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FINAL HENDERSON POND/HICKORY POND INVESTIGATION REPORT MCB CAMP LEJEUNE NC

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CH2M HILL

Final

Henderson Pond/Hickory Pond Investigation Report

Marine Corps Installations East - Marine Corps Base Camp Lejeune
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Executive Summary

Soil, sediment, and surface water samples were collected in November 2011 (Phase I) at Henderson Pond to evaluate whether environmental conditions posed any risk to human or ecological receptors as part of the planned improvements to the recreational area. As discussed in the *Confirmatory Sampling Investigation, IR Site 74 – Henderson Pond Technical Memorandum* (CH2M HILL, 2012b), there were potential unacceptable risks to human receptors as a result of fish consumption and a potential risk to ecological receptors from sediment. Additional environmental media sampling (surface/subsurface soil, sediment, surface water, and fish tissue) was performed in April-May 2012 (Phase II) to further evaluate the potential risks identified.

The following is a summary of the analytical results and risk assessments for Henderson Pond and Hickory Pond as presented in this report.

Henderson Pond

Soil, sediment, and fish tissue samples were collected from the proposed recreational improvement areas and from within Henderson Pond for laboratory analysis. Sediment samples collected during Phase I indicated the presence of five total metals (aluminum, arsenic, cobalt, iron, and vanadium), one polychlorinated biphenyl (PCB) (Aroclor-1260), and one pesticide (phorate) in sediment above North Carolina Soil Screening Levels (NCSSLs) and adjusted Residential Soil Regional Screening Levels (RSLs). Surface water samples collected in 2011 contained total and dissolved arsenic concentrations exceeding the adjusted Tap Water RSLs multiplied by a factor of 10. Human health and ecological risk screenings were conducted using the 2011 analytical data and indicated a potential unacceptable risk to human health related to the ingestion of fish based on modeling using sediment concentrations and a potential risk to ecological receptors from sediment.

The Phase II surface soil data indicated concentrations of PCBs (Aroclor-1260), and metals (arsenic, chromium, iron, and vanadium) in one sample above Base background threshold values (BTVs) and either the NCSSLs or adjusted Residential Soil RSLs. There were no subsurface soil concentrations exceeding BTVs and NCSSLs or RSLs. Additional sediment samples were collected to further evaluate the potential human health and ecological risks identified based on the Phase I sampling. Aroclor-1260 was detected at a concentration above NCSSLs in 1 out of 10 samples, and arsenic was detected in all 10 samples at concentrations exceeding the adjusted Residential Soil RSLs only. Fish tissue samples were collected to evaluate the potential risks to human health and the environment. Largemouth bass, catfish, carp, and sunfish species composite samples were collected from two areas within Henderson Pond. Pesticides (4,4'-dichlorodiphenyldichloroethylene [DDE] and 4,4'-dichlorodiphenyltrichloroethane [DDT]) and PCB congeners were detected in the fish tissue samples at concentrations above laboratory reporting limits.

The laboratory analytical data from Phases I and II were used to conduct a human health risk assessment (HHRA) and baseline ecological risk assessment (BERA). The results of the HHRA indicated that there were not unacceptable risks based on exposure to soil, sediment, and surface water. The HHRA indicated that carcinogenic risks associated with ingestion of fish from Henderson Pond by adults, children, and lifetime anglers are within acceptable United States Environmental Protection Agency (USEPA) carcinogenic risk levels. A potential non-carcinogenic hazard associated with non-dioxin like PCBs from the ingestion of fish from Henderson Pond was identified based on reasonable maximum exposure (RME). However, the non-dioxin like PCBs central tendency exposure (CTE) hazard is within acceptable USEPA levels. The BERA indicated there were no significant risks expected to ecological receptor populations from exposure to soil, surface water, and sediment. Additionally, fish populations within the pond appeared to be abundant and breeding populations of sunfish and bass were noted in the pond, suggesting that an adequate prey population is present. Consequently, overall risk to populations of ecological receptors is considered low.

Hickory Pond

Sediment, surface water, and fish tissue samples were collected during Phase II to evaluate if there were potential risks to aquatic receptors and humans associated with Hickory Pond. Five co-located sediment and surface water samples were collected and analyzed for full suite analysis. Four metals (arsenic, chromium, iron, and vanadium) were detected in sediment samples at concentrations exceeding either the NCSSLs or adjusted RSLs. One semivolatile organic compound (SVOC) (di-n-octylphthalate), and two metals (total chromium and dissolved arsenic) were detected in surface water samples at concentrations exceeding the adjusted Tap Water RSLs multiplied by a factor of 10. Largemouth bass, carp, and sunfish species composite samples were collected from Hickory Pond to evaluate the potential risk to human health and ecological receptors. One pesticide (4,4'-DDE), 13 total metals, and PCB congeners were detected in fish tissue samples above laboratory reporting limits.

The Hickory Pond laboratory analytical data was used along with the Henderson Pond data to conduct an HHRA and a BERA. The results of the HHRA indicated that there were not unacceptable risks based on exposure to sediment and surface water. The HHRA indicated a potential non-carcinogenic hazard associated with mercury from the ingestion of fish (primarily largemouth bass) from Hickory Pond based on RME. However, the mercury CTE hazard is within acceptable USEPA levels, and mercury concentrations in fish fell within the range of mercury concentrations in largemouth bass reported in the North Carolina (North Carolina Department of Health and Human Services, 2006). The mercury concentrations in Hickory Pond fish samples ranged from 0.047 mg/kg to 0.63 mg/kg, with the highest concentration detected in the largemouth bass, while the mercury concentrations in largemouth bass in the North Carolina survey ranged from 0.35 mg/kg to 1.4 mg/kg. The BERA indicated there were no significant risks expected to ecological receptor populations from exposure to soil, surface water, and sediment. Additionally, fish populations within the pond appeared to be abundant and breeding populations of sunfish and bass were noted in the pond, suggesting that an adequate prey population is present. Consequently, overall risk to populations of ecological receptors is considered low.

Conclusions

Direct exposure to soil within the proposed recreational improvement areas and sediment and surface water in Henderson and Hickory Ponds do not result in unacceptable risks to human health and the environment. Additionally, fish populations within the ponds appeared to be abundant and breeding populations of sunfish and bass were noted in the ponds, suggesting that an adequate prey population is present. Consequently, overall risk to populations of ecological receptors in these ponds is considered low.

Carcinogenic risks associated with ingestion of fish from either Henderson or Hickory Pond by adults, children, and lifetime anglers are within acceptable USEPA levels. However, ingestion of fish from Henderson or Hickory Pond, based on RME assumptions, would result in non-carcinogenic hazards above acceptable USEPA levels for adults and children. The hazard is associated with non-dioxin like PCBs for Henderson Pond and mercury for Hickory Pond. The following uncertainties are provided for risk management consideration and/or further evaluation.

- The CTE hazard associated with ingestion of fish from Henderson Pond and Hickory Pond are within acceptable USEPA levels.
- The concentrations of mercury in fillet tissue samples collected from Hickory Pond were 0.625 mg/kg for bass, 0.0466 mg/kg for carp, and 0.0963 mg/kg for sunfish. These concentrations fall within the average range of mercury measured in fish tissue in North Carolina (0.35 mg/kg to 1.4 mg/kg for bass, and 0.03 mg/kg to 0.3 mg/kg for sunfish) (NCDHHS, 2006).
- Henderson Pond and Hickory Pond are stocked with fish brought in from off-Base locations where there could be potential sources.
- The risk calculations are conservative and assume that only fish from either Henderson or Hickory Pond is ingested, and not from other water bodies. If only one-quarter of the fish ingested is from Henderson Pond or Hickory Pond, there would be no unacceptable risk associated with consumption of fish from these ponds alone.

- The North Carolina Department of Health and Human Services (NCDHHS) has a statewide fish advisory for fish containing mercury. The NCDHHS guidance for eating fish containing mercury (NCDHHS, 2006) recommends that women of childbearing age and children less than 15 years of age should not eat fish containing methyl mercury at concentrations greater than 0.4 mg/kg. Furthermore, it is also recommended that the general public should limit their consumption of fish containing methyl mercury to one meal per week. Since the mercury concentration in bass fillet tissue from Hickory Pond was 0.625 mg/kg, consumers should follow the NCDHHS guidance.

Contents

Executive Summary ..... **iii**

Acronyms and Abbreviations ..... **xi**

1 Introduction **1-1**
1.1 Objectives and Approach 1-1
1.2 Report Layout 1-1

2 Background **2-1**
2.1 Site Location and Description 2-1
2.2 Physical Characteristics 2-1
2.3 Site History 2-1

3 Field Investigation **3-1**
3.1 Soil Sampling 3-1
3.1.1 Surface Soil 3-1
3.1.2 Subsurface Soil 3-1
3.2 Sediment Sampling 3-2
3.2.1 Phase I 3-2
3.2.2 Phase II 3-2
3.3 Surface Water Sampling 3-3
3.3.1 Phase I 3-3
3.3.2 Phase II 3-3
3.4 Fish Tissue Sampling 3-3
3.5 Quality Assurance/Quality Control Sampling and Analysis 3-4
3.6 Investigation-derived Waste Management 3-4

4 Data Evaluation **4-1**
4.1 Soil 4-1
4.1.1 Surface Soil 4-1
4.1.2 Subsurface Soil 4-1
4.2 Sediment 4-2
4.2.1 Henderson Pond 4-2
4.2.2 Hickory Pond 4-2
4.3 Surface Water 4-3
4.3.1 Henderson Pond 4-3
4.3.2 Hickory Pond 4-4
4.4 Fish Tissue 4-4
4.4.1 Henderson Pond 4-4
4.4.2 Hickory Pond 4-5

5 Human Health Risk Assessment **5-1**
5.1 Conceptual Site Model 5-1
5.2 Data Summary 5-1
5.2.1 Soil 5-2
5.2.2 Surface Water 5-2
5.2.3 Sediment 5-2
5.2.4 Fish Tissue 5-2
5.3 Phase I – Human Health Risk Screening 5-3
5.3.1 Step 1 5-3

5.3.2 Step 2 5-4
5.3.3 Non-Detected Analytes 5-4
5.3.4 Human Health Risk Screening Results 5-4
5.4 Phase II – Human Health Risk Assessment 5-4
5.4.1 Identification of Chemicals of Potential Concern 5-5
5.4.2 Exposure Assessment 5-5
5.4.3 Toxicity Assessment 5-8
5.4.4 Risk Characterization 5-9
5.4.5 Uncertainty Associated with Human Health Assessment 5-12
5.5 Human Health Risk Summary 5-14

6 Ecological Risk Assessment 6-1
6.1 Step 1—Preliminary Problem Formulation and Ecological Effects Evaluation 6-1
6.1.1 Ecological Setting 6-1
6.1.2 Summary of Available Analytical Data 6-2
6.1.3 Fate and Transport Mechanisms 6-2
6.1.4 Conceptual Site Model 6-3
6.1.5 Ecological Effects Evaluation 6-3
6.2 Step 2—Preliminary Exposure Estimate and Risk Calculation 6-3
6.3 Step 3 —Problem Formulation 6-4
6.3.1 Refinement of Chemicals of Potential Concern 6-4
6.3.2 Direct Exposure 6-4
6.3.3 Food Chain Transfer 6-6
6.3.4 Risk Characterization 6-11
6.3.5 Uncertainty 6-12
6.4 Ecological Risk Summary 6-14

7 Conclusions 7-1

8 References 8-1

Tables

4-1 Surface Soil Exceedance Summary
4-2 Validated Surface Soil Analytical Results
4-3 Validated Subsurface Soil Analytical Results
4-4 Henderson Pond Sediment Exceedance Summary
4-5 Validated Henderson Pond Sediment Analytical Results
4-6 Hickory Pond Sediment Exceedance Summary
4-7 Validated Hickory Pond Sediment Analytical Results
4-8 Henderson Pond Surface Water Exceedance Summary
4-9 Validated Henderson Pond Surface Water Analytical Results
4-10 Hickory Pond Surface Water Exceedance Summary
4-11 Validated Hickory Pond Surface Water Analytical Results
4-12 Henderson Pond Fish Tissue Pesticide Detections Summary
4-13 Hickory Pond Fish Tissue Pesticide and Metals Detections Summary

5-1 Summary of Samples Evaluated in the Human Health Risk Assessment
5-2 Summary of COPCs for the Human Health Risk Assessment
5-3 WHO Dioxin-like PCB TEFs
5-4 Summary of RME Cancer Risks and Hazard Indices
5-5 Summary of CTE Cancer Risks and Hazard Indices

Figures

2-1 Site Map

3-1 Soil Sample Location Map
3-2 Sediment and Surface Water Sample Location Map
3-3 Fish Tissue Sample Location Map

4-1 Surface Soil Exceedance Map
4-2 Sediment Exceedances Map
4-3 Surface Water Exceedances Map

5-1 Human Health Risk Assessment Conceptual Site Model

6-1 Conceptual Site Model of Ecological Exposures

Appendixes

A Fish Tissue Sampling Sheets
B Validated Laboratory Analytical Data
C Human Health Risk Assessment Tables
D Ecological Risk Assessment Tables

Acronyms and Abbreviations

°F	degree Fahrenheit
µg/kg	microgram per kilogram
µg/L	microgram per liter
ATSDR	Agency for Toxic Substances and Disease Registry
BAF	bioaccumulation factor
BCF	bioconcentration factor
BERA	baseline ecological risk assessment
bgs	below ground surface
BSAF	biota-sediment accumulation factor
bss	below sediment surface
bsw	below surface water
BTV	background threshold value
Cal EPA	California Environmental Protection Agency
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFAL	Cape Fear Analytical Laboratory
CLEAN	Comprehensive Long-term Environmental Action–Navy
COPC	chemical of potential concern
CSF	cancer slope factor
CSM	conceptual site model
CTE	central tendency exposure
CTO	Contract Task Order
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
DoN	Department of the Navy
DOT	Department of Transportation
DTSC	Department of Toxic Substance Control
EcoSSL	Ecological Soil Screening Level
ELCR	excess lifetime carcinogenic risk
ENCO	Environmental Conservation Laboratories
EPC	exposure point concentration
ERA	ecological risk assessment
ESV	ecological screening value
ft	foot or feet
g/day	gram per day
GPS	global positioning system
HEAST	Health Effects Assessment Summary Tables
HI	hazard index
HHRA	human health risk assessment
HHRS	human health risk screening
HQ	hazard quotient
IAS	Initial Assessment Study
IDW	investigation-derived waste

IR	Installation Restoration
IRIS	Integrated Risk Information System
kg	kilogram
kg/day	kilogram per day
K_{ow}	octanol-water partitioning coefficient
L/day	liter per day
LOAEL	Lowest Observed Adverse Effect Level
LTM	long-term monitoring
LUC	land use control
MCIEAST–MCB CAMLEJ	Marine Corps Installations East – Marine Corps Base Camp Lejeune
MF	modifying factor
mg	milligram
mg/day	milligram per day
mg/kg	milligram per kilogram
mg/kg-BW/day	milligram per kilogram body weight per day
mg/L	milligram per liter
MS/MSD	matrix spike/matrix spike duplicate
NAVFAC	Naval Facilities Engineering Command
Navy	United States Navy
NCGWQS	North Carolina Groundwater Quality Standards
NCEA	National Center for Environmental Assessment
NCSSL	North Carolina Soil Screening Level
NCDENR	North Carolina Department of Environment and Natural Resources
NCDHHS	North Carolina Department of Health and Human Services
NE	none established
NFA	no further action
NOAEL	No Observed Adverse Effect Level
NRWQC	National Recommended Water Quality Criteria
OCP	organochlorine pesticide
OPP	organophosphorous pesticide
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PEL	probable effects level
PID	photoionization detector
PPE	personal protective equipment
PPRTV	Provisional Peer-Reviewed Toxicity Values
RAGS	Risk Assessment Guidance for Superfund
RfD	reference dose
RME	reasonable maximum exposure
RSL	Regional Screening Level
QA	quality assurance
QC	quality control
ROD	Record of Decision
SIM	Selective Ion Monitoring
SLERA	screening-level ecological risk assessment

SQL	sample quantitation limit
SVOC	semivolatile organic compound
TCDD	tetrachlorodibenzo-p-dioxin
TCLP/RIC	Toxicity Characteristic Leaching Procedure/Reactivity, Ignitability, and Corrosivity
TEF	toxicity equivalency factor
TEL	threshold effects level
TEQ	toxicity equivalent
TOC	Total Organic Carbon
TRV	toxicity reference value
UCL	upper confidence level
UF	uncertainty factor
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USMC	United States Marine Corps
UTL	upper tolerance limit
VOC	volatile organic compound
WAR	Water and Air Research
WOE	weight-of-evidence
WHO	World Health Organization

SECTION 1

Introduction

This report presents the results of environmental media and fish tissue sampling conducted at Henderson and Hickory Ponds located within a proposed recreational area at Marine Corps Installations East – Marine Corps Base Camp Lejeune (MCIEAST–MCB CAMLEJ). The work was conducted in accordance with the *Henderson Pond/IR 74 Work Plan MILCON Confirmation Sampling* (CH2M HILL, 2011a) and the *Henderson Pond/Hickory Pond Work Plan Addendum* (CH2M HILL, 2012a). This investigation was performed under the Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic Division under the Comprehensive Long-Term Environmental Action – Navy (CLEAN) 8012 Contract Number N-62470-11-D-8012, Contract Task Order (CTO) – WE14.

1.1 Objectives and Approach

The objective of this investigation was to collect sufficient data to evaluate potential risks to human health and ecological receptors at the proposed recreational area around Henderson Pond and Hickory Pond.

The methods used during this investigation to meet the objectives included:

- Surface and subsurface soil sampling
- Sediment sampling
- Surface water sampling
- Fish tissue collection
- Human health risk assessments (HHRA) and ecological risk assessments (ERA)

1.2 Report Layout

The following sections are included in the report:

- Section 1—Introduction
- Section 2—Background
- Section 3—Field Investigation
- Section 4—Data Evaluation
- Section 5—Human Health Risk Assessment
- Section 6—Ecological Risk Assessment
- Section 7—Conclusions
- Section 8—References

SECTION 2

Background

2.1 Site Location and Description

The Henderson Pond and Hickory Pond recreational area is located approximately 0.2 miles south of Old Sawmill Road between Holcomb Boulevard and Piney Green Road in the northeast portion of 'Mainside' MCIEAST-MCB CAMLEJ (**Figure 2-1**). The area is currently used for recreational hiking, fishing, and mountain biking. Game fish, including largemouth bass, red-ear sunfish, bluegill, and channel catfish, are stocked in both ponds on an annual to semi-annual basis (USMC, 2006). Proposed recreational amenity improvements around Henderson and Hickory Ponds include the construction of a new Game Warden office along Old Sawmill Road, campgrounds, picnic shelters, mountain bike trails, and parking areas.

2.2 Physical Characteristics

The surrounding topography is generally flat with a gentle slope towards the south with elevations ranging from 20 to 30 feet above mean sea level. The shallow soils underlying the investigation area generally consist of sands and silty sands extending to depths of nearly 30 feet (ft) below ground surface (bgs). Shallow groundwater has been encountered at depths ranging from roughly 4 to 19 ft bgs.

Henderson Pond encompasses approximately 16 acres and Hickory Pond is approximately 3 acres in size. Both ponds receive drainage from the surrounding wooded areas. The south ends of Henderson and Hickory Ponds are dammed, with overflow discharging into unnamed tributaries of Wallace Creek located approximately 1,300 ft to the south. The water levels fluctuate seasonally, with higher levels during the winter and spring. Generally, the water depths are greatest at the south ends of the ponds, near the dams.

2.3 Site History

Henderson and Hickory Ponds are located immediately south of Installation Restoration (IR) Site 74 and former Site 4. IR Site 74 is the historical dump for mess hall grease as well as a mixing and storage area for pesticides used at the Base (**Figure 2-1**).

Previous investigations conducted at Site 74, including Henderson Pond, identified potential unacceptable risks from exposure to waste and volatile organic compounds (VOCs) and metals in groundwater. A Record of Decision (ROD) was signed in 1995 and identified long-term monitoring (LTM) to monitor groundwater and potential discharge and land use controls (LUCs) to eliminate exposure to waste and groundwater as the Selected Remedy (Baker, 1995). LTM was initiated in 1997 and included sampling of five monitoring wells and eight surface water and sediment locations twice a year for analysis of VOCs and metals. In 2005 the groundwater cleanup levels were achieved and LTM was discontinued. LUCs were implemented in 2001, updated in 2002, and are still in-place. A fence was installed around the perimeter of the site in 2008 to restrict access. Additional fencing was installed in 2011 along both sides of the access road leading to Henderson Pond (**Figure 2-1**). Additional undocumented reports suggest that Henderson Pond was cleaned in the late 1970s of material dumped in the pond during nearby training exercises.

In 2009, a confirmatory sampling investigation was performed at former Site 4, the Sawmill Road Construction Debris Dump located north of Henderson Pond (**Figure 2-1**) to confirm the no further action (NFA) recommendation from the Base-wide Initial Assessment Study (IAS) conducted by Water and Air Research, Inc. (WAR), (1983). Soil and groundwater samples were collected and analyzed for VOCs, semi-volatile organic compounds (SVOCs), and metals and human health and ecological risk screenings were conducted. There were no unacceptable risks to human health and ecological receptors identified, therefore the existing NFA was confirmed and the site was closed in 2011.

In November 2011, five composite surface and subsurface soil samples were collected from the access road through Site 74 (**Figure 2-1**). All samples were analyzed for VOCs, SVOCs, pesticides, polychlorinated biphenyls (PCBs), and

metals (including hexavalent chromium). The 2011 sampling activities and analytical results were summarized in the *Confirmatory Sampling Investigation Technical Memorandum* (CH2M HILL, 2012b).

Pesticides and metals were detected in surface and subsurface soil, and SVOCs were detected in surface soil at concentrations exceeding regulatory standards and risk screening criteria. The analytical results indicated 15 SVOCs, eight pesticides, one PCB (Aroclor-1260), and 19 metals were detected above laboratory reporting limits. The human health risk screening (HHRS) of the access road soil samples indicated that exposure to soil by the most likely potential receptors, construction workers, was not expected to result in any unacceptable risks. Future residential (and potentially recreational) exposure to SVOCs and pesticides in soil may result in unacceptable risk to human health. Additionally, ecological exposure to pesticides and Aroclor-1260 in soil may pose a potential risk. However, any exposures other than by construction workers are unlikely because the soil is beneath 0.5 to 1 foot (ft) of gravel and LUCs are in place to prevent residential development and intrusive activities.

Due to the proposed improvements to the recreation area, the additional investigation activities presented in Section 3 was planned to identify environmental conditions potentially posing unacceptable risks to human and/or ecological receptors within the improvement areas and ponds.

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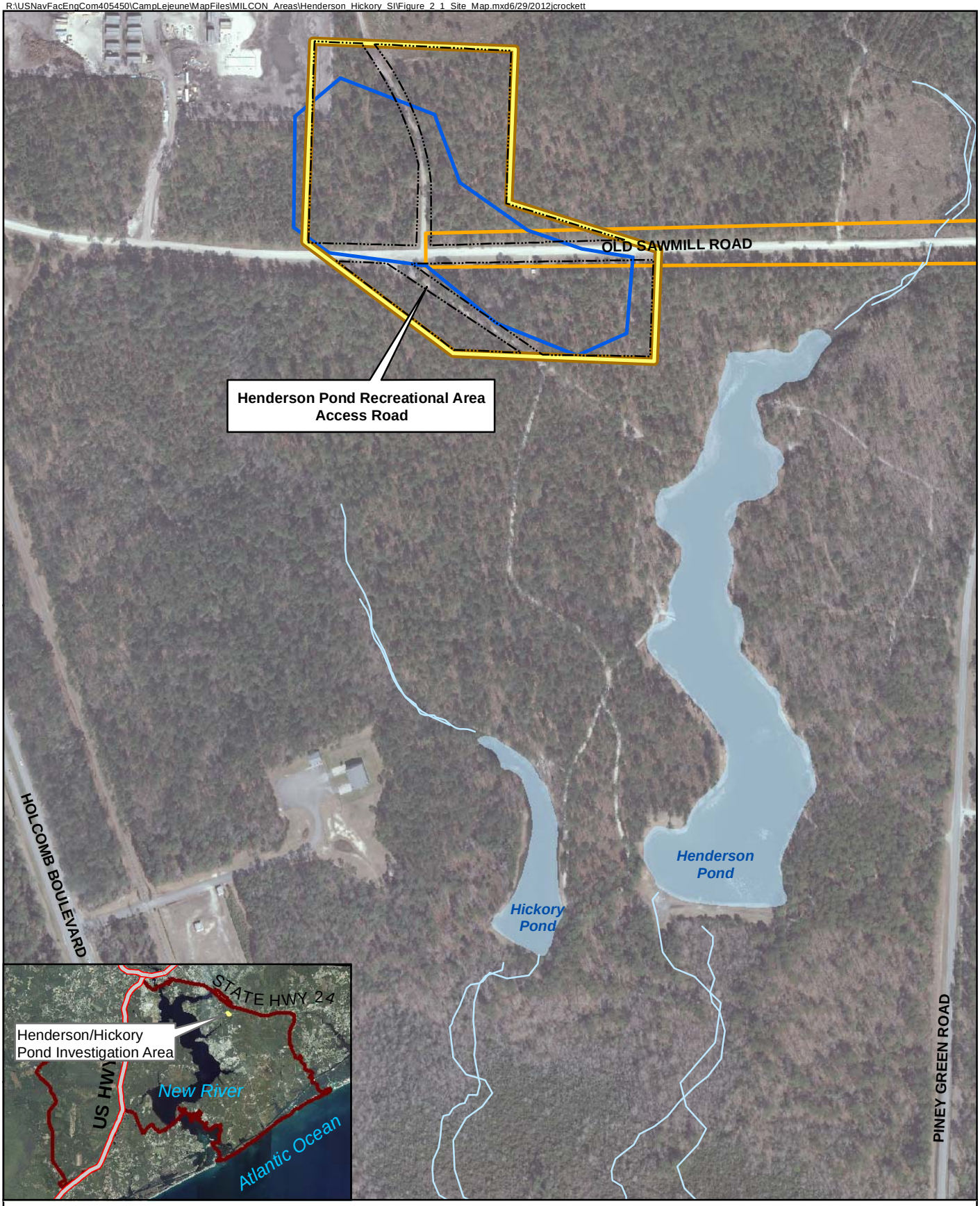

Legend

- Surface Water
- Water Body
- Site 74 Boundary
- Site 4 Boundary
- Approximate Location of Fence
- Intrusive Activities Control Boundary (Soil)
- Intrusive Activities Control Boundary (Groundwater)

N

0 250 500 1,000 Feet

1 inch = 500 feet

Figure 2-1
Site Map
Henderson/Hickory Pond Investigation
MCIEAST - MCB CAMLEJ
North Carolina

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SECTION 3

Field Investigation

This section describes the field activities performed during the investigation at Henderson and Hickory Ponds in November 2011 (Phase I) and April-May 2012 (Phase II). The field activities included:

- Surface and subsurface soil sampling
- Sediment sampling
- Surface water sampling
- Fish tissue sampling

Surface water and sediment sampling was performed in November 2011 (Phase I) and soil, surface water, sediment, and fish sampling were performed in April-May 2012 (Phase II) to evaluate whether exposure to these media poses any potential unacceptable risks to human and ecological receptors.

