5.70	6.62	854.6
RPC001	17.68	16.54	0.98	7.91	7.6	263.5
Buck Pond	21.35	16.59	0.56	6.42	8.05	257.9

^{O} C = degrees Celsius

us/cm = microsiemens per centimeter

ppt = parts per thousand

mg/L = milligrams per liter

ntu = nephlometric turbidity units

AW = adjacent wetlands upstream

RPD = Round Pond Downstream

RPC = Round Pond Creek

a = Water quality results generated using a YSI 6820

DIGITAL SITE PHOTOS

View of boat staging area for Round Pond Creek

View of the downstream portion of Round Pond Creek
North of Former Air Force Plant No. 51

View to the southwest of the upstream portion of Round Pond Creek

View of fish sampling Upstream in Round Pond Creek

View to the west across Round Pond

View to the northwest of fish sampling along the northwest corner of Round Pond

View to southwest of fish sampling along the western portion of Round Pond

Example of specimen collected for fish sampling and analyses

View to the west across Round Pond from staging area

CHAIN OF CUSTODY FORMS

Chain of Custody Record

(1) Client: USACE
Site Name: Former Air Force Plant 51
W.O. 20074515.011.6600
Laboratory: STL
Lab Batch Number:

WESTON Contact Name: Chris Kane
Contact Phone No. 603.656.5428
WESTON PM: Chris Kane
Fax No. 603.656.5401
Sampler(s): Wagner, Flack, Todaro

(2) Ship To: STL
208 South Park Rd.
Attn: Colchester. VT 05446
Phone:
Fax:

Carrier/Airbill No.:
# of coolers: 1

WESTON

Type of Container: Foil / plastic bag
(13). Analysis Requested
Volume
(3) Turn-Around Time (# of days) ⟶
(4) Preservative

Matrix Codes (Box 8): SW= Surface Water; GW=Ground Water; SD=Sediment; S=Soil; A=Air; PE=Performance Evaluation; O* = Other (Nonexplained in comments); 7 = Fillet; 8 = Whole Body

Preservative (Box 4): 1. HCl; 2. HNO_3; 3. NaOH; 4. H_2SO_4; 5. Methanol; 6. Ice; 7. Other Fish Fillet; 8. Other Fish Whole (8)

(5) Lab ID	(6) Sample ID	(7) Matrix	(8) Comp	(8) Grab	(9) MS/MSD	(10) Sampler Initials	(11) Date Collected	(12) Time Collected processed	3050B/6010B	7471A	3540C/8081A	3540C/8082	% Lipids
TAT / Preservative									6	6	6	[illegible]	6
	WB-001-RP-00	8		✓		RF	6/11/02	16:00	✓	✓	✓	✓	✓
	WB-002-RP-00	8		✓		RF	6/11/02	16:06	✓	✓	✓	✓	✓
	WB-003-RP-00	8		✓		RF	6/11/02	16:09	✓	✓	✓	✓	✓
	WB-004-RP-00	8		✓		RF	6/11/02	16:12	✓	✓	✓	✓	✓
	FF-001-RP-00	7		✓		RF	6/11/02	16:30	✓	✓	✓	✓	✓
	FF-002-RP-00	7		✓		RF	6/11/02	16:40	✓	✓	✓	✓	✓
	FF-003-RP-00	7		✓		RF	6/11/02	16:50	✓	✓	✓	✓	✓
	FF-004-RP-00	7		✓		RF	6/11/02	~~16:~~ 17:00	✓	✓	✓	✓	✓
	FF-005-RP-00	7		✓	✓	RF	6/11/02	17:10	✓	✓	✓	✓	✓
	WB-005-RP-00	8		✓		RF	6/11/02	16:15	✓	✓	✓	✓	✓

(14) Remarks/Comments
See Project Specific Quality Assurance Project Plan
(*) SW-846 modified using Soxhlet extraction for fish tissue samples.
3050B/6010B → Cadmium & Lead

Lab Use Only
Was Temperature Blank Included? Y N
Temp of Cooler when Received, C° ____
Discrepancies Between Sample Labels and COC Record? Y N
Notes:

Lab check	Y	N
Custody Seal (CS) Tape was present on outer package	Y	N
CS Tape was unbroken on outer package	Y	N
CS Tape was present on sample	Y	N
CS Tape was unbroken on sample	Y	N
Received in good condition	Y	N
Labels indicate Properly Preserved	Y	N
Received within Holding Time	Y	N

(15) Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
[signature] Todaro	6/12/02	4pm			
Relinquished by (Signature)	**Date**	**Time**	**Received for Laboratory By: (Signature)**	**Date**	**Time**
			Glen Corcoran	06.13.02	0930

See Reverse Side for Standard Instructions
Top two copies of COC to laboratory in cooler (original is returned to WESTON with final data package).
Bottom copy to WESTON PM Project File

Page 1 of 3

№ 0000183

Chain of Custody Record

WESTON

(1) Client USACE
Site Name Former Air Force Plant 51
W.O. 20074.515.011.0600
Laboratory STL
Lab Batch Number

WESTON Contact Name Chris Kane
Contact Phone No. 603-656-5429
WESTON PM Chris Kane
Fax No. 603-656-5401
Sampler(s) L. TODARO / B. WAGNER / R. FLACK

(2) Ship To: STL
208 South Park Drive
Attn:
Phone: Colchester, VT 05446 Fax:

Carrier/Airbill No.
# of coolers: (1)

(13). Analysis Requested
Type of Container PLASTIC BAG / FOIL
Volume
(3) Turn-Around Time (# of days) ------>
(4) Preservative

Matrix Codes (Box 6): SWs=Surface Water; GW=Ground Water; SD=Sediment; SoSoil; AirAir; PE=Performance Evaluation; O*=Other; (N=explained in comments)
Preservative (Box 4): 1. HCl; 2. HNO3; 3. NaOH; 4. H2SO4; 5. Methanol; 6. Ice; 7. Other X Fillet; 8. Other X Whole body
7=Fillet 8=Whole Body

(5) Lab ID	(6) Sample ID	(7) Matrix	(8) Sample Type: Comp	(8) Sample Type: Grab	(9) MS/MSD	(10) Sampler Initials	(11) Date Collected	(12) Time Collected Processed.	3500B/6010B	7471A	3540C/8081A	3540C/8082	9 Lipids
	WB-006-RP-00	8		✓			6/11/02	17:30	✓	✓	✓	✓	✓
	WB-007-RP-00	8		✓			6/11/02	17:40	✓	–	✓	✓	✓
	WB-008-RP-00	8		✓			6/11/02	17:45	✓	✓	✓	✓	✓
	WB-009-RP-00	8		✓			6/11/02	17:50	✓	✓	✓	✓	✓
	WB-010-RP-00	8		✓			6/11/02	17:55	✓	✓	✓	✓	✓
	FF-006-RP-00	7		✓			6/11/02	18:00	✓	✓	✓	✓	✓
	FF-007-RP-00	7		✓			6/11/02	18:10	✓	✓	✓	✓	✓
	FF-008-RP-00	7		✓			6/11/02	18:20	✓	✓	✓	✓	✓
	FF-009-RP-00	7		✓			6/11/02	18:30	✓	✓	✓	✓	✓
	FF010-RP-00	7		✓			6/11/02	18:40	✓	✓	✓	✓	✓

(14) Remarks/Comments
See Project Specific Quality Assurance Project Plan

Lab Use Only
Was Temperature Blank Included? Y N
Temp of Cooler when Received, C°
Discrepancies Between Samples
Labels and COC Record? Y N
Notes:

Custody Seal (CS) Tape was present on outer package Y N
CS Tape was unbroken on outer package Y N
CS Tape was present on sample Y N
CS Tape was unbroken on sample Y N
Received in good condition Y N
Labels Indicate Properly Preserved Y N
Received within Holding Time Y N

(15) Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Lisa Todaro	6/12/02	4pm	G		
Relinquished by (Signature)	Date	Time	Received for Laboratory By: (Signature)	Date	Time
				06.13.02	0930

See Reverse Side for Standard Instructions
Top two copies of COC to laboratory in cooler (original is returned to WESTON with final data package).
Bottom copy to WESTON PM Project File

Page 1 of 3

№ 0000184

Chain Custody Record

WESTON

(1) Client: USACE — WESTON Contact Name: Chris Kane
Site Name: Former Air Force PNA 51 — Contact Phone No.: 603.656.5428
W.O.: 20074.515.011.6600 — WESTON PM: C. Kane
Laboratory: STL — Fax No.: 603.656.5401
Lab Batch Number: — Sampler(s): LI/RF/BW

(2) Ship To: STL
208 (Burlington) South Park Drive
Attn:
Phone: Colchester, VT Fax: 05446

Carrier/Airbill No.: Fed Ex
# of coolers: 1

(13). Analysis Requested
Type of Container: Plastic bag / Foil
Volume

(3) Turn-Around Time (# of days)——>
(4) Preservative

Matrix Codes (Box 6): SW=Surface Water, GW=Ground Water, SD=Sediment, S=Soil, A=Air, PE=Performance Evaluation, O=Other (Non-explained in comments)	Preservative (Box 4): 1. HCl, 2. HNO_3, 3. NaOH, 4. H_2SO_4, 5. Methanol, 6. Ice (dry), 7. Other, 8. Other	(5) Lab ID	(5) Sample ID	(7) Matrix	(8) Sample Type: Comp	(8) Sample Type: Grab	(9) MS/MSD	(10) Sampler Initials	(11) Date Collected	(12) Time Collected	6	6	6	6	6
											3330B/6010B	7471A	3540C/8082A	3540C/8082	% Lipids
			FF-001-AW-00	F		✓		RF	6/12/02	12:00	✓	✓	✓	✓	✓
			FF-002-AW-00	F		✓		RF	6/12/02	12:10	✓	✓	✓	✓	✓
			FF-003-AW-00	F		✓		RF	6/12/02	12:20	✓	✓	✓	✓	✓
			FF-004-AW-00	F		✓		RF	6/12/02	12:30	✓	✓	✓	✓	✓
			FF-005-AW-00	F		✓		RF	6/12/02	13:30	✓	✓	✓	✓	✓
			WB-001-AW-00	W		✓		RF	6/12/02	12:40	✓	✓	✓	✓	✓
			WB-002-AW-00	W		✓		RF	6/12/02	12:50	✓	✓	✓	✓	✓
			WB-003-AW-00	W		✓		RF	6/12/02	13:00	✓	✓	✓	✓	✓
			WB-004-AW-00	W		✓		RF	6/12/02	13:10	✓	✓	✓	✓	✓
			WB-005-AW-00	W		✓		RF	6/12/02	13:20	✓	✓	✓	✓	✓

F = Fillet
W = Whole body

(14) Remarks/Comments
See Project Specific Quality Assurance Project Plan
3540c/8082 Modified using soxhlet extraction for tissue samples
% Lipid – portion of PCB extraction.

Lab Use Only
Was Temperature Blank Included? Y N
Temp of Cooler when Received, C°:
Discrepancies Between Sample Labels and COC Record? Y N
Notes:

	Y	N
Custody Seal (CS) Tape was present on outer package	Y	N
CS Tape was unbroken on outer package	Y	N
CS Tape was present on sample	Y	N
CS Tape was unbroken on sample	Y	N
Received in good condition	Y	N
Labels Indicate Properly Preserved	Y	N
Received within Holding Time	Y	N

(15) Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time	See Reverse Side for Standard Instructions
Lisa Podlaski	6/13/02	1200				Top two copies of COC to laboratory in cooler (original is returned to WESTON with final data package).
Relinquished by (Signature)	Date	Time	Received for Laboratory By: (Signature)	Date	Time	Bottom copy to WESTON PM Project File
			Glen Corcoran	06-14-02	0930	

№ 0000185

Chain of Custody Record

(1) Client USACE
Site Name Former Air Force Pt No 5
W.O. 20074515.011.66000
Laboratory STL
Lab Batch Number

WESTON Contact Name Chris Kaine
Contact Phone No (603) 656-5428
WESTON PM C. Kaine
Fax No. (603) 656-5401
Sampler(s) LT/RF/BW

(2) Ship To: STL Burlington
208 South Park Drive
Attn: Colchester, VT 05446
Phone: Fax:

Carrier/Airbill No. Fed Ex
# of coolers: 1

Type of Container Plastic bag / Foil
Volume
(3) Turn-Around Time (# of days)——>
(4) Preservative

(13). Analysis Requested

Matrix Codes (Box 6)	Preservative (Box 4)	(5) Lab ID	(6) Sample ID	(7) Matrix	(8) Sample Type: Comp	(8) Sample Type: Grab	(9) MS/MSD	(10) Sampler Initials	(11) Date Collected	(12) Time Collected	6	6	6	6	6
											3550B/6010B	7471A	3540C/8081A	3540C/8082	% Lipid
			FF-006-AW-00	F		✓		RF	6/12/02	13:40	✓	✓	✓	✓	✓
			FF-007-AW-00	F		✓		RF	6/12/02	13:50	✓	✓	✓	✓	✓
			FF-008-AW-00	F		✓		RF	6/12/02	14:00	✓	✓	✓	✓	✓
			FF-009-AW-00	F		✓		RF	6/12/02	14:10	✓	✓	✓	✓	✓
			FF-010-AW-00	F		✓		RF	6/12/02	18:30	✓	✓	✓	✓	✓
			WB-006-AW-00	W		✓		RF	6/12/02	18:35	✓	✓	✓	✓	✓
			WB-007-AW-00	W		✓		RF	6/12/02	18:40	✓	✓	✓	✓	✓
			WB-008-AW-00	W		✓		RF	6/12/02	18:45	✓	✓	✓	✓	✓
			WB-009-AW-00	W		✓		RF	6/12/02	18:50	✓	✓	✓	✓	✓
			WB-010-AW-00	W		✓		RF	6/12/02	18:55	✓	✓	✓	✓	✓

SW=Surface Water
GW=Ground Water
SD=Sediment
So=Soil
A=Air
P=Performance Evaluation
O=Other
(Nonexplained in comments)
F=Fillet
W=Whole Body

1. HCl
2. HNO_3
3. NaOH
4. H_2SO_4
5. Methanol
6. Ice
7. Other
8. Other

(14) Remarks/Comments
See Project Specific Quality Assurance Project Plan
3540C/8082 Modified using Soxhlet extraction for tissue samples
% Lipids - portion of PCB extraction.