Sampling methods and details from each field event are described as follows. Prior to any intrusive field activities, buried utilities were identified by the North Carolina One-Call and East Coast Land Surveyors, a private utility locating company.

3.1 Soil Sampling

In order to assess soil conditions, surface and subsurface soil samples were collected from 10 proposed recreational improvement areas in April-May 2012 (**Figure 3-1**). A composite surface soil (0 to 1 ft) and one discrete subsurface soil (1 to 4 ft) sample were collected from each area. Samples were analyzed for the compounds that were detected in the 2011 Henderson Pond access road soil samples (CH2M HILL, 2011a) as follows: Samples were placed into laboratory supplied bottles and shipped under chain-of-custody control to Environmental Conservation Laboratories (ENCO) in Orlando, Florida, for the following analysis:

- Polycyclic aromatic hydrocarbons (PAHs) by United States Environmental Protection Agency (USEPA) Method 8270/Selective Ion Monitoring (SIM)
- Aroclor-1260 (PCBs) by USEPA Method 8082
- Organochlorine Pesticides (OCPs) by USEPA Method 8081
- Metals by USEPA Method 6010
- Hexavalent Chromium by USEPA Method 7196

3.1.1 Surface Soil

Each surface soil sample consisted of three to eight aliquots (roughly one per quarter acre), depending on the acreage of the sampling area. Samples were collected using a stainless steel hand auger and homogenized in a stainless steel bowl using a stainless steel spoon. Surface soil samples were collected from 0 to 1 ft bgs. Surface soil sample aliquots were split into two samples, one for field screening using a photoionization detector (PID) and the other for laboratory analysis. All reusable sampling equipment was decontaminated between sampling locations using deionized water, Liquinox, and an isopropanol rinse. The composite surface soil sample locations were designated HENP-SS01 through HENP-SS10 and are illustrated on **Figure 3-1**.

3.1.2 Subsurface Soil

A discrete subsurface soil sample was collected at the location of the surface soil aliquot containing the highest PID reading from each area. A stainless steel hand auger, bowl, and spoon were used to collect the subsurface soil samples. All field equipment was decontaminated prior to sampling. Subsurface soil samples were collected by hand auger from 1 to 4 ft bgs. The locations of the subsurface soil samples (HENP-SB01 through HENP-SB10) are depicted on **Figure 3-1**.

3.2 Sediment Sampling

3.2.1 Phase I

In November 2011, five sediment samples were collected from Henderson Pond (**Figure 3-2**). Each sediment sample was collected from 0 to 0.5 ft below sediment surface (bss) using a Ponar dredge sampler. Sediment was placed into a stainless steel bowl and a stainless steel spoon was used to homogenize the sediment prior to being placed into laboratory containers. VOC samples were collected prior to homogenization. The samples were designated as IR74-HP-SD01 through IR74-HP-SD05. Sediment samples were shipped under chain-of-custody control to ENCO for the following laboratory analyses:

- VOCs by USEPA Method 8260
- SVOCs including PAHs by USEPA Method 8270/SIM
- OCPs by USEPA Method 8081
- Organophosphorous Pesticides (OPPs) by USEPA Method 8141
- PCBs by USEPA Method 8082
- Metals by USEPA Method 6010
- Hexavalent Chromium by USEPA Method 7196

3.2.2 Phase II

Based on the findings of the 2011 Phase I investigation, additional sediment sampling was necessary to further evaluate the potential risks to human health as a result of ingesting fish from Henderson Pond and an ecological risk to aquatic receptors from exposure to pesticides (4,4'-dichlorodiphenyldichloroethylene [4,4'-DDE] and 4,4'-dichlorodiphenyltrichloroethane [4,4'-DDT]), copper, barium, and Aroclor-1260. Therefore, the additional sediment samples collected from Henderson Pond were analyzed for the compounds potentially posing human health and ecological risks.

In April-May 2012, sediment samples were collected from 10 locations (HENP-SD01 through HENP-SD10) within Henderson Pond as indicated on **Figure 3-2**. The sediment samples were collected into laboratory supplied bottles and shipped under chain-of-custody control to ENCO for the following laboratory analysis:

- Arsenic, barium, and copper by USEPA Method 6010
- Aroclor-1260 (PCB) by USEPA Method 8082
- Select OCPs (4,4'-DDE and 4,4'-DDT) by USEPA Method 8141
- Total Organic Carbon (TOC) by Lloyd Kahn

Sediment sampling had not previously been conducted at the adjacent Hickory Pond; therefore, sediment samples were collected for full suite analyses (indicated as follows) to evaluate potential risks to human and ecological receptors. Five sediment samples (HICP-SD01 through HICP-SD05) were collected from within Hickory Pond as indicated on **Figure 3-2**. Each sample was collecting by advancing a stainless steel hand auger approximately 0.5 ft bss into the sediment. Sediment samples were transferred into a stainless steel bowl and a stainless steel spoon was used to homogenize the sediment prior to sample collection, except at Hickory Pond where VOCs were collected prior to homogenization. Sediment samples were collected into laboratory supplied bottles, and shipped under chain-of-custody control to ENCO for the following laboratory analyses:

- VOCs by USEPA Method 8260
- SVOCs by USEPA Method 8270/SIM
- OCPs by USEPA Method 8081
- OPPs by USEPA Method 8141
- PCBs by USEPA Method 8082
- Metals by USEPA Method 6010
- Hexavalent Chromium by USEPA Method 7196
- TOC by Lloyd Kahn

3.3 Surface Water Sampling

3.3.1 Phase I

In November 2011, a total of five surface water samples were collected from Henderson Pond (**Figure 3-2**). Each surface water sample was collected from 0 to 0.5 ft below surface water (bsw) using a peristaltic pump and new, dedicated polyethylene tubing and in-line 0.45-micron filter (dissolved metals only). Sample tubing was discarded after each use. The surface water samples were co-located with the Phase I Henderson Pond sediment sample locations and analyzed for the same constituents. The samples were designated as IR74-HP-SW01 through IR74-HP-SW05.

Surface water samples were placed into laboratory supplied containers and shipped to ENCO under chain-of-custody control and analyzed for the following:

- VOCs by USEPA Method 8260
- SVOCs by USEPA Method 8270/SIM
- OCPs by USEPA Method 8081
- OPPs by USEPA Method 8141
- PCBs by USEPA Method 8082
- Total and dissolved metals by USEPA Method 6010
- Hexavalent Chromium by USEPA Method 7196

3.3.2 Phase II

Surface water sampling had not previously been conducted at Hickory Pond; therefore, samples were collected and analyzed for a full suite analyses (as indicated below) to evaluate potential risks to human health and ecological receptors in Hickory Pond.

A total of five surface water grab samples were collected from Hickory Pond (**Figure 3-2)**. Samples were collected from 0 to 1 ft bsw using a peristaltic pump and new, dedicated polyethylene tubing and in-line 0.45-micron filters (dissolved metals only). Sample tubing was discarded after each use. The surface water samples were co-located with the sediment sample locations. Surface water sample locations were positioned in the field using a hand-held global positioning system (GPS). Alkalinity was measured in the field using a Hach field test kit. The five surface water samples were designated as HICP-SW01 through HICP-SW05. Surface water samples were collected into laboratory supplied bottles and shipped under chain-of-custody control to ENCO for the following laboratory analysis:

- VOCs by USEPA Method 8260
- SVOCs by USEPA Method 8270/SIM
- OCPs by USEPA Method 8081
- OPPs by USEPA Method 8141
- PCBs by USEPA Method 8082
- Total and dissolved metals by USEPA Method 6010
- Hexavalent Chromium by USEPA Method 7196

3.4 Fish Tissue Sampling

The preliminary risk screenings conducted as part of the Phase I investigation indicated a potential risk to human and ecological receptors associated with the ingestion of fish based on predicted fish tissue concentrations obtained from modeling sediment results. Therefore, fish tissue sampling in both ponds was proposed to further evaluate the potential risk. Fish tissue samples from Henderson Pond were analyzed for the analytes that were found to present a potential risk based on the Phase I risk screening results. Fish tissue samples from Hickory Pond were analyzed for full suite analyses since no previous environmental data were available for Hickory Pond.

Species of largemouth bass, catfish, sunfish, and carp were collected from Henderson and Hickory Ponds using trotlines, gill nets, hoop nets, seine nets, and long line methods. Fish samples were collected from two areas

within Henderson Pond and one area within Hickory Pond (**Figure 3-3**). A total of six composite fish tissue samples were collected from Henderson Pond, with each sample split into a fillet and offal sample, for a total of 12 samples. Each composite fish tissue sample consisted of multiple fish of individual species to provide adequate tissue mass for laboratory analysis and account for variation in chemical concentration likely to occur between individual fish. Three composite fish tissue samples were collected from Hickory Pond and split into a fillet and offal sample for a total of six samples. Fish tissue sampling sheets documenting the species, weight, and length of fish collected are included in **Appendix A**.

Fish tissue samples were transported on dry ice by courier to Cape Fear Analytical Laboratory (CFAL) of Wilmington, North Carolina, under chain-of-custody control for processing and analysis of percent lipids, moisture and PCB congeners by USEPA Method 1668.

Processed fish tissue samples were subsequently shipped to ENCO for the following laboratory analysis:

Henderson Pond

- Arsenic by USEPA Method 6010
- 4,4'-DDE and 4,4'-DDT (Pesticides) by USEPA Method

Hickory Pond

- SVOCs by USEPA Method 8270/SIM
- OCPs by USEPA Method 8081
- OPPs by USEPA Method 8141
- Metals by USEPA Method 6010

3.5 Quality Assurance/Quality Control Sampling and Analysis

Field quality assurance (QA)/quality control (QC) samples including equipment blanks, trip blanks, duplicate samples, and matrix spike/matrix spike duplicates (MS/MSDs) were collected during the investigations in accordance with the approved Work Plans (CH2M HILL, 2011a and CH2M HILL, 2012a).

A trip blank accompanied all coolers containing VOC samples. Fish tissue samples were placed in a sample cooler on dry ice until they were picked up by a courier service and transported to CFAL.

An independent data validator was subcontracted to validate all the laboratory analytical data. The analytical results were evaluated to assess the technical adequacy and usability of the data from the laboratory. Data were technically reviewed as described in the Master Project Plans (CH2M HILL, 2008).

3.6 Investigation-derived Waste Management

Decontamination fluids from environmental sampling were placed in 5-gallon buckets and transferred to an approved Department of Transportation (DOT) 55-gallon drum. Approximately 8 gallons of decontamination fluids were generated during environmental sampling activities and staged at the 90-day temporary storage area located at Parachute Tower Road, in accordance with the Base Waste Management Plan (CH2M HILL, 2011b). A label describing the contents, date collected, location, and contact information for responsible parties was affixed to the drum.

The liquid investigation-derived waste (IDW) was characterized for disposal using the Toxicity Characteristic Leaching Procedure/Reactivity, Ignitability, and Corrosivity (TCLP/RIC) analysis. Following receipt of the laboratory analytical data, the IDW was disposed of as non-hazardous waste at an off Base, permitted disposal facility. All disposable personal protective equipment (PPE) and other investigation-related waste (such as gloves and tubing) was placed in black contractor trash bags and disposed in dumpsters located on the Base.

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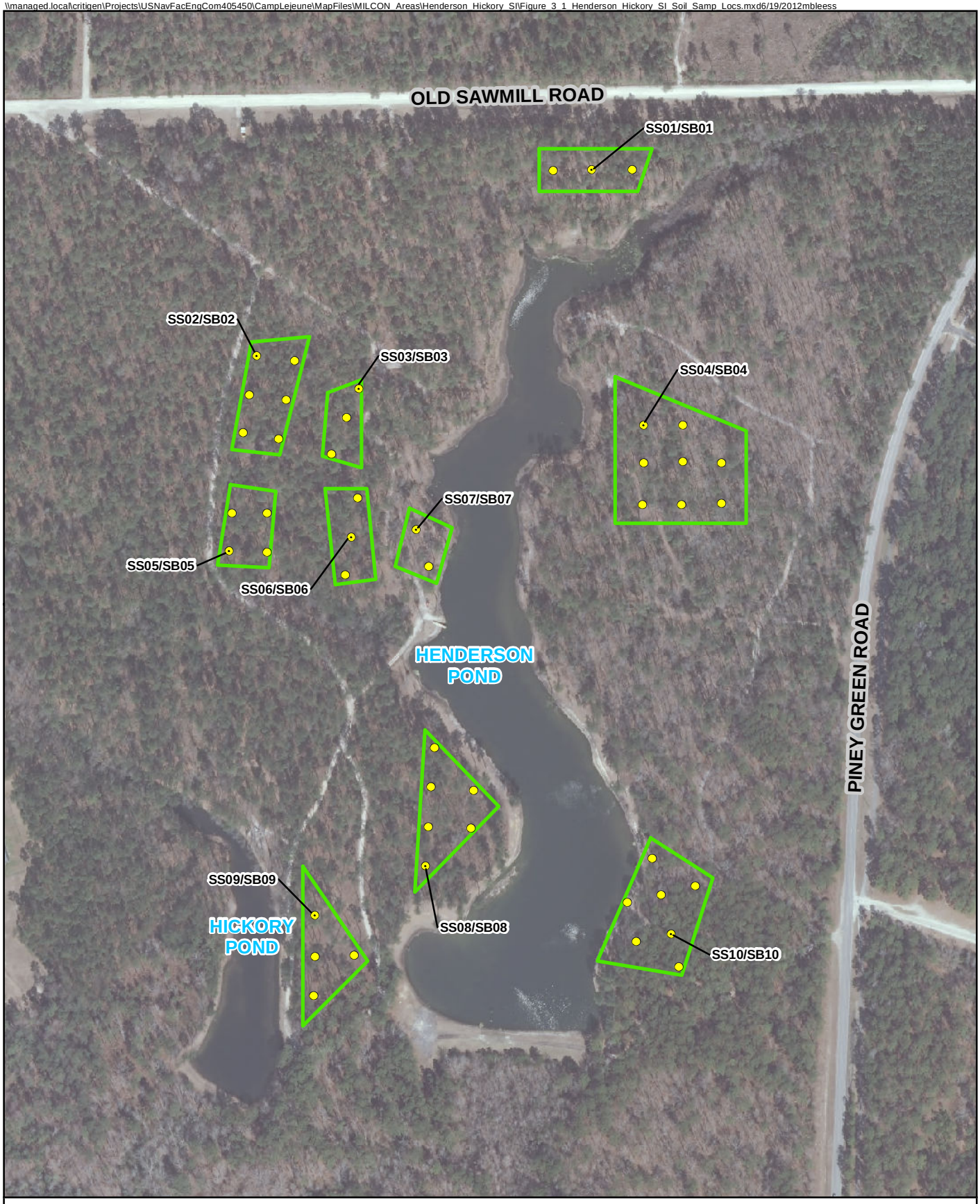

Legend

- Composite Surface Soil Sample Location
- Subsurface/Surface Soil
- Proposed Campgrounds

N

0 175 350 Feet

1 inch = 350 feet

Figure 3-1
Soil Sample Location Map
Henderson/Hickory Pond Investigation
MCIEAST - MCB CAMLEJ
North Carolina

CH2MHILL

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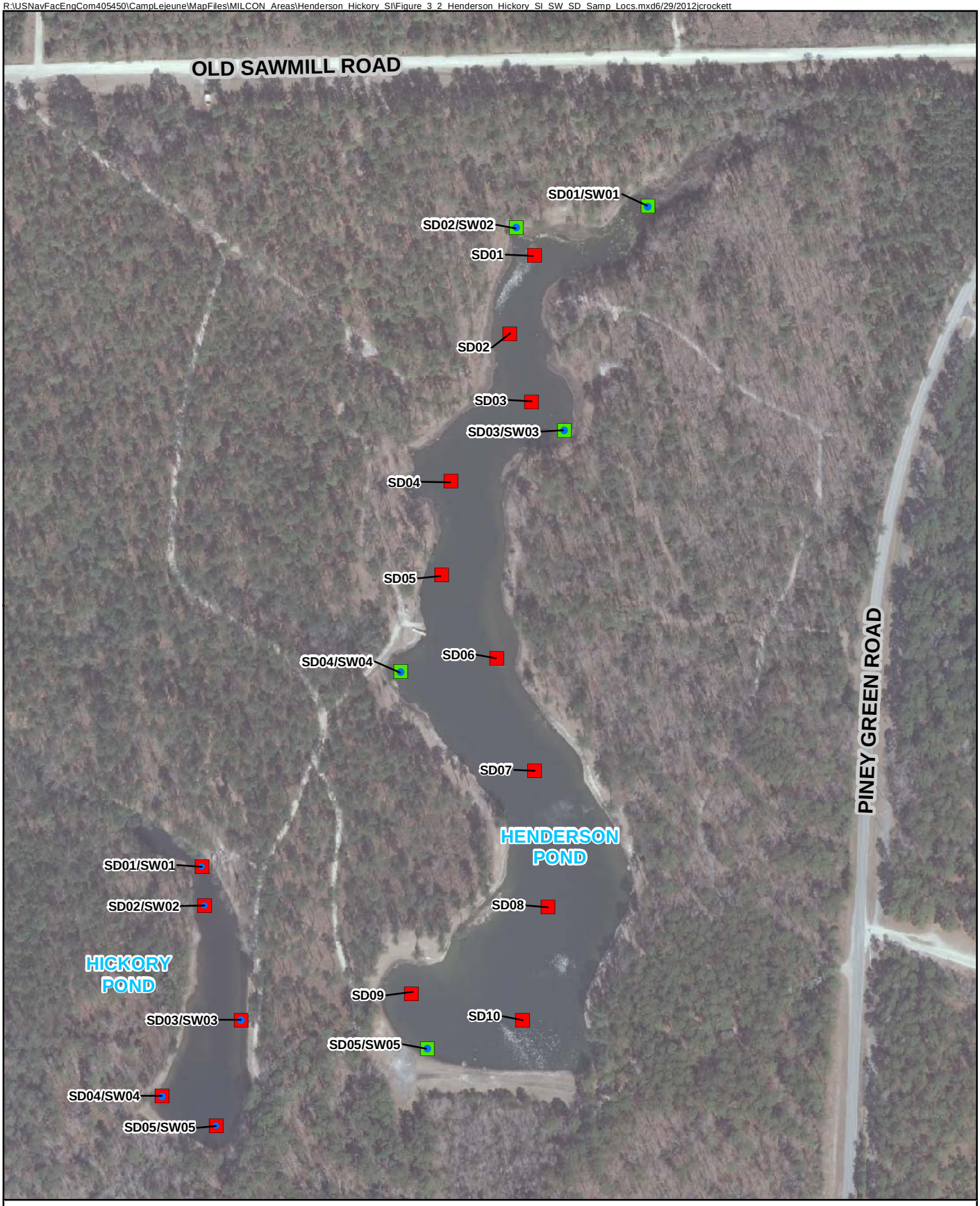

Legend

- Surface Water and Sediment Sample Location (November 2011)
- Sediment Sample (2012)
- Surface Water and Sediment Sample (2012)

N

0 150 300 Feet

1 inch = 325 feet

Figure 3-2
Sediment and Surface Water Sample Location Map
Henderson/Hickory Pond Investigation
MCIEAST - MCB CAMLEJ
North Carolina

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Legend

Fish Collection Area

N

0 150 300 Feet

1 inch = 325 feet

Figure 3-3
Fish Sample Location Map
Henderson/Hickory Pond Investigation
MCIEAST - MCB CAMLEJ
North Carolina

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SECTION 4

Data Evaluation

This section presents the analytical results of the investigations conducted at Henderson and Hickory Ponds in November 2011 (Phase I) and April-May 2012 (Phase II).

4.1 Soil

The soil analytical results were collected in April-May 2012 and compared to the North Carolina Soil Screening Levels (NCSSLs) and the adjusted Residential Regional Screening Levels (RSLs). Metal concentrations in surface and subsurface soil samples were also compared to the MCIEAST-MCB CAMLEJ specific background threshold values (BTVs) for combined soil types for undeveloped areas (CH2M HILL, 2011c).

4.1.1 Surface Soil

Three SVOCs, one PCB, and 19 metals were detected in surface soil samples at concentrations above laboratory reporting limits; however, only 2 metals concentrations were above the applicable BTVs and either the NCSSL or the RSL. The concentration of Aroclor-1260 (PCB) in sample HENP-SS08 exceeded the NCSSL and RSL. A summary of surface soil exceedances is presented in **Table 4-1** and illustrated on **Figure 4-1**. The validated analytical results are presented in **Table 4-2** and **Appendix B**.

TABLE 4-1
Surface Soil Exceedance Summary

Chemical Name	Frequency of Detection	Maximum Concentration	Location of Maximum Concentration	Comparison Criteria	Frequency of Exceedance
PCBs		(µg/kg)		(µg/kg)	
Aroclor-1260	1/10	1,300 J	HENP-SS08	BTV NE Res RSL 220 NCSSL 140	1/10
Total Metals		(mg/kg)		(mg/kg)	
Arsenic	8/10	2.17 J	HENP-SS08	BTV 1.17 Res RSL 0.39 NCSSL 5.8	1/10
Iron	10/10	10,500 J	HENP-SS08	BTV 7,210 Res RSL 55,000 NCSSL 150	1/10
Vanadium	10/10	17.9	HENP-SS08	BTV 17.6 Res RSL 390 NCSSL 6	1/10

µg/kg – micrograms per kilogram
J – Analyte present, value may or may not be accurate or precise
mg/kg – milligrams per kilogram
NE – None established

4.1.2 Subsurface Soil

Eighteen metals were detected in subsurface soil samples at concentrations above laboratory reporting limits. However, there were no exceedances of BTVs and the NCSSLs and/or the RSLs. The validated analytical results are presented in **Table 4-3** and **Appendix B**.

4.2 Sediment

The sediment analytical results were compared to the NCSSLs and adjusted Residential RSLs. A discussion of the sediment results for Henderson Pond and Hickory Pond are presented as follows.

4.2.1 Henderson Pond

In November 2011, five sediment samples were collected and two VOCs, one SVOC, one PCB, three pesticides, and 21 metals were detected at concentrations above laboratory reporting limits. Of the target analytes detected, only one pesticide (phorate), one PCB (Aroclor-1260), and six metals (aluminum, antimony, arsenic, cobalt, iron, and vanadium) exceeded the NCSSLs and/or the RSLs.

In April 2012, 10 sediment samples were collected and two pesticides (4,4'-DDE and 4,4'-DDT), one PCB (Aroclor-1260), and three metals (arsenic, barium, and copper) were detected in samples at concentrations exceeding laboratory reporting limits; however, only concentrations of Aroclor-1260 and arsenic exceeded the NCSSLs and/or RSLs. A summary of the analytical concentrations exceeding the NCSSL and/or RSLs is presented as follows in **Table 4-4** and illustrated on **Figure 4-2**. The validated analytical results are presented in **Table 4-5** and **Appendix B**.

TABLE 4-4
Henderson Pond Sediment Exceedance Summary

Chemical Name	Year	Frequency of Detection	Maximum Concentration	Location of Maximum Concentration	Comparison Criteria	Frequency of Exceedance
Pesticides			(µg/kg)		(µg/kg)	
Phorate	2011	1/5	190	HP-SD04	Res RSL 1,200 NCSSL 13	1/5
PCBs						
Aroclor-1260	2011 2012	4/5 9/10	240 J 160 J	HP-SD01 HENP-SD03	Res RSL 220 NCSSL 140	2/5 1/10
Metals			(mg/kg)		(mg/kg)	
Aluminum	2011	5/5	16,300 J	HP-SD01	Res RSL 7,700 NCSSL NE	4/5
Antimony	2011	2/5	1.37 J	HP-SD03	Res RSL 3.1 NCSSL 0.9	2/5
Arsenic	2011 2012	5/5 10/10	3.13 J 4.24 J	HP-SD03 HENP-SD08	Res RSL 0.39 NCSSL 5.8	5/5 10/10
Cobalt	2011	3/5	2.65	HP-SD01	Res RSL 2.3 NCSSL 0.9	3/5
Iron	2011	5/5	7,580	HP-SD01	Res RSL 5,500 NCSSL 150	5/5
Vanadium	2011	4/5	30.8	HP-SD01	Res RSL 39 NCSSL 6	4/5

µg/kg – micrograms per kilogram
J – Analyte present, value may or may not be accurate or precise
mg/kg – milligrams per kilogram
NE – None established

4.2.2 Hickory Pond

Two VOCs, one SVOC, two pesticides, and 19 metals were detected in sediment soil samples collected in April-May 2012 at concentrations exceeding laboratory reporting limits; however, the VOCs and SVOC concentrations were below NCSSLs and RSLs. Of the 19 metals detected, only four metals (arsenic, chromium, iron, and

vanadium) exceeded the BTVs and NCSSLs and/or RSLs. A summary of the analytical concentrations exceeding the BTVs, as well as the NCSSLs and/or RSLs, is presented as follows in **Table 4-6** and depicted on **Figure 4-2**. The validated sediment analytical results are presented in **Table 4-7** and **Appendix B**.

TABLE 4-6
Hickory Pond Sediment Exceedance Summary

Chemical Name	Frequency of Detection	Maximum Concentration (mg/kg)	Location of Maximum Concentration	Comparison Criteria (mg/kg)	Frequency of Exceedance
Total Metals					
Arsenic	4/5	1.37 J	HICP-SD03	Res RSL 0.39 NCSSL 5.8	4/5
Chromium	5/5	6.32	HICP-SD04	Res RSL 0.29 NCSSL 3.8	5/5
Iron	5/5	2,730 J	HICP-SD03	Res RSL 55,000 NCSSL 150	5/5
Vanadium	5/5	8.62	HICP-SD01	Res RSL 390 NCSSL 6	3/5

J – Analyte present, value may or may not be accurate or precise
mg/kg – milligrams per kilogram

4.3 Surface Water

The surface water analytical data were compared to the North Carolina surface water quality standards for human health and water supply, and the adjusted Tap Water RSLs multiplied by a factor of 10 for surface water.

4.3.1 Henderson Pond

In November 2011, five surface water samples were collected and VOCs, SVOCs, PCBs, and pesticides were not detected at concentrations above laboratory reporting limits. However, 14 total and dissolved metals were reported above laboratory reporting limits. Of these 14 metals, only total and dissolved arsenic concentrations exceeded the risk screening criteria. A summary of the analytical concentrations exceeding the regulatory standards and screening criteria is presented in **Table 4-8** and **Figure 4-2**. The validated analytical results are presented in **Table 4-9** and **Appendix B**.

TABLE 4-8
Henderson Pond Surface Water Exceedance Summary

Analyte	Frequency of Detection	Maximum Concentration(µg/L)	Location of Maximum Concentration	NC2B-SW-Human Health & Water Supply (µg/L)	RSLs Tap x 10 for SW Adjusted (May 2011) (µg/L)	Frequency of Exceedance
Total Metals						
Arsenic	1/5	4.39 J	HP-SW04	10	0.45	1/5
Chromium	2/5	0.354 J	HP-SW02	NE	NE	2/5
Dissolved Metals						
Arsenic	1/5	5.22 J	HP-SW03	10	0.45	1/5
Chromium	2/5	0.498 J	HP-SW04	NE	0.31	2/5

µg/L – micrograms per liter
J – Analyte present, value may or may not be accurate or precise
NE – None established
NC2B-SW – North Carolina Surface Water Quality Standard

4.3.2 Hickory Pond

One VOC (acetone), one SVOC (Di-n-octylphthalate), 12 total metals, and 10 dissolved metals were detected above laboratory reporting limits in surface water samples collected from Hickory Pond in April-May 2012. The concentrations of Di-n-octylphthalate, total chromium, and dissolved arsenic exceeded the screening criteria as presented in **Table 4-10** and illustrated on **Figure 4-2**. The validated analytical results are presented in **Table 4-11** and **Appendix B**.