Lab Use Only
Was Temperature Blank Included? Y N
Temp of Cooler when Received, C°
Discrepancies Between Sample Labels and COC Record? Y N
Notes:

Custody Seal (CS) Tape was present on outer package Y N
CS Tape was unbroken on outer package Y N
CS Tape was present on sample Y N
CS Tape was unbroken on sample Y N
Received in good condition Y N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

(15) Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Brian Yodercio	June 13 2002	1200			
Relinquished by (Signature)	Date	Time	Received for Laboratory By: (Signature)	Date	Time
			Gle Crocker	06-14-02	0930

See Reverse Side for Standard Instructions
Top two copies of COC to laboratory in cooler (original is returned to WESTON with final data package).
Bottom copy to WESTON PM Project File

№ 000186

Chain of Custody Record

WESTON

(1) Client: USACE — WESTON Contact Name: C. Kane
Site Name: Former Air Force Pit #5 — Contact Phone No.: 603-1656-5428
W.O.: 20074.515.011.0600 — WESTON PM: C. Kane
Laboratory: STL — Fax No.: 603.1656.5401
Lab Batch Number: — Sampler(s):

(2) Ship To: STL
208 South Park Drive, Ste 1
Attn: Colchester, VT 05446
Phone: — Fax:

Carrier/Airbill No.: Fed EX
# of coolers: 1

(13). Analysis Requested
Type of Container: Plastic bag / Foil
Volume:
(3) Turn-Around Time (# of days) ——>
(4) Preservative

Matrix Codes (Box 6): GWe Surface Water; GW=Ground Water; SDe Sediment; Se Soil; A=Air; PEe Performance Evaluation; O" e Other (Nee explained in comments)
Preservative (Box 4): 1. HCl; 2. HNO_3; 3. NaOH; 4. H_2SO_4; 5. Methanol; 6. Ice; 7. Other ____; 8. Other ____

(5) Lab ID	(6) Sample ID	(7) Matrix	(8) Sample Type: Comp	(8) Sample Type: Grab	(9) MS/MSD	(10) Sampler Initials	(11) Date Collected	(12) Time Collected	8330/8010B	7471A	3540/8093A	3540/8082	9071/9045							
	FF-010-AW-00-DP	F		✓		RF	6/12/02	19:30	✓	✓	✓	✓	✓							
	FF-001-RCU-00	F		✓		RF	6/12/02	19:00	✓	✓	✓	✓	✓							
	FF-002-RCU-00	F		✓		RF	6/12/02	19:05	✓	✓	✓	✓	✓							
	FF-003-RCU-00	F		✓		RF	6/12/02	19:10	✓	✓	✓	✓	✓							
	FF-004-RCU-00	F		✓		RF	6/12/02	19:15	✓	✓	✓	✓	✓							

F=Fillet

(14) Remarks/Comments
See Project Specific Quality Assurance Project Plan

Lab Use Only
Was Temperature Blank Included? Y N
Temp of Cooler when Received: C° ____
Discrepancies Between Sample Labels and COC Record? Y N
Notes:

Custody Seal (CS) Tape was present on outer package	Y	N
CS Tape was unbroken on outer package	Y	N
CS Tape was present on sample	Y	N
CS Tape was unbroken on sample	Y	N
Received in good condition	Y	N
Labels Indicate Properly Preserved	Y	N
Received within Holding Time	Y	N

(15) Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time	See Reverse Side for Standard Instructions
Dina Todaro	6/13/02	1200				Top two copies of COC to laboratory in cooler (original is returned to WESTON with final data package).
Relinquished by (Signature)	Date	Time	Received for Laboratory By: (Signature)	Date	Time	Bottom copy to WESTON PM Project File
			Glen Corcoran	06-14-02	0930	

No 0000187

Chain of Custody Record

(1) Client: USACE
Site Name: Former Air Force Plant No 51
W.O.: 20074.515.011.6600
Laboratory: STL
Lab Batch Number: ________
WESTON Contact Name: C. Kane
Contact Phone No.: 603.656.5428
WESTON PM: C. Kane
Fax No.: 603.656.5401
Sampler(s): LT/BW/RF

WESTON

(2) Ship To: STL
208 South Park Drive Ste 1
Attn: Colchester, VT 05446
Phone: (802) 655.1203 Fax: Don Dawicki

Carrier/Airbill No.: FedEx
# of coolers: 1

(13). Analysis Requested

Type of Container: 8oz amber, 4oz amber, Encore samplers.

Volume:

	3050B/6010B	9010B	5035A/8260	3540C/8081A	TOC	3540C/8082	3540C/8270C			
(3) Turn-Around Time (# of days)	10	10	10	10	10	10	10			
(4) Preservative	6	6	6	6	6	6	6			

Matrix Codes (Box 6): SW=Surface Water; GW=Ground Water; SD=Sediment; S=Soil; A=Air; PE=Performance Evaluation; O* = Other (*explained in comments)

Preservative (Box 4): 1. HCl; 2. HNO_3; 3. NaOH; 4. H_2SO_4; 5. Methanol; 6. Ice; 7. Other___; 8. Other___

(5) Lab ID	(6) Sample ID	(7) Matrix	(8) Sample Type: Comp	(8) Sample Type: Grab	(9) MS/MSD	(10) Sampler Initials	(11) Date Collected	(12) Time Collected	3050B/6010B	9010B	5035A/8260	3540C/8081A	TOC	3540C/8082	3540C/8270C			
	SD-001-RPD-1-FS	SD		✓		RF	6/13/02	9:15	✓	✓	✓	✓	✓	✓	✓			
	SD-001-RPU-1-FS	SD		✓		RF	6/13/02	9:30	✓	✓	✓	✓	✓	✓	✓			
	SD-001-RCD-1-FS	SD		✓		RF	6/13/02	9:45	✓	✓	✓	✓	✓	✓	✓			
	SD-002-RCD-1-FS	SD		✓		RF	6/13/02	9:55	✓	✓	✓	✓	✓	✓	✓			
	SD-001-AW-1-FS	SD		✓		RF	6/13/02	10:00	✓	✓	✓	✓	✓	✓	✓			
	SD-002-RCU-1-FS	SD		✓		RF	6/13/02	11:00	✓	✓	✓	✓	✓	✓	✓			
	SD-001-RCU-1-FS	SD		✓		RF	6/13/02	10:15	✓	✓	✓	✓	✓	✓	✓			
	TRB-001						~~6/13/02~~ 6/5/02											
	TB-001																	

(14) Remarks/Comments
See Project Specific Quality Assurance Project Plan
TOC-Analyze Lloyd Kahn Method
SW-846, 3540C/8082

Lab Use Only
Was Temperature Blank Included? Y N
Temp of Cooler when Received, C° ______
Discrepancies Between Sample Labels and COC Record? Y N
Notes:
Custody Seal (CS) Tape was present on outer package Y N
CS Tape was unbroken on outer package Y N
CS Tape was present on sample Y N
CS Tape was unbroken on sample Y N
Received in good condition Y N
Labels Indicate Properly Preserved Y N
Received within Holding Time Y N

(15) Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
[signature]	6/13/02	1300			
Relinquished by (Signature)	**Date**	**Time**	**Received for Laboratory By: (Signature)**	**Date**	**Time**
			[signature]	06.14.02	0930

See Reverse Side for Standard Instructions
Top two copies of COC to laboratory in cooler (original is returned to WESTON with final data package).
Bottom copy to WESTON PM Project File

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No 0000190

Chain of Custody Record

(1) Client: USACE
Site Name: Former Air Force Plant #51
W.O. 20074.515.011.6600
Laboratory: STL
Lab Batch Number:

WESTON Contact Name: Chris Kane
Contact Phone No. 603.656.5428
WESTON PM: Chris Kane
Fax No. 603.656.5401
Sampler(s): RF/BW

WESTON

(2) Ship To: STL
208 South Park Drive Ste 1
Attn: Colchester, VT 05446
Phone: (802)655-1203 Fax: Don Dawicki

Carrier/Airbill No.: FedEX
# of coolers: 2

(13). Analysis Requested
Type of Container: 4oz - amber jars, 8oz amber jars, Encores
Volume:

									3050B/6010B	9010B	5035A/8260	3546/8270C	3546/8081A	3540C/8082	TOC	Temp.		
(3) Turn-Around Time (# of days)									10	10	10	10	10	10				
(4) Preservative									6	6	6	6	6	6				
(5) Lab ID	(6) Sample ID	(7) Matrix	Comp	Grab	(8) MS/MSD	(10) Sampler Initials	(11) Date Collected	(12) Time Collected										
	SD-002-AW-1-FS	SD		✓		BW	6/13/02	12:00	✓	✓	✓	✓	✓	✓	✓			
	SD-003-AW-1-FS	SD		✓	✓	BW	6/13/02	1215	✓	✓	✓	✓	✓	✓	✓			
	SD-004-AW-1-FS	SD		✓		BW	6/13/02	1300	✓	✓	✓	✓	✓	✓	✓			
	SD-005-AW-1-FS	SD		✓		BW	6/13/02	1330	✓	✓	✓	✓	✓	✓	✓			
	SD-003-AW-1-DP	SD		✓		BW	6/13/02	1215	✓	✓	✓	✓	✓	✓	✓			
	SD-001-BP-1-FS	SD		✓		BW	6/13/02	1600	✓	✓	✓	✓	✓	✓	✓			
	TRP-002																	
	TB-002															✓		

Matrix Codes (Box 6): SW= Surface Water; GW=Ground Water; SD=Sediment; S=Soil; A=Air; PE=Performance Evaluation; O* = Other (* explained in comments)

Preservative (Box 4): 1. HCl; 2. HNO_3; 3. NaOH; 4. H_2SO_4; 5. Methanol; 6. Ice; 7. Other___; 8. Other___

(14) Remarks/Comments
See Project Specific Quality Assurance Project Plan
TOC - Analyze using Lloyd Kahn Method
8082 → Method SW-846

Lab Use Only
Was Temperature Blank Included? Y N
Temp of Cooler when Received, C°___
Discrepancies Between Sample Labels and COC Record? Y N
Notes:

Custody Seal (CS) Tape was present on outer package Y N
CS Tape was unbroken on outer package Y N
CS Tape was present on sample Y N
CS Tape was unbroken on sample Y N
Received in good condition Y N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

(15) Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Lisa Todaro	6/13/02	1700			
Relinquished by (Signature)	**Date**	**Time**	**Received for Laboratory By: (Signature)**	**Date**	**Time**
			Glen Corcoran	06.14.02	0930

See Reverse Side for Standard Instructions
Top two copies of COC to laboratory in cooler (original is returned to WESTON with final data package).
Bottom copy to WESTON PM Project File

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№ 0000191

Chain of Custody Record

WESTON

(1) Client USACE — WESTON Contact Name C Kane
Site Name Former Air Force Plants — Contact Phone No. 603.656.5428
W.O. 20074-515.011.6600 — WESTON PM C. Kane
Laboratory STL — Fax No. 603.656.5401
Lab Batch Number — Sampler(s) LT/RF/BW

(2) Ship To: STL, 208 South Park Drive Ste 1
Attn: Colchester VT Fax: 05446
Phone:

Carrier/Airbill No.
# of coolers:

(13). Analysis Requested
Type of Container: 40ml VOAs.
Volume
(3) Turn-Around Time (# of days) ——>
(4) Preservative

Matrix Codes (Box 6): SW=Surface Water; GW=Ground Water; SD=Sediment; S=Soil; A=Air; PE=Performance Evaluation; O=Other (Non-contained in comments)	Preservative (Box 4): 1. HCl; 2. HNO_3; 3. NaOH; 4. H_2SO_4; 5. Methanol; 6. Ice; 7. Other; 8. Other	(5) Lab ID	(6) Sample ID	(7) Matrix	(8) Sample Type: Comp	(8) Sample Type: Grab	(9) MS/MSD	(10) Sampler Initials	(11) Date Collected	(12) Time Collected	TBMP	Trip blank
			TRP-003						6/05/02	—		
			TB-003							—	✓	

(14) Remarks/Comments
See Project Specific Quality Assurance Project Plan

Lab Use Only
Was Temperature Blank Included? Y N
Temp of Cooler when Received, C°
Discrepancies Between Sample Labels and COC Record? Y N Notes:
Custody Seal (CS) Tape was present on outer package Y N
CS Tape was untorn on outer package Y N
CS Tape was present on sample Y N
CS Tape was untorn on sample Y N
Received in good condition Y N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

(15) Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Lisa Todaro	6/13/02	18:00			
Relinquished by (Signature)	Date	Time	Received for Laboratory By: (Signature)	Date	Time
			Glen Corcoran	06.14.02	0630

See Reverse Side for Standard Instructions
Top two copies of COC to laboratory in cooler (original is returned to WESTON with final data package).
Bottom copy to WESTON PM Project File

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№ 0000192

Chain of Custody Record

WESTON

(1) Client: USACE
Site Name: Air Force Plant No. 51
W.O. 20074.515.011.6600
Laboratory: STL
Lab Batch Number:

WESTON Contact Name: Chris Kane
Contact Phone No.: (603) 656-5478
WESTON PM: C. Kane
Fax No.: (603)-656-5401
Sampler(s): BW/RF/LT

(2) Ship To: STL
208 South Park Drive Ste. 1
Attn: Colchester, VT 05446
Phone: 6[illegible]802 655-1203 Don Dawicki

Carrier/Airbill No.: Fed Ex
# of coolers: (2)

(13). Analysis Requested
Type of Container: Foil / Plastic bags.
Volume
(3) Turn-Around Time (# of days)----->
(4) Preservative

Matrix Codes (Box 6): SW= Surface Water; GW=Ground Water; SD=Sediment; S=Soil; A=Air; PE=Performance Evaluation; O" = Other (N=explained in comments); W=whole body Fish
Preservative (Box 4): 1. HCl; 2. HNO_3; 3. NaOH; 4. H_2SO_4; 5. Methanol; 6. Ice (dry); 7. Other; 8. Other

(5) Lab ID	(6) Sample ID	(7) Matrix	(8) Sample Type: Comp	(8) Sample Type: Grab	(9) MS/MSD	(10) Sampler Initials	(11) Date Collected	(12) Time Collected	23081/8100	7471A	3540C/8082A	3540C/8082	%Lipid	TEMP
	WB-001-RCH-00	W				BW	6/14/02	1000	✓	✓	✓	✓	✓	
	WB-002-RCH-00	W				BW	6/14/02	1030	✓	✓	✓	✓	✓	
	WB-003-RCH-00	W				BW	6/12/02	1300	✓	✓	✓	✓	✓	
	WB-004-RCH-00	W				BW	6/12/02	1330	✓	✓	✓	✓	✓	
	FF-001-BP-00	W				BW	6/13/02	1900	✓	✓	✓	✓	✓	
	FF-002-BP-00	W				BW	6/13/02	1930	✓	✓	✓	✓	✓	
	TB-005						—	—						✓
	TRP-005						6/15/02	—						.
	WB-001-BP-00	W				BW	6/13/02	2000	✓	✓	✓	✓	✓	
	WB-002-BP-00	W				BW	6/13/02	2030	✓	✓	✓	✓	✓	

(14) Remarks/Comments
See Project Specific Quality Assurance Project Plan
% Lipid - portion of PCB extraction
3540C/8082 - modified using soxhlet extraction tissue samples.

Lab Use Only
Was Temperature Blank Included? Y N
Temp of Cooler when Received, C°:
Discrepancies Between Sample Labels and COC Record? Y N
Notes:
Custody Seal (CS) Tape was present on outer package Y N
CS Tape was unbroken on outer package Y N
CS Tape was present on sample Y N
CS Tape was unbroken on sample Y N
Received in good condition Y N
Labels Indicate Properly Preserved Y N
Received within Holding Time Y N

(15) Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
[signature]	6/14/02	1300			
Relinquished by (Signature)	Date	Time	Received for Laboratory By: (Signature)	Date	Time
			[signature]	06-15-02	1045

See Reverse Side for Standard Instructions
Top two copies of COC to laboratory in cooler (original is returned to WESTON with final data package).
Bottom copy to WESTON PM Project File

Page 1 of 2

№ 0000193

Chain of Custody Record

WESTON

(1) Client: USACE
Site Name: Air Force Plant No. 51
W.O.: 20074515.011.6600
Laboratory: STL
Lab Batch Number:

WESTON Contact Name: Chris Kane
Contact Phone No.: 603-656-5428
WESTON PM: Chris Kane
Fax No.: 603-656-5401
Sampler(s): BW/RF

(2) Ship To: STL
208 South Park Drive
Attn: Colchester, VT 05446
Phone: (802) 655-1203 Fax:

Carrier/Airbill No.: FedEx
# of coolers: 2

(13). Analysis Requested
Type of Container: 5-1 Liter ambers per sample; 3-40 ml VOAs per sample; ~~1-500 ml poly bottle / sample~~
Volume: 1-250 ml poly bottle / sample
(3) Turn-Around Time (# of days): 10 | 10 | 10 | 10 | 10 | 10
(4) Preservative: 2 | 3 | 1 | 6 | 6 | 6

Matrix Codes (Box 6): SW= Surface Water; GW=Ground Water; SD=Sediment; S=Soil; A=Air; PE=Performance Evaluation; O* = Other (N=explained in comments); R=Rinseate; W=Whole Body Fish

Preservative (Box 4): 1. HCl; 2. HNO_3; 3. NaOH; 4. H_2SO_4; 5. Methanol; 6. Ice; 7. Other; 8. Other

(5) Lab ID	(6) Sample ID	(7) Matrix	(8) Comp	(8) Grab	(9) MS/MSD	(10) Sampler Initials	(11) Date Collected	(12) Time Collected	3010B/6010B	9010B	5030A/8260B	8270C	8081A	SW-846 8082				Temp
	EB-001	R	✓			BW	6/14/02	1100	✓	✓	✓	✓	✓	✓				
	EB-002	R	✓			RF	6/14/02	1130	✓	✓	✓	✓	✓	✓				
	TB-006						—	—										✓
	~~TB~~ (initialed)																	
	TRP-006						6/5/02	~~[illegible]~~ (initialed)										
	WB-003-BP-00	W					6/13/02	2040										

(14) Remarks/Comments
See Project Specific Quality Assurance Project Plan
WB-003-BP-00 → hold sample

Lab Use Only
Was Temperature Blank Included? Y N
Temp of Cooler when Received, C°
Discrepancies Between Sample Labels and COC Record? Y N
Notes:

Custody Seal (CS) Tape was present on outer package Y N
CS Tape was unbroken on outer package Y N
CS Tape was present on sample Y N
CS Tape was unbroken on sample Y N
Received in good condition Y N
Labels Indicate Properly Preserved Y N
Received within Holding Time Y N

(15) Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
[signature]	6/14/02	1300			
Relinquished by (Signature)	**Date**	**Time**	**Received for Laboratory By: (Signature)**	**Date**	**Time**
			Glen Corcoran	06-15-02	1045

See Reverse Side for Standard Instructions
Top two copies of COC to laboratory in cooler (original is returned to WESTON with final data package).
Bottom copy to WESTON PM Project File

Page 2 of 2

№ 0000194

Chain of Custody Record

(1) Client USACE
Site Name Former Air Force Pt 51
W.O. 20074515.011.1600003
Laboratory STL
Lab Batch Number

WESTON Contact Name C. Kane
Contact Phone No. 603.656.5428
WESTON PM Chris Kane
Fax No. 603.656.5401
Sampler(s) LT/RF/BW

WESTON

(2) Ship To: STL
208 South Park Drive
Attn:
Phone: Colchester, VT 05446
Fax:

Carrier/Airbill No.

# of coolers: 1

(13). Analysis Requested

Type of Container Plastic Bag / Foil

Volume

(3) Turn-Around Time (# of days)———>

(4) Preservative

Matrix Codes (Box 8): SW= Surface Water; GW=Ground Water; SD=Sediment; S=Soil; A=Air; PE=Performance Evaluation; O*= Other (*=explained in comments) ⑦ Fish Fillet

Preservative (Box 4): 1. HCl; 2. HNO_3; 3. NaOH; 4. H_2SO_4; 5. Methanol; 6. Ice; 7. Other___; 8. Other___

(5) Lab ID	(6) Sample ID	(7) Matrix	(8) Sample Type: Comp	Grab	(9) MS/MSD	(10) Sampler Initials	(11) Date Collected	(12) Time Collected	8082/8081	7471A	3540C/8081A	3540C/8082	% Lipids					
									6	6	6	6	6					
	FF-007-RP-00-DP	7		✓		RF	6/11/02	18:10	✓	✓	✓	✓	✓					

(14) Remarks/Comments
See Project Specific Quality Assurance Project Plan

Lab Use Only
Was Temperature Blank Included? Y N
Temp of Cooler when Received, C°
Discrepancies Between Sample
Labels and COC Record? Y N
Notes:

Custody Seal (CS) Tape was present on outer package Y N
CS Tape was unbroken on outer package Y N
CS Tape was present on sample Y N
CS Tape was unbroken on sample Y N
Received in good condition Y N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

(15) Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Lisa Todarc	6/12/02	4pm			
Relinquished by (Signature)	Date	Time	Received for Laboratory By: (Signature)	Date	Time
			Glen Corcoran	06.13.02	0930

See Reverse Side for Standard Instructions
Top two copies of COC to laboratory in cooler (original is returned to WESTON with final data package).
Bottom copy to WESTON PM Project File

Page 3 of 3

№ 000200

DATA REVIEW CHECKLISTS AND CASE NARRATIVES

Inorganic

WESTON
DATA REVIEW CHECKLIST

Reviewer: R. Bentley
Date: 9 August 2002
Site: Round Pond - Former Air Force Plant 51
Analytical Lab: Severn Trent Laboratories, Colchester, VT

SDG Number: 88401
Case Number: 22000

Weston Sample Numbers: [23 samples in this SDG]: EB1, FF-001-RP-00, FF-002-RP-00, FF-003-RP-00, FF-004-RP-00, FF-005-RP-00, FF-005-RP-00D, FF-006-RP-00, FF-008-RP-00, FF-009-RP-00, FF-010-RP-00, WB-001-RP-00, WB-001-RP-00, WB-002-RP-00, WB-003-RP-00, WB-004-RP-00, WB-005-RP-00, WB-006-RP-00, WB-006-RP-00DUP, WB-007-RP-00, WB-008-RP-00, WB-009-RP-00, WB-010-RP-00.

Analyte(s): Total cadmium, lead and mercury in fish tissue.

Data Reviewed	Fraction			Comments
	Cadmium, lead, & mercury in tissue			
Chain of Custody	✔			
Log-in Sheet	✔			
Preservation	none			Shipped on ice.
Holding Time	✔			
Trip Blanks	NA			
Instrument/Method Blanks (soils/solids)	✔			
MS/MSD - soil/solid	✔			
MS/MSD - Aqueous	NA			
LCS/LFB	✔			
Blank Spikes (BS/BSD)	NA			
Lab Duplicates	✔			
Field Duplicates	✔			
Surrogate Recoveries	NA			
Percent Solids	✔			

✔ = Data Reviewed
NA = Not Applicable
Note: Data reviewed but not commented on is considered acceptable.

Qualifiers used:

None.

Notes:

The initial CRDL standard for mercury yielded a recovery of 75%. No samples were affected with this standard. The second CRDL standard yielded an acceptable recovery.

There was one field duplicate sample associated with this package. The RPDs were found to be acceptable.

Data Reviewer Initials: _____

Date: 9 Aug-02

Note: PCBs Forms have Volatile at top → called lab on 8/1 for resubs

Also Pest/PCBs ~~RSDs~~ calib curve in linear vs %RSD.

DATA REVIEW CHECKLIST

Site: Former AF Plant No 51 – Round Pond

Organic

STL Lab Number: 88401

WESTON Sample IDs: ~~WB-001-RP-00, FF-001-RP-00~~ → FF-0005, WB-005-RP-00 → WB-010 ; WB006-RP-00-DUP, FF-006, 008, 010 ; FB1

Data Reviewed	Fraction: Pest	Fraction: 8081	Comments
Chain of Custody			
Log-in Sheet			
Preservation			
Holding Time			
~~Trip Blanks~~ EQUIP	✓	✓	
Instrument/Method Blanks (soils/solids)	✓	✓	
Instrument/Method Blanks (Aqueous)			
MS/MSD - Soil/Solid	4,4'-DDT below QL in MS, RPD from other MS/MSD		
MS/MSD - Aqueous			
LCS/LFB		✓	
Blank Spikes (BS/BSD)			
Lab Duplicates			
Field Duplicates	✓	J2	
Surrogate Recoveries	✓	✓	

Sample Quantitation

✓ = Data reviewed

NA = Not Applicable

Note: Data reviewed but not commented on is considered acceptable.