TABLE 4-10
Hickory Pond Surface Water Exceedance Summary

Analyte	Frequency of Detection Rate	Maximum Concentration(µg/L)	Location of Maximum Concentration	NC2B-SW-Human Health & Water Supply (µg/L)	RSLs Tap X 10 for SW Adjusted (May 2012) (µg/L)	Frequency of Exceedance Rate
SVOCs						
Di-n-octylphthalate	1/5	3.5 J	HICP-SW05	NE	0.71	1/5
Total Metals						
Chromium	3/5	0.444 J	HICP-SW03	NE	0.31	2/5
Dissolved Metals						
Arsenic	4/5	5.74 J	HICP-SW03	10	0.45	4/5

µg/L – micrograms per liter
J – Analyte present, value may or may not be accurate or precise
NE – None established
NC2B-SW – North Carolina Surface Water Quality Standard

4.4 Fish Tissue

Fish tissue concentrations were compared to risk-based screening criteria as part of the HHRA and ERA in Sections 5 and 6. A summary of pesticide and metals detections is presented as follows. PCB congener data will be discussed in the risk assessment sections. The validated analytical data are included in **Appendix B**.

4.4.1 Henderson Pond

As part of the Phase II investigation, a total of 12 composite fish tissue samples were collected from Henderson Pond. Two pesticides (4,4'-DDE and 4,4'-DDT) and PCB congeners were detected in fish tissue samples above laboratory reporting limits. Arsenic was not detected in any of the fish tissue samples. A summary of the pesticides, 4,4'-DDE and 4,4'-DDT, detected in the fish tissue samples is presented as follows in **Table 4-12.** PCB congener data are included in the validated analytical data tables in **Appendix B.**

TABLE 4-12
Henderson Pond Fish Tissue Pesticide Detections Summary

Analyte	Frequency of Detection Rate	Maximum Concentration	Location of Maximum Concentration	Fish Species	Fillet or Offal Sample
Pesticides (µg/kg)					
4,4'-DDE	10/12	38 J	HENP-C02	Catfish	Offal
4,4'-DDT	9/12	65 J	HENP-C02	Catfish	Offal

µg/kg – micrograms per kilogram (reported in wet weight)
J – Analyte present, value may or may not be accurate or precise

4.4.2 Hickory Pond

As part of the Phase II investigation, a total of six composite fish tissue samples were collected from Hickory Pond. One pesticide (4,4'-DDE), 13 total metals, and PCB congeners were detected in fish tissue samples above laboratory reporting limits. There were no SVOC concentrations detected above laboratory reporting limits. A summary of the pesticide (4,4'-DDE) and metals concentrations detected above laboratory reporting limits is presented as follows in **Table 4-13.** PCB congener data are included in the validated analytical data tables in **Appendix B.**

TABLE 4-13
Hickory Pond Fish Tissue Pesticide and Metals Detections Summary

Analyte	Frequency of Detection Rate	Maximum Concentration	Location of Maximum Concentration	Fish Species	Fillet or Offal Sample
Pesticide (μg/kg)					
4,4'-DDE	4/6	52 J	HICP-S01	Sunfish	Offal
Metals (mg/kg)					
Aluminum	3/6	48.2 J	HICP-S01	Sunfish	Offal
Barium	6/6	4.29	HICP-B01	Bass	Offal
Calcium	6/6	94,700 J	HICP-B01	Bass	Offal
Chromium	6/6	1.81	HICP-B01	Bass	Offal
Cobalt	1/6	0.0566 J	HICP-CP01	Carp	Offal
Iron	4/6	58.5	HICP-CP01 HICP-S01	Carp Sunfish	Offal Offal
Magnesium	6/6	1,760	HICP-B01	Bass	Offal
Manganese	6/6	1.66 J	HICP-B01	Bass	Offal
Mercury	6/6	0.625	HICP-B01	Bass	Fillet
Potassium	6/6	4,160	HICP-S01	Sunfish	Fillet
Selenium	6/6	1.88 J	HICP-B01	Bass	Offal
Sodium	6/6	2,890	HICP-B01	Bass	Offal
Zinc	6/6	37.1	HICP-B01	Bass	Offal

μg/kg – micrograms per kilogram (reported in wet weight)
mg/kg – milligrams per kilogram (reported in wet weight)
J – Analyte present, value may or may not be accurate or precise

TABLE 4-2

Validated Surface Soil Analytical Results

Henderson/Hickory Pond Investigation

MCIEAST - MCB CAMLEJ, Jacksonville, North Carolina

Station ID	MCIEAST - MCB CAMLEJ Background Undeveloped SS Combined Soil (Aug. 2011)	Adjusted Residential Soil RSLs (May 2012)	NCSSLs (Feb. 2012)	HENP-IS01	HENP-IS02	HENP-IS03	HENP-IS04	HENP-IS05		HENP-IS06	HENP-IS07	HENP-IS08	HENP-IS09	HENP-IS10
Sample ID				HENP-SS01-0-1-12B	HENP-SS02-0-1-12B	HENP-SS03-0-1-12B	HENP-SS04-0-1-12B	HENP-SS05-0-1-12B	HENP-SS05D-0-1-12B	HENP-SS06-0-1-12B	HENP-SS07-0-1-12B	HENP-SS08-0-1-12B	HENP-SS09-0-1-12B	HENP-SS10-0-1-12B
Sample Date				04/23/12	05/03/12	05/03/12	05/03/12	05/03/12	05/03/12	05/02/12	05/02/12	05/03/12	05/02/12	05/03/12
Chemical Name														
Semivolatile Organic Compounds (µg/kg)														
Benzo(a)anthracene	10.1	150	180	28 U	21 J	19 J	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Benzo(a)pyrene	8.46	15	59	28 U	33 U	8.3 J	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Chrysene	10.7	15000	18,000	28 U	33 U	13 J	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Pesticide/Polychlorinated Biphenyls (µg/kg)														
Aroclor-1260	--	220	140	11 U	13 U	11 U	11 U	12 U	11 U	11 U	11 U	1,300 J	11 U	10 U
Total Metals (mg/kg)														
Aluminum	12,800	7,700	--	3,010 J	3,310 J	1,070 J	4,340 J	3,860 J	2,320 J	399	474	9,580 J	2,440 J	1,220 J
Antimony	1.87	3.1	0.9	1.87 U	1.83 UJ	1.48 UJ	0.402 J	1.64 UJ	0.308 J	1.9 U	1.74 U	1.47 UJ	1.66 U	1.26 UJ
Arsenic	1.17	0.39	5.8	0.773 J	0.934 J	1.48 U	0.619 J	0.533 J	0.505 J	1.9 U	0.489 J	2.17 J	0.94 J	0.567 J
Barium	36.7	1500	580	6.25	14	2.73	7.82	3.04	3.29	4.29	7.41	9.1	8.89	5.29
Beryllium	0.195	16	63	0.0249 J	0.0218 J	0.0371 U	0.0357 J	0.023 J	0.0159 J	0.0476 U	0.0152 J	0.0748	0.0394 J	0.028 J
Cadmium	0.2	7	3	0.0937 U	0.0572 J	0.0741 U	0.0761 U	0.0819 U	0.0641 U	0.0952 U	0.0872 U	0.0735 U	0.0254 J	0.0631 U
Calcium	8,470	--	--	171	80.4 U	27.8 U	32.2 U	57.8 U	115 U	89 U	70 U	52.3 U	1,560 J	138
Chromium (hexavalent)	2.73	0.29	3.8	0.22 U	0.27 U	0.22 U	0.82 J	0.24 U	0.22 U	0.21 U	0.21 U	0.21 U	0.22 U	0.21 U
Chromium	17.4	0.29	3.8	1.97	4.01	1.21	4.95	3.82	2.17	1.07	0.655 J	10.7	3.04	1.44
Copper	17.1	310	700	0.729 J	1.72	0.693 J	0.801	0.493 J	0.432 J	0.389 J	0.808 J	2.29	0.815 J	1.46
Iron	7,210	5,500	150	987 J	1,520 J	584 J	1,780 J	1,600 J	1,070 J	346	265	10,500 J	2,130 J	817 J
Lead	27.5	400	270	3.59 J	12.2	3.99	3.69	4.01	4.34	5.61	5.78	5.96	5.36	5.16
Magnesium	904	--	--	47.1	46.6	15.4 J	80.5	41.3	34.7	13 J	14.1 J	149	90.7	28.1 J
Manganese	37	180	65	3.69	7.83	2.87	4.09	1.23 J	1.34	4.49	2.1	4.63	11.4	3.72
Mercury	0.161	2.3	1	0.00957 J	0.0539	0.00349 J	0.025	0.0254 J	0.00827 J	0.00608 U	0.00607 U	0.0101 J	0.0247	0.00341 J
Nickel	3.11	150	130	0.681 J	0.908 J	0.345 J	0.985	1.02	0.442 J	0.0933 J	0.13 J	1.27	0.518 J	0.305 J
Potassium	359	--	--	54.3	50.6	16.2 J	84.5	39.3 J	31.9 J	23.8 U	16.4 J	132	93.2	39
Vanadium	17.6	39	6	3.37	4.62	1.91	6.86	5.78	3.58	1.19	1.25	17.9	5.44	2.89
Zinc	28.6	2300	1,200	0.894 J	18.6	2.99	1.37 J	1.17 J	1.54	0.458 J	0.827 J	2.32	1.77	3.15

Notes:

Shading indicates exceedance of base background concentration for combined surface soil type.

Bold box indicates exceedance of NC SSL

Underline indicates exceedance of Adjusted Residential Soil RSLs

NA - Not analyzed

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

mg/kg - Milligrams per kilogram

µg/kg - Micrograms per kilogram

TABLE 4-3

Validated Subsurface Soil Analytical Results

Henderson/Hickory Pond Investigation

MCIEAST - MCB CAMLEJ, Jacksonville, North Carolina

Station ID	MCIEAST - MCB CAMLEJ Background Undeveloped SB Combined Soil (Aug. 2011)	Adjusted Residential Soil RSLs (May 2012)	NCSSLs (Feb. 2012)	HENP-IS01	HENP-IS02	HENP-IS03	HENP-IS04	HENP-IS05	HENP-IS06	HENP-IS07	HENP-IS08	HENP-IS09	HENP-IS10
Sample ID				HENP-SB01-1-4-12B	HENP-SB02-1-4-12B	HENP-SB03-1-4-12B	HENP-SB04-1-4-12B	HENP-SB05-1-4-12B	HENP-SB06-1-4-12B	HENP-SB07-1-4-12B	HENP-SB08-1-4-12B	HENP-SB09-1-4-12B	HENP-SB10-1-4-12B
Sample Date				04/23/12	05/03/12	05/03/12	05/03/12	05/03/12	05/02/12	05/02/12	05/03/12	05/02/12	05/03/12
Chemical Name													
Semivolatile Organic Compounds (µg/kg)													
No Detections													
Pesticide/Polychlorinated Biphenyls (µg/kg)													
No Detections													
Total Metals (mg/kg)													
Aluminum	19,000	7,700	--	7,160 J	7,320 J	1,920 J	996 J	5,110 J	5,490 J	3,460 J	7,700 J	8,560 J	2,130 J
Arsenic	5.09	0.39	5.8	1.6 J	1.1 J	0.425 J	1.71 U	0.829 J	0.888 J	0.911 J	4.4	2.84 J	0.671 J
Barium	28.3	1,500	580	12.1	9.49	3.93	3.83	5	8.81	6.01	9.86	11.3	4.78
Beryllium	0.332	16	63	0.0569 J	0.0352 J	0.0152 J	0.0167 J	0.0298 J	0.0436 J	0.0263 J	0.0716 J	0.0678 J	0.0269 J
Cadmium	0.208	7	3	0.086 U	0.0769 U	0.0626 U	0.0853 U	0.0837 U	0.0812 U	0.0972 U	0.0317 J	0.0958 U	0.0704 U
Calcium	1,530	--	--	39.5 U	66.2 U	46.8 U	36.1 U	28.8 U	336	21.4 U	94.2 U	397	48.2 U
Chromium (hexavalent)	3.74	0.29	3.8	0.89 J	1.3	0.14 J	0.22 J	0.69 J	1.9	0.24 J	1.5	1.5	0.22 U
Chromium	27.6	0.29	3.8	6.43	7.21	2	1.05	5.1	6.01	3.07	10.4	10.1	2.6
Copper	6.05	310	700	1.35	0.406 J	1.03	0.213 J	0.357 J	2.64	0.419 J	1.26	0.922 J	0.413 J
Iron	12,700	5,500	150	2,960 J	3,390 J	846 J	580 J	2,090 J	2,480 J	2,830 J	5,900 J	12,200 J	954 J
Lead	11.2	400	270	4.15	4.28	2.29 J	3.05 J	2.84 J	3.89	3.14 J	5.29	5.13	2.55 J
Magnesium	776	--	--	153	162	36.8	18.3 J	132	132	59.2	174	145	47.2
Manganese	18.3	180	65	2.68	2.62	2.74	3.97	1.54 J	3.18	2.62	2.64	2.66	7.14
Mercury	0.0852	2.3	1	0.0188	0.0139 J	0.00342 J	0.00318 J	0.0138 J	0.0107 J	0.00809 J	0.0118 J	0.00784 J	0.0067 J
Nickel	7.08	150	130	1.05	1.31	0.634	0.299 J	0.878	1.22	0.689 J	0.913	0.876 J	0.863
Potassium	620	--	--	174	111	27.5 J	27.1 J	105	113	52	204	152	54.1
Vanadium	35.6	39	6	10.8	8.84	2.32	1.99	6.64	7.2	6.59	15.9	18.2	2.99
Zinc	14.1	2,300	1,200	1.66 J	1.28 J	2.06	0.555 J	1.3 J	1.95	1.04 J	1.96	1.75 J	0.742 J

Notes:

Shading indicates exceedance of base background concentration for combined surface soil type.

Bold box indicates exceedance of NC SSL

Underline indicates exceedance of Adjusted Residential Soil RSLs

RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

mg/kg - Milligrams per kilogram

µg/kg - Micrograms per kilogram

TABLE 4-5

Henderson Pond Validated Sediment Exceedance Analytical Results, April-May 2012

Henderson/Hickory Pond Investigation

MCIEAST - MCB CAMLEJ, Jacksonville, North Carolina

Station ID	Adjusted Residential Soil RSLs (May 2012)	NCSSL (Feb. 2012)	IR74-HP-SW/SD01	IR74-HP-SW/SD02	IR74-HP-SW/SD03	IR74-HP-SW/SD04	IR74-HP-SW/SD05		HENP-SD01		HENP-SD02
Sample ID			IR74-HP-SD01-0-0_5-11D	IR74-HP-SD02-0-0_5-11D	IR74-HP-SD03-0-0_5-11D	IR74-HP-SD04-0-0_5-11D	IR74-HP-SD05-0-0_5-11D	IR74-HP-SD05D-0-0_5-11D	HENP-SD01-0-0_5-12B	HENP-SD01D-0-0_5-12B	HENP-SD02-0-0_5-12B
Sample Date			11/16/11	11/16/11	11/16/11	11/16/11	11/16/11	11/16/11	04/30/12	04/30/12	04/30/12
Chemical Name											
Volatile Organic Compounds (µg/kg)											
2-Butanone	2,800,000	16,000	19 J	11 UJ	38	3.8 U	3.9 J	20 J	NA	NA	NA
Acetone	6,100,000	24,000	100 J	32 J	97	19 U	17 J	150 J	NA	NA	NA
Semivolatile Organic Compounds (µg/kg)											
bis(2-Ethylhexyl)phthalate	35,000	7,200	370 U	400 U	780 U	190 UJ	240 U	550 J	NA	NA	NA
Phorate	1,200	13	370 U	80 U	78 U	190	48 UJ	320 UJ	NA	NA	NA
Pesticide/Polychlorinated Biphenyls (µg/kg)											
4,4'-DDE	1,400	240	11 J	11 J	2.6 J	1.9 UJ	5.6 J	3.2 J	2.5 J	6.7 J	15 J
4,4'-DDT	1,700	340	3.7 U	4 U	3.9 U	78 J	2.4 U	3.2 U	2.4 UJ	2.3 UJ	3.3 UJ
Aroclor-1260	220	140	240 J	220 J	85 J	39 U	65 J	110 J	16 J	11 J	120 J
Total Metals (mg/kg)											
Aluminum	7,700	--	16,300 J	13,100 J	10,100 J	2,340 J	5,370 J	8,350 J	NA	NA	NA
Antimony	3.1	0.9	3.68 UJ	4.99 UJ	1.37 J	0.951 J	2.38 UJ	4 UJ	NA	NA	NA
Arsenic	0.39	5.8	3.4 J	2.47 J	3.13 J	0.891 J	1.11 J	2.13 J	2.76 J	1.84 J	3.68 J
Barium	1,500	580	52.3	53.9	35.5	10.4	17.7	28.4	55.6	47.7	83.3
Beryllium	16	63	0.462	0.412	0.257 J	0.0452 J	0.125	0.172 J	NA	NA	NA
Cadmium	7	3	0.412	0.272 J	0.188 J	0.414	0.0914 J	0.105 J	NA	NA	NA
Calcium	--	--	5,490	5,700	4,010	5,230	1,990	2,470	NA	NA	NA
Chromium	0.29	3.8	17.4	13.5	11.7	4	6.31	9.77	NA	NA	NA
Cobalt	2.3	0.9	2.65	1.64 J	1.55 J	0.479 J	0.777 J	0.866 J	NA	NA	NA
Copper	310	700	33.3	78.3	75.9	15.2	32.5	18.6	6.61	5.57	10.6
Iron	5,500	150	7,580	5,560	6,350	1,770	3,190	4,940	NA	NA	NA
Lead	400	270	31.9	30	21	10.5	11.3	19	NA	NA	NA
Magnesium	--	--	571	460	435	1,870	201	290	NA	NA	NA
Manganese	180	65	18.7	23.4	23.6	19.4	12.6	14.8	NA	NA	NA
Mercury	2.3	1	0.0676	0.0721	0.0617 J	0.0078 J	0.0208 J	0.0543	NA	NA	NA
Nickel	150	130	8.38	6.37	5.82	1.87	2.53	3.28	NA	NA	NA
Potassium	--	--	533	402	430	118 J	205	296	NA	NA	NA
Selenium	39	2.1	1.36 J	4.99 U	5.26 U	3.27 U	2.38 U	4 U	NA	NA	NA
Silver	39	3.4	0.64 J	1.25 U	1.31 U	0.818 U	0.595 U	0.999 U	NA	NA	NA
Vanadium	39	6	30.8	23.4	19.7	5	9.95	15.4	NA	NA	NA
Zinc	2,300	1,200	95.3 J	56.5 J	48.8 J	77.5 J	22.4 J	24.7 J	NA	NA	NA
Wet Chemistry											
Total organic carbon (TOC) (mg/kg)	--	--	NA	NA	NA	NA	NA	NA	49,000	63,000	65,000

#REF!

Notes:

Bold box indicates exceedance of NC SSL

Underline indicates exceedance of Adjusted Residential Soil RSLs

RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents

* - The MCL-Groundwater value is reported in place of the NCSSL where the MCL value is more conservative.

NA - Not analyzed

J - Analyte present, value may or may not be accurate or precise

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

mg/kg - Milligrams per kilogram

µg/kg - Micrograms per kilogram

TABLE 4-5

Henderson Pond Validated Sediment Exceedance Analytical Results, April-May 2012

Henderson/Hickory Pond Investigation

MCIEAST - MCB CAMLEJ, Jacksonville, North Carolina

Station ID	**Adjusted Residential Soil RSLs (May 2012)**	**NCSSL (Feb. 2012)**	HENP-SD03	HENP-SD04	HENP-SD05	HENP-SD06	HENP-SD07	HENP-SD08	HENP-SD09	HENP-SD10
Sample ID			HENP-SD03-0-0_5-12B	HENP-SD04-0-0_5-12B	HENP-SD05-0-0_5-12B	HENP-SD06-0-0_5-12B	HENP-SD07-0-0_5-12B	HENP-SD08-0-0_5-12B	HENP-SD09-0-0_5-12B	HENP-SD10-0-0_5-12B
Sample Date			04/30/12	04/30/12	04/30/12	04/30/12	04/30/12	04/30/12	04/30/12	04/30/12
Chemical Name										
Volatile Organic Compounds (µg/kg)										
2-Butanone	2,800,000	16,000	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	6,100,000	24,000	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/kg)										
bis(2-Ethylhexyl)phthalate	35,000	7,200	NA	NA	NA	NA	NA	NA	NA	NA
Phorate	1,200	13	NA	NA	NA	NA	NA	NA	NA	NA
Pesticide/Polychlorinated Biphenyls (µg/kg)										
4,4'-DDE	1,400	240	1.6 UJ	14 J	4.9 J	3.6 J	5 J	5.9 J	1.7 UJ	2 UJ
4,4'-DDT	1,700	340	31 J	18 J	1.6 UJ	8.8	11 J	22 J	1.7 UJ	2 UJ
Aroclor-1260	220	140	160 J	76 J	23 J	37 J	36 J	55 J	17 UJ	7.8 J
Total Metals (mg/kg)										
Aluminum	7,700	--	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	3.1	0.9	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.39	5.8	1.2 J	1.37 J	0.929 J	1.06 J	2.1 J	4.24 J	1.21 J	2.45 J
Barium	1,500	580	20	35.1	14.3	16.1	38.8	85.7	15.6	38.3
Beryllium	16	63	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	7	3	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	0.29	3.8	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	2.3	0.9	NA	NA	NA	NA	NA	NA	NA	NA
Copper	310	700	3.99	3.14	1.16	3.51	5.55	9.84	6.84	10.1
Iron	5,500	150	NA	NA	NA	NA	NA	NA	NA	NA
Lead	400	270	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	180	65	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2.3	1	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	150	130	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	39	2.1	NA	NA	NA	NA	NA	NA	NA	NA
Silver	39	3.4	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	39	6	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2,300	1,200	NA	NA	NA	NA	NA	NA	NA	NA
Wet Chemistry										
Total organic carbon (TOC) (mg/kg)	--	--	21,000	53,000	22,000	18,000	41,000	83,000	18,000	28,000

#REF!

Notes:

Bold box indicates exceedance of NC SSL

Underline indicates exceedance of Adjusted Residential Soil RSLs

RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents

* - The MCL-Groundwater value is reported in place of the NCSSL where the MCL value is more conservative.

NA - Not analyzed

J - Analyte present, value may or may not be accurate or precise

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

mg/kg - Milligrams per kilogram

µg/kg - Micrograms per kilogram

TABLE 4-7

Validated Hickory Pond Sediment Analytical Results

Henderson/Hickory Pond Investigation

MCIEAST - MCB CAMLEJ, Jacksonville, North Carolina

Station ID	**NCSSLs (Feb. 2012)**	**Adjusted Residential Soil RSLs (May 2012)**	HICP-SW/SD01	HICP-SW/SD02	HICP-SW/SD03	HICP-SW/SD04	HICP-SW/SD05	
Sample ID			HICP-SD01-0-0_5-12B	HICP-SD02-0-0_5-12B	HICP-SD03-0-0_5-12B	HICP-SD04-0-0_5-12B	HICP-SD05-0-0_5-12B	HICP-SD05D-0-0_5-12B
Sample Date			05/01/12	05/01/12	05/02/12	05/02/12	05/02/12	05/02/12
Chemical Name								
Volatile Organic Compounds (µg/kg)								
2-Butanone	16,000	2,800,000	17 J	40 J	16 J	4.8 J	4.3 J	5.2 J
Acetone	24,000	6,100,000	130	180	73	35	28	26
Semivolatile Organic Compounds (µg/kg)								
Benzo(a)anthracene	180	150	20 J	50 U	41 U	36 U	31 U	32 U
Pesticide/Polychlorinated Biphenyls (µg/kg)								
4,4'-DDD	240	2,000	2.1 UJ	2 U	1.6 UJ	1.4 UJ	3	6.7 J
4,4'-DDE	240	1,400	1.5 J	2 U	1.7 J	1.4 UJ	1.2 J	7.6 J
Total Metals (mg/kg)								
Aluminum	--	7,700	4,150 J	3,520 J	6,120 J	5,990 J	2,060 J	2,900 J
Arsenic	5.8	0.39	1.35 J	1.02 J	1.37 J	0.703 J	1.25 U	1.56 U
Barium	580	1,500	37.3	25.2	30.1	24.3	10	15.7
Beryllium	63	16	0.204	0.273	0.176	0.145	0.0571 J	0.0618 J
Cadmium	3	7	0.0797 J	0.0707 J	0.0313 J	0.0813 U	0.0624 U	0.0779 U
Calcium	--	--	771	1,040 J	850 J	546	210	352
Chromium (hexavalent)	3.8	0.29	0.24 J	0.4 U	1.6 U	0.29 U	0.25 U	0.25 U
Chromium	3.8	0.29	4.59	3.46	4.61	6.32	2.78	3.59
Cobalt	0.9	2.3	0.57 J	0.649 J	0.363 J	0.425 J	0.312 U	0.39 U
Copper	700	310	4.02	5.52	1.32	1.54	0.474 J	0.585 J
Iron	150	5,500	2,630 J	2,020 J	2,730 J	2,560 J	928 J	1,090 J
Lead	270	400	11.8	8.89	11.1	7	3.11	4.4
Magnesium	--	--	169	108	183	227	79.8	101
Manganese	65	180	7.45	4.35	9.43	5.76	2.21	2.49
Mercury	1	2.3	0.0327	0.0345	0.0319	0.0187 J	0.00647 U	0.00654 U
Potassium	--	--	124	76.7	109	186	66.1	75.7
Selenium	2.1	39	0.812 J	0.713 J	0.672 J	0.579 J	1.25 U	1.56 U
Vanadium	6	39	8.62	5.4	8.23	8.18	3.78	4.7
Zinc	1,200	2,300	12	15.2	8.32	7.5	2.29	3.38
Wet Chemistry								
Total organic carbon (TOC) (mg/kg)	--	--	28,000	45,000	26,000	9,100	1,200	2,000

Notes:

Bold box indicates exceedance of NC SSL

Underline indicates exceedance of Adjusted Residential Soil RSLs

RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

mg/kg - Milligrams per kilogram

µg/kg - Micrograms per kilogram

TABLE 4-9

Validated Henderson Pond Surface Water Analytical Results

Henderson/Hickory Pond Investigation

MCIEAST - MCB CAMLEJ, Jacksonville, North Carolina

Station ID	NC2B-SW-Human Health & Water Supply	RSLs Tap X 10 for SW Adjusted (May 2012)	IR74-HP-SW/SD01	IR74-HP-SW/SD02	IR74-HP-SW/SD03		IR74-HP-SW/SD04			IR74-HP-SW/SD05		
Sample ID			IR74-HP-SW01-0-0_5-11D	IR74-HP-SW02-0-0_5-11D	IR74-HP-SW03-0-0_5-11D	IR74-HP-SW03-0-0_5-11D-2	IR74-HP-SW04-0-0_5-11D	IR74-HP-SW04D-0-0_5-11D	IR74-HP-SW04-0-0_5-11D-2	IR74-HP-SW05-0-0_5-11D	IR74-HP-SW05D-0-0_5-11D	IR74-HP-SW05-0-0_5-11D-2
Sample Date			11/16/11	11/16/11	11/16/11	11/17/11	11/16/11	11/16/11	11/17/11	11/16/11	11/16/11	11/17/11
Chemical Name												
Volatile Organic Compounds (µg/l)												
No Detections												
Semivolatile Organic Compounds (µg/l)												
No Detections												
Pesticide/Polychlorinated Biphenyls (µg/l)												
No Detections												
Total Metals (µg/l)												
Aluminum	--	16,000	167 J	173 J	156 J	NA	145 J	168 J	NA	138 J	130 J	NA
Arsenic	10	0.45	20 U	20 U	20 U	NA	4.39 J	20 U	NA	20 U	20 U	NA
Barium	1,000	2,900	4.87 J	4.6 J	4.38 J	NA	5.37 J	5.59 J	NA	4.93 J	4.76 J	NA
Calcium	--	--	13,500	13,300	13,100	NA	13,200	13,300	NA	13,300	13,300	NA
Chromium (trivalent)	--	16,000	5 U	0.354 J	5 U	NA	0.351 J	5 U	NA	5 U	5 U	NA
Copper	--	620	2.67 J	3.14 J	3.03 J	NA	3.52 J	50.3 J	NA	3.35 J	3.11 J	NA
Iron	--	11,000	117	121	89	NA	102	106	NA	83.7	82.2	NA
Lead	--	15	10 U	10 U	10 U	NA	10 U	3.02 J	NA	10 U	10 U	NA
Magnesium	--	--	1,110	1,120	1,100	NA	1,100	1,140	NA	1,120	1,090	NA
Manganese	200	320	3.91 J	5.94 J	2.76 J	NA	2.43 J	2.39 J	NA	10 U	10 U	NA
Potassium	--	--	973 J	989 J	933 J	NA	1,030 J	971 J	NA	931 J	971 J	NA
Sodium	--	--	4,830	4,800	4,730	NA	4,750	4,740	NA	4,930	4,760	NA
Vanadium	--	78	1.63 J	1.43 J	1.52 J	NA	1.62 J	1.76 J	NA	1.56 J	1.73 J	NA
Zinc	--	4,700	5 U	5 U	5 U	NA	5 U	32.6	NA	5 U	5 U	NA
Dissolved Metals (µg/l)												
Aluminum, Dissolved	--	16,000	112 J	90.7 J	119 J	NA	98.3 J	86.5 J	NA	118 J	101 J	NA
Antimony, Dissolved	--	6	20 U	20 U	20 U	NA	4.38 J	20 U	NA	20 U	20 U	NA
Arsenic, Dissolved	10	0.45	20 U	20 U	5.22 J	NA	20 U	20 U	NA	20 U	20 U	NA
Barium, Dissolved	1,000	2,900	5.9 J	4.88 J	5.56 J	NA	5.92 J	5.27 J	NA	5.05 J	5.61 J	NA
Calcium, Dissolved	--	--	13,300	13,100	13,200	NA	13,000	13,700	NA	13,500	13,100	NA
Chromium (trivalent), Dissolved	--	16,000	0.353 J	5 U	5 U	NA	0.498 J	5 U	NA	5 U	0.265 J	NA
Copper, Dissolved	--	620	3.09 J	3.45 J	4.26 J	NA	4.06 J	3.27 J	NA	3.1 J	4.23 J	NA
Iron, Dissolved	--	11,000	86.1	88.6	70.6	NA	79.6	74.8	NA	73.7	77.4	NA
Magnesium, Dissolved	--	--	1,100	1,090	1,090	NA	1,090	1,130	NA	1,120	1,090	NA
Manganese, Dissolved	200	320	3.17 J	5.03 J	2.03 J	NA	2.14 J	1.79 J	NA	1.38 J	1.46 J	NA
Nickel, Dissolved	25	300	1.05 J	0.842 J	1.05 J	NA	1.22 J	0.751 J	NA	0.44 J	1.11 J	NA
Potassium, Dissolved	--	--	1,010 J	947 J	971 J	NA	1,040 J	1,000 J	NA	946 J	986 J	NA
Sodium, Dissolved	--	--	4,870	4,850	4,900	NA	4,920	4,900	NA	4,940	4,900	NA
Zinc, Dissolved	--	4,700	4.39 J	3.13 J	5 U	NA	5 U	5 U	NA	5 U	5 U	NA
Wet Chemistry												
Total organic carbon (TOC) (mg/l)	--	--	NA	NA	NA	11	NA	NA	7.1	NA	NA	7.4

Notes:

Shading exceeds RSLs

Underline exceeds NC2B-SW Human Health & Water Supply 2

Bold box indicates exceedance of NC2B-SW-Human Health + Water Supply 1

RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents

1 - NC2B-SW-Human Health and NC2B-SW-Water Supply were combined to show the most conservative criteria

NA - Not analyzed

J - Analyte present, value may or may not be accurate or precise

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

mg/l - Milligrams per liter

µg/l - Micrograms per liter

TABLE 4-11

Validated Hickory Pond Surface Water Analytical Results

Henderson/Hickory Pond Investigation

MCIEAST - MCB CAMLEJ, Jacksonville, North Carolina

Station ID	**NC2B-SW-Human Health & Water Supply[1]**	**RSLs Tap X 10 for SW Adjusted (May 2012)**	HICP-SW/SD01	HICP-SW/SD02	HICP-SW/SD03		HICP-SW/SD04	HICP-SW/SD05
Sample ID			HICP-SW01-0-1-12B	HICP-SW02-0-1-12B	HICP-SW03-0-1-12B	HICP-SW03D-0-1-12B	HICP-SW04-0-1-12B	HICP-SW05-0-1-12B
Sample Date			05/01/12	05/01/12	05/01/12	05/01/12	05/01/12	05/01/12
Chemical Name								
Volatile Organic Compounds (µg/l)								
Acetone	--	12,000	14 J	17 J	19 J	17 J	16 J	16 J
Semivolatile Organic Compounds (µg/l)								
Di-n-octylphthalate	--	0.71	6 UJ	6 UJ	6 U	6 UJ	6 UJ	3.5 J
Pesticide/Polychlorinated Biphenyls (µg/l)								
No Detections								
Total Metals (µg/l)								
Aluminum	--	16,000	282 J	244 J	466	623	260 J	251 J
Barium	1,000	2,900	29.8	30.4	31.8	31.4	29.9	29.4
Calcium	--	--	6,630	6,770	6,650	6,420	6,670	6,690
Chromium	--	0.31	0.267 J	5 U	0.353 J	0.444 J	5 U	5 U
Copper	--	620	1.88 J	5 U	1.56 J	5 U	5 U	5 U
Iron	--	11,000	565	515	639	662	447	466
Magnesium	--	--	1,620	1,600	1,610	1,570	1,630	1,600
Manganese	200	320	13.9 J	13.1 J	12.9 J	12.3 J	11.9 J	11.9 J
Mercury	--	4.3	0.069 U	0.069 U	0.111 J	0.069 U	0.069 U	0.069 U
Potassium	--	--	877	863	862	793	840	830
Sodium	--	--	6,660	6,760	6,790	6,490	6,830	6,680
Vanadium	--	78	1.6 J	0.983 J	1.8 J	1.91 J	1.04 J	1.43 J
Dissolved Metals (µg/l)								
Aluminum, Dissolved	--	16,000	56.2 J	42 J	102 J	79.4 J	69.3 J	97.6 J
Arsenic, Dissolved	10	0.45	4.47 J	20 U	5.39 J	5.74 J	5.4 J	4.97 J
Barium, Dissolved	1,000	2,900	27.5	26.3 U	25.9 U	25.3 U	25.2 U	25.7 U
Calcium, Dissolved	--	--	6,570	6,060	6,270	6,180	6,210	5,950
Cobalt, Dissolved	--	4.7	5 U	0.386 J	5 U	5 U	5 U	5 U
Iron, Dissolved	--	11,000	132	125	92.2 J	54 J	72.9	118
Magnesium, Dissolved	--	--	1,580	1,470	1,540	1,530	1,520	1,430
Potassium, Dissolved	--	--	755	695	654	658	689	682
Sodium, Dissolved	--	--	6,930	6,520	6,720	6,690	6,700	6,750
Vanadium, Dissolved	--	78	0.704 J	0.666 J	5 U	0.933 J	0.591 J	0.582 J

Notes:

Bold box indicates exceedance of NC2B-SW-Human Health + Water Supply

Underline indicates exceedance of RSLs Tap X 10 for SW Adjusted (May, 2012)

RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents

[1] NC2B-SW-Human Health and NC2B-SW-Water Supply were combined to show the most conservative criteria

J - Analyte present, value may or may not be accurate or precise

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

µg/l - Micrograms per liter

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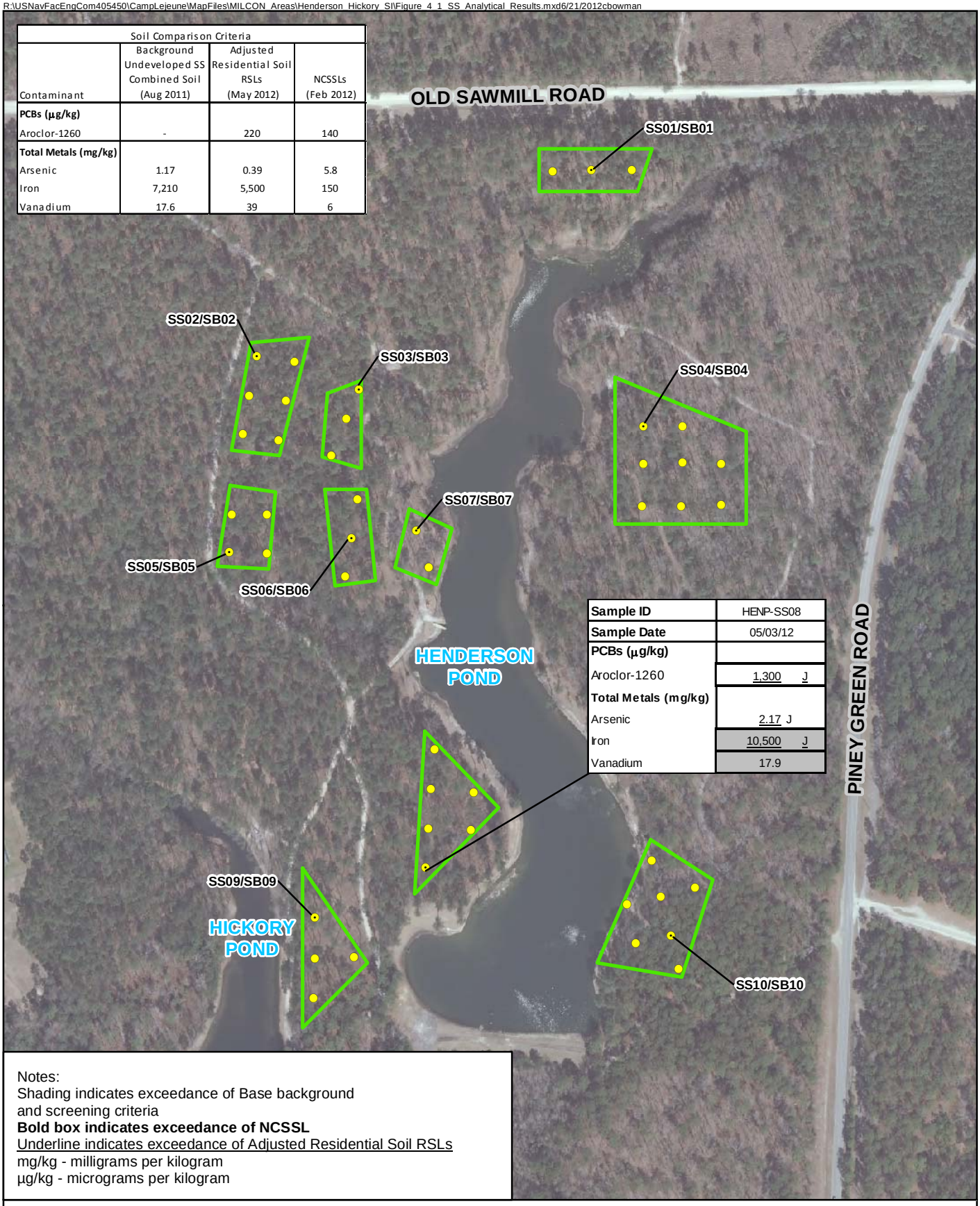

Soil Comparison Criteria			
Contaminant	Background Undeveloped SS Combined Soil (Aug 2011)	Adjusted Residential Soil RSLs (May 2012)	NCSSLs (Feb 2012)
PCBs (µg/kg)			
Aroclor-1260	-	220	140
Total Metals (mg/kg)			
Arsenic	1.17	0.39	5.8
Iron	7,210	5,500	150
Vanadium	17.6	39	6

Sample ID	HENP-SS08
Sample Date	05/03/12
PCBs (µg/kg)	
Aroclor-1260	1,300 J
Total Metals (mg/kg)	
Arsenic	2.17 J
Iron	10,500 J
Vanadium	17.9

Notes:
Shading indicates exceedance of Base background and screening criteria
Bold box indicates exceedance of NCSSL
Underline indicates exceedance of Adjusted Residential Soil RSLs
mg/kg - milligrams per kilogram
µg/kg - micrograms per kilogram

Legend

- Composite Surface Soil Sample Location
- Subsurface/Surface Soil
- Proposed Campgrounds

N

0 175 350 Feet

1 inch = 350 feet

Figure 4-1
Surface Soil Exceedance Map
Henderson/Hickory Pond Investigation
MCIEAST - MCB CAMLEJ
North Carolina

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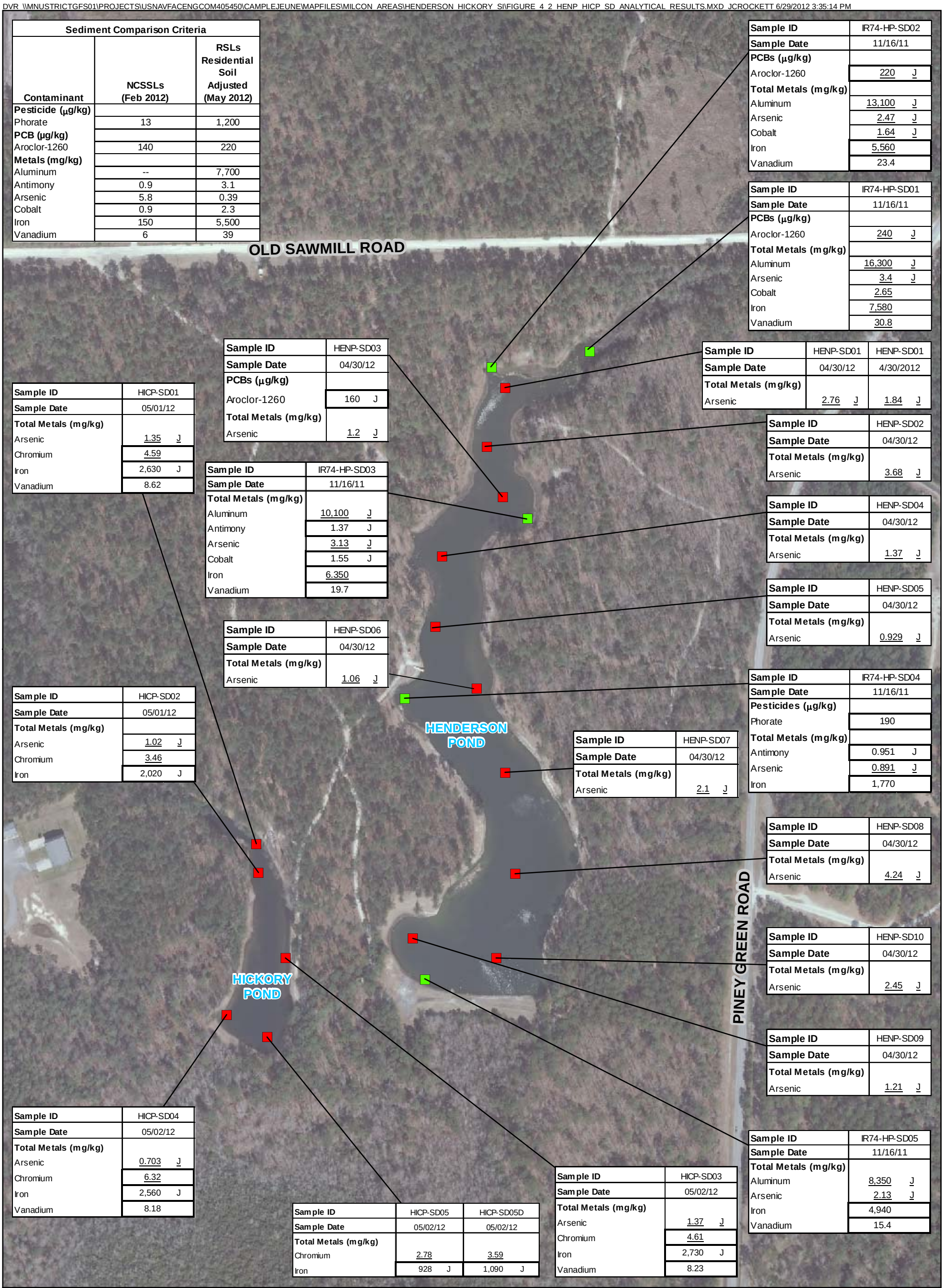

Sediment Comparison Criteria		
Contaminant	NCSSLs (Feb 2012)	RSLs Residential Soil Adjusted (May 2012)
Pesticide (µg/kg)		
Phorate	13	1,200
PCB (µg/kg)		
Aroclor-1260	140	220
Metals (mg/kg)		
Aluminum	--	7,700
Antimony	0.9	3.1
Arsenic	5.8	0.39
Cobalt	0.9	2.3
Iron	150	5,500
Vanadium	6	39

Sample ID	IR74-HP-SD02
Sample Date	11/16/11
PCBs (µg/kg)	
Aroclor-1260	220 J
Total Metals (mg/kg)	
Aluminum	13,100 J
Arsenic	2.47 J
Cobalt	1.64 J
Iron	5,560
Vanadium	23.4

Sample ID	IR74-HP-SD01
Sample Date	11/16/11
PCBs (µg/kg)	
Aroclor-1260	240 J
Total Metals (mg/kg)	
Aluminum	16,300 J
Arsenic	3.4 J
Cobalt	2.65
Iron	7,580
Vanadium	30.8

Sample ID	HENP-SD03
Sample Date	04/30/12
PCBs (µg/kg)	
Aroclor-1260	160 J
Total Metals (mg/kg)	
Arsenic	1.2 J

Sample ID	HENP-SD01	HENP-SD01
Sample Date	04/30/12	4/30/2012
Total Metals (mg/kg)		
Arsenic	2.76 J	1.84 J

Sample ID	HICP-SD01
Sample Date	05/01/12
Total Metals (mg/kg)	
Arsenic	1.35 J
Chromium	4.59
Iron	2,630 J
Vanadium	8.62

Sample ID	HENP-SD02
Sample Date	04/30/12
Total Metals (mg/kg)	
Arsenic	3.68 J

Sample ID	IR74-HP-SD03
Sample Date	11/16/11
Total Metals (mg/kg)	
Aluminum	10,100 J
Antimony	1.37 J
Arsenic	3.13 J
Cobalt	1.55 J
Iron	6.350
Vanadium	19.7

Sample ID	HENP-SD04
Sample Date	04/30/12
Total Metals (mg/kg)	
Arsenic	1.37 J

Sample ID	HENP-SD05
Sample Date	04/30/12
Total Metals (mg/kg)	
Arsenic	0.929 J

Sample ID	HENP-SD06
Sample Date	04/30/12
Total Metals (mg/kg)	
Arsenic	1.06 J

Sample ID	IR74-HP-SD04
Sample Date	11/16/11
Pesticides (µg/kg)	
Phorate	190
Total Metals (mg/kg)	
Antimony	0.951 J
Arsenic	0.891 J
Iron	1,770

Sample ID	HICP-SD02
Sample Date	05/01/12
Total Metals (mg/kg)	
Arsenic	1.02 J
Chromium	3.46
Iron	2,020 J

Sample ID	HENP-SD07
Sample Date	04/30/12
Total Metals (mg/kg)	
Arsenic	2.1 J

Sample ID	HENP-SD08
Sample Date	04/30/12
Total Metals (mg/kg)	
Arsenic	4.24 J

Sample ID	HENP-SD10
Sample Date	04/30/12
Total Metals (mg/kg)	
Arsenic	2.45 J

Sample ID	HENP-SD09
Sample Date	04/30/12
Total Metals (mg/kg)	
Arsenic	1.21 J

Sample ID	HICP-SD04
Sample Date	05/02/12
Total Metals (mg/kg)	
Arsenic	0.703 J
Chromium	6.32
Iron	2,560 J
Vanadium	8.18

Sample ID	IR74-HP-SD05
Sample Date	11/16/11
Total Metals (mg/kg)	
Aluminum	8,350 J
Arsenic	2.13 J
Iron	4,940
Vanadium	15.4

Sample ID	HICP-SD05	HICP-SD05D
Sample Date	05/02/12	05/02/12
Total Metals (mg/kg)		
Chromium	2.78	3.59
Iron	928 J	1,090 J

Sample ID	HICP-SD03
Sample Date	05/02/12
Total Metals (mg/kg)	
Arsenic	1.37 J
Chromium	4.61
Iron	2,730 J
Vanadium	8.23

Legend
- Sediment Sample (2011)
- Sediment Sample (2012)

N

0 150 300 600 Feet

1 inch = 300 feet

Figure 4-2
Sediment Exceedances Map
Henderson/Hickory Pond Investigation
MCIEAST - MCB CAMLEJ
North Carolina

Notes:
Underline indicates exceedance of Adjusted Residential RSLs
Bold Box indicates exceedance of NCSSL
J - Analyte present, value may or may not be acurate or precise
mg/kg - milligrams per kilogram
µg/kg - micrograms per kilogram

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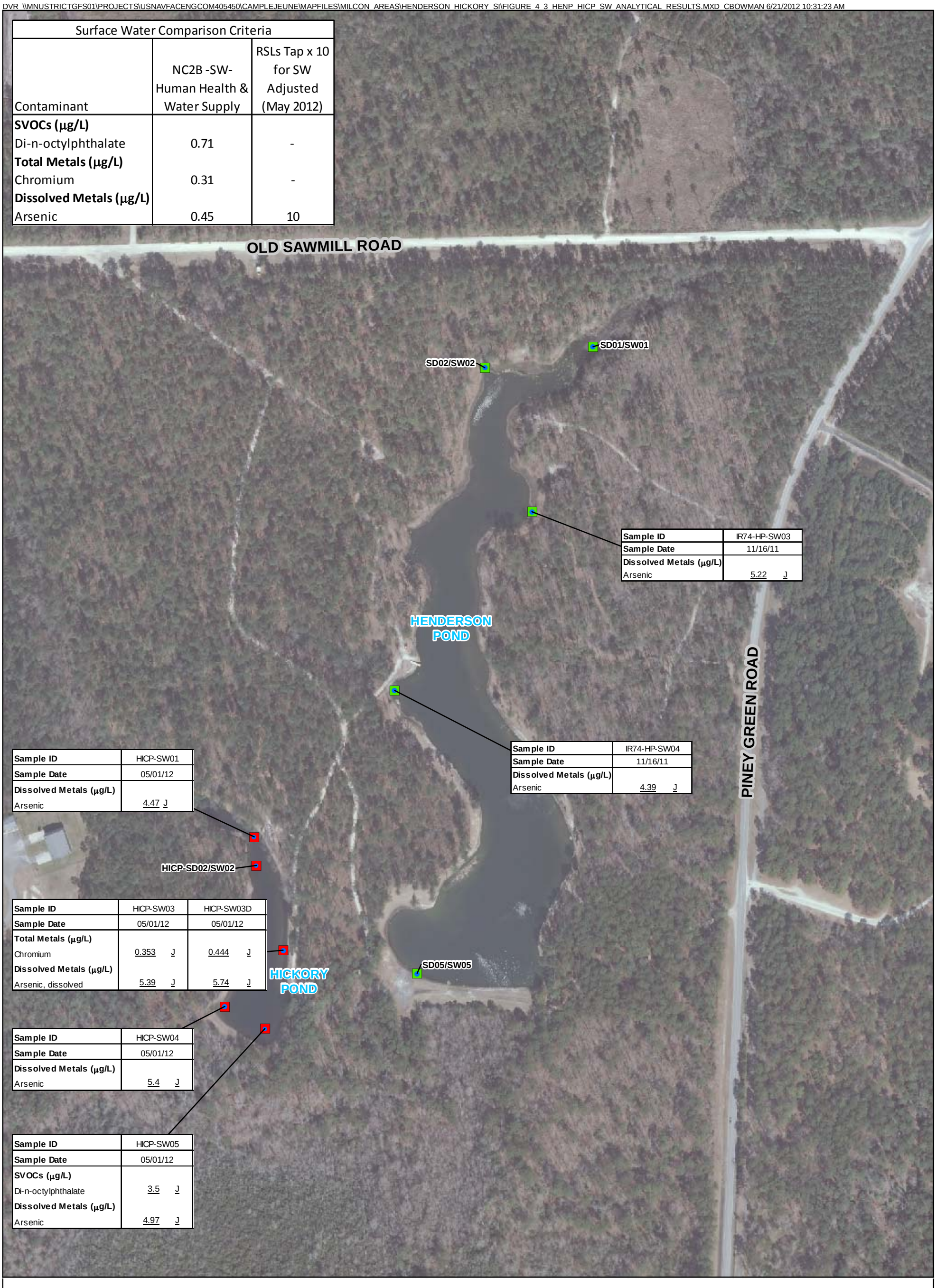

Surface Water Comparison Criteria		
Contaminant	NC2B -SW- Human Health & Water Supply	RSLs Tap x 10 for SW Adjusted (May 2012)
SVOCs (µg/L)		
Di-n-octylphthalate	0.71	-
Total Metals (µg/L)		
Chromium	0.31	-
Dissolved Metals (µg/L)		
Arsenic	0.45	10

Sample ID	IR74-HP-SW03
Sample Date	11/16/11
Dissolved Metals (µg/L)	
Arsenic	5.22 J

Sample ID	IR74-HP-SW04
Sample Date	11/16/11
Dissolved Metals (µg/L)	
Arsenic	4.39 J

Sample ID	HICP-SW01
Sample Date	05/01/12
Dissolved Metals (µg/L)	
Arsenic	4.47 J

Sample ID	HICP-SW03	HICP-SW03D
Sample Date	05/01/12	05/01/12
Total Metals (µg/L)		
Chromium	0.353 J	0.444 J
Dissolved Metals (µg/L)		
Arsenic, dissolved	5.39 J	5.74 J

Sample ID	HICP-SW04
Sample Date	05/01/12
Dissolved Metals (µg/L)	
Arsenic	5.4 J

Sample ID	HICP-SW05
Sample Date	05/01/12
SVOCs (µg/L)	
Di-n-octylphthalate	3.5 J
Dissolved Metals (µg/L)	
Arsenic	4.97 J

Legend
- Surface Water Sample (November 2011)
- Surface Water Sample (May 2012)

N

0 150 300 600 Feet

1 inch = 300 feet

Figure 4-3
Surface Water Exceedances Map
Henderson/Hickory Pond Investigation
MCIEAST - MCB CAMLEJ
North Carolina

Notes:
Underline indicates exceedance of RSLs Tap x 10 for SW Adjusted
J - Analyte present, value may or may not be acurate or precise
µg/L - micrograms per liter

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SECTION 5

Human Health Risk Assessment

The analytical data for surface soil, subsurface soil, surface water, sediment, and fish tissue collected in 2011 and 2012 at the Henderson Pond and Hickory Pond recreational area were evaluated to determine the potential for human health risks associated with exposure to these media. The risk evaluation was performed in two phases. The first phase, a HHRS, entailed comparing the site data to appropriate human health risk-based screening values and performing a risk ratio evaluation. If any of the media indicated the potential for unacceptable human health risks based on the HHRS, that medium was carried forward to the second phase of the risk evaluation, a complete HHRA. Only those media that indicated the potential for human health risks based on the first phase were carried forward to the second phase of evaluation.