Qualifiers Used:

J', R1 – Estimate due to %D > 25; Reject due to %D between Column results > 100%. See yellow tabs.

J2 = Estimate 1254 + 1260 results in PCB samples WB006RP00 +-0.000 DUP due to ~~%difference~~ RPD between field duplicates greater than 50%.

Data Reviewer Initials: DFS

Date: 7/31+8/1

SEVERN
TRENT
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Severn Trent Laboratories, Inc.

SAMPLE DATA SUMMARY PACKAGE

SDG NO: 88401

SEVERN TRENT SERVICES

STL Burlington
208 South Park Drive
Suite 1
Colchester, VT 05446

Tel: 802 655 1203
Fax: 802 655 1248
www.stl-inc.com

July 15, 2002

Chris Kane
Weston Solutions, Inc.
One Wall Street
Manchester, NH 03101-1501

Re: Laboratory Project No. 22000
Case: 22000; SDG: 88401

Dear Mr. Kane:

Enclosed are analytical results for samples received by Severn Trent Laboratories on June 14, 2002. Laboratory numbers have been assigned and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 06/14/02 ETR No. 88401		
491097	WB-001-RP-00	06/11/02	Tissue
491098	WB-001-RP-00	06/11/02	Tissue
491099	WB-002-RP-00	06/11/02	Tissue
491100	WB-002-RP-00	06/11/02	Tissue
491101	WB-003-RP-00	06/11/02	Tissue
491102	WB-003-RP-00	06/11/02	Tissue
491103	WB-004-RP-00	06/11/02	Tissue
491104	WB-004-RP-00	06/11/02	Tissue
491105	FF-001-RP-00	06/11/02	Tissue
491106	FF-001-RP-00	06/11/02	Tissue
491107	FF-002-RP-00	06/11/02	Tissue
491108	FF-002-RP-00	06/11/02	Tissue
491109	FF-003-RP-00	06/11/02	Tissue
491110	FF-003-RP-00	06/11/02	Tissue
491111	FF-004-RP-00	06/11/02	Tissue
491112	FF-004-RP-00	06/11/02	Tissue
491113	FF-005-RP-00	06/11/02	Tissue
491114	FF-005-RP-00	06/11/02	Tissue
491114MS	FF-005-RP-00MS	06/11/02	Tissue
491114MD	FF-005-RP-00MSD	06/11/02	Tissue
491114DP	FF-005-RP-00REP	06/11/02	Tissue
491115	WB-005-RP-00	06/11/02	Tissue
491116	WB-005-RP-00	06/11/02	Tissue

SEVERN TRENT SERVICES

STL Burlington

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 06/14/02 ETR No. 88401 (Cont.)		
491117	WB-006-RP-00	06/11/02	Tissue
491118	WB-006-RP-00	06/11/02	Tissue
491119	WB-006-RP-00-DUP	06/11/02	Tissue
491120	WB-007-RP-00	06/11/02	Tissue
491121	WB-007-RP-00	06/11/02	Tissue
491122	WB-008-RP-00	06/11/02	Tissue
491123	WB-008-RP-00	06/11/02	Tissue
491124	WB-009-RP-00	06/11/02	Tissue
491125	WB-009-RP-00	06/11/02	Tissue
491126	WB-010-RP-00	06/11/02	Tissue
491127	WB-010-RP-00	06/11/02	Tissue
491128	FF-006-RP-00	06/11/02	Tissue
491129	FF-006-RP-00	06/11/02	Tissue
491130	FF-008-RP-00	06/11/02	Tissue
491131	FF-008-RP-00	06/11/02	Tissue
491132	FF-009-RP-00	06/11/02	Tissue
491133	FF-009-RP-00	06/11/02	Tissue
491134	FF-010-RP-00	06/11/02	Tissue
491135	FF-010-RP-00	06/11/02	Tissue
491136	EB1		Tissue

Documentation that identifies the condition of the samples at the time of sample receipt and the issues arising at the time of sample log-in is included in the Sample Handling section of this submittal.

In order to accommodate field length limitations in processing the data summary forms, the laboratory did, in certain instances, abbreviate the sample identifiers.

The Pesticide analyses of the field samples FF-001-RP-00, FF-004-RP-00, FF-006-RP-00, FF-008-RP-00, FF-009-RP-00,FF-010-RP-00, WB-001-RP-00, WB-002-RP-00, WB-003-RP-00, WB-004-RP-00, WB-005-RP-00, WB-006-RP-00, WB-007-RP-00, WB-008-RP-00, WB-009-RP-00, WB-010-RP-00 AND WB-006-RP-00DUP were accomplished at dilutions based upon initial screen data which indicated the presence of select target compounds which would have exceeded the calibration range in full strength acquisitions. The results of the dilution analyses were within the calibration range.

SEVERN TRENT SERVICES

STL Burlington

The Pesticide analyses of the matrix spike sample FF005RP00MS exhibited a percent recovery for the target compound 4,4'-DDT which was below the control limits (32-143%) at 22%. The laboratory suspects that this anomaly may be due to the nature of the sample matrix.

The Pesticide analysis of the matrix spike duplicate sample FF005RP00MSD exhibited relative percent difference for 4,4-DDE (76%), 4,4'-DDD (42%) and 4,4'-DDT (56%) that exceeded the control limits (40%). These compounds were detected in several of the field samples of this delivery group.

The Pesticide analyses of the samples in this delivery group were analyzed for Technical Chlordane. The chromatographic pattern in the field samples does not match the low standard (50 PPB) in the calibration in this analytical sequence. The front of the pattern is disproportionately small or non-existent in the field samples and/or does not confirm on the second column. Consequently, this compound was not reported.

The PCB analysis of the field sample identified as WB-010-RP-00 exhibited a percent recovery of the surrogate monitoring compound Tetrachloro-m-xylene on the RTX-35 analytical column that was marginally below the advisory quality control limits (61-115%) at 60%. All other surrogate percent recoveries were within the advisory quality control limits.

The PCB analyses of the field samples FF-006-RP-00, WB-006-RP-00 and WB-007-RP-00 were accomplished at dilutions based upon initial screen data which indicated the presence of Aroclor 1260 which would have exceeded the calibration range in full strength acquisitions. The results of the dilution analyses were within the calibration range.

The PCB analysis of the field sample FF-006-RP-00 exhibited an overlap of quantitation peaks, which may elevate the quantitation of each individual Aroclor. The analysis of this sample detected the presence of Aroclor 1248, 1254 and 1260.

Please note that for all the field samples in this delivery group, the Laboratory omitted one Aroclor 1254 peak on both analytical channels due to an interference peak (DDE). The Aroclor 1260 peak 4 on the RTX-35 analytical column was also omitted in most field samples as it was out of proportion to the pattern in the Aroclor standard.

The Laboratory's standard operating procedure states that there should be no ore than eight hours between continuing calibration standards. Due to a power outage encountered by the Laboratory, the time between the opening check calibration and the next continuing calibration check standard exceeded the eight hour window by four hours and thirty-seven minutes. The results were reported as normal.

Client specific matrix spike/matrix spike duplicate samples were not performed, nor requested with this sample delivery group.

SEVERN TRENT SERVICES

STL Burlington

If there are any questions regarding this submittal, please contact Don C. Dawicki at (802) 655-1203.

This report shall not be reproduced, except in full, without the written approval of the laboratory. This report is sequentially numbered starting with page 0001 and ending with page 1514.

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

Sincerely,

Michael F. Wheeler, Ph.D.
Laboratory Director

MFW/jta
Enclosure

0001-D LAST ALPHA

WESTON
DATA REVIEW CHECKLIST

Reviewer: R. Bentley
Date: 9-10 August 2002
Site: Round Pond - Former Air Force Plant 51
Analytical Lab: Severn Trent Laboratories, Colchester, VT

SDG Number: 88408
Case Number: 22000

Weston Sample Numbers: [21 samples in this SDG]: EB2, FF-001-AW-00, FF-002-AW-00, FF-003-AW-00, FF-004-AW-00, FF-005-AW-00, FF-006-AW-00, FF-007-AW-00, FF-007-RP-00, FF-007-RP-00-DP, FF-008-AW-00, FF-009-AW-00, FF-010-AW-00, FF-010-AW-00-DP, WB-001-AW-00, WB-002-AW-00, WB-003-AW-00, WB-004-AW-00, WB-005-AW-00, WB-007-AW-00, WB-008-AW-00.

Analyte(s): Total cadmium, lead and mercury in fish tissue.

Data Reviewed	Fraction			Comments
	Cadmium, lead, & mercury in tissue			
Chain of Custody	✔			
Log-in Sheet	✔			
Preservation	none			Shipped on ice.
Holding Time	✔			
Trip Blanks	NA			
Instrument/Method Blanks (soils/solids)	NOT			see below
MS/MSD - soil/solid	NA			
MS/MSD - Aqueous	NA			
LCS/LFB	✔			
Blank Spikes (BS/BSD)	NA			
Lab Duplicates	NA			
Field Duplicates	NOT			see below
Surrogate Recoveries	NA			
Percent Solids	✔			

✔ = Data Reviewed
NA = Not Applicable
Note: Data reviewed but not commented on is considered acceptable.

Qualifiers used:

U^{9}	Raise the detection limit for all cadmium results since it was detected in the equipment blank.
J^{10}/UJ^{10}	Estimate all results <3xCRDL for lead since the CRDL criteria were not met.
J^{11}	Estimate all positive results for cadmium since the RPD criteria for field duplicates was not met (>50%).

Notes:

Cadmium was found in the equipment blank at a concentration of 0.037 mg/kg. The detection limit for this analyte has been raised to 0.185 mg/kg.

The CRDL standard for lead yielded recoveries of 124.2% and 122.5%. All samples were affected. All samples <3xCRDL have been estimated.

There were no laboratory duplicate nor MS/MSD samples with this SDG.

There were two field duplicate samples associated with this package. Cadmium yielded an unacceptable RPD for one duplicate pair. All positive cadmium results have been estimated. It is noted, however, that all positive cadmium results have been raised to non-detected due to equipment blank contamination. Therefore, the J^{11} qualifier, although assigned, has not been written on the Form 1's.

Data Reviewer Initials: RBB
Date: 10 Sep. 02

Field Duplicate Results

Round Pond

SDG: 88408

	Sample			
	FF-007-RP-00	FF-007-RP-00-DP	**RPD**	Action
Cd	0.07	0.037	61.68%	J all positive results
Pb	U	U		None
Hg	0.23	0.21	9.09%	None

	Sample			
	FF-010-AW-00	FF-010-AW-00-DP	**RPD**	Action
Cd	0.035	0.034	2.90%	None
Pb	U	U		None
Hg	0.089	0.092	3.31%	None

DATA REVIEW CHECKLIST

e: Round Pond

STL,NT Lab Number: SDG 88408 (Case 22000)

WESTON Sample IDs: FF-007-RP-00, -000P, EB 2, FF-001-AW-00 → 005
WB-001-AW-00 → WB-005, FF-006-AW-00 → 010-AW, -010-AW-DP
WB-007-AW-00 → WB 009

Data Reviewed	Fraction 8082	Fraction 8081	Comments
Chain of Custody	✓	✓	
Log-in Sheet	✓	✓	
Preservation	✓	✓	
Holding Time	✓	✓	
Trip Blanks EB	✓	✓	
Instrument/Method Blanks (soils/solids)	✓	✓	alpha-BHC=55 = 1.1 x 55 no actions since not a BHC in samples
Instrument/Method Blanks (Aqueous)		NA	
MS/MSD - Soil/Solid			
MS/MSD - Aqueous	✓		
LCS/LFB	✓	✓	
Blank Spikes (BS/BSD)			
Lab Duplicates	✓	✓	
Field Duplicates	✓	✓	
Surrogate Recoveries	✓	✓	

✓ = Data reviewed
NA = Not Applicable
Note: Data reviewed but not commented on is considered acceptable.

Qualifiers Used: J'/R' - Estimate results based on % difference between column result criteria. See yellow tabs.