Section 5.1 presents the human health conceptual site model (CSM), Section 5.2 presents a summary of the data evaluated in the risk assessment, Section 5.3 presents the Phase I screening level risk assessment, Section 5.4 presents the Phase II HHRA, and Section 5.5 summarizes the human health risk evaluation.

5.1 Conceptual Site Model

The human health CSM presents an overview of site conditions, potential contaminant migration pathways, and exposure pathways to potential receptors. The human health CSM for the Henderson Pond and Hickory Pond recreational area is presented on **Figure 5-1**. Section 2 presents the site history and site use.

Table 1 in **Appendix C** summarizes the potential exposure pathways and scenarios considered for the study area. Potential current receptors include recreational users who may come into contact with surface soil, subsurface soil, surface water, and sediment, and ingest fish caught in both ponds, and a game warden and construction worker who may come into contact with surface soil and subsurface soil. Currently, both ponds are posted with signs for “catch-and-release only” and an advisory has been placed on the Base website (http://www.lejeune.usmc.mil/gwarden/). These “catch-and-release” measures were implemented as a temporary precaution, pending the results of this evaluation. Based on the implementation of these measures, the fish ingestion route is currently considered incomplete. However, the fish ingestion exposure pathway was evaluated as potentially complete assuming the currently posted catch-and-release advisory is not retained in the future or not followed. The need for permanent signage or fish ingestion advisories will be based on recommendations from the North Carolina Department of Health and Human Services (NCDHHS) and USEPA. Potential exposure routes for the soil are ingestion, dermal contact, and inhalation of particulates, and potential exposure routes for the surface water and sediment are ingestion and dermal contact.

Potential future receptors include the current receptors, and future adult and child residents who may be exposed to surface and subsurface soil if future residential houses are constructed at the site, and the soil is re-worked, bringing the subsurface soil to the surface. Exposure routes for the soil are the same as those for current exposure to soil.

5.2 Data Summary

The purpose of this investigation is to evaluate potential risk to human health and the environment associated with development and use of the proposed Henderson Pond and Hickory Pond recreational area. Surface and subsurface soil samples were collected from 10 proposed recreational improvement areas in April-May 2012. Surface water, sediment, and fish tissue samples were collected from Henderson Pond and Hickory Pond in November 2011 (Henderson Pond surface water and sediment only) and April-May 2012 (all media). The samples evaluated in the HHRS and HHRA are identified in **Table 5-1**. The analytical data are presented in **Appendix B**.

The data used in the risk assessment were validated, and the validated data were evaluated to determine the reliability for use in the risk assessment. A review of the data identified the following criteria for data usability:

- Estimated values flagged with a J qualifier were treated as detected concentrations.

- Data qualified with an R (rejected) were not used in the risk evaluation.
- For duplicate samples, the maximum concentration between the two samples was used as the sample concentration.
- Only the detected PCB congeners were used to calculate the dioxin-like PCB toxicity equivalent (TEQ) concentrations, total non-dioxin like PCB concentrations, and total PCB concentrations for each sample. Undetected congeners and congeners qualified with a B were not included in the calculation.

5.2.1 Soil

Surface and subsurface soil samples were collected from 10 proposed recreational improvement areas in April-May 2012 (**Figure 3-1**). A composite surface soil sample (0 to 1 ft bgs) and one discrete subsurface soil sample (1 to 4 ft bgs) were collected from each area, as discussed in Section 3.1. The soil samples were analyzed for the constituents detected in the soil samples collected from the Henderson Pond access road in November 2011, including PAHs, Aroclor-1260, OCPs, metals, and hexavalent chromium.

5.2.2 Surface Water

Five surface water samples were collected from Henderson Pond in November 2011 (**Figure 3-2**). Five surface water samples were collected from Hickory Pond in April 2012 (**Figure 3-2**). The surface water samples were analyzed for VOCs, SVOCs, OCPs, OPPs, PCBs, total and dissolved metals, and hexavalent chromium.

5.2.3 Sediment

Five sediment samples were collected from Henderson Pond in November 2011 and 10 sediment samples were collected from the pond in April 2012, as discussed in Section 3.2 (**Figure 3-2**). The November 2011 samples were analyzed for VOCs, SVOCs, OCPs, OPPS, PCBs, metals, and hexavalent chromium. The April 2012 samples were analyzed for the constituents identified as potentially posing unacceptable risks to human health (through fish ingestion) and ecological receptors: Aroclor-1260, 4,4'-DDE, 4,4'-DDT, arsenic, barium, and copper.

Five sediment samples were collected from Hickory Pond in May 2012. The sediment samples were analyzed for VOCs, SVOCs, OCPs, OPPs, PCBs, metals, and hexavalent chromium.

5.2.4 Fish Tissue

The preliminary ecological and HHRS performed as part of the Phase I investigation indicated a potential risk to human health associated with the ingestion of fish. Therefore, fish tissue sampling was conducted for both ponds to further evaluate the potential risk to human health and the environment.

Largemouth bass, catfish, sunfish, and carp were collected as composite fish tissue samples from Henderson Pond, and largemouth bass, sunfish, and carp were collected as composite fish tissue samples from Hickory Pond. Fish tissue samples were collected from two areas within Henderson Pond and one area within Hickory Pond (**Figure 3-3**). Each composite fish tissue sample consisted of multiple fish to provide adequate tissue mass for laboratory analysis and account for variation in chemical concentration likely to occur between individual fish. A total of six composite fish tissue samples were collected from Henderson Pond (two bass, two catfish, one sunfish, and one carp), with each sample split into a fillet and offal sample, for a total of 12 samples. A total of three composite fish tissue samples were collected from Hickory Pond (one bass, one sunfish, and one carp) and split into a fillet and offal sample for a total of six samples. The fillet samples were evaluated in the HHRS and HHRA. Due to the small number of fish tissue samples, all fish types were combined into one data set for each pond for the HHRS and HHRA. Fish tissue sampling sheets documenting the species, weight, and length of fish collected is included in **Appendix A**.

The fish tissue samples from Henderson Pond were analyzed for PCB congeners, arsenic, 4,4'-DDE, and 4,4'-DDT, based on the preliminary ecological and HHRS performed as part of the Phase I investigation. Since sediment data had not been collected from Hickory Pond, the Hickory Pond fish tissue samples were analyzed for PCB congeners, SVOCs, OCPs, OPPs, and metals. The analytical data were reported on a wet weight basis.

5.3 Phase I – Human Health Risk Screening

The HHRS and risk ratio evaluation was conducted in three steps using a risk ratio technique (Navy, 2000). If chemicals of potential concern (COPCs) were identified in Step 1, the COPCs were evaluated in Step 2. COPCs identified in Step 2 were evaluated in Step 3.

5.3.1 Step 1

The maximum detected analyte concentrations for each medium were compared to RSLs (USEPA, 2012a), other HHRS levels (if appropriate), and the MCIEAST-MCB CAMLEJ BTVs (CH2M HILL, 2011c). RSLs based on non-carcinogenic effects were divided by 10 to account for exposure to multiple constituents (i.e., were adjusted to a hazard quotient [HQ] of 0.1, from the HQ of 1 used on the RSL table). RSLs based on carcinogenic endpoints were used as presented in the RSL table, and are based on a carcinogenic risk of 1×10^{-6}. If the maximum detected concentration in any media exceeded the appropriate screening value and background concentration (soil only), the screening level risk evaluation proceeded to Step 2.

In addition to comparing the detected concentrations to the screening levels, the detection limits for non-detected analytes were compared to the screening levels. Non-detected analytes with detection limits exceeding the screening level were not identified as COPCs to carry forward to Step 2, but were discussed to evaluate the potential for underestimating the total risks.

Soil data were compared to the USEPA residential soil RSLs (USEPA, 2012a). Residential soil RSLs are more conservative (i.e., lower) than industrial soil RSLs, and are therefore protective of all potential receptors (e.g., residents, recreational receptors, game warden, and construction workers).The soil data were also compared to the BTVs for combined soil types in undeveloped areas (CH2M HILL, 2011c). The NCSSLs (NCDENR, 2012) are also presented in **Appendix C**, Tables 2.1 and 2.3; however, they were not used to identify COPCs for soil. Concentrations of chemicals in air emanating from contaminated soil by fugitive dust emissions were compared to the USEPA residential air RSLs. The ambient air concentrations were calculated following USEPA's soil screening guidance (USEPA, 2002), as displayed in **Appendix C**, Tables 2.2, 2.2A, 2.4, and 2.4A**.**

As indicated in Table 2.1 in **Appendix C**, Aroclor-1260, arsenic, and iron were identified as COPCs in Step 1 for surface soil; however, no COPCs were identified for the surface soil to air exposure pathway (**Appendix C**, Table 2.2). No COPCs were identified in Step 1 for subsurface soil (**Appendix C**, Tables 2.3 and 2.4).

The surface water data were compared to the North Carolina surface water standards for human health, if available. If a North Carolina value was not available, the National Recommended Ambient Water Quality Criteria for Human Health (organisms only) were used. If neither of these were available for a detected chemical, the tap water RSL was used for comparison. Surface water screening for Henderson Pond and Hickory Pond are displayed in **Appendix C**, Tables 2.5 and 2.6, respectively. As indicated in Tables 2.5 and 2.6, **Appendix C**, no analytes were detected in surface water at concentrations exceeding the screening levels.

Sediment data were compared to the USEPA residential soil RSLs (USEPA, 2012a). As indicated in Table 2.7, **Appendix C**, one PCB (Aroclor-1260) and four metals (aluminum, arsenic, chromium, and iron) were identified as COPCs in Henderson Pond sediment (**Appendix C**, Table 2.7), and one metal (arsenic) was identified as a COPC in Hickory Pond sediment.

Fish tissue data were compared to fish tissue screening levels developed using the calculator on the RSL table website (http://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search). In accordance with USEPA guidance (USEPA, 1996) for PCB congener analysis, the dioxin-like PCB TEQ concentration, the non-dioxin-like total PCB concentration, and the total PCB concentration were calculated for each sample using the methods discussed in Section 5.4.2. The dioxin-like PCB TEQ concentration was screened against the 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) RSL, the non-dioxin-like PCB concentration was screened against the Aroclor-1260 RSL, and the total PCB concentration was screened against the Aroclor-1254 RSL.

As indicated on **Appendix C**, Table 2.9, 4,4'-DDT, dioxin-like PCB TEQ, total non-dioxin like PCB congeners, and total PCB congeners were identified as COPCs for Henderson Pond fish. **Appendix C**, Table 2.10 indicates that

total non-dioxin like PCBs and total PCBs, chromium, mercury, and selenium were identified as COPCs for Hickory Pond fish.

Based on Step 1 of the Phase I screening risk assessment, surface soil, Henderson Pond sediment, and Hickory Pond sediment were evaluated in Step 2 of the screening risk assessment. Fish tissue from Henderson Pond and Hickory Pond were not evaluated in Step 2 of the screening risk assessment, but were carried forward to the Phase II HHRA since additional screening steps would not show that ingestion of fish from the ponds could result in acceptable risk levels.

5.3.2 Step 2

For chemicals identified as COPCs in Step 1, a corresponding risk level was calculated using the following equation:

$$\text{corresponding risk level} = \frac{\text{concentration x acceptable risk level}}{\text{RSL}}$$

The concentration is the maximum detected concentration (the same concentration that was used in Step 1). The acceptable risk level is 1 for noncarcinogens and 10^{-6} for carcinogens. RSLs based on non-carcinogenic effects were not adjusted by 10 as was done in Step 1, instead they are used as presented in the RSL table.

All of the corresponding risk levels for all analytes within a media were summed to calculate the cumulative corresponding hazard index (HI) (for noncarcinogens) and cumulative corresponding carcinogenic risk (for carcinogens). A cumulative corresponding HI was also calculated for each target organ/effect. If the cumulative corresponding HI for a target organ/effect is greater than 0.5, or the cumulative corresponding carcinogenic risk is greater than 5×10^{-5}, the anayltes contributing to these values are retained as COPCs and carried forward to Step 3.

Based on Step 2 of the screening process for surface soil (Table 2.1a, **Appendix C**), Henderson Pond sediment (Table 2.7a, **Appendix C**), and Hickory Pond sediment (Table 2.8a, **Appendix C**) all COPCs identified in Step 1 were eliminated. Therefore, Step 3 of the screening level risk assessment was not performed.

5.3.3 Non-Detected Analytes

There were a few constituents that were not detected in soil that had detection limits above the screening level. However, in general, the detection limits for these analytes in surface and subsurface soil were only slightly above the screening level (within one order of magnitude of the non-carcinogenic adjusted RSL). There were a number of VOCs, SVOCs, pesticides, PCBs, and metals in surface water, sediment, or fish tissue samples with detection limits above the screening level. However, due to the limited amount of analytes detected it is not expected that they are present, and if they are, it is likely they would be below levels of potential concern for human health. Based on this evaluation, there are not expected to be any non-detected analytes present at the site that would result in unacceptable risks, or changes to the results of the HHRS evaluation.

5.3.4 Human Health Risk Screening Results

There were no COPCs identified for surface soil, subsurface soil, Henderson Pond surface water or sediment, and Hickory Pond surface water and sediment. Therefore, exposure to these media would not pose any unacceptable risks, and further evaluation of these media based on human health risks was not conducted. COPCs were identified for Henderson Pond and Hickory Pond fish tissue samples; therefore, a risk assessment was conducted for ingestion of fish caught from Henderson Pond and Hickory Pond, as presented in Section 5.4.

5.4 Phase II – Human Health Risk Assessment

An HHRA was performed for fillet fish tissue samples based on the Phase I HHRS (Section 5.3). Supplemental information used in this HHRA and the risk calculations are presented in **Appendix C** and included the *Risk Assessment Guidance for Superfund* (RAGS*), Volume 1, Human Health Evaluation Manual Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments* (RAGS Part D [USEPA, 2001a]) tables, and additional supporting tables. Guidance documents used for preparing the risk assessment include *RAGS Part A*

(USEPA, 1989), *RAGS Part D* (USEPA, 2001a), *RAGS Part E* (USEPA, 2004), and USEPA Region IV *Supplemental Guidance to RAGS: Region 4 Bulletins* (USEPA, 2000a).

The primary objective of the HHRA was to assess the health risks associated with the ingestion of fish from Henderson Pond and Hickory Pond. The risk assessment is comprised of the following components:

- **Identification of Chemicals of Potential Concern**—Identification of the chemicals found onsite and selection of the COPCs. COPCs are the focus of the subsequent evaluation in the risk assessment.
- **Exposure Assessment**—Identification of the potential pathways of human exposure, characterization of the potentially exposed populations, and estimation of the magnitude, frequency, and duration of these exposures.
- **Toxicity Assessment**—Assessment of the potential adverse effects of the COPCs and compilation of the toxicity values used for developing numerical risk estimates.
- **Risk Characterization**—Integration of the results of the exposure assessment and toxicity assessment to develop numerical estimates of health risks.
- **Uncertainty Assessment**—Identification and discussion of sources of uncertainty associated with the data, methodology, and values used in the risk assessment.

These components are described briefly in the following sections.

5.4.1 Identification of Chemicals of Potential Concern

All of the fish tissue data evaluated in the Phase I HHRS evaluation was quantitatively evaluated in Phase II of the risk assessment. The COPC screening is presented in Tables 2.9 and 2.10 in **Appendix C**. The methodology used to select the COPCs for quantitative evaluation in the HHRA was the same as Step 1 of the Phase I risk screening evaluation, as described in Section 5.3.1

Table 5-2 lists the constituents that were identified as COPCs for Henderson Pond fish tissue and Hickory Pond fish tissue. For Henderson Pond, 4,4'-DDT, dioxin-like PCB TEQ concentration, total non-dioxin like PCB congeners, and total PCB congeners were identified as COPCs. For Hickory Pond, total non-dioxin like PCB congeners, total PCB congeners, chromium, mercury, and selenium were identified as COPCs. For Henderson Pond, since dioxin-like PCBs were identified as a COPC, risks and hazards associated with PCBs were calculated for the dioxin-like PCBs and for the non-dioxin like PCBs. They were not calculated using the total PCB congeners concentration. For Hickory Pond, since dioxin-like PCBs were not identified as a COPC, risks and hazards associated with PCBs were calculated using the total PCB concentration.

5.4.2 Exposure Assessment

Exposure assessment is the estimation of the likelihood, magnitude, frequency, duration, and routes of exposure to a chemical. Exposure refers to the potential contact of an individual (or receptor) with a chemical. Exposure can occur when contaminants migrate from a source to an exposure point, or when a receptor comes into direct contact with contaminated media.

The three components of exposure assessment include:

- Characterization of exposure setting
- Identification of exposure pathways
- Quantification of exposure

5.4.2.1. Characterization of Exposure Setting

Descriptions and the history of MCIEAST-MCB CAMLEJ and the Henderson Pond and Hickory Pond recreational area are included in Section 2 as well as summarized in Section 5.1. Section 5.1 also describes the potential receptors at the Henderson Pond and Hickory Pond recreational area.

5.4.2.2. Identification of Exposure Pathways

An exposure pathway can be described as the physical course that a COPC takes from the point of release (or source) to a receptor. To be complete, an exposure pathway must have all of the following components:

- A source (e.g., constituent residues in soil)
- A mechanism for chemical release and migration (e.g., leaching)
- An environmental transport medium (e.g., groundwater)
- A point or site of potential human contact (exposure point, e.g., drinking water)
- A route of intake (e.g., ingestion of groundwater used as a drinking water source)

In the absence of any one of these components, an exposure pathway is considered incomplete and, by definition, there is no risk or hazard. In some cases, a receptor may contact a source directly, eliminating the release and transport pathways.

The potential exposure pathways for all media for the Henderson Pond and Hickory Pond recreational area are identified in the CSM (**Figure 5-1**) and shown in Table 1, **Appendix C**. Surface soil, subsurface soil, Henderson Pond surface water and sediment, and Hickory Pond surface water and sediment are shown in the CSM, but were only evaluated in the Phase 1 HHRS, as described in Section 5.3.

The current and future land use exposure routes quantitatively evaluated in the HHRA include:

- **Angler (adult and child) —**Ingestion of fish caught in Henderson and Hickory Ponds.

5.4.2.3. Quantification of Exposure

Exposure is quantified by estimating the exposure point concentrations (EPCs) of COPCs in environmental media and COPC intake by the receptor. Both reasonable maximum exposure (RME) and central tendency exposure (CTE) intakes were included in this evaluation. CTE intakes were calculated for exposure scenarios with RME cumulative cancer risks greater than $1x10^{-4}$ or cumulative non-cancer hazards greater than 1.

5.4.2.4. Exposure Concentrations

EPCs are estimated constituent concentrations that a receptor may contact and are specific to each exposure medium and exposure area. EPCs may be directly measured or estimated using environmental fate and transport models. Constituent concentrations in fish tissue were measured for this assessment. Fate and transport modeling was not conducted to estimate EPCs. As discussed in Section 5.2.4, due to the small number of fish tissue samples, all fish types (bass, catfish, sunfish, and carp for Henderson Pond and bass, sunfish, and carp for Hickory Pond) were combined into one data set for each pond. Therefore, the EPCs were calculated using fish tissue data from a combination of fish types for each pond.

ProUCL software Version 4.1 (USEPA, 2010a) was used to determine the distribution that the data fit and to calculate the 95 percent upper confidence levels (UCLs) used as the RME EPC. ProUCL identifies three possible data distributions: normal distribution, log-normal distribution, and gamma distribution. The UCL calculation method is then selected based on the data distribution (normal, lognormal, gamma, or nonparametric if the data do not fit any of the distributions). The recommendations outlined in the ProUCL software documentation were followed to select the appropriate UCL (USEPA, 2010a). The maximum detected concentration was used as the RME EPC in cases where the estimated 95 percent UCL was greater than the maximum detected concentration, less than 5 samples were available for a data grouping (such as for Hickory Pond fish), or the COPC was detected in only one sample. The arithmetic mean concentration was used as the CTE EPC.

In accordance with USEPA guidance (USEPA, 1996), EPCs (and sample concentrations for identification of COPCs) were calculated separately for fish tissue for both of the data groupings for 1) “dioxin-like” PCB toxicity equivalent (TEQ) concentrations, 2) “non-dioxin-like” total PCB concentrations, and 3) total PCB concentrations. These concentrations were calculated for each sample, using the methods discussed below. The EPCs were calculated using only the PCB congeners detected in each sample. Non-detected congeners and B-flagged congers were not included in the individual sample sums discussed as follows. The uncertainties associated with this approach are discussed in Section 5.4.5.

TEQ concentrations for "dioxin-like" PCBs were calculated for each sample in accordance with the World Health Organization (WHO) toxicity equivalency factor (TEF) approach (Van den Berg et al., 2006; USEPA, 2010b). The purpose of using the WHO TEF approach is to adjust the relative carcinogenic potency of specific dioxin-like PCB congeners, relative to 2,3,7,8-TCDD, the most potent dioxin congener. TEFs are published by WHO for mammals, fish, and wildlife. PCB TEQ concentrations for this HHRA were calculated using the mammal TEFs. Using the measured concentration values for each congener and the TEF for that congener, the dioxin-like TEQ concentration for a mixture of PCB congeners in a specific sample is calculated as follows:

$$PCB\ TEQ\ Concentration = \Sigma\ (TEFi \times Ci)$$

Where:

PCB TEQ = PCB toxicity equivalent concentration (mg/kg)
TEFi = Toxicity equivalency factor for congener "i" (unitless)
Ci = Concentration of congener "i" (mg/kg)

Non-carcinogenic hazards and carcinogenic risks from the calculated dioxin-like PCB TEQ concentration are based on the toxicity factors for 2,3,7,8-TCDD. The TEFs used to calculate the dioxin-like PCB TEQ concentrations are shown in **Table 5-3**.

The nondioxin-like PCB concentrations (the sum of all detected nondioxin-like PCB congeners, not adjusted using TEFs) were also calculated and evaluated for non-carcinogenic risks (using toxicity factors for Arclor-1254) and carcinogenic risks (using toxicity factors for PCB-Aroclors). The total PCB concentrations (the sum of all detected PCB congeners, not adjusted using TEFs) were also calculated for each sample and were used to evaluate non-carcinogenic hazards and carcinogenic risks. For Henderson Pond, since dioxin-like PCBs were identified as a COPC, risks and hazards associated with PCBs were calculated for the dioxin-like PCBs using 2,3,7,8-TCDD toxicity factors and for the non-dioxin like PCBs using Aroclor-1254 (for non-cancer) and PCB (for cancer) toxicity factors. They were not calculated using the total PCB congeners concentration. For Hickory Pond, since dioxin-like PCBs were not identified as a COPC, risks and hazards associated with PCBs were calculated using the total PCB concentration using Aroclor-1254 (for non-cancer) and PCB (for cancer) toxicity factors. The PCB concentration calculations are included in **Appendix C**, Tables 2.9a and 2.10a.

Appendix C, Tables 3.1.RME through 3.4.RME present the EPCs used in the HHRA calculations, and the rationale for the selected EPC. The EPCs calculated as discussed above were used to evaluate the RME and CTE scenarios. CTE risk evaluations were performed for receptors with risks above a cancer risk of $1x10^{-4}$ or HI of 1.

5.4.2.5. Estimation of Chemical Intakes

Chemical intake is the amount of the chemical constituent entering the receptor's body. The quantification of exposure is based on an estimate of the average daily intake, the average amount of the chemical contaminant entering the receptor's body per day. Chemical intakes for the ingestion and dermal pathways are generally expressed as follows:

$$ADI = \frac{C \times CR \times EF \times ED}{BW \times AT}$$

Where:

ADI = average daily intake (mg/kg-day)

C = chemical concentration (mg/kg)

CR = contact rate (milligrams per day [mg/day])

EF = exposure frequency (days/year)

ED = exposure duration (years)

BW = body weight (kg)

AT = averaging time (days)

The intake equation requires exposure parameters that are specific to each exposure pathway. Exposure parameters are often assumed values, and their magnitude influences the estimates of potential exposure (and risk). The reliability of the values chosen can also contribute substantially to the uncertainty of the resulting risk estimates. Many of the exposure parameters have default values, which were used for this assessment. These assumptions, based on estimates of body weights, media intake levels, and exposure frequencies and duration, are provided in USEPA guidance. Tables 4.1.RME and 4.1.CTE in **Appendix C** identify the exposure parameters and intake equations used for different receptor scenarios at the site. The exposure parameters are discussed below for the receptors evaluated in the risk assessment.

5.4.2.6. Angler Adult and Child

A fish ingestion rate of 25 grams per day (g/day), the 95th percentile recreational freshwater anglers fish ingestion rate (USEPA, 1997a), was used for an adult for the RME scenario. A fish ingestion rate of 12 g/day, the 95th percentile value of the ingestion rate of freshwater/estuarine fish for children ages 3 to less than 6 years of age (USEPA, 2008) was used for a child for the RME scenario. The adult resident exposure duration of 24 years (USEPA, 1991a), adult body weight of 70 kg (USEPA, 1991a), child exposure duration of 6 years (USEPA, 1991a), and child body weight of 18.6 kg (USEPA, 2008) were assumed applicable for the recreational/angler scenario.

A fish ingestion rate of 8 g/day, the mean recreational freshwater anglers fish ingestion rate (USEPA, 1997a) was used for an adult for the CTE scenario. For a child for the CTE scenario, an ingestion rate of 2.2 g/day, the mean ingestion rate of freshwater/estuarine fish for ages 3 to less than 6 year olds was used. The only other parameter value changed for the CTE scenario was the adult exposure duration; an exposure duration of 9 years was used (USEPA, 2004).

In addition to the parameters discussed above, a preparation/cooking loss factor was used to estimate the ingested dose of PCBs from the fish tissue. This evaluation assumed that 30 percent of the PCBs are eliminated during cooking of fish, based on studies reported in the literature for PCBs (Zabik et al., 1995; Great Lakes Sport Fish Advisory Task Force, 1993; USEPA, 2000b).

5.4.3 Toxicity Assessment

Toxicity assessment defines the relationship between the magnitude of exposure and possible severity of adverse effects, and weighs the quality of available toxicological evidence. Toxicity assessment generally consists of two steps: hazard identification and dose-response assessment. Hazard identification is the process of determining the potential adverse effects from exposure to the chemical along with the type of health effect involved. Dose-response assessment is the process of quantitatively evaluating the toxicity information and characterizing the relationship between the dose of the constituent administered or received and the incidence of adverse health effects in the exposed population. Toxicity criteria (e.g., reference doses [RfDs] and cancer slope factors [CSFs]) are derived from the dose-response relationship.

USEPA recommends that a tiered approach be used to obtain the toxicity values (RfDs and CSFs) that are used to calculate non-carcinogenic hazards and carcinogenic risks, respectively (USEPA, 2003). The hierarchy of toxicity value sources it the following:

1. Integrated Risk Information System (IRIS) (USEPA, 2012b)
2. Provisional Peer-Reviewed Toxicity Values (PPRTV)
3. Other USEPA and non-USEPA sources including the National Center for Environmental Assessment (NCEA), Agency for Toxic Substances and Disease Registry (ATSDR), Health Effects Assessment Summary Tables (HEAST) (USEPA, 1997b), California Environmental Protection Agency (Cal EPA), and USEPA's Office of Water, and the WHO

The use of toxicity values from sources other than IRIS in an HHRA increases the uncertainty of the quantitative risk.

Three of the COPCs, 4,4'-DDT, PCBs, and chromium, elicit both systemic (non-carcinogenic) toxic effects and cancer (carcinogenic) effects. Because of this, these constituents are evaluated as both noncarcinogens and carcinogens. The health risks for carcinogenic and non-carcinogenic effects were calculated separately based on different toxicity values.

Chromium (VI) is unstable in the body (in biological tissues) and is ultimately reduced to chromium (III) by a variety of reducing agents, including ascorbate and glutathione (ATSDR, 2008; USEPA, 2012b). Chromium (VI) exerts toxicity through direct contact mechanisms rather than bioaccumulation to a critical concentration in tissue. However, for evaluating the risks associated with chromium in fish tissue, it was assumed that all the chromium detected in fish tissue samples is chromium (VI).

5.4.3.1. Toxicity Information for Non-carcinogenic Effects

Non-carcinogenic health effects include a variety of toxic effects on body systems, ranging from toxicity to the kidneys to central nervous system disorders. The toxicity of a chemical is assessed through a review of toxic effects noted in short-term (acute) animal studies, long-term (chronic) animal studies, and epidemiological investigations.

USEPA (1989) defines the chronic RfD as a dose that is likely to be without appreciable risk of deleterious effects during a lifetime of exposure. Chronic RfDs are specifically developed to be protective for long-term exposure to a compound (for example, 7 years to a lifetime), and consider uncertainty in the toxicological database and sensitive receptors. Chronic RfDs were used to evaluate non-carcinogenic risks to all receptors evaluated in the risk assessment.

In the development of RfDs, all available studies examining the toxicity of a chemical following exposure are considered on the basis of scientific merit. The lowest dose level at which an observed toxic effect occurs is identified as the Lowest Observed Adverse Effect Level (LOAEL), and the dose at which no effect is observed is identified as the No Observed Adverse Effect Level (NOAEL). Several uncertainty factors (UFs) may be applied to account for uncertainties such as limited data quality, extrapolation of data from animal studies to human exposures, or the use of subchronic studies to develop chronic criteria. These UFs range from 3 to 10,000, and are based on professional judgment. Consequently, there are varying degrees of uncertainty in the toxicity criteria, which range from 3 to 1,000 for the COPCs for this site. USEPA-derived oral RfDs, and associated UF and modifying factor (MF) values, available for the COPCs are presented in **Appendix C**, Table 5.1. The RfD for 2,3,7,8-TCDD (dioxin) was used to estimate the non-carcinogenic risks associated with the dioxin-like PCBs and the RfD for Aroclor-1254 was used to estimate the non-carcinogenic effects associated with exposure to non-dioxin like PCBs and total PCBs.

5.4.3.2. Toxicity Information for Carcinogenic Effects

Potential carcinogenic effects are quantified as CSFs or unit risk factors that convert estimated exposures directly to incremental lifetime carcinogenic risks.

CSFs may be derived from the results of chronic animal bioassays, human epidemiological studies, or both. Animal bioassays are usually conducted at dose levels that are much higher than are likely to be encountered in the environment. This design detects possible adverse effects in the relatively small test populations used in the studies. The actual risks from exposure to a potential carcinogen are not likely to exceed the estimated risks and are probably much lower or even zero. USEPA-derived CSFs are presented in **Appendix C**, Table 6.1. The CSF for 2,3,7,8-TCDD (dioxin) was used to estimate the carcinogenic risks associated with the dioxin-like PCBs and the CSF for Total PCBs was used to estimate the carcinogenic risks associated with the nondioxin-like PCBs and total PCBs.

5.4.4 Risk Characterization

Risk characterization combines the results of the previous elements of the risk assessment to evaluate the potential health risks associated with exposure to the COPCs.

Potential human health risks are discussed independently for carcinogenic and non-carcinogenic constituents because of the different toxicological endpoints, relevant exposure duration, and methods used to characterize risk. Some constituents may produce both non-carcinogenic and carcinogenic effects, and were evaluated in both

groups. The methodology used to estimate non-carcinogenic hazards and carcinogenic risks is described below. Following the description of the methodology, the non-carcinogenic hazards and carcinogenic risks for Henderson Pond and Hickory pond recreational area are discussed.

5.4.4.1. Methods for Estimating Risks

Potential human health risks are discussed independently for carcinogenic and non-carcinogenic constituents because of the different toxicological endpoints, relevant exposure duration, and methods used to characterize risk. The methodology used to estimate non-carcinogenic hazards and carcinogenic risks are described as follows.

Non-carcinogenic Hazard Estimation.

Non-carcinogenic hazards for the PCBs were estimated using the non-dioxin like PCB concentrations or total PCB concentrations calculated as discussed in Section 5.4.2. Non-carcinogenic health risks for all COPCs are estimated by comparing the calculated exposures to RfDs. The calculated intake divided by the RfD is equal to the HQ:

$$HQ = Intake / RfD$$

The intake and RfD represent the same exposure route (i.e., oral intakes are divided by oral RfDs). An HQ that exceeds 1 (i.e., intake exceeds the RfD) indicates that there is a potential for adverse health effects associated with exposure to that constituent.

To assess the potential for non-carcinogenic health effects posed by exposure to multiple constituents, an HI approach is used (USEPA, 1986). This approach assumes that non-carcinogenic hazards associated with exposure to more than one constituent are additive (HI = sum of the HQs). Synergistic or antagonistic interactions between constituents are not considered. The HI may exceed 1 even if all of the individual HQs are less than 1. An HI greater than 1 indicates that there is some potential for adverse non-carcinogenic health effects associated with exposure to the COPCs, possibly warranting remedial action. If the HI is greater than 1, separate HIs are calculated for each target organ to determine if the HI for a specific target organ is greater than 1. A target organ specific HI greater than 1 indicates there is some potential for adverse non-carcinogenic health effects associated with exposure to the COPCs, possibly warranting remedial action. If the HI for each target organ does not exceed 1, non-carcinogenic hazards are not expected.

Carcinogenic Risk Estimation.

Carcinogenic risks for PCBs were calculated using the dioxin-like TEQ concentrations calculated as discussed in Section 7.5.2 along with the CSF for dioxin, and the nondioxin-like PCB concentrations or total PCB concentrations along with the CSF for Total PCBs. The potential for carcinogenic effects due to exposure to all COPCs is evaluated by estimating the excess lifetime carcinogenic risk (ELCR). ELCR is the incremental increase in the probability of developing cancer during one's lifetime in addition to the background probability of developing cancer.

Carcinogenic risk is calculated by multiplying the intake by the CSF.

$$ELCR = Intake \times CSF$$

The combined risk from exposure to multiple constituents was evaluated by adding the risks from individual constituents

When a cumulative carcinogenic risk to an individual receptor under the assumed RME exposure conditions at the site exceeds one in ten thousand (i.e., 10^{-4} excess carcinogenic risk), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) generally requires remedial action to reduce risks at the site. If the cumulative risk is less than 10^{-4}, action generally is not required (USEPA, 1991b).

For the angler receptor, non-carcinogenic hazards and carcinogenic risks were calculated for the adult and child angler receptors. Carcinogenic risks for the adult and child angler receptors were added to estimate the carcinogenic risk for the lifetime angler receptors. The USEPA assumes that carcinogenic effect of chemicals is a cumulative process, thus making even short-term exposures to chemicals equivalent to lifetime exposures.

5.4.4.2. Risk Assessment Results

The results of the risk characterization for fish are presented below by receptor. The risks are calculated in **Appendix C**, Tables 7.1.RME, 7.2.RME, 7.1.CTE, and 7.2.CTE and summarized in **Appendix C**, Tables 9.1.RME through 9.3.RME and 9.1.CTE through 9.3.CTE. A summary of the RME results is presented in **Table 5-4** and a summary of the CTE results is summarized in **Table 5-5.** Analytical data from all types of fish species caught in Henderson Pond (largemouth bass, catfish, sunfish, and carp) were combined and assumed representative of the range of fish people catch and ingest from Henderson Pond. Analytical data from all types of fish species caught in Hickory Pond (largemouth bass, sunfish, and carp) were combined and assumed representative of the range of fish people catch and ingest from Hickory Pond.

Adult Anglers

Tables 9.1.RME and 9.1.CTE in **Appendix C** summarize the HIs and ELCRs for angler adults who ingest fish caught in Henderson Pond and Hickory Pond.

- Henderson Pond fish ingestion HI (RME)=2, above USEPA's target HI of 1. The hazard is associated with non-dioxin like PCBs.
- The risk calculations for Henderson Pond are based on the assumption that the angler only fishes in Henderson Pond, so all of the recreational caught and ingested fish (the full recreational freshwater angler's fish ingestion rate) are from Henderson Pond. The risk calculations assume that the fisherman only ingests fish from Henderson Pond, and not from other water bodies.
- Henderson Pond fish ingestion HI (CTE) = 0.3, below USEPA's target HI.
- Henderson Pond fish ingestion ELCR (RME) = $4x10^{-5}$, within USEPA's target cancer risk level of 10^{-6} to 10^{-4}.
- Hickory Pond fish ingestion HI (RME) = 2, above USEPA's target HI. The hazard is associated with mercury. The largemouth bass, the highest fish on the food chain that was sampled, had the highest concentration of mercury (and therefore, since there were only 3 samples, this concentration was used as the EPC). This is consistent with expectations, as the highest level fish would bioconcentrate the greatest amount of mercury, based on ingestion of smaller fish that may have bioaccumulated mercury. Although the mercury concentration in all three fish samples from Hickory Pond exceeded the methylmercury fish tissue RSL based on a HI of 0.1, only the concentration in the bass sample exceeded the RSL based on an HI of 1 and only ingestion of bass would result in an HI above 1.
- The risk calculations for Hickory Pond are based on the assumption that the angler only fishes in Hickory Pond, so all of the recreational caught and ingested fish (the full recreational freshwater angler's fish ingestion rate) are from Hickory Pond.
- Hickory Pond fish ingestion HI (CTE) = 0.3, below USEPA's target HI.
- Hickory Pond fish ingestion ELCR (RME) = $7x10^{-6}$, within USEPA's target cancer risk level of 10^{-6} to 10^{-4}
- Fish caught in Henderson Pond were not analyzed for mercury, as mercury was not identified as posing a potentially unacceptable risk during the preliminary ecological or HHRS performed as part of the Phase I investigation. It should be noted that the concentrations of mercury detected in the Henderson Pond sediment samples during the Phase I investigation (0.0078 mg/kg to 0.072 mg/kg) are similar to, or slightly higher than, the concentrations detected in Hickory Pond sediment samples during the Phase II investigation (0.019 mg/kg to 0.035 mg/kg).

Child Anglers

Tables 9.2.RME and 9.2.CTE in **Appendix C** summarize the HIs and ELCRs for angler children (or children of anglers) who ingest fish caught in Henderson Pond and Hickory Pond.

- Henderson Pond fish ingestion HI (RME) =4, above USEPA's target HI. This hazard is associated with non-dioxin like PCB congeners. The risk calculations are based on the assumption that the angler only fishes in Henderson

Pond, so all of the recreationally caught and ingested fish (the full recreational freshwater angler's fish ingestion rate) are from Henderson Pond.

- Henderson Pond fish ingestion HI (CTE) = 0.3, below USEPA's target HI.
- Henderson Pond fish ingestion ELCR (RME) = $2x10^{-5}$, within USEPA's target cancer risk level of 10^{-6} to 10^{-4}.
- Hickory Pond Fish ingestion HI (RME) = 4, above USEPA's target HI. The hazard is associated with mercury. The largemouth bass, the highest fish on the food chain that was sampled, had the highest concentration of mercury (and therefore, since there were only 3 samples, this concentration was used as the EPC). This is consistent with expectations, as the highest level fish would bioconcentrate the greatest amount of mercury, based on ingestion of smaller fish that may have bioaccumulated mercury. Although the mercury concentration in all three fish samples from Hickory Pond exceeded the methylmercury fish tissue RSL based on a HI of 0.1, only the concentration in the bass sample exceeded the RSL based on an HI of 1 and only ingestion of bass would result in an HI above 1.
- Additionally, the risk calculations are based on the assumption that the angler only fishes in Hickory Pond, so all of the recreational caught and ingested fish (the full recreational freshwater angler's fish ingestion rate) are from Hickory Pond.
- Hickory Pond Fish ingestion HI (CTE) = 0.3, below USEPA's target HI.
- Hickory Pond fish ingestion ELCR (RME) = $3x10^{-6}$, within USEPA's target cancer risk level of 10^{-6} to 10^{-4}.
- Fish caught in Henderson Pond were not analyzed for mercury, as mercury was not identified as posing a potentially unacceptable risk during the preliminary ecological or HHRS performed as part of the Phase I investigation. It should be noted that the concentrations of mercury detected in the Henderson Pond sediment samples during the Phase I investigation (0.0078 mg/kg to 0.072 mg/kg) are similar to, or slightly higher than, the concentrations detected in Hickory Pond sediment samples during the Phase II investigation (0.019 mg/kg to 0.035 mg/kg).

Lifetime Anglers

Tables 9.3.RME and 9.3.CTE in **Appendix C** summarize the ELCRs for a lifetime angler who ingests fish caught in Henderson Pond and Hickory Pond.

- Henderson Pond fish ingestion ELCR (RME) = $5x10^{-5}$, within USEPA's target cancer risk level of 10^{-6} to 10^{-4}.
- Hickory Pond fish ingestion ELCR (RME) = $1x10^{-5}$, within USEPA's target cancer risk level of 10^{-6} to 10^{-4}.

5.4.5 Uncertainty Associated with Human Health Assessment

The risk measures used in HHRAs are not fully probabilistic estimates of risk, but are conditional estimates given that a set of assumptions about exposure and toxicity are realized. Thus it is important to specify the assumptions and uncertainties inherent in the risk assessment to place the risk estimates in proper perspective (USEPA, 1989).

5.4.5.1. General Uncertainty in COPC Selection

The sampling conducted at the Henderson and Hickory Pond recreational area generally focused on areas of suspected impact from past site use based on previous sampling information, or areas where exposure is most likely to occur based on planned site use. Therefore, the uncertainty in sampling and possibility of omitting a potential sampling location affected by site constituents where exposure is likely to occur is expected to be minimal. The uncertainty associated with the data analysis is minimal because the data were fully validated before being used in the risk assessment.

The general assumptions used in the COPC selection process were conservative to ensure that true COPCs were not eliminated from the quantitative risk assessment and that the highest possible risk was estimated. RSLs based on residential assumptions were used to select the COPCs for all of the scenarios.

A comparison of the surface water, sediment, and fish tissue data to background concentrations was not conducted, as base-wide or site-specific background concentrations are not available for these media. This may result in included COPCs related to background conditions in the risk estimates.

Dioxin-like PCB TEQ concentrations, non-dioxin-like PCB concentrations, and total PCB concentrations were calculated for each sample using detected PCB congeners only. In general, if the non-detected dioxin congeners were included in the sample concentration calculations, the non-dioxin-like PCB concentrations and the total PCB concentrations would be similar to those used in the risk assessment and the resulting risks would not differ significantly. The dioxin-like PCB TEQ concentrations would not always be similar, since if the most toxic congener (3,3',4,4',5-Pentachlorobiphenyl [126]) was not detected in a sample, inclusion of this congener at the detection limit times the TEF would contribute significantly to the dioxin-like PCB TEQ, even if it was not detected. Therefore, this may result in an underestimation of actual risk if this congener was present in the sample at a concentration below the reporting limit. However, this congener was only detected in fish tissue samples from Henderson Pond, and all but one of the detected concentrations was J flagged as detected below the reporting limit, so it is unlikely that it would be present in the samples at concentrations similar to reporting limits, and it would likely be present at much lower concentrations and not contribute significantly to the dioxin-like PCB TEQ concentration for the sample.

5.4.5.2. Uncertainty Associated with Exposure Assessment

Uncertainty in the exposure assessment was generally treated with conservative decision rules and assumptions, so the uncertainty likely overestimates actual exposure to COPCs. The exposure factors used for the quantitation of exposure were conservative and reflect worst-case or upper-bound assumptions on the exposure. The reliability of the values chosen for the exposure factors also contributes substantially to the uncertainty of the resulting risk estimates. Because most of the exposure factors are worst-case or upper-bound assumptions, the resulting risks are worst-case and likely overestimate the actual risk.

There are inherent limitations and uncertainties associated with estimating health risks based on fish consumption that should be considered when interpreting the results of this HHRA. Factors contributing to these uncertainties include the following:

- Assumptions regarding fidelity to fishing location and fish consumption rates are variable and affect the estimates of exposure and associated risk. This HHRA conservatively assumed that an angler's diet of fish is composed solely of fish caught from Henderson or Hickory Pond. Moreover, the fish ingestion rates used are from studies that generally include both wild-caught and store-bought fish. It is unlikely the angler would only fish at one location, and only ingest the fish from location throughout the year and for their full exposure duration (24 years for an adult and 6 years for a child). Therefore, the fish ingestion rates used in the HHRA are very conservative and result in an overestimate of the actual risk associated with ingesting fish from Henderson and Hickory Ponds.
- Cancer risks and non-cancer health hazards were not specifically quantified for subsistence anglers, or other subpopulations of anglers who may be highly exposed. Although there are no known distinct subpopulations that may be highly exposed at Henderson or Hickory Pond, there is some degree of uncertainty as to whether these subpopulations have been adequately addressed in this risk assessment.
- Reported cooking losses vary considerably among the numerous studies reviewed. However, little information is available to quantify personal preferences among anglers for various preparation and cooking methods and other related habits (such as consumption of pan drippings). The assumption that there is 30 percent loss of PCBs during cooking used for risk and hazard calculations may overestimate or underestimate the risks.

As discussed in Section 5.2.4, due to the small number of composite fish tissue samples collected, all fish types (bass, catfish, sunfish, and carp for Henderson Pond and bass, sunfish, and carp for Hickory Pond) were combined into one data set for each pond. Therefore, the EPCs were calculated using fish tissue data from a combination of fish types for each pond. Additionally, for Hickory pond, only 3 composite fish tissue samples were collected, one

bass, one sunfish, and one carp composite sample; therefore, the maximum detected concentration was used as the EPC for Hickory Pond fish tissue.

5.4.5.3. Uncertainty Associated with Toxicity Assessment

Uncertainty associated with the non-carcinogenic toxicity factors is included in **Appendix C**, Table 5.1. Several UFs were applied by USEPA to extrapolate dose points from animal studies to humans. These UFs range between 3 and 1,000. Additional modification factors are also used based on the professional judgment of USEPA. Therefore, there is a high degree of uncertainty in the non-carcinogenic toxicity criteria, based on the available scientific data for each constituent. The non-carcinogenic toxicity factors are most likely an overestimate of actual toxicity.

The uncertainty associated with CSFs is mostly due to the low dose extrapolation, where carcinogenicity at low doses is assumed to be a linear response. This is a conservative assumption, which introduces a high uncertainty into slope factors and unit risk factors that are extrapolated from this area of the dose-response curve. The CSFs are based on the assumption that there is no threshold level for carcinogenicity; however, most of the experimental studies indicate the existence of a threshold level. Therefore, CSFs developed by USEPA represent upper-bound estimates. Carcinogenic risks generated in this assessment should be regarded as an upper bound estimate on potential carcinogenic risks, rather than an accurate representation of carcinogenic risk. The true carcinogenic risk is likely to be less than the predicted value (USEPA, 1989).

Additional uncertainty is associated with the prediction of relative sensitivities of different species of animals and the applicability of animal data to humans.

Use of provisional or withdrawn toxicity factors increases the uncertainty of the quantitative hazard and risk estimates. Provisional toxicity values (from Cal EPA, PPRTV, and HEAST) were used in the HHRA to provide a quantitative estimate rather than a merely qualitative risk discussion; however, USEPA has not fully promulgated these toxicity values.

The TEFs used to adjust the concentrations of the dioxin-like PCB congeners to TEQ of dioxin (2,3,7,8-TCDD) for the fish also results in uncertainty in the risk assessment.

5.4.5.4. Uncertainty in Risk Characterization

The uncertainties identified in each component of risk assessment ultimately contribute to uncertainty in risk characterization. The addition of risks and HIs across pathways and chemicals contributes to uncertainty based on the interaction of chemicals such as additivity, synergism, potentiation, and susceptibility of exposed receptors. The simple assumption of additivity used for this site may or may not be accurate and may over- or under-estimate risk; however, a better alternative is not available at this time.

5.5 Human Health Risk Summary

The human health risk evaluation for surface soil; subsurface soil; Henderson Pond surface water, sediment, and fish; and Hickory Pond surface water, sediment, and fish was performed in two phases. The first phase, an HHRS, entailed comparing the site data to appropriate human health risk-based screening values and performing a risk ratio evaluation to determine if a baseline HHRA was necessary for any of the media. If any of the media indicated the potential for unacceptable human health risks based on the HHRS (COPCs were retained after this evaluation), that medium was carried forward to the second phase of evaluation, a complete HHRA.

The Phase I evaluation indicated that exposure to surface soil, subsurface soil, Henderson Pond and Hickory Pond surface water, and Henderson Pond and Hickory Pond sediment would not result in any COPCs, or unacceptable risks to human health. Therefore, no further assessment of these media, based on human health risks, is necessary, and a baseline HHRA was not performed.

The Phase I evaluation indicated the potential for unacceptable risks associated with exposure to Henderson Pond and Hickory Pond fish; therefore, a more complete risk assessment was performed for these media.

The complete HHRA evaluated exposure to:

- Henderson Pond fish for current/future anglers (adult, child, lifetime)
- Hickory Pond fish for current/future anglers (adult, child, lifetime)

Table 5-4 and Tables 9.1.RME through 9.3.RME in **Appendix C** summarize the RME cancer risks and non-carcinogenic hazard indices. **Table 5-5** and Tables 9.1.CTE through 9.3.CTE in **Appendix C** summarize the CTE cancer risks and non-carcinogenic hazard indices. Tables 10.1.RME and 10.2.RME present only the constituents of concern, the constituents that contributed HIs above 0.1 to total cumulative receptor HIs greater than 1, or carcinogenic risks greater than 10^{-6} to total cumulative receptor carcinogenic risks greater than 10^{-4}.

Carcinogenic risks associated with ingestion of fish from either Henderson or Hickory Pond by adults, children, and lifetime anglers are within acceptable USEPA carcinogenic risk levels.

Ingestion of fish from Henderson Pond, based on RME assumptions, would result in non-carcinogenic hazards above acceptable levels for adults and children. The hazard is associated with non-dioxin like PCBs. The CTE hazard associated with ingestion of fish from Henderson Pond for both an adult and child angler is within acceptable USEPA levels. Additionally, the risk calculations assume that the fisherman only ingests fish from Henderson Pond, and not from other water bodies, including Hickory Pond. If the angler only ingests one-quarter of the total recreational freshwater angler's fish ingestion rate as fish from Henderson Pond, there would be no unacceptable risk associated with ingestion of fish from Henderson Pond alone.

Ingestion of fish from Hickory Pond, based on RME assumptions, would result in non-carcinogenic hazards above acceptable levels for adults and children. The hazard is associated with mercury. The CTE hazard associated with ingestion of fish from Hickory Pond for both adult and child angler is within acceptable USEPA levels. Although the mercury concentration in all three fish samples from Hickory Pond exceeded the methylmercury fish tissue RSL based on a HI of 0.1, only the concentration in the bass sample exceeded the RSL based on an HI of 1. The risk calculations assume that the fisherman only ingests fish from Hickory Pond, and not from other water bodies, including Henderson Pond. If the angler only ingests one-quarter of the total recreational freshwater angler's fish ingestion rate as fish from Hickory Pond, there would be no unacceptable risk associated with ingestion of fish from Hickory Pond alone.

It should also be noted that fish caught in Henderson Pond were not analyzed for mercury, as mercury was not identified as posing unacceptable risk during the preliminary risk screenings based on the results of the Phase I investigation. However, concentrations of mercury detected in the Henderson Pond sediment samples during the Phase I investigation (0.0078 mg/kg to 0.072 mg/kg) are similar to, or slightly higher than, the concentrations detected in Hickory Pond sediment samples during the Phase II investigation (0.019 mg/kg to 0.035 mg/kg), indicating potential risks associated with ingestion of mercury in fish from Henderson Pond and Hickory Pond may be similar, assuming the fish uptake of mercury is from the on-site sediment rather than the off-site breeding location. However, compared to reported mean mercury concentrations in lake sediments across the United States (0.07 mg/kg to 0.31 mg/kg), the mercury concentrations from both Hickory and Henderson Ponds are equal to or below the reported national averages (USEPA, 1997d).