Data Reviewer Initials: MFG

Date: 8/16/02

SEVERN TRENT SERVICES

STL Burlington
208 South Park Drive
Suite 1
Colchester, VT 05446

Tel: 802 655 1203
Fax: 802 655 1248
www.stl-inc.com

July 12, 2002

Chris Kane
Weston Solutions, Inc.
One Wall Street
Manchester, NH 03101-1501

Re: Laboratory Project No. 22000
Case: 22000; SDG: 88408

Dear Mr. Kane:

Enclosed are analytical results for samples received by Severn Trent Laboratories on June 14, 2002. Laboratory numbers have been assigned and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 06/14/02 ETR No. 88408		
491183	FF-007-RP-00	06/11/02	Tissue
491184	FF-007-RP-00	06/11/02	Tissue
491185	FF-007-RP-00-DP	06/11/02	Tissue
491186	FF-007-RP-00-DP	06/11/02	Tissue
491187	EB2		Tissue
	Received: 06/14/02 ETR No. 88423		
491289	FF-001-AW-00	06/12/02	Tissue
491290	FF-001-AW-00	06/12/02	Tissue
491291	FF-002-AW-00	06/12/02	Tissue
491292	FF-002-AW-00	06/12/02	Tissue
491293	FF-003-AW-00	06/12/02	Tissue
491294	FF-003-AW-00	06/12/02	Tissue
491295	FF-004-AW-00	06/12/02	Tissue
491296	FF-004-AW-00	06/12/02	Tissue
491297	FF-005-AW-00	06/12/02	Tissue
491298	FF-005-AW-00	06/12/02	Tissue

SEVERN TRENT SERVICES

STL Burlington

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 06/14/02 ETR No. 88423 (Cont.)		
491299	WB-001-AW-00	06/12/02	Tissue
491300	WB-001-AW-00	06/12/02	Tissue
491301	WB-002-AW-00	06/12/02	Tissue
491302	WB-002-AW-00	06/12/02	Tissue
491303	WB-003-AW-00	06/12/02	Tissue
491304	WB-003-AW-00	06/12/02	Tissue
491305	WB-004-AW-00	06/12/02	Tissue
491306	WB-004-AW-00	06/12/02	Tissue
491307	WB-005-AW-00	06/12/02	Tissue
491308	WB-005-AW-00	06/12/02	Tissue
491309	FF-006-AW-00	06/12/02	Tissue
491310	FF-006-AW-00	06/12/02	Tissue
491311	FF-007-AW-00	06/12/02	Tissue
491312	FF-007-AW-00	06/12/02	Tissue
491313	FF-008-AW-00	06/12/02	Tissue
491314	FF-008-AW-00	06/12/02	Tissue
491315	FF-009-AW-00	06/12/02	Tissue
491316	FF-009-AW-00	06/12/02	Tissue
491317	FF-010-AW-00	06/12/02	Tissue
491318	FF-010-AW-00	06/12/02	Tissue
491319	FF-010-AW-00-DP	06/12/02	Tissue
491320	FF-010-AW-00-DP	06/12/02	Tissue
491321	WB-007-AW-00	06/12/02	Tissue
491322	WB-007-AW-00	06/12/02	Tissue
491323	WB-008-AW-00	06/12/02	Tissue
491324	WB-008-AW-00	06/12/02	Tissue

Documentation that identifies the condition of the samples at the time of sample receipt and the issues arising at the time of sample log-in is included in the Sample Handling section of this submittal.

In order to accommodate field length limitations in processing the data summary forms, the laboratory did, in certain instances, abbreviate the sample identifiers.

The Pesticide analyses of the field samples FF-007-RP-00, FF-010-AW-00, FF007RP00-DP, WB-002-AW-00, WB-003-AW-00 and WB-005-AW-00 were accomplished at dilutions based upon initial screen data which indicated the presence of select target compounds which would have exceeded the calibration range in full strength acquisitions. The results of the dilution analyses were within the calibration range.

SEVERN TRENT SERVICES

STL Burlington

The Pesticide analyses of the samples in this delivery group exhibited interference with delta-BHC and Heptachlor on the RTX-CLPII analytical column. Consequently, the associated sample results have been reported with a "P" flag. The lower value was used for reporting purposes.

The original PCB analysis of the field sample identified as WB-008-AW-00 exhibited surrogate percent recoveries that were outside the quality control limits. This sample was subsequently re-extracted within the method prescribed holding time and yielded surrogate percent recoveries that were within the quality control limits. Only the results from the re-extracted data have been presented in this case submittal.

The PCB analyses of the biota samples in this delivery group exhibited the presence of Aroclor peaks, which did not exactly match the patterns of the Aroclors in the calibration standards. In each case, the patterns which most closely resembled the calibration standards were chosen for quantitation. It is possible that the variance could be attributed to degradation of the Aroclor in the environment or differences resulting from different manufacturers of the actual product.

Client specific matrix spike/matrix spike duplicate samples were not performed, nor requested with this sample delivery group.

If there are any questions regarding this submittal, please contact Don C. Dawicki at (802) 655-1203.

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

Sincerely,

Michael F. Wheeler, Ph.D.
Laboratory Director

MFW/jta
Enclosure

WESTON
DATA REVIEW CHECKLIST

Reviewer: R. Bentley
Date: 11-12 August 2002
Site: Round Pond - Former Air Force Plant 51
Analytical Lab: Severn Trent Laboratories, Colchester, VT

SDG Number: 88418
Case Number: 22000

Weston Sample Numbers: [15 samples in this SDG]: EB-001, EB-002, SD-001-AW-1-FS, SD-001-BP-1-FS, SD-001-RCD-1-FS, SD-001-RCU-1-FS, SD-001-RPD-1-FS, SD-001-RPU-1-FS, SD-002-AW-1-FS, SD-002-RCD-1-FS, SD-001-RCU-1-FS, SD-003-AW-1-DP, SD-003-AW-1-FS, SD-004-AW-1-FS, SD-005-AW-1-FS.

Analyte(s): Total metals in soil (mg/kg).

Data Reviewed	Fraction			Comments
	Total metals in soil			
Chain of Custody	✔			
Log-in Sheet	✔			
Preservation	none			Shipped on ice.
Holding Time	✔			
Trip Blanks	NA			
Instrument/Method Blanks (soils/solids)	NOT			see below
MS/MSD - soil/solid	NOT			see below
MS/MSD - Aqueous	NA			
LCS/LFB	✔			
Blank Spikes (BS/BSD)	NA			
Lab Duplicates	✔			
Field Duplicates	NOT			see below
Surrogate Recoveries	NA			
Percent Solids	✔			

✔ = Data Reviewed
NA = Not Applicable
Note: Data reviewed but not commented on is considered acceptable.

Qualifiers used: J5/UJ5-Estimate results due to percent solids/moist less than 30%

U[12] Raise the detection limit for all cadmium and lead results since they were detected in the equipment blank.

J[13]/UJ[13] Estimate all results <3xCRDL for aluminum, iron and lead and all samples except SD-001-AW-1-FS, SD-002-RCU-1-FS and SD-001-BP-1-FS for arsenic since the CRDL criteria were not met.

J[14]/UJ[14] Estimate all positive and non-detected results for antimony and selenium since the matrix spike criteria was not met.

J[15] Estimate all positive results for sodium and cyanide since the RPD criteria for field duplicates was not met.

J[16] The serial dilution criteria were not met for zinc. All positive results have been estimated.

Notes:

Cadmium and lead were found in the equipment blanks at concentrations of 0.046 mg/kg and 0.14 mg/kg, respectively. The detection limits for these analytes have been raised to 0.23 mg/kg and 0.70 mg/kg, respectively.

The CRDL standards for mercury yielded recoveries of 75%. The CRDL standards for aluminum were 120.9% and 147.5%, for arsenic they were 86.8% and 76.0%. All aluminum samples were affected, and all samples except SD-001-AW-1-FS, SD-002-RCU-1-FS and SD-001-BP-1-FS were affected for arsenic. Iron and lead yielded recoveries of 127.9% & 125.3%, and 139.0% & 130.0%, respectively. All samples were affected.

Antimony and selenium did not meet the criteria for the matrix spike sample (53.5% and 65.6%, respectively). All positive and non-detected results have been estimated.

There was one field duplicate sample associated with this package. Results were unacceptable for sodium and cyanide. All positive results have been estimated.

The serial dilution criteria were not met for zinc. All positive results have been estimated.

Data Reviewer Initials: RFB

Date: 12 Aug. 02

Round Pond Blank Data

SDG: 88418

Soil Blank Concentrations

	CRDL	IDL	ICB	Prep. Blank	1	2	CCB 3	4	5	6		Equip. Blank	Equip. Blank	Min. water Conc.	Max. water Conc.	Soil ACTION LEVEL (mg/kg)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			
Al	200	19.7			9.08									9.08	9.08	45.4
Sb	60	1.6			-1.46	-0.86	-1.3	-1.38						-1.46	-0.86	
As	10	1.5	-0.8	-0.479	-0.84		-0.76		-0.56					-0.84	-0.479	
Ba	200	5.3														
Be	5	0.1	0.04	0.012										0.012	0.04	0.2
B	100	6.7														
Cd	5	0.3										0.064		0.064	0.064	0.32
Ca	5000	0				62.68								62.68	62.68	313.4
Cr	10	0.8		0.106										0.106	0.106	0.53
Co	50	1.5														
Cu	25	1.8	-0.4			-0.64								-0.64	-0.4	
Fe	100	23.4										6.18		6.18	6.18	30.9
Pb	3	0.9		0.192								0.44	0.3	0.192	0.44	2.2
Mg	5000	129.3														
Mn	15	0.5														
Hg	10	0.1														
Ni	40	1.3														
K	5000	193.9	108.12	45.92	106.54	102.46	104.04	102.84	111.62			106.4	95.2	45.92	111.62	558.1
Se	5	2.6														
Si	100	6.1														
Ag	10	1.5														
Na	5000	653.5														
Tl	10	1.9														
Sn	20	1.5														
V	50	1.8														
Zn	20	1.1	0.24	0.218								19.14	0.38	0.218	19.14	95.7
CN	10	10														

* = Analyte was detected at negative concentrations in the blanks. Concentrations found were <2x the negative IDL. No action taken.

Round Pond Field Duplicate Data

SDG: 88418

	SD-003-AW-1-00	SD-003-AW-1-DP		
Al	8420	9050	7.21%	
Sb	5	6	18.18%	
As	6.5	5.7	13.11%	
Ba	85.2	83.8	1.66%	
Be	0.45	0.5	10.53%	
Cd	3.6	4.5	22.22%	
Ca	35300	33700	4.64%	
Cr	67.6	70.3	3.92%	
Co	7.4	7.8	5.26%	
Cu	433	578	28.68%	
Fe	29300	31400	6.92%	
Pb	762	989	25.93%	
Mg	19700	19700	0.00%	
Mn	465	367	23.56%	
Hg	1.3	1.3	0.00%	
Ni	48.7	59.4	19.80%	
K	2100	2210	5.10%	
Se	2.2	2.1	4.65%	
Ag	3	3.6	18.18%	
Na	456	796	54.31%	J all positives
Tl	U	U		
V	36.8	44.2	18.27%	
Zn	854	1040	19.64%	
CN	U	2.2	200.00%	J all positives

DATA REVIEW CHECKLIST

e: Round Pond

STL Lab Number: 88418

ESTON Sample IDs: SD-001-RPD-1FS, SD-001-RCD-1FS, -002, SD-001-AW-1FS, -002-RCU-1-FS, SD-001-RCU-1-FS, TRB-001, SD-002-AW-1-FS, -003, -004, -005, D-003-AW-1-FSRep, SD-001-BP-1-FS, TRB-002, -003, FB-001-002, TRB-005, -006

Data Reviewed	Fraction 8260	8270			8310		Comments
ain of Custody							
g-in Sheet							
eservation							
olding Time							
rip Blanks							
strument/Method lanks (soils/solids)	(U6) Qualify MeCl2 + acetone as undetected since it was detected in the blank				(U7) Qualify 2-butanone as undetected since it was detected in MeOH blank		
strument/Method la (Aqueous)							
S/MSD - Soil/Solid	003AW-1FS MS/MSD several compds out but no action since all surrogate recovery to the				(U8) Qualify napthalene as undetected since it was detected in blank		
S/MSD - Aqueous							
CS/LFB							
lank Spikes (BS/BSD)							
ab Duplicates	LCS → 1,2-Dibromoethane slightly below QC in MXG 3LCS no action; Dichlorodifluoromethane slightly below QC - no action						
ield Duplicates							
urrogate Recoveries							

Internal stds - failed in almost all samples → note yellow stickies

= Data reviewed

A = Not Applicable

ote: Data reviewed but not commented on is considered acceptable.

ualifiers Used: indicating which sample to report (original or reanalysis) based on surrogate and internal std recoveries.

Data Reviewer Initials: DFB

Date: 8/13/02

water VBLKA5
6/20
acetone 3.7J
1,2,4 TCB .098J
Hexachlorobutadiene 1.1J
Napthalene 1.8J
1,2,3 TCB 1.4J

MeOH BLK F6
soil
6/20
2-Butanone 160J

water VBLKA8
6/20
Acetone 3.4J
1,2,4 TCB ~~1.6J~~ 1.1J
Hexachlorobutadiene 1.1J
Napthalene 1.8J
1,2,3 TCB 1.6J

soil VBLK22
6/18
Napthalene 1.3J

VBLK25
6/18 soil
acetone 3.5 ✓
$MeCl_2$ 1.8
1,2,4 TCB 1.0
Napthalene 2.2
1,2,3 TCB 0.99J

~~VB~~

VBLK3 soil
6/21
acetone 5.4
Napthalene 1.3
1,2,3 TCB ~~1.1~~ 1.1

VBLKB8
6/24 soil
chloromethane 2.2
acetone 2.4
$MeCl_2$ 1.5
Napthalene 1.3

DATA REVIEW CHECKLIST

Site: Round Pond
STL Lab Number: 88418
WESTON Sample IDs: _____

Data Reviewed	Fraction: 8270			1664A	8015	TOC = percent moisture Comments
Chain of Custody	✓			✓	✓	✓
Log-in Sheet	✓			✓	✓	✓
Preservation						
Holding Time	✓			✓	✓	
Trip Blanks	NA					
Instrument/Method Blanks (soils/solids)	U9 bis(2-ethylhexyl) phthalate 23 x 10 = 230 ug/kg			✓	✓	✓
Instrument/Method Blanks (Aqueous)						
MS/MSD - Soil/Solid	Several cmpds outside QC limits → no action			✓	J3 Estimate 1260 result since MS/MSD criteria was not met	
MS/MSD - Aqueous						
LCS/LFB	Benzo(a)pyrene recovery above QC limits in both LCS → no action				✓	
Blank Spikes (BS/BSD)	Since sample results less than CRQL already estimated					
Lab Duplicates	A few cmpds outside QC limit in one of 2 LCS - no action since met in 2nd LCS					
Field Duplicates						
Surrogate Recoveries	J4/UJ4			✓	✓	

Calibration — Benzidine initial + continuing calib outside QC range → estimate all results J17/UJ17

✓ = Data reviewed
NA = Not Applicable
Note: Data reviewed but not commented on is considered acceptable.