TABLE 5-1

Summary of Samples Evaluated in the Human Health Risk Assessment

Henderson/Hickory Pond Investigation

MCIEAST - MCB CAMLEJ, Jacksonville, North Carolina

Medium	Sample Date	Sample Location	Sample ID	Parameters
Surface Soil	04/23/12	HENP-IS01	HENP-SS01-0-1-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/03/12	HENP-IS02	HENP-SS02-0-1-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/03/12	HENP-IS03	HENP-SS03-0-1-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/03/12	HENP-IS04	HENP-SS04-0-1-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/03/12	HENP-IS05	HENP-SS05-0-1-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/03/12	HENP-IS05	HENP-SS05D-0-1-12B[1]	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/02/12	HENP-IS06	HENP-SS06-0-1-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/02/12	HENP-IS07	HENP-SS07-0-1-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/03/12	HENP-IS08	HENP-SS08-0-1-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/02/12	HENP-IS09	HENP-SS09-0-1-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/03/12	HENP-IS10	HENP-SS10-0-1-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
Subsurface Soil	04/23/12	HENP-IS01	HENP-SB01-1-4-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/03/12	HENP-IS02	HENP-SB02-1-4-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/03/12	HENP-IS03	HENP-SB03-1-4-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/03/12	HENP-IS04	HENP-SB04-1-4-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/03/12	HENP-IS05	HENP-SB05-1-4-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/02/12	HENP-IS06	HENP-SB06-1-4-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/02/12	HENP-IS07	HENP-SB07-1-4-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/03/12	HENP-IS08	HENP-SB08-1-4-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/02/12	HENP-IS09	HENP-SB09-1-4-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
	05/03/12	HENP-IS10	HENP-SB10-1-4-12B	PAHs, Metals, OCPs, Hex Chrom, Aroclor-1260
Henderson Pond Surface Water	11/16/2011	IR74-HP-SW/SD01	IR74-HP-SW01-0-0_5-11D	VOCs, SVOCs, OCPs, OPPs, PCBs, Total/Dissolved Metals, Hex Chrom
	11/16/2011	IR74-HP-SW/SD02	IR74-HP-SW02-0-0_5-11D	VOCs, SVOCs, OCPs, OPPs, PCBs, Total/Dissolved Metals, Hex Chrom
	11/16/2011	IR74-HP-SW/SD03	IR74-HP-SW03-0-0_5-11D	VOCs, SVOCs, OCPs, OPPs, PCBs, Total/Dissolved Metals, Hex Chrom
	11/16/2011	IR74-HP-SW/SD04	IR74-HP-SW04-0-0_5-11D	VOCs, SVOCs, OCPs, OPPs, PCBs, Total/Dissolved Metals, Hex Chrom
	11/16/2011	IR74-HP-SW/SD04	IR74-HP-SW04D-0-0_5-11D[1]	VOCs, SVOCs, OCPs, OPPs, PCBs, Total/Dissolved Metals, Hex Chrom
	11/16/2011	IR74-HP-SW/SD05	IR74-HP-SW05-0-0_5-11D	VOCs, SVOCs, OCPs, OPPs, PCBs, Total/Dissolved Metals, Hex Chrom
	11/16/2011	IR74-HP-SW/SD05	IR74-HP-SW05D-0-0_5-11D[1]	VOCs, SVOCs, OCPs, OPPs, PCBs, Total/Dissolved Metals, Hex Chrom
Henderson Pond Sediment	4/30/2012	HENP-SD01	HENP-SD01-0-0_5-12B	Arsenic, Copper, Barium, Aroclor-1260, 4,4'-DDE, 4,4'-DDT
	4/30/2012	HENP-SD01	HENP-SD01D-0-0_5-12B[1]	Arsenic, Copper, Barium, Aroclor-1260, 4,4'-DDE, 4,4'-DDT
	4/30/2012	HENP-SD02	HENP-SD02-0-0_5-12B	Arsenic, Copper, Barium, Aroclor-1260, 4,4'-DDE, 4,4'-DDT
	4/30/2012	HENP-SD03	HENP-SD03-0-0_5-12B	Arsenic, Copper, Barium, Aroclor-1260, 4,4'-DDE, 4,4'-DDT
	4/30/2012	HENP-SD04	HENP-SD04-0-0_5-12B	Arsenic, Copper, Barium, Aroclor-1260, 4,4'-DDE, 4,4'-DDT
	4/30/2012	HENP-SD05	HENP-SD05-0-0_5-12B	Arsenic, Copper, Barium, Aroclor-1260, 4,4'-DDE, 4,4'-DDT
	4/30/2012	HENP-SD06	HENP-SD06-0-0_5-12B	Arsenic, Copper, Barium, Aroclor-1260, 4,4'-DDE, 4,4'-DDT
	4/30/2012	HENP-SD07	HENP-SD07-0-0_5-12B	Arsenic, Copper, Barium, Aroclor-1260, 4,4'-DDE, 4,4'-DDT
	4/30/2012	HENP-SD08	HENP-SD08-0-0_5-12B	Arsenic, Copper, Barium, Aroclor-1260, 4,4'-DDE, 4,4'-DDT
	4/30/2012	HENP-SD09	HENP-SD09-0-0_5-12B	Arsenic, Copper, Barium, Aroclor-1260, 4,4'-DDE, 4,4'-DDT
	4/30/2012	HENP-SD10	HENP-SD10-0-0_5-12B	Arsenic, Copper, Barium, Aroclor-1260, 4,4'-DDE, 4,4'-DDT
	11/16/2011	IR74-HP-SW/SD01	IR74-HP-SD01-0-0_5-11D	VOCs, SVOCs, OCPs, OPPs, PCBs, Metals, Hex Chrom
	11/16/2011	IR74-HP-SW/SD02	IR74-HP-SD02-0-0_5-11D	VOCs, SVOCs, OCPs, OPPs, PCBs, Metals, Hex Chrom
	11/16/2011	IR74-HP-SW/SD03	IR74-HP-SD03-0-0_5-11D	VOCs, SVOCs, OCPs, OPPs, PCBs, Metals, Hex Chrom
	11/16/2011	IR74-HP-SW/SD04	IR74-HP-SD04-0-0_5-11D	VOCs, SVOCs, OCPs, OPPs, PCBs, Metals, Hex Chrom
	11/16/2011	IR74-HP-SW/SD05	IR74-HP-SD05-0-0_5-11D	VOCs, SVOCs, OCPs, OPPs, PCBs, Metals, Hex Chrom
	11/16/2011	IR74-HP-SW/SD05	IR74-HP-SD05D-0-0_5-11D[1]	VOCs, SVOCs, OCPs, OPPs, PCBs, Metals, Hex Chrom
Henderson Pond Fish Tissue (Filet samples)	4/27/2012	HENP-TI01	HENP-FS-CP01-F-12B	PCB Congeners, Arsenic, 4,4'-DDE, 4,4'-DDT
	4/27/2012	HENP-TI02	HENP-FS-B03-F-12B	PCB Congeners, Arsenic, 4,4'-DDE, 4,4'-DDT
	4/27/2012	HENP-TI02	HENP-FS-C02-F-12B	PCB Congeners, Arsenic, 4,4'-DDE, 4,4'-DDT
	4/27/2012	HENP-TI02	HENP-FS-S01-F-12B	PCB Congeners, Arsenic, 4,4'-DDE, 4,4'-DDT
	4/24/2012	HENP-TI03	HENP-FS-C06D-F-12B[1]	PCB Congeners, Arsenic, 4,4'-DDE, 4,4'-DDT
	4/24/2012	HENP-TI03	HENP-FS-C06-F-12B	PCB Congeners, Arsenic, 4,4'-DDE, 4,4'-DDT
	4/27/2012	HENP-TI03	HENP-FS-B05-F-12B	PCB Congeners, Arsenic, 4,4'-DDE, 4,4'-DDT

TABLE 5-1

Summary of Samples Evaluated in the Human Health Risk Assessment

Henderson/Hickory Pond Investigation

MCIEAST - MCB CAMLEJ, Jacksonville, North Carolina

Medium	Sample Date	Sample Location	Sample ID	Parameters
Hickory Pond Surface Water	5/1/2012	HICP-SW/SD01	HICP-SW01-0-1-12B	VOCs, SVOCs, PCBs, OCPs, OPPs, Hex Chrom, Total/Dissolved Metals
	5/1/2012	HICP-SW/SD02	HICP-SW02-0-1-12B	VOCs, SVOCs, PCBs, OCPs, OPPs, Hex Chrom, Total/Dissolved Metals
	5/1/2012	HICP-SW/SD03	HICP-SW03-0-1-12B	VOCs, SVOCs, PCBs, OCPs, OPPs, Hex Chrom, Total/Dissolved Metals
	5/1/2012	HICP-SW/SD03	HICP-SW03D-0-1-12B[1]	VOCs, SVOCs, PCBs, OCPs, OPPs, Hex Chrom, Total/Dissolved Metals
	5/1/2012	HICP-SW/SD04	HICP-SW04-0-1-12B	VOCs, SVOCs, PCBs, OCPs, OPPs, Hex Chrom, Total/Dissolved Metals
	5/1/2012	HICP-SW/SD05	HICP-SW05-0-1-12B	VOCs, SVOCs, PCBs, OCPs, OPPs, Hex Chrom, Total/Dissolved Metals
Hickory Pond Sediment	5/1/2012	HICP-SW/SD01	HICP-SD01-0-0_5-12B	VOCs, SVOCs, PCBs, OCPs, OPPs, Metals, Hex Chrom
	5/1/2012	HICP-SW/SD02	HICP-SD02-0-0_5-12B	VOCs, SVOCs, PCBs, OCPs, OPPs, Metals, Hex Chrom
	5/2/2012	HICP-SW/SD03	HICP-SD03-0-0_5-12B	VOCs, SVOCs, PCBs, OCPs, OPPs, Metals, Hex Chrom
	5/1/2012	HICP-SW/SD04	HICP-SD04-0-0_5-12B	VOCs, SVOCs, PCBs, OCPs, OPPs, Metals, Hex Chrom
	5/1/2012	HICP-SW/SD05	HICP-SD05-0-0_5-12B	VOCs, SVOCs, PCBs, OCPs, OPPs, Metals, Hex Chrom
	5/1/2012	HICP-SW/SD05	HICP-SD05D-0-0_5-12B[1]	VOCs, SVOCs, PCBs, OCPs, OPPs, Metals, Hex Chrom
Hickory Pond Fish	4/27/2012	HICP-TI01	HICP-FS-B01-F-12B	SVOCs, PCB Congeners, OCPs, OPPs, Metals
	4/27/2012	HICP-TI01	HICP-FS-CP01-F-12B	SVOCs, PCB Congeners, OCPs, OPPs, Metals
	4/27/2012	HICP-TI01	HICP-FS-S01-F-12B	SVOCs, PCB Congeners, OCPs, OPPs, Metals

OCPs - organochlorine pesticides
OPPs - organophosphorus pesticides
PAHs - polycyclic aromatic hydrocarbons
PCBs - polychlorinated biphenyls
SVOC - semivolatile organic constituents
VOCs - volatile organic constituents
[1] Duplicate sample

TABLE 5-2

Summary of COPCs for the Human Health Risk Assessment

Henderson/Hickory Pond Investigation

MCIEAST - MCB CAMLEJ, Jacksonville, North Carolina

Henderson Pond ***Fish Tissue***	***Hickory Pond*** ***Fish Tissue***
4,4'-DDT	Total Non-dioxin like PCB congeners
Dioxin-like PCB TEQ	Total PCB congeners
Total Non-dioxin like PCB congeners	Chromium
Total PCB congeners	Mercury
	Selenium

Note - For Henderson Pond, since dioxin-like PCBs were identified as a COPC, risks and hazards associated with PCBs were calculated for the dioxin-like PCBs using 2,3,7,8-TCDD toxicity factors and for the non-dioxin like PCBs using Aroclor-1254 (for non-cancer) and PCB (for cancer) toxicity factors. They were not calculated using the total PCB congeners concentration. For Hickory Pond, since dioxin-like PCBs were not identified as a COPC, risks and hazards associated with PCBs were calculated using the total PCB concentration using Aroclor-1254 (for non-cancer) and PCB (for cancer) toxicity factors .

TABLE 5-3

WHO Dioxin-like PCB TEFs

Henderson/Hickory Pond Investigation

MCIEAST - MCB CAMLEJ, Jacksonville, North Carolina

Dioxin-like PCB Congener	WHO TEF[1]
3,3',4,4'-Tetrachlorobiphenyl (77)	0.0001
3,4,4',5-Tetrachlorobiphenyl (81)	0.0003
2,3,3',4,4'-Pentachlorobiphenyl (105)	0.00003
2,3,4,4',5-Pentachlorobiphenyl (114)	0.00003
2,3',4,4',5-Pentachlorobiphenyl (118)	0.00003
2,3',4,4',5'-Pentachlorobiphenyl (123)	0.00003
3,3',4,4',5-Pentachlorobiphenyl (126)	0.1
Congeners (156/157)	0.00003
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	0.00003
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	0.03
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	0.00003

[1] Van den Berg et al., 2006. The 2005 World Health Organization Re-evaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds. ToxSci Advance Acces. July 7.

TABLE 5-4

Summary of RME Cancer Risks and Hazard Indices

Henderson/Hickory Pond Investigation

MCIEAST - MCB CAMLEJ, Jacksonville, North Carolina

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks >10^{-4}	Chemicals with Cancer Risks >10^{-5} and <10^{-4}	Chemicals with Cancer Risks >10^{-6} and <10^{-5}	Hazard Index	Chemicals with HI>1
Current/Future Adult Angler	Henderson Pond Fish	Ingestion	4E-05		Total Non-dioxin like PCB congeners	Dioxin-like PCB TEQ	2E+00	Total Non-dioxin like PCB congeners
	Hickory Pond Fish	Ingestion	7E-06			Chromium	2E+00	Mercury
Current/Future Child Angler	Henderson Pond Fish	Ingestion	2E-05			Total Non-dioxin like PCB congeners, Dioxin-like PCB TEQ	4E+00	Total Non-dioxin like PCB congeners
	Hickory Pond Fish	Ingestion	3E-06			Chromium	4E+00	Mercury
Current/Future Lifetime Angler	Henderson Pond Fish	Ingestion	5E-05		Total Non-dioxin like PCB congeners, Dioxin-like PCB TEQ		N/A	
	Hickory Pond Fish	Ingestion	1E-05			Chromium	N/A	

N/A = Not available/not applicable

TABLE 5-5

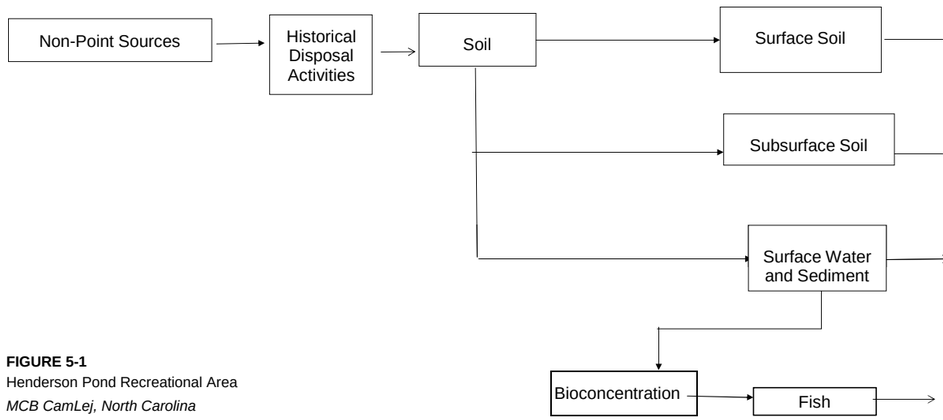
Summary of CTE Cancer Risks and Hazard Indices

Henderson/Hickory Pond Investigation

MCIEAST - MCB CAMLEJ, Jacksonville, North Carolina

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks >10^{-4}	Chemicals with Cancer Risks >10^{-5} and <10^{-4}	Chemicals with Cancer Risks >10^{-6} and <10^{-5}	Hazard Index	Chemicals with HI>1
Current/Future Adult Angler	Henderson Pond Fish	Ingestion	1E-06				3E-01	
	Hickory Pond Fish	Ingestion	6E-07				3E-01	
Current/Future Child Angler	Henderson Pond Fish	Ingestion	8E-07				3E-01	
	Hickory Pond Fish	Ingestion	4E-07				3E-01	
Current/Future Lifetime Angler	Henderson Pond Fish	Ingestion	2E-06				N/A	
	Hickory Pond Fish	Ingestion	1E-06				N/A	

N/A = Not available/not applicable



Exposure Route	Current/Future							Future	
	Recreational User Adult	Recreational User Adolescent	Recreational User Child	Game Warden	Construction Worker	Angler Adult	Angler Child	Resident Adult	Resident Child
Ingestion	X	X	X	X	X	NA	NA	X	X
Dermal Contact	X	X	X	X	X	NA	NA	X	X
Inhalation	X	X	X	X	X	NA	NA	X	X
Ingestion	X	X	X	X	X	NA	NA	X	X
Dermal Contact	X	X	X	X	X	NA	NA	X	X
Inhalation	X	X	X	X	X	NA	NA	X	X
Ingestion	X	X	X	X	NA	NA	NA	NA	NA
Dermal Contact	X	X	X	X	NA	NA	NA	NA	NA
Inhalation	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ingestion	NA	NA	NA	NA	NA	X[1]	X[1]	NA	NA

NA - Not Applicable or pathway is incomplete
X - Potentially complete exposure pathways
X[1] - Exposure pathway considered potentially complete assuming the currently posted catch-and-release advisory is not retained in the future or not followed

FIGURE 5-1
Henderson Pond Recreational Area
MCB CamLej, North Carolina

SECTION 6

Ecological Risk Assessment

The following ERA completes Steps 1 through 3 of the USEPA eight-step ERA process for Henderson Pond and Hickory Pond located at MCIEAST-MCB CAMLEJ. Surface water, sediment, and fish tissue data for the ponds were analyzed separately while soil data collected near the ponds were analyzed together. Step 1 is the preliminary problem formulation and ecological effects evaluation. Step 2 is the preliminary exposure estimate and risk calculation. Steps 1 and 2 constitute the screening-level ecological risk assessment (SLERA). Step 3, the first step of the baseline ecological risk assessment (BERA), is defined as the problem formulation. The first activity under problem formulation is the refinement of the list of COPCs.

This ERA evaluates surface and subsurface soil near the ponds and surface water, sediment, and fish tissue data that were collected within Henderson and Hickory Pond. The ERA was performed in accordance with the following guidance:

- Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (USEPA, 1997c)
- Region 4 Ecological Risk Assessment Bulletins – Supplement to RAGS (USEPA, 2001a)
- Navy Guidance for Conducting Ecological Risk Assessments (DoN, 2003)
- NCDENR Guidelines for Performing Screening Level Ecological Risk Assessments within the North Carolina Division of Waste Management (NCDENR, 2003).

6.1 Step 1—Preliminary Problem Formulation and Ecological Effects Evaluation

The problem formulation covers the physical layout of the site, its history and ecology, available analytical data, fate and transport mechanisms, complete exposure pathways, and receptors of concern.

6.1.1 Ecological Setting

The New River is a coastal blackwater river. The New River watershed sits within Onslow County and includes MCIEAST - MCB CAMLEJ and the City of Jacksonville to the north. The watershed upgradient of Jacksonville is characterized by gum-cypress swamps, with upland areas used primarily for forestry and agriculture. At Jacksonville, the river widens into a broad, slow-moving tidal embayment. About 16 miles south of Jacksonville, it discharges into the Atlantic Ocean through a narrow opening called New River Inlet. Jacksonville and MCIEAST-MCB CAMLEJ comprise the majority of land in the lower watershed (the area downstream of the United States 17 Bypass). There are 223 stream miles, 22,810 estuarine acres, and 15 miles of Atlantic coastline in this subbasin.

This portion of the North Carolina coast consists of sandy beaches. The adjacent upland area transitions to a region of pines (*Pinus* sp.), scrub oaks (*Quercus* sp.), sweet gum (*Liquidambar styraciflua*), and dogwood (*Cornus* sp.). Wire grass (*Cynodon dactylon*) is the primary undergrowth species. The area is interspersed with bottomland hardwood forests which are dominated by bald cypress (*Taxodium distichum*) and swamp tupelo (*Nyssa sylvatica* var. *biflora*). Croplands are common in this area, and consist of mostly corn, cotton, peanuts, and tobacco.

The climate in Jacksonville is characterized by short, mild winters and long, hot, humid summers. Average annual net precipitation is approximately 50 inches. Ambient air temperatures generally range from 33 to 53 degrees Fahrenheit (°F) in the winter months, and 71°F to 88°F during the summer months.

The area around Henderson and Hickory Ponds is heavily forested with a dense understory. Henderson Pond is approximately 16 acres and Hickory Pond is approximately 3 acres. Both ponds receive drainage from the surrounding wooded areas. The south ends of Henderson and Hickory Ponds are dammed, with overflow discharging into unnamed tributaries of Wallace Creek located approximately 1,300 feet to the south.

Henderson Pond historically had depths exceeding 15 feet (approximately 8 ft currently) while Hickory Pond has depths generally less than 6 feet. Both ponds are primarily used for recreational fishing. Game fish, including largemouth bass (*Micropterus salmoides*), red-ear sunfish (*Lepomis microlophus*), bluegill (*Lepomis macrochirus*), and channel catfish (*Ictalurus punctatus*), are stocked in both ponds on an annual to semi-annual basis (USMC, 2006).

The ecological checklist in **Appendix D** identifies the terrestrial and aquatic habitats onsite. Table 1 of **Appendix D** presents a list of threatened and endangered species for Onslow County, North Carolina.

6.1.2 Summary of Available Analytical Data

Surface and subsurface soil data were collected in 2012 from various areas around the ponds. Likewise, surface water, sediment, and fish tissue data were collected in 2012 from both ponds (**Figure 3-2** and **Figure 3-3**). In addition, five surface water and sediment samples were collected from Henderson Pond in 2011. The following data were used for the assessment:

- Ten surface soil samples (plus one field duplicate) from 0 to 1 ft bgs
- Ten subsurface soil samples from 1 to 4 ft bgs
- Five surface water samples (plus 2 duplicates) from Henderson Pond
- Fifteen sediment samples (plus two duplicates) from Henderson Pond.
- Six composite fish samples (plus one duplicate) from Henderson Pond.
- Five surface water samples (plus one duplicate) from Hickory Pond
- Five sediment samples (plus one duplicate) from Hickory Pond.
- Three composite fish samples from Hickory Pond.

Samples used for the ERA are listed in Table 2**, Appendix D**. Surface and subsurface soils were analyzed for inorganics, pesticides/PCBs, and SVOCs. Surface water and sediment samples from both ponds were analyzed for inorganics, pesticides/PCBs, SVOCs, and VOCs. Fish collected from both ponds, as described in **Appendix A**, were evaluated in the laboratory based on fillet and offal samples. Only the fillets were evaluated in the HHRA. For the purposes of the ERA, a whole body concentration was calculated as described in Section 6.3.3. Fish tissue samples from Henderson Pond were analyzed for arsenic, pesticides/PCBs (including PCB congeners), and SVOCs. Fish tissue samples from Hickory Pond were analyzed for inorganics, pesticides/PCBs (including PCB congeners), and SVOCs. Dissolved inorganic concentration data were obtained for surface water samples. TOC and pH data were also collected for sediments in both ponds and surface soils, respectively.

Available analytical data were selected for use in the ERA based upon the following:

- Data must have been validated by a qualified data validator using acceptable data validation methods. Unqualified data and data qualified as J (estimated) were treated as detected. Data qualified as U (undetected) and R (rejected) were treated as undetected.
- For samples with duplicate analyses, the higher of the two concentrations was used, for conservatism, when both values were detects or when both values were non-detects. In cases where one result was a detection and the other a non-detect, the detected value was used in the assessment.

6.1.3 Fate and Transport Mechanisms

Fate and transport mechanisms at the site, as they relate to ecological exposures, are briefly discussed as follows.

6.1.3.1. Surface Water Runoff and Erosion

Both Henderson and Hickory Ponds receive drainage from the surrounding wooded areas. Contamination that may be present in the ponds is likely from surface runoff from the surrounding areas.

6.1.3.2. Dust

Soil dust at the site is not expected to be significant because the majority of the site is vegetated.

6.1.4 Conceptual Site Model

Information regarding the general habitat features of Henderson Pond and Hickory Pond recreational area and the fate and transport of the chemicals associated with site media was used to build an ecological CSM. Key components of the CSM include chemical sources, release and transport mechanisms, exposure media, receptors, and exposure routes (**Figure 6-1, Appendix D**).

Potentially complete and significant exposure pathways to terrestrial and aquatic ecological receptors include the following:

- Direct exposure to terrestrial plants (root uptake) and soil invertebrates (dermal and direct ingestion)
- Direct exposure to aquatic biota (root uptake for plants and dermal and direct ingestion for aquatic biota)
- Incidental ingestion exposure for wildlife
- Food chain (prey consumption) exposures for wildlife

Terrestrial bird and mammal species that are representative of the site include the short-tailed shrew (mammalian insectivore), white-footed mouse (mammalian omnivore), red fox (mammalian omnivore), white-tailed deer (mammalian herbivore), American robin (avian omnivore), mourning dove (avian herbivore), and red-tailed hawk (avian carnivore). Aquatic mammal and bird species that are representative of the site include the mink (mammalian carnivore) and great blue heron (avian piscivore).

6.1.5 Ecological Effects Evaluation

The potential for effects from exposure to each abiotic medium was initially evaluated by comparing ecological screening values (ESVs) to maximum constituent concentrations (Step 2). For soil, the USEPA Ecological Soil Screening Levels (EcoSSLs) (USEPA, 2010c) were preferentially selected over Region 4 values (USEPA, 2001b). If no EcoSSL was available for a constituent, the Region 4 value was selected.

A selection hierarchy was also applied to surface water. The freshwater National Recommended Water Quality Criteria (NRWQC) (USEPA, 2011) were preferentially selected over the Region 4 values. However, when no NRWQC was available for a constituent, the Region 4 freshwater value was selected as the ESV for that constituent.

Region 4 ESVs were used for sediment.

It should be noted that fish tissue data were used to support food chain modeling in Step 3 only. Because each pond is stocked on an annual to semi-annual basis, risk to fish populations is not a concern. Additionally, breeding populations of sunfish and bass were noted during the fish sampling efforts suggesting that impacts on fish populations from direct exposure to contaminants in the ponds are likely minimal.

6.2 Step 2—Preliminary Exposure Estimate and Risk Calculation

In Step 2, risk to ecological receptors was evaluated by calculating HQs. HQs are calculated by dividing the maximum concentration detected within a medium by the corresponding medium-specific ESV. Maximum concentrations for detected analytes and maximum detection limits for undetected analytes were used to conservatively estimate potential chemical exposures to ecological receptors. Risk estimates were calculated for surface soil, subsurface soil, surface water, and sediment (**Tables 3 through 8, Appendix D**).

North Carolina SLERA guidance (NCDENR, 2003) requires that constituents falling into one of the following categories be identified as a Step 2 COPC:

- Category 1 – Contaminants with a maximum detection exceeding the ESV
- Category 2– Undetected contaminants with a laboratory sample quantitation limit (SQL) exceeding the ESV
- Category 3 – Detected contaminants with no ESV
- Category 4 – Undetected contaminants with no ESV

Contaminants with a maximum detection exceeding the ESV and those with no ESV were carried forward to Step 3. Results, by medium, are summarized below:

- Surface soil – Aldrin and dieldrin had HQs greater than one but were not detected. PAHs were detected but had HQs less than one based on the high molecular and low molecular weight sums. Nine detected inorganics and total PCBs had HQs greater than 1.
- Subsurface soil – No PAHs, PCBs, or pesticides were detected. Of the detected inorganics, seven had an HQ greater than 1. Antimony also had an HQ greater than 1 but was not detected.

Henderson Pond

- Surface water - No VOCs, SVOCs, pesticides, or PCBs were detected. Aluminum, copper, and lead had HQs greater than 1 based on total concentrations. However, only aluminum had an HQ above 1 based on the dissolved concentrations. Based on both total and dissolved concentrations, there were several detected inorganics with no ESV or with HQs less than 1.
- Sediment – Two VOCs and two SVOCs were detected but lacked ESVs. Two pesticides and total PCBs were detected and had HQs greater than 1. Of the detected inorganics, copper and lead had HQs above 1. There were also several detected inorganics with no ESV.

Hickory Pond

- Surface water - No pesticides or PCBs were detected. One VOC and one SVOC were detected and had HQs greater than 1. Aluminum had an HQ greater than 1 based on both total and dissolved concentrations, and there were several detected inorganics with no ESV or with HQs less than 1.
- Sediment – Two VOCs were detected but lacked ESVs. One SVOC was detected but the HQ was less than 1. Two pesticides were detected and had HQs greater than 1. Of the detected inorganics, none had an HQ greater than 1. However, no ESV was available for several detected inorganics.