Qualifiers Used:

U9 - Qualify bis(2-ethylhexyl) phthalate as undetected since it was detected in the method blank.

J4/UJ4 - Surrogate recoveries outside QC limits

J18/UJ18 → Estimate all results since internal stds did not meet QC criteria

Data Reviewer Initials: DKO
Date: 8/8+8/9

SEVERN TRENT SERVICES

STL Burlington
208 South Park Drive
Suite 1
Colchester, VT 05446

Tel: 802 655 1203
Fax: 802 655 1248
www.stl-inc.com

July 17, 2002

Chris Kane
Weston Solutions, Inc.
One Wall Street
Manchester, NH 03101-1501

Re: Laboratory Project No. 22000
Case: 22000; SDG: 88418

Dear Mr. Kane:

Enclosed are analytical results for samples received by Severn Trent Laboratories on June 14, and 15, 2002. Laboratory numbers have been assigned and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 06/14/02 ETR No. 88418		
491219	SD-001-RPD-1-FS	06/13/02	Sediment
491220	SD-001-RPU-1-FS	06/13/02	Sediment
491221	SD-001-RCD-1-FS	06/13/02	Sediment
491222	SD-002-RCD-1-FS	06/13/02	Sediment
491223	SD-001-AW-1-FS	06/13/02	Sediment
491224	SD-002-RCU-1-FS	06/13/02	Sediment
491225	SD-001-RCU-1-FS	06/13/02	Sediment
491226	TRB-001	06/05/02	Water
491227	SD-002-AW-1-FS	06/13/02	Sediment
491228	SD-003-AW-1-FS	06/13/02	Sediment
491228MS	SD-003-AW-1-FSMS	06/13/02	Sediment
491228MD	SD-003-AW-1-FSMSD	06/13/02	Sediment
491228DP	SD-003-AW-1-FSREP	06/13/02	Sediment
491229	SD-004-AW-1-FS	06/13/02	Sediment
491230	SD-005-AW-1-FS	06/13/02	Sediment
491231	SD-003-AW-1-DP	06/13/02	Sediment
491232	SD-001-BP-1-FS	06/13/02	Sediment
491233	TRB-002	06/05/02	Water
491234	TRB-003	06/05/02	Water

SEVERN TRENT SERVICES

STL Burlington

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 06/15/02 ETR No. 88429		
491363	EB-001	06/14/02	Water
491364	EB-002	06/14/02	Water
491365	TRP-005	06/05/02	Water
491374	TRP-006		Water

Documentation that identifies the condition of the samples at the time of sample receipt and the issues arising at the time of sample log-in is included in the Sample Handling section of this submittal.

Please note that due to software limitations the sample identifications have been truncated on the laboratory results. The entire sample identification will appear in the electronic deliverable.

EPA SW846 Method 8260B Volatiles:
The volatile organic analyses of the method blank samples identified as VBLKA5, VBBLKA8, VBLKZ2 and VBLKB8 exhibited the presence of select target compounds. However, these compounds were not detected above the method reporting limits. All data have been flagged appropriately with a "B".

The volatile organic analyses of the method blank samples identified as VBLKB3 exhibited the presence of the target compound Acetone above the method reporting limit (5.0µg/kg) at 5.4 µg/kg. This compound was detected in the field sample SD-003-AW-1-FS and associated matrix spike and matrix spike duplicate, which were analyzed in that analytical window. The volatile organic analyses of this method blank sample also exhibited the presence of select target compounds. However, these compounds were not detected above the method reporting limits. All data have been flagged appropriately with a "B".

The volatile organic analyses of the method blank sample identified as MEOHBLKF6 exhibited the presence of 2-Butanone. However, this compound was not detected above the method reporting limits. All data have been flagged appropriately with a "B".

The volatile organic analyses of several field samples in this delivery group exhibited surrogate percent recoveries that were outside the quality control limits. Those samples were subsequently re-analyzed yielding similar surrogate percent recoveries. Both sets of data have been included in this case submittal. All exceedences can be found on the associated Form IIs in this case submittal.

Please note that the field samples identified as SD-001-RPD-1-FS, SD-001-RPU-1-FS and SD-003-AW-1-FS exhibited the presence of Acetone above the calibrated range of the instrument. These samples were not re-analyzed at a medium level analysis since the Laboratory expected the resulting Acetone concentrations to be below the method reporting limit.

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STL Burlington

EPA SW846 Method 8260B Volatiles (cont.):
The volatile organic analysis of the field sample SD-003-AW-1-FS was originally analyzed as a medium concentration soil based upon initial screen data which indicated the presence of select target compounds. The analysis of this sample did not confirm the presence of the compounds from the screen data. This sample was subsequently re-analyzed as a low concentration soil. The associated matrix spike and matrix spike duplicate samples were analyzed outside the 12 hour analytical window. These samples could not be re-analyzed due to insufficient sample volume remaining. The parent sample was re-analyzed due to internal standard responses and surrogate percent recoveries that were outside the control criteria. The analyses of the matrix spike and matrix spike duplicate samples yielded results from the low concentration soil determination that were outside the control limits for several target compounds due to matrix related interference. Consequently, several target compound exhibited relative percent difference that were also outside the control criteria. The volatile organic results of the matrix spike and matrix spike duplicate samples that were analyzed at medium level were within the control limits and are included in the Sample Preparation Section of this case submittal.

The volatile organic analyses of the blank spike sample NTMM LCS, and associated blank spike duplicate samples exhibited the presence of Sulfur Dioxide interference, which elevated the percent recoveries of select early eluting gases. The Sulfur Dioxide interference from the samples in the NTML analytical sequence exhibited over into the NTMM analytical sequence. All exceedences can be found on the associated Form IIIs in this case submittal.

Please note that the analyses of in the blank spike samples NTMM LCS, MXGK LCS, NTML LCS and NTMM LCS exhibited elevated percent recoveries of the target compound Methyl Iodide resulting in a percent drift in select continuing calibration standards in these analytical sequences. Methyl Iodide was not detected in the field samples of this delivery group. All exceedences can be found on the associated Form IIIs in this case submittal.

The responses for the target compounds Isobutyl Alcohol, Chloromethane and 1,4-Dioxane in select initial calibration check acquisitions exceeded the relative standard deviation criterion. These compounds were not detected in the samples of this delivery group.

The responses for the target compounds1,4-Dioxane,Tetrachloroethene, Hexachlorobutadiene, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene, Bromomethane, Methyl Iodide, Isobutyl Alcohol, Chloromethane, Acetone, Methylene Chloride, Acrylonitrile, Methyl-t-Butyl Ether, Methyl Methacrylate, cis-1,4-Dichloro-2-butene and trans-1,4-Dichloro-2-butene in select continuing calibration check acquisitions exceeded the maximum percent difference criterion (20%). Acetone was detected in 001AW1FS, 001RCD1FS, 001RCU1FS, 002AW1FS, 002RCD1FS, 002RCU1FS and 004AW1FS. Chloromethane and Bromomethane were detected in 003AW1FS.

The analyses of several field samples in this delivery group exhibited internal standard area responses that were outside the control criteria. These samples were subsequently re-analyzed, yielding generally similar responses.

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STL Burlington

EPA SW846 Method 8260B Volatiles (cont.):
The volatile organic analysis of the sodium bisulfate blank -F4 which was prepared with the soil samples is included in the Sample Preparation Section of this case submittal.

Please note that manual integrations were performed for the processing of volatile organic data files. Documentation of these integrations can be found in supporting documentation section of the data package.

EPA SW846 Method 8270C Semivolatiles:
The original semivolatile organic analyses of the sample SD005AW1FS exhibited the presence of select target compounds that exceeded the calibration range of the instrument. This sample was subsequently re-analyzed at an appropriate dilution. The results of the dilution analysis yielded results that were within the calibration range.

The semivolatile organic analyses of the samples SD003AW1FS, SD005AW1FS and SD001AW1FS exhibited percent recoveries of select surrogate monitoring compounds that exceeded the quality control limits. These samples were subsequently re-analyzed yielding surrogate percent recoveries that were within the control limits.

The semivolatile organic analyses of the matrix spike sample 3AW1FREMS exhibited zero percent recoveries of Benzidine, which is regularly observed in Method 8270C. Zero percent recoveries were reported for 2,4-Ditrophenol, 4,6-Dinitro-2-Methylphenol and 3,3'-Dichlorobenzidine that were replicated in the matrix spike duplicate sample. The analysis of this blank spike sample and duplicate exhibited percent recoveries of several target compounds that were outside the control limits. These exceedences can be found on the associated Form IIIs.

The semivolatile organic analyses of the blank spike sample, V1LCS, exhibited zero percent recovery of Benzidine, which is regularly observed in Method 8270C. The analysis of this blank spike sample exhibited a percent recovery of Benzo (a) pyrene that was marginally above the control limits.

The analyses of several field samples in this delivery group exhibited internal standard area responses that were outside the control criteria. These samples were subsequently re-analyzed, yielding generally similar responses.

Please note that manual integrations were performed for the processing of semivolatile organic data files. Documentation of these integrations can be found in supporting documentation section of the data package.

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EPA SW846 Method 8081A Pesticides:
The Laboratory notes that the field samples in this delivery group exhibited high percent moisture content. Consequently, the samples SD-001-RPD-1-FS, SD001-RPU-1-FS, SD-001-RCD-1-FS, SD-002-RCD-1-FS, SD-001-AW-1-FS, SD-001-RCU-1-FS, SD-002-AW-1-FS, SD-003-AW-1-FSSD-003-AW-1-DP and SD-001-BP-1-FS all required an additional drying and subsequent filtration step using sodium sulfate and 0.45 µm filters in the organic preparation procedure due to the high percent moisture in these samples.

The pesticide analyses of the field samples D003AW1FS, SD003AW-1-DUP, and matrix spike and duplicate samples D003AW1FSMS and D003AW1FSMSD exhibited percent recoveries of the surrogate monitoring compound Decachlorobiphenyl that exceeded the advisory quality control limits. The Laboratory suspects the presence of Aroclors in the late eluting region of the chromatograms, which may account for the elevated Decachlorobiphenyl recoveries.

The pesticide analyses of the matrix spike sample D003AW1FSMS and matrix spike duplicate sample D003AW1FSMSD exhibited percent recoveries of several target compounds were below the control limits. The relative percent difference for beta-BHC (67%), Aldrin (78%), Dieldrin 46%) and 4,4'-DDT(65%) exceeded the control limits (40%). The Laboratory suspects that these anomalies may be due to the nature of the sample matrix.

Select pesticide continuing calibration standards exhibited percent difference relative to the nominal concentrations that exceeded the established 15 percent difference criteria for the target compounds 4,4'-DDT and Methoxychlor. The target compound 4,4'-DDT was detected only in the field sample SD004AW-1-FS of this delivery group.

EPA SW846 Method 8082 Polychlorinated Biphenyls (PCBs):
The PCB analysis of the matrix spike duplicate sample D003AW1FSMSD yielded zero percent recovery of Aroclor-1260. Consequently, the relative percent difference exceeded the control limits (30%) at 200%. The Laboratory suspects that this anomaly may be due to the nature of the sample matrix. The percent recoveries of the associated matrix spike and blank spike recoveries were within the control limits.

The PCB analyses of the samples in this delivery group exhibited the presence of Aroclor 1260 peaks, which did not exactly match the patterns of the Aroclors in the calibration standards. In each case, the patterns which most closely resembled the calibration standards were chosen for quantitation. It is possible that the variance could be attributed to degradation of the Aroclor in the environment or differences resulting from different manufacturers of the actual product.

SW846 6010B/7471A Metals:
The metals analysis of the sample SD-003-AW-1-FSSMS exhibited percent recoveries for Antimony (53.5%) and Selenium (65.6%) that were below the control criteria (75%-125%). The Laboratory suspects this anomaly may be due to the nature of the sample matrix.

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SW846 6010B/7471A Metals (cont.):
A metals post spike was performed on the matrix spike sample SD-003-AW-1-FSSMS and the results of this analysis exhibited spike recoveries for Lead (-110%) and Selenium (147.5%) were outside the control limits (75%01125%).

The analysis of the sample EB-001 was performed by serial dilution for Zinc. The Laboratory suspects this anomaly may be due to the nature of the sample matrix.

SW846 6010B/7471A Metals:
Please note that due to varied replicates in the raw data for Selenium which exceeded the Relative Standard Deviation criterion (<20% RSD), the result with the lowest percent Relative Standard Deviation was reported.

Total Organic Carbon (TOC) by Lloyd Kahn Method:
Please note that the original TOC analyses of samples SD-002-RCU-1-FS and SD-005-AW-1-FS that were performed on 6/20/02 yielded elevated Percent Relative Standard Deviation (%RSD) between replicates. These samples were re-analyzed on 6/21/02/02 yielding %RSD that were also elevated. The results from the original analyses have been presented in this case submittal. The Laboratory suspects that this anomaly is due to sample non-homogeneity.

If there are any questions regarding this submittal, please contact Don C. Dawicki at (802) 655-1203.

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

Sincerely,

Michael F. Wheeler, Ph.D.
Laboratory Director

Enclosure

WESTON
DATA REVIEW CHECKLIST

Reviewer: R. Bentley
Date: 10-11 August 2002
Site: Round Pond - Former Air Force Plant 51
Analytical Lab: Severn Trent Laboratories, Colchester, VT

SDG Number: 88424
Case Number: 22000

Weston Sample Numbers: [17 samples in this SDG]: EB3, FF-001-BP-00, FF-001-RCU-00, FF-002-BP-00, FF-002-RCU-00, FF-003-RCU-00, FF-004-RCU-00, WB-001-BP-00, WB-001-RCU-00, WB-002-BP-00, WB-002-RCU-00, WB-003-RCU-00, WB-004-RCU-00, WB-006-AW-00, WB-006-AW-00-DUP, WB-009-AW-00, WB-010-AW-00.

Analyte(s): Total cadmium, lead and mercury in fish tissue.

Data Reviewed	Fraction			Comments
	Cadmium, lead, & mercury in tissue			
Chain of Custody	✔			
Log-in Sheet	✔			
Preservation	none			Shipped on ice.
Holding Time	✔			
Trip Blanks	NA			
Instrument/Method Blanks (soils/solids)	NOT			see below
MS/MSD - soil/solid	NA			
MS/MSD - Aqueous	NA			
LCS/LFB	✔			
Blank Spikes (BS/BSD)	NA			
Lab Duplicates	NA			
Field Duplicates	✔			
Surrogate Recoveries	NA			
Percent Solids	✔			

✔ = Data Reviewed
NA = Not Applicable

Note: Data reviewed but not commented on is considered acceptable.

Qualifiers used:

U^{12}	Raise the detection limit for all cadmium and lead results since they were detected in the equipment blank.

Notes:

Cadmium and lead were found in the equipment blanks at concentrations of 0.046 mg/kg and 0.14 mg/kg, respectively. The detection limits for these analytes have been raised to 0.23 mg/kg and 0.70 mg/kg, respectively.

There was one field duplicate sample associated with this package. Results were found to be acceptable.

Data Reviewer Initials: KLB

Date: 11 Aug. 02

DATA REVIEW CHECKLIST

Site: Round Pond

STL Lab Number: 88424

WESTON Sample IDs: WB-006-AW-00, 009, 010 FF-001-RCU-00, -002, -003, -004, EB3; WB-001-RCU-00, -002-003, -004, FF-001-BP-002 WB-001-002, -003

Data Reviewed	Fraction: 8088	Fraction: 8081	Comments
Chain of Custody	✓	✓	
Log-in Sheet	✓	✓	
Preservation	✓	✓	
Holding Time	✓	✓	
Trip Blanks EB	✓	✓	
Instrument/Method Blanks (soils/solids)	✓	✓	
Instrument/Method Blanks (Aqueous)			
MS/MSD - Soil/Solid	✓	(J3) Estimate in sample WB001BP00 for 4,4'-DDE and gamma-Chlordane since MS/MSD criteria was not met.	
MS/MSD - Aqueous			
LCS/LFB	✓		
Blank Spikes (BS/BSD)			
Lab Duplicates			
Field Duplicates	(J2)		
Surrogate Recoveries	TCMX did not meet recov criteria in WB001BP00 → no action since DCB met	✓	

✓ = Data reviewed
NA = Not Applicable
Note: Data reviewed but not commented on is considered acceptable.

Qualifiers Used:

(J2) Estimate the pos 1254 & 1260 results in samples WB-006-AW-00 & -00DUP since field duplicate criteria was not met.

Sample Quantitation

(J1) FF003-RCU-00
FF004-RCU-00
WB-006-AW-00 & -00DUP
PCBs

Data Reviewer Initials: CB

Date: 8/6/02

SEVERN TRENT SERVICES

STL Burlington
208 South Park Drive
Suite 1
Colchester, VT 05446

Tel: 802 655 1203
Fax: 802 655 1248
www.stl-inc.com

July 18, 2002

Chris Kane
Weston Solutions, Inc.
One Wall Street
Manchester, NH 03101-1501

Re: Laboratory Project No. 22000
Case: 22000; SDG: 88424

Dear Mr. Kane:

Enclosed are analytical results for samples received by Severn Trent Laboratories on June 14 and 15, 2002. Laboratory numbers have been assigned and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 06/14/02 ETR No. 88424		
491325	WB-006-AW-00	06/12/02	Tissue
491326	WB-006-AW-00	06/12/02	Tissue
491327	WB-006-AW-00-DUP	06/12/02	Tissue
491328	WB-009-AW-00	06/12/02	Tissue
491329	WB-009-AW-00	06/12/02	Tissue
491330	WB-010-AW-00	06/12/02	Tissue
491331	WB-010-AW-00	06/12/02	Tissue
491332	FF-001-RCU-00	06/12/02	Tissue
491333	FF-001-RCU-00	06/12/02	Tissue
491334	FF-002-RCU-00	06/12/02	Tissue
491335	FF-002-RCU-00	06/12/02	Tissue
491336	FF-003-RCU-00	06/12/02	Tissue
491337	FF-003-RCU-00	06/12/02	Tissue
491338	FF-004-RCU-00	06/12/02	Tissue
491339	FF-004-RCU-00	06/12/02	Tissue
491340	EB3		Water

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 06/15/02 ETR No. 88426		
491345	WB-001-RCU-00	06/14/02	Tissue
491346	WB-001-RCU-00	06/14/02	Tissue
491347	WB-002-RCU-00	06/14/02	Tissue

SEVERN TRENT SERVICES

STL Burlington

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 06/15/02 ETR No. 88426 cont.		
491348	WB-002-RCU-00	06/14/02	Tissue
491349	WB-003-RCU-00	06/12/02	Tissue
491350	WB-003-RCU-00	06/12/02	Tissue
491351	WB-004-RCU-00	06/13/02	Tissue
491352	WB-004-RCU-00	06/13/02	Tissue
491353	FF-001-BP-00	06/13/02	Tissue
491354	FF-001-BP-00	06/13/02	Tissue
491355	FF-002-BP-00	06/13/02	Tissue
491356	FF-002-BP-00	06/13/02	Tissue
491357	WB-001-BP-00	06/13/02	Tissue
491358	WB-001-BP-00	06/13/02	Tissue
491358MS	WB-001-BP-00MS	06/13/02	Tissue
491358MD	WB-001-BP-00MSD	06/13/02	Tissue
491358DP	WB-001-BP-00REP	06/13/02	Tissue
491359	WB-002-BP-00	06/13/02	Tissue
491360	WB-002-BP-00	06/13/02	Tissue
491361	WB-003-BP-00	06/13/02	Tissue
491362	WB-003-BP-00	06/13/02	Tissue

Documentation that identifies the condition of the samples at the time of sample receipt and the issues arising at the time of sample log-in is included in the Sample Handling section of this submittal.

Please note that due to software limitations some sample identifications have been truncated on the hard copy laboratory results. The entire sample identification will appear in the electronic deliverable.

The tissue samples were prepared and homogenized for analysis, and after homogenization the tissue was maintained in frozen storage at -20 °C. The results for the tissue samples are reported on a wet weight basis. In preparing the tissues, an equipment bank was generated in order to characterize the homogenization process. This blank, identified as "EB3", was carried through each of the analytical processes, using weighed amounts similar to the tissue amounts that were analyzed. The results have been reported on the same weight/weight basis as the tissue samples and the matrix for this sample as identified in the analytical report reflects this treatment.

SW846 6010B Metals:
There were no exceptions to laboratory quality control criteria noted during the analysis of samples in this delivery group.

SEVERN TRENT SERVICES

STL Burlington

EPA SW846 Method 8082 PCBs:
Please note that due to software limitations, the matrices are identified on the analytical reports as soils versus tissues.

The analysis of the laboratory fortified aliquot of sample WB-001-BP-00 was performed at a 2-fold dilution due to the presence of target analytes above the calibration range of the instrument.

The recoveries of the surrogate standards tetrachloro-m-xylene (56%) and decachlorobiphenyl (49%) from the sample identified as WB-001-BP-00 were just below the lower limit of their control ranges (61% and 52%, respectively). Recovery of the surrogates from the laboratory fortified aliquots of this sample (WB-001-BP-00MS and WB-001-BP-00MSD) proved acceptable.

EPA SW846 Method 8081A Pesticides:
Please note that due to software limitations, the matrices are identified on the analytical reports as soils versus tissues.

The analysis of the following samples was performed at a dilution in order to provide quantification of all target analytes within the calibrated range of instrument response: FF-003-RCU-00, WB-003-RCU-00, WB-004-RCU-00, FF-001-BP-00, FF-002-BP-00, WB-001-BP-00 (plus MS and MSD), and WB-002-BP-00.

The recoveries of several compounds from the laboratory fortified aliquot of sample WB-001-BP-00 were outside of their respective control ranges. All were, however, amply recovered from the associated laboratory control sample.

If there are any questions regarding this submittal, please contact Don C. Dawicki at (802) 655-1203.

This report shall not be reproduced, except in full, without the written approval of the laboratory. This report is sequentially numbered starting with page 0001 and ending with page 1417.

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

Sincerely,

Michael F. Wheeler, Ph.D.
Laboratory Director

MFW/jta/jmm
Enclosure

SEVERN TRENT SERVICES

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Metals Qualifiers

E (furnace) -	Analytical spike recovery is less than 40%. An explanatory note is included on the specific form to which applies.
E (ICP) -	The reported value is estimated because of the presence of interference.
M-	Duplicate injection precision is not met.
N-	Matrix spiked sample recovery not within control limits.
S-	The reported value was determined by the Method of Standards Additions.
+-	Correlation coefficient for the MSA is less than 0.995.
W -	Post digestion for furnace AA analysis is out of control limits (85-115%), while sample concentration is less than 50% of spike concentration.
*-	Duplicate analysis not within control limits.

Concentration Qualifiers

B -	Entered if the report is less than the Contract Required Detection Limit (CRDL) but greater than the Instrument Detection Limit (IDL).
U-	Entered if the analyte was analyzed for but not detected, less than IDL.

Method Qualifiers

P-	for ICP
F-	for Furnace AA
CV-	for Manual Cold Vapor AA
AS-	for Semi-automated Spectrophotometric
NR-	if the analyte is not required to be analyzed

SEVERN TRENT SERVICES

STL Burlington

The following Qualifiers may be used when reporting any Organic parameters analyzed by Gas Chromatography/mass Spectometry (GCMS). Any additional qualifiers used in the reports will be described in the case narrative. These flags are based on the EPA Contract Laboratory Program statement of work.

GC/MS Qualifiers

A-	The reported Tentatively Identified Compound (TIC) is a suspected Aldol-condensation product.
B-	The reported analyte was detected in the associated method blank as well as the sample.
D -	This flag identifies all compounds identified in an analysis at a secondary dilution factor. This flag alerts data users that any discrepancies between the concentrations reported for the dilutions may be due to dilution of the sample or extract. It additionally indicates that spike recoveries may have been diluted below quantifiable levels.
E-	Compound quantitation is above the instrument's calibration range for this analysis.
J -	Indicates an estimated value. This flag is used when the result is less than the reporting limit, but > ½ reporting limit.
U-	Indicates compound was analyzed for but not detected above the reporting limit.
X,Y,Z -	Laboratory defined flags. These flags must be fully described, and such description attached to the Sample Data Summary Package and the case Narrative. Begin by using "X" and go on to "Y" as necessary. These flags may also be used to combine several flags, as needed.

SEVERN TRENT SERVICES

STL Burlington

The following Qualifiers may be used when reporting any Organic Parameter analyzed by Gas Chromatography (GC) or High Pressure Liquid Chromatography (HPLC). Any additional qualifiers used in the reports will be described in the case narrative. These flags are based on the EPA Contract Laboratory statement of work.

GC/HPLC Qualifiers

U	Indicates compound was analyzed for but not detected above the reporting limit.
J	Indicates an estimated value. This flag is used when the result is less than the reporting limit, but > ½ reporting limit.
P	This flag is used for a Pesticide/Aroclor target analyte when there is greater the 25.0% difference for detected concentrations between the two analytical columns. The lower of the two values is reported on the Form I and flagged with a "P".
C	This flag applies to Pesticide results where the identification has been confirmed by GC/MS.
B	This flag is used when the analyte if found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. Only the samples get "B" flag. The method blank does not.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor. This flag alerts data users that any discrepancies between the concentrations reported for the dilutions may be due to dilution of the sample or extract. It additionally indicates that spike recoveries may have been diluted below quantifiable levels.
E	This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis. If one or more compounds have a response greater than the upper level of calibration range, the extract shall be diluted and re-analyzed.
X, Y, Z	Laboratory defined flags. These flags must be fully described and such description attached to the Sample Data Summary Package and the case Narrative. Begin by using "X" and to on to "Y" as necessary. The flags may also be used to combine several flags, as needed.

DAILY REPORTS

DAILY INSPECTION REPORT

DATE 6/11/2002

WEEK NO.	HOURS ON SITE:	WRITTEN BY:	REVIEWED BY:	WORK ORDER NUMBER
1	0700-2030	Lisa Todaro	Chris Kane	20074.515.011.6600.03

WEATHER/TEMPERATURE: 60s - overcast

LOCATION OF WORK: Former Air Force Plant No. 51, Greece, NY

WESTON PERSONNEL:		EQUIPMENT:	VISITORS:
SITE MANAGER:	Rich Flack	John Boat	Christina Dowd (NYSDEC biologist)
SHSC:	Lisa Todaro	Electroshocker	Frank Sower (NYSDEC)
QC OFFICER:	Bob Wagner	Fish sampling equipment	Marvin Verna (NYSDEC boat op)
		(ie nets, buckets, etc)	Mary Johansen (Omaha USACE)

SUBCONTRACTORS:

None

AGREEMENTS MADE/PHONE CONVERSATIONS:

NYSDEC biologist - Christina Dowd categorized which fish would be used for the the human health sampling and ecological assessment. For Human Health 5 Brown Bullhead fish were filleted and 1 large mouth bass, 3 small mouth bass and one rock bass were filleted. For the Ecological assessment: 5 Brown Bullheads and 5 Yellow perch were processed as whole body samples. Christina Dowd discussed these choices with Tony Forti of the State Health Department.

MATERIALS DELIVERED/PICKED UP (AMOUNT, CONDITION, PURPOSE):

Sampling supplies such as plastic bags and ice were purchased and brought onsite by WESTON employees.

TEST DATA (LIST ITEMS HERE AND RECORD DETAILS ON APPROPRIATE TEST DATA SHEET):

No test data.

SAFETY VIOLATIONS/COMMENTS: None.

WORK COMPLETED BY WESTON:

WESTON collected fish specimen from Round Pond. Caught approximately 10 Bullheads, 4 Rock Bass, 3 Silver Redhorse, 15 Yellow perch, 3 small mouth bass, and 1 large mouth bass.
As stated above 10 fish were kept for human heath and 10 fish were kept for ecological assessment analyses.
WESTON filleted and processed the fish for shipment to the offsite lab. The samples were kept on ice and will be shipped 6/12/02.
The fish not used for sampling were kept in a bucket on ice until further notice by NYSDEC.

WORK COMPLETED BY SUBCONTRACTORS:

None

DAILY INSPECTION REPORT

DATE: 6/11/2002

REPORT IS COMPLETE AND CORRECT. WORK IN COMPLIANCE WITH CONTRACT EXCEPT WHERE NOTED.

CQC INSPECTOR (PRINT NAME): Lisa Todaro **CQC SIGNATURE:**

TYPE OF INSPECTION (PREPARATORY, INITIAL, FOLLOW UP): None

CQC FINDINGS (SATISFACTORY WORK COMPLETED AND DEFICIENCIES): All work is satisfactory.

RECOMMENDED CORRECTIVE ACTIONS: None

SAFETY OBSERVATIONS: No safety violations were executed.

WORK PERFORMED BY WESTON (CONTINUED): See previous page.

WORK PERFORMED BY SUBCONTRACTORS (CONTINUED): See previous page.

DAILY INSPECTION REPORT

DATE 6/13/2002

WEEK NO.	HOURS ON SITE:	WRITTEN BY:	REVIEWED BY:	WORK ORDER NUMBER
1	0700-2045	Lisa Todaro	Chris Kane	20074.515.011.6600.03

WEATHER/TEMPERATURE: 80s - clear and sunny

LOCATION OF WORK: Former Air Force Plant No. 51, Greece, NY

WESTON PERSONNEL:		EQUIPMENT:	VISITORS:
SITE MANAGER:	Rich Flack	John Boat	Mary Johansen (Omaha USACE)
SHSC:	Lisa Todaro	Electroshocker	Frank Sower (NYSDEC)
QC OFFICER:	Bob Wagner	Fish and sediment sampling equipment	

SUBCONTRACTORS:

None

AGREEMENTS MADE/PHONE CONVERSATIONS:

Christina Dowd stated fish samples can be determined by the quantity the lab needs for analyses.

MATERIALS DELIVERED/PICKED UP (AMOUNT, CONDITION, PURPOSE):

Sampling supplies such as plastic bags and ice (including dry ice) were purchased and brought onsite by WESTON employees.

Two coolers of sediment and fish samples were shipped offsite Fed Ex to STL for sample analyses.

TEST DATA (LIST ITEMS HERE AND RECORD DETAILS ON APPROPRIATE TEST DATA SHEET):

No test data.

SAFETY VIOLATIONS/COMMENTS: None.

WORK COMPLETED BY WESTON:

WESTON collected sediment samples in Round Pond, the adjacent wetland, Buck Pond and Round Pond Creek. All sediment samples were collected from the john boat with the exception of 4 sediment samples collected in the adjacent wetland. Sediment samples were homogenized and placed in appropriate sample containers with the exception of the VOCs and SVOCs. All sediment sample locations were verified using GPS unit. WESTON also collected fish samples from Buck Pond. The fish were placed on ice until consultation with Frank Sower in the morning (6/14/02).

WORK COMPLETED BY SUBCONTRACTORS:

None

DAILY INSPECTION REPORT

DATE: 6/13/2002

REPORT IS COMPLETE AND CORRECT. WORK IN COMPLIANCE WITH CONTRACT EXCEPT WHERE NOTED.

CQC INSPECTOR (PRINT NAME): Lisa Todaro **CQC SIGNATURE:**

TYPE OF INSPECTION (PREPARATORY, INITIAL, FOLLOW UP): None

CQC FINDINGS (SATISFACTORY WORK COMPLETED AND DEFICIENCIES): All work is satisfactory.

RECOMMENDED CORRECTIVE ACTIONS: None

SAFETY OBSERVATIONS: No safety violations.

WORK PERFORMED BY WESTON (CONTINUED): See previous page.

WORK PERFORMED BY SUBCONTRACTORS (CONTINUED): See previous page.

DAILY INSPECTION REPORT

DATE 6/12/2002

WEEK NO.	HOURS ON SITE:	WRITTEN BY:	REVIEWED BY:	WORK ORDER NUMBER
1	0700-2030	Lisa Todaro	Chris Kane	20074.515.011.6600.03

WEATHER/TEMPERATURE: low 60s - raining

LOCATION OF WORK: Former Air Force Plant No. 51, Greece, NY

WESTON PERSONNEL:		EQUIPMENT:	VISITORS:
SITE MANAGER:	Rich Flack	John Boat	Christina Dowd (NYSDEC biologist)
SHSC:	Lisa Todaro	Electroshocker	Frank Sower (NYSDEC)
QC OFFICER:	Bob Wagner	Fish sampling equipment	Marvin Verna (NYSDEC boat op)
		(ie nets, buckets, etc)	Mary Johansen (Omaha USACE)
			Burr Lewis - photographer for paper

SUBCONTRACTORS:

None

AGREEMENTS MADE/PHONE CONVERSATIONS:

Christina Dowd consulted with Tony Forti to determine which fish should be used for sampling. Yellow perch in order to be used for sampling must be greater than 6 inches in length. It was decided that for the Human Health (HH) sampling 5 Brown Bullhead and 5 yellow perch fillets will be sampled for the adjacent wetland area. For the Ecological Assesssment (ES), 5 Brown Bullhead and 5 yellow perch whole bodies will be sampled. For the Round Pond Creek area the following fish selections were chosen HH = 1 rock bass, 1 Brown Bullhead, one small mouth bass, and 1 yellow perch.
The fish caught yesterday were placed in the reeds of Round Pond per Christina Dowd.

MATERIALS DELIVERED/PICKED UP (AMOUNT, CONDITION, PURPOSE):

Sampling supplies such as plastic bags and ice (including dry ice) were purchased and brought onsite by WESTON employees.
One cooler was shipped offsite Fed Ex to STL for sample analyses.

TEST DATA (LIST ITEMS HERE AND RECORD DETAILS ON APPROPRIATE TEST DATA SHEET):

No test data.

SAFETY VIOLATIONS/COMMENTS: None.

WORK COMPLETED BY WESTON:

WESTON collected fish samples from adjacent wetland area and Round Pond Creek areas. All fish were collected using electroshocking methods from the john boat. Fish samples were skinned, filleted, and processed as appropriate for sampling.

WORK COMPLETED BY SUBCONTRACTORS:

None

DAILY INSPECTION REPORT

DATE: 6/12/2002

REPORT IS COMPLETE AND CORRECT. WORK IN COMPLIANCE WITH CONTRACT EXCEPT WHERE NOTED.

CQC INSPECTOR (PRINT NAME): Lisa Todaro **CQC SIGNATURE:** _____

TYPE OF INSPECTION (PREPARATORY, INITIAL, FOLLOW UP): None

CQC FINDINGS (SATISFACTORY WORK COMPLETED AND DEFICIENCIES): All work is satisfactory.

RECOMMENDED CORRECTIVE ACTIONS: None

SAFETY OBSERVATIONS: No safety violations.

WORK PERFORMED BY WESTON (CONTINUED): See previous page.

WORK PERFORMED BY SUBCONTRACTORS (CONTINUED): See previous page.

DAILY INSPECTION REPORT

DATE 6/14/2002

WEEK NO.	HOURS ON SITE:	WRITTEN BY:	REVIEWED BY:	WORK ORDER NUMBER
1	0700-1400	Lisa Todaro	Chris Kane	20074.515.011.6600.03

WEATHER/TEMPERATURE: 80s - clear and sunny

LOCATION OF WORK: Former Air Force Plant No. 51, Greece, NY

WESTON PERSONNEL:		EQUIPMENT:	VISITORS:
SITE MANAGER:	Rich Flack	John Boat	
SHSC:	Lisa Todaro	Electroshocker	
QC OFFICER:	Bob Wagner	Fish and sediment sampling equipment	

SUBCONTRACTORS:

None

AGREEMENTS MADE/PHONE CONVERSATIONS:

Lisa Todaro spoke with Frank Sower about which fish to analyze from Buck Pond. The following fish were selected.
Human Health: 1 BrownBullhead and 1 large mouth bass. For Ecological Assessment: 1 Brown Bullhead and 1 Large mouth Bass.

MATERIALS DELIVERED/PICKED UP (AMOUNT, CONDITION, PURPOSE):

Sampling supplies such as plastic bags and ice (including dry ice) were purchased
and brought onsite by WESTON employees.
Two coolers of sediment and fish samples were shipped offsite Fed Ex to STL for sample analyses.

TEST DATA (LIST ITEMS HERE AND RECORD DETAILS ON APPROPRIATE TEST DATA SHEET):

No test data.

SAFETY VIOLATIONS/COMMENTS: None.

WORK COMPLETED BY WESTON:

Two additional fish samples were collected upstream of Round Pond Creek in order to complete the ecological assessment
samples.The ecological assessment samples for Round Pond Creek included 2 Rock Bass and 2 Yellow perch as background
samples. Buck Pond and Round Pond Creek fish samples were skinned, filleted, and processed appropriately for analysis.
WESTON sent an additional whole body fish sample to the lab. The sample will remain on hold unless
authorized by NYSDEC or USACE to analyze.
WESTON Demob from the site.

WORK COMPLETED BY SUBCONTRACTORS:

None

DAILY INSPECTION REPORT

DATE: 6/14/2002

REPORT IS COMPLETE AND CORRECT. WORK IN COMPLIANCE WITH CONTRACT EXCEPT WHERE NOTED.

CQC INSPECTOR (PRINT NAME): Lisa Todaro **CQC SIGNATURE:** _____

TYPE OF INSPECTION (PREPARATORY, INITIAL, FOLLOW UP): None

CQC FINDINGS (SATISFACTORY WORK COMPLETED AND DEFICIENCIES): All work was conducted satisfactorily.

RECOMMENDED CORRECTIVE ACTIONS: None

SAFETY OBSERVATIONS: No safety violations.

WORK PERFORMED BY WESTON (CONTINUED): See previous page.

WORK PERFORMED BY SUBCONTRACTORS (CONTINUED): See previous page.