6.3 Step 3 —Problem Formulation

6.3.1 Refinement of Chemicals of Potential Concern

Using the same CSM, Step 3 involves re-evaluation of the conservative assumptions used in Steps 1 and 2, resulting in a refinement of the COPC list. Step 3 includes a re-assessment of the risks to lower trophic level receptors (direct exposure) and an evaluation, for the subset of contaminants that are bioaccumulative according to USEPA (2000c), of the potential for risks to upper trophic level receptors (food chain transfer). Food chain transfer was also evaluated for analytes detected in fish tissue from Hickory and Henderson Ponds.

Non-detected constituents were excluded from further consideration. If a constituent was not detected with current analytical methods, it is highly unlikely that it would pose a significant risk to receptor populations. Likewise, nutrients, including calcium, magnesium, potassium, and sodium were excluded from further consideration in Step 3. A discussion of the uncertainty associated with undetected analytes is presented in Section 6.3.5.

6.3.2 Direct Exposure

The risk to lower trophic level receptors was recalculated using a conservative estimate of the mean chemical concentration as the EPC. EPCs were calculated using ProUCL Version 4.0.0.5. If a conservative estimate of the mean EPC could not be calculated, the arithmetic mean concentration was used as the EPC.

Potential risks were further evaluated using a weight-of-evidence (WOE) approach not utilized in Step 2. The WOE approach considers the magnitude of the recalculated risks, toxicity information not used in the Step 2 screening, frequency of detection, magnitude of exceedance, background (when available), and the distribution of detected concentrations.

When ESVs were not available from the sources used in the Step 2 evaluation, a supplemental ESV from the literature was identified in Step 3. Constituents with no available supplemental ESVs are discussed in the Uncertainty section (Section 6.3.5).

Maximum concentrations of pesticides, PAHs, and inorganics in surface and subsurface soil were also compared to the BTVs for undeveloped areas with combined soil types (CH2M HILL, 2011c). The BTV represents a 95/95 upper tolerance limit (UTL), which is an upper bound (with 95 percent confidence) of the background 95th percentile.

The results of the direct exposure assessment for surface soil, subsurface soil, surface water, and sediment, are presented in **Tables 9 through 14 (Appendix D)**, respectively. A summary of the results is presented as follows.

6.3.2.1. Surface Soil

Twelve detected COPCs in surface soil were carried forward to Step 3. Based on the refined screening, aluminum, antimony, hexavalent chromium, and lead were all consistent with background and calcium, magnesium, and potassium are macronutrients and not considered to pose a risk. Vanadium, iron, and total PCBs were the only detected analytes with HQs greater than 1 (**Table 9, Appendix D**). Vanadium had a low magnitude of exceedance (HQ = 1.12) and therefore was not considered to pose significant risk. While the maximum concentration of iron exceeded the BTV, it was within the overall range of background (26.3 to 12,200 mg/kg). Additionally, because no other inorganic analytes were identified as Step 3 COPCs, it is unlikely that the iron detections are related to a release. While total PCBs had an elevated HQ, they were only detected in 1 of 10 samples suggesting that PCBs are limited in extent and unlikely to pose significant risks to populations or communities of lower trophic level receptors.

6.3.2.2. Subsurface Soil

Seven detected COPCs in surface soil were carried forward to Step 3 (**Table 10, Appendix D**). Based on the refined screening, aluminum, hexavalent chromium, iron and vanadium were all consistent with background and calcium, magnesium, and potassium are macronutrients and not considered to pose risk. Consequently, no analytes in subsurface soil are expected to pose a significant risk to lower trophic level receptors.

6.3.2.3. Surface Water

Henderson Pond

Six detected inorganic COPCs, based on both total and dissolved data, were carried forward to Step 3 (**Table 11, Appendix D**). However, based on the refined screening for dissolved inorganics, all analytes were either not detected, macronutrients, had HQs less than 1, or had a low magnitude of exceedance (aluminum).

Based on this refined screening, no analytes in surface water were considered to pose a significant risk to aquatic receptors.

Hickory Pond

Eleven detected COPCs, based on both total data and dissolved data, were carried forward to Step 3 (**Table 12, Appendix D**). However, based on the refined screening for dissolved inorganics, all analytes were either macronutrients, had HQs less than 1, or had a low magnitude of exceedance (aluminum). Acetone and di-n-octylphthalate were both detected but lacked ESVs. Because both are known to be common laboratory contaminants (DTSC, 2006) they are not considered to pose a risk.

Based on this refined screening, no analytes in surface water were considered to pose a significant risk to aquatic receptors.

6.3.2.4. Sediment

Henderson Pond

Twenty detected COPCs were carried forward to Step 3 (**Table 13, Appendix D**). Based on the refined screening, 4,4'-DDE; 4,4'-DDT; total PCBs; copper; and lead had HQs greater than 1. All other detected analytes were either macronutrients, had HQs less than one, or lacked ESVs. Three detected organics lacking ESVs (2-butanone,

acetone, and bis[2-ethylhexyl]phthalate) are considered common laboratory contaminants (DTSC, 2006). Copper and lead both had low magnitudes of exceedance (HQs less than 2). Because HQs were elevated for 4,4'-DDE (HQ = 4.05); 4,4'-DDT (HQ = 21.3); total PCBs (HQ = 5.4), these analytes have potential to pose risk to lower trophic level receptors.

The maximum concentration of 4,4'-DDE (15 μg/kg) was below the surface soil BTV (24 μg/kg), and concentrations are expected to be slightly higher in sediment from runoff accumulation overtime.

The screening values for 4,4'-DDE; 4,4'-DDT; and total PCBs were based on the threshold effects level (TEL) concentrations (MacDonald, 1994). The range of concentrations that could, potentially, be associated with biological effects (i.e., the possible effects range) is delineated by the TEL (lower limit) and the probable effects level (PEL) (upper limit). The maximum and EPC concentrations of 4,4'-DDE and the EPC concentration of total PCBs are less than the PEL concentrations of 374 μg/kg and 189 μg/kg, respectively. This suggests that risk from these analytes is likely low.

The maximum (78 μg/kg) and EPC (25.3 μg/kg) concentrations for 4,4'-DDT exceeded the surface soil BTV (5.24 μg/kg) and the PEL (4.77) value. Based on the sediment concentrations of 4,4'-DDT, a potential risk to lower trophic level receptors may exist.

However, based on observations at the site during sampling efforts, there appear to be breeding populations of sunfish and bass in both ponds, suggesting an adequate prey population is present to support the fish communities. As a result, population- or community-level impacts from these analytes are likely low.

Hickory Pond

Sixteen detected COPCs were carried forward to Step 3 (**Table 14, Appendix D**). Based on the refined screening, 4,4'-dichlorodiphenyldichloroethane (DDD) and 4,4'-DDE had HQs greater than 1. The organics, 2-butanone and acetone, were also detected but lacked ESVs and are considered common laboratory contaminants (DTSC, 2006). All other detected analytes were either macronutrients or had HQs less than 1.

Because HQs were elevated for 4,4'-DDE (HQ = 5.49) and 4,4'-DDT (HQ = 2.71), these analytes have potential to pose risk to lower trophic level receptors. However, the maximum and EPC concentrations of 4,4'-DDD (6.7 μg/kg maximum concentration) and 4,4'-DDE (7.6 μg/kg maximum concentration and 5.61 μg/kg EPC concentration) were less than the surface soil BTVs (14.8 μg/kg for 4,4'-DDD and 24 for 4,4'-DDE) and the PELs (7.8 μg/kg for 4,4'-DDD and 374 μg/kg for 4,4'-DDE) (MacDonald, 1994). Additionally, based on observations at the site, there appear to be breeding populations of fish in the ponds, suggesting an adequate prey population is present. As a result, population- or community-level impacts from these analytes are likely low.

6.3.3 Food Chain Transfer

Food chain modeling was conducted for the following detected COPCs:

- Organic constituents carried to Step 3 and identified as bioaccumulative in USEPA (2000c)
- Inorganic constituents carried to Step 3 that were not consistent with background and were identified as bioaccumulative in USEPA (2000c)
- Constituents detected in fish tissue for each pond with the exception of macronutrients (**Tables 15 and 16 of Appendix D**)

Food chain modeling was initially conducted for the terrestrial and aquatic receptors using maximum media and tissue concentrations. If analytes posed a potential risk based on maximum concentrations, modeling was refined using a conservative estimate of the mean (i.e., the EPC, as described in Section 6.3.2) when available. If a conservative estimate of the mean could not be calculated the mean concentration was used to estimate exposure.

The only COPC retained for food chain modeling in surface soils was total PCBs. Analytes in subsurface did not require food chain modeling because they are collected at depths (4 ft bgs) that are unlikely to result in bird and

mammal exposure and all analytes were either not detected or were consistent with background. The COPCs 4,4'-DDE; 4,4'-DDT; PCBs (including total PCBs and dioxin-like PCBs); copper; lead; and selenium were included in food chain modeling for Henderson Pond, and aluminum; barium; chromium; manganese; mercury; selenium; zinc; 4,4'-DDE; 4,4'-DDT; and PCBs (including total PCBs and dioxin-like PCBs) were included in food chain modeling for Hickory Pond. While iron was detected in fish tissue from Hickory Pond, it was not modeled because it lacked toxicity reference values (TRVs) for both birds and mammals. Considering that iron did not pose a risk in sediments from Hickory Pond, iron in fish tissue is unlikely to pose a significant risk to upper trophic level receptors.

Fish tissue data were converted to whole body concentrations using offal and filet concentrations and the percent moisture for each sample as presented in **Tables 15 and 16** of **Appendix D.** Fish tissue samples collected from both ponds were analyzed for PCB congeners. Total dioxin-like PCB TEQs for birds and mammals were calculated for each fish sample as presented in **Tables 17 through 20** of **Appendix D** using the 1998 and 2005 WHO TEFs, respectively (Van den Berg et al., 1998 and 2006).

Based on the species list of vertebrates with potential to occur at MCIEAST-MCB CAMLEJ and field observations by CH2M HILL biologists during the field sampling event, the following receptors were selected for the terrestrial and aquatic evaluations:

- **Short-tailed shrew** is a terrestrial insectivore (primarily eats terrestrial invertebrates) occurring in forested areas with notable leaf litter (Pennsylvania State University, 2002).
- **White-footed mouse** is a terrestrial omnivore occurring in a variety of forested, brushy, and open areas (FCPS, 2011).
- **Red fox** is a terrestrial omnivore occurring in forested areas (NatureWorks, 2011).
- **White-tailed deer** is a terrestrial herbivore occurring in forested areas (NatureWorks, 2011).
- **Mink** is an aquatic carnivore occurring in forested areas near rivers, streams, lakes, and ponds (NatureWorks, 2011). The mink may occur around the ponds.
- **American robin** is a terrestrial omnivore occurring in a variety of habitats from woodlands to open parks. The American robin was also selected to conservatively represent the endangered red-cockaded woodpecker known to occur at MCIEAST-MCB CAMLEJ. Both species prey on terrestrial invertebrates, but the robin forages on the ground and the woodpecker primarily eats insects on trees and underneath bark (Cornell University, 2011). Both may consume constituents that have accumulated in prey. However, the robin has greater exposure due to ingestion of soil directly during foraging and through consumptions of earthworms that contain soil in their gut.
- **Mourning dove** is a terrestrial herbivore occurring in open woodland areas (Cornell University, 2011).
- **Red-tailed hawk** is a terrestrial carnivore occurring in a variety of open habitats from forest edges to parks (Cornell University, 2011).
- **Great blue heron** is an aquatic piscivore occurring in ponds and along lake edges (Cornell University, 2011). The great blue heron is likely to occur around the ponds.

The potential for risks to amphibians and reptiles was assumed to be covered through the evaluation of these receptors species and also the direct exposure assessment. Amphibians and reptiles were not directly evaluated given the limited available data in the literature.

Risks to the upper trophic level receptors were evaluated by modeling exposure via the ingestion of constituents which have accumulated in prey. Drinking of surface water and incidental ingestion of soil were also included when calculating exposure. Copper and lead were the only COPCs evaluated for drinking of surface water in Henderson Pond; the other COPCs were not detected in surface water. Aluminum, barium, chromium, manganese, and mercury were evaluated for drinking of surface water in Hickory Pond. The other COPCs for Hickory Pond were not detected in surface water. Dietary items for tissue concentration modeling included

terrestrial and aquatic plants, terrestrial and aquatic invertebrates, and mammals. Fish tissue data were available and were used to estimate exposure to the mink and the great blue heron.

For the maximum exposure case, two HQs were developed. The maximum exposure estimate was compared to two types of TRVs: NOAELs and LOAELs. If the NOAEL-based HQ was greater than 1, NOAEL and LOAEL-based HQs were calculated using the EPC. When the LOAEL-based HQ is greater than 1 using the EPC, risk may be present. When the NOAEL-based HQ is above 1 using the EPC, there is high confidence of no significant risk.

6.3.3.1. Exposure Assessment

For prey items other than fish tissue, bioconcentration factors (BCFs) and bioaccumulation factors (BAFs) were used to estimate exposure, and based upon, or modeled from, central tendency estimates (e.g., median or mean) (**Table 21 of Appendix D**). Using central tendency estimates for exposure parameters provides a more representative estimate of potential exposures and risks to receptor populations. Since the upper trophic level receptors are highly mobile, they would be expected to effectively average their exposure over time as they forage within the area defining their home range.

The development of BCF and BAF values considered both the distribution of the data (e.g., normal or log normal) and the recommendations in the cited reference. Geometric means were preferred for log normal distributions and arithmetic means for normal distributions. In some cases, neither distribution was applicable or the distribution was biased by an outlying value. In these cases, point estimates like the median were then considered. Where an individual study (as opposed to a compilation of multiple studies) was cited, the best available value was sometimes a single value or the derivation was not specified. Default (assumed) factors of 1.0 were used only when data were not readily available for a chemical in the literature. In some cases, chemical concentrations in food items were directly estimated from surface soil EPCs using available literature-based regression models.

- Central tendency estimates of media concentrations were also used for exposure estimation. The wildlife dietary exposure models contained in the *Wildlife Exposure Factors Handbook* (USEPA, 1993) specify the calculation of an average daily dose. Increasing the representativeness of the exposure estimates relative to population-level effects is consistent with the intent of a baseline assessment. In cases where adequate spatial sampling coverage exists, mean concentrations are also appropriate for evaluating potential risks to populations of lower trophic level receptors because the members of the population are expected to be found throughout an area (where suitable habitat is present), rather than concentrated in one particular location. While effects to individual organisms might be important for some receptors, such as rare and endangered species, population- and community-level effects are typically more relevant to ecosystems.

Terrestrial Plants

For non-ionic organic chemicals (with a log K_{ow} of between 3 and 8) without literature-based BAFs (e.g. PCBs), the soil-to-plant BAF was estimated using the rinsed foliage algorithm provided on Figure 5B of USEPA (2007):

$$\log BAF = (-0.4057)(\log K_{ow}) + 1.781$$

where: BAF = Soil-to-plant BAF (unitless; dry-weight basis)
K_{ow} = Octanol-water partitioning coefficient (unitless)

A log K_{ow} value of 6.5 from Jones et al. (1997) was used to estimate the BAF for total PCBs based on Aroclor-1254.

Soil Invertebrates (Earthworms)

An earthworm BAF was estimated for total PCBs using available regression equations from the literature (Sample et al., 1997).

Small Mammals

For chemicals such as PCBs without soil-to-small mammal BAF values or algorithms, an alternate approach was used to estimate whole-body tissue concentrations. Because most chemical exposure for these small mammals is via the diet, it was assumed that the concentration of each bioaccumulative chemical in the small mammal's tissues was equal to the chemical concentration in its diet multiplied by a diet to whole-body BAF derived from the literature. The small mammal tissue concentration was calculated as follows:

$$TC_x = [[\sum_i (FC_{xi})(PDF_i)] + [(SC_x)(PDS)]] (BAF_{diet\text{-}whole\ body})$$

where:

TC_x	=	Small mammal tissue concentration for chemical x (mg/kg, dry weight)
FC_{xi}	=	Concentration of chemical x in food item i (mg/kg, dry weight)
PDF_i	=	Proportion of diet composed of food item i (dry weight basis)
SC_x	=	Concentration of chemical x in soil (mg/kg, dry weight)
PDS	=	Proportion of diet composed of soil (dry weight basis)
BAF	=	Diet to whole-body BAF (unitless, dry weight basis)

This equation is basically a weighted average of the chemical concentration in the various dietary components (including soil ingestion) for the small mammal, multiplied by a diet-to-whole body BAF, and thus excludes water ingestion.

For chemicals lacking diet to whole-body BAF values (not to be confused with the soil-to-small mammal BAFs listed in **Table 21 of Appendix F**), a diet to whole-body BAF of one was assumed. The use of a diet to whole-body BAF of one is likely to result in a conservative estimate of chemical concentrations for chemicals that are not known to biomagnify in terrestrial food webs and a reasonable estimate of chemical concentrations for chemicals that are known to bioaccumulate or biomagnify, based upon reported literature values. A maximum diet to whole-body BAF value of 1.0 was reported by Simmons and McKee (1992) for PCBs based upon laboratory studies with white-footed mice.

Aquatic Plants

Tissue concentrations in the above-ground vegetative portion of rooted wetland/aquatic plants were estimated by multiplying the surface sediment concentration for each chemical by chemical-specific soil-to-plant BCFs (extrapolated to sediments) obtained from the literature.

The BCF values were based upon root uptake from sediment and upon the ratio between dry-weight sediment and dry-weight plant tissue. Literature values based upon the ratio between dry-weight sediment and wet-weight plant tissue were converted to a dry-weight basis by dividing the wet-weight BCF by the estimated solids content for plants (15 percent [0.15]; Sample et al., 1997).

For inorganic chemicals lacking literature-based values, applicable algorithms were used. For non-ionic organic chemicals (i.e. a log K_{ow} of between 3 and 8) without literature-based BAFs, soil-to-plant BAFs were estimated using the rinsed foliage algorithm provided on Figure 5B of USEPA (2007):

$$\log BAF = (-0.4057)(\log K_{ow}) + 1.781$$

where:

BAF	=	Soil-to-plant BAF (unitless; dry-weight basis)
K_{ow}	=	Octanol-water partitioning coefficient (unitless)

A log K_{ow} value of 6.5 from Jones et al. (1997) was used to estimate the BAF for total PCBs based on Aroclor-1254.

Benthic Invertebrates

Tissue concentrations in benthic invertebrates were estimated by multiplying the maximum and sediment concentration for each chemical by chemical-specific sediment-to-invertebrate BAF or biota-sediment accumulation factor (BSAF) values obtained from the literature. BSAF (wet weight) values were converted to BAF values (dry weight) for use in the food web models using 2.58 percent lipids (USACE, 2010) and 21 percent solids

(USEPA, 1993), and an assumed TOC of 1 percent. Algorithms, if available for a chemical, were the preferred method for deriving BAFs, followed by the point-estimate BAFs.

The BAF values selected were based upon the ratio between dry-weight sediment and dry-weight invertebrate tissue. BAFs based upon depurated analyses (sediment was purged from the gut of the organism prior to analysis) were given preference over undepurated analyses when selecting BAF values because direct ingestion of sediment is accounted for separately in the food web model. However, in some cases, the depurated data set was limited or highly variable, and the pooled or undepurated data were then considered.

Invertebrate tissue were converted to a dry-weight basis by dividing the wet-weight BAF by the estimated solids content for benthic invertebrates (21 percent [0.21]). For chemicals without available measured BAFs, a BAF was estimated using available regression equations from the literature, estimated using data for similar chemicals, or a BAF of 1.0 was assumed.

Fish

Fish tissues samples were collected as described in the *Henderson Pond/Hickory Pond Work Plan Addendum Marine Corps Base Camp Lejeune, Jacksonville, North Carolina* (CH2M HILL, 2012a) and as summarized in Appendix A. The maximum concentration across all species from each pond was used to estimate the uptake and exposure for both the mink and great blue heron during the initial evaluation. During the refinement step, mean fish tissue concentrations were used to estimate the update and exposure for mink and great blue heron.

Dietary Intakes

Upper trophic level receptor exposures via the food web to chemicals present in surface soil and sediment were determined by estimating the chemical concentrations in each relevant dietary component for each receptor, as described in the previous subsection. Incidental ingestion of surface soil and sediment was included when calculating the total exposure. Direct ingestion of drinking surface water was also included.

Dietary intakes for each upper trophic level receptor were calculated using the following formula (modified from USEPA [1993]):

$$DI_x = \frac{[[\sum_i (FIR)(FC_{xi})(PDF_i)] + [(FIR)(SC_x)(PDS)] + [(WIR)(WC_x)]]}{BW}$$

where:

DI_x	=	Dietary intake for chemical x (mg chemical/kg body weight/day)
FIR	=	Food ingestion rate (kilograms per day [kg/day], dry weight)
FC_{xi}	=	Concentration of chemical x in food item i (mg/kg, dry weight)
PDF_i	=	Proportion of diet composed of food item i (dry weight basis)
SC_x	=	Concentration of chemical x in soil (mg/kg, dry weight)
PDS	=	Proportion of diet composed of soil (dry weight basis)
WIR	=	Water ingestion rate (liters per day [L/day])
WC_x	=	Concentration of chemical x in water (mg/L)
BW	=	Body weight (kg)

Incidental ingestion of soil was modeled as a dietary component rather than using a separate soil ingestion rate. Parameter values for the selected receptors are listed in **Table 22 of Appendix D**. When measured food ingestion rates were not available for a receptor from the literature, the rates were estimated using allometric equations from Nagy (2001). For receptors that consume small mammals (red fox, red-tailed hawk), it was assumed that the small mammal portion of the diet was composed of equal parts mice (omnivores) and shrews (insectivores).

The exposure parameter values were selected to provide for a realistic evaluation of exposure. Central tendency estimates (e.g., mean, median, or midpoint) for adult body weight and ingestion rates were used. Central tendency estimates for these exposure parameters are relevant because they better represent the characteristics

of a greater proportion of the individuals in the population. Each receptor was conservatively assumed to be constantly present at the site (i.e., an area use factor of 1.0 use applied).

Mink and great blue heron, the semi-aquatic receptors, were used to evaluate risk from exposure to fish, surface water, and sediment. The other receptors, short-tailed shrew, white-footed mouse, red fox, white-tailed deer, red-tailed hawk, mourning dove, and American robin, were used to evaluate risk from exposure to soil. For each medium, the entire data set was applied to each receptor (e.g., the soil data set was the same for each of the terrestrial receptors).

6.3.3.2. Ingestion Toxicity Reference Values

Ingestion TRVs for dietary exposures were derived for each bioaccumulative chemical evaluated in the ERA and each detected analyte in fish tissue. TRVs were derived for both mammalian and avian upper trophic level receptors, the only two taxonomic groups for which sufficient toxicological information was generally available for the range of bioaccumulative chemicals evaluated. Toxicological information from the literature for wildlife species most closely related to the receptor species were used, where available, but were supplemented by laboratory studies of non-wildlife species (e.g., laboratory mice) where necessary. The ingestion TRVs are expressed as milligrams of the chemical per kilogram body weight of the receptor per day (mg/kg-BW/day).

Survival, growth, and reproduction were emphasized as toxicological endpoints because they are the most relevant, ecologically, to maintaining viable populations and because they are generally the most studied toxicological endpoints for ecological receptors. Endpoints based upon reproduction were generally preferred to those based upon growth, which were preferred to those based upon survival. If several chronic toxicological studies were available from the literature, the most appropriate study was selected for each receptor species based upon study design, study methodology, study duration, study endpoint, and test species.

Ingestion TRVs were derived for both chronic NOAEL and chronic LOAEL endpoints. The applicable UFs from **Table 23 of Appendix D** were used to derive these TRVs where appropriate (UFs were not generally applied to TRVs obtained from EcoSSL documents because these TRVs often encompassed multiple studies). Because the concern is population- or community-level effects, no intraspecies UFs were applied. Taxonomic class-type UFs were also not applied because the TRVs selected were typically derived based upon data from a broad range of taxonomic groups.

Ingestion TRVs for mammals and birds are provided in **Tables 24 and 25 of Appendix D**, respectively.

6.3.3.3. Risk Results

The results of the food chain modeling for terrestrial and aquatic wildlife exposed to maximum concentrations in surface soil, sediment, fish tissue, and surface water used by wildlife as drinking water are presented in **Tables 26 and 27 of Appendix D**. The NOAEL-based HQs for total PCBs in the short-tailed shrew (HQ = 3.25) and the mink (HQ = 1.31) were greater than one in Henderson Pond. However, no LOAEL-based HQs were greater than one for any receptor or any analyte in Henderson Pond. At Hickory Pond, aluminum, mercury, and selenium had NOAEL-based HQs greater than one for either the mink or great blue heron. Mercury also had a LOAEL-based HQ greater than one for the great blue heron while selenium had a LOAEL-based HQ greater than one for the mink. These analytes were further evaluated in a refined screening (**Table 28 of Appendix D**). Aluminum and mercury had NOAEL-based HQs greater than one but the LOAEL-based HQs were less than one. The NOAEL- and LOAEL-based HQs for selenium both exceeded one (2.1 and 1.9, respectively).

6.3.4 Risk Characterization

6.3.4.1. Lower Trophic Level Receptors

No analytes in subsurface soils or surface water were identified as posing potential risk to lower trophic level receptors.

While total PCBs in surface soil had an elevated HQ, PCBs were only detected in 1 of 10 samples suggesting that PCBs are limited in extent and unlikely to pose significant risks to populations or communities of lower trophic level receptors.

In Henderson Pond, HQs were elevated for 4,4'-DDE (HQ = 4.05); 4,4'-DDT (HQ = 21.3); and total PCBs (HQ = 5.4). In Hickory Pond, HQs were elevated for 4,4'-DDD (HQ = 5.49) and 4,4'-DDE (HQ = 2.71). Consequently, these analytes have the potential to pose risk to lower trophic level receptors. However, in Henderson Pond, the maximum concentration of 4,4'-DDE was below the surface soil BTV and PEL value, and the EPC concentration of total PCBs was also less than the PEL value. In Hickory Pond, the maximum and EPC concentrations for 4,4'-DDD and 4,4'-DDE were below the surface soil BTVs and the PEL values. The 4,4'-DDT concentrations in Henderson Pond exceeded the BTVs and the PEL values, but breeding populations of fish were observed in the ponds, indicating an adequate lower trophic level prey population, and population- or community-level impacts from these analytes is likely low.

6.3.4.2. Upper Trophic Level Receptors

Based on the maximum-based food chain model for Henderson Pond, the NOAEL-based HQs for total PCBs exceeded 1 for the short-tailed shrew and mink; however, none of the LOAEL-based HQs were greater than 1. As a result, no risks were found to upper trophic level receptors in Henderson Pond. At Hickory Pond, aluminum, mercury, and selenium were retained for further evaluation based on the maximum-based food chain model. Based on the refined screening, selenium had a LOAEL-based HQ just slightly greater than one (1.9) for the mink. It should be noted that selenium in Hickory Pond sediments was not identified as a contaminant of concern and the maximum concentration of 0.81 mg/kg was well below the supplemental screening value of 2 mg/kg. Additionally, the LOAEL-based TRV (0.157 mg/kg bw/day) used in the food chain model for selenium as requested by EPA is only slightly higher than the NOAEL-based TRV (0.143 mg/kg bw/day). The paired LOAEL value (0.215 mg/kg bw/day) may be more appropriate and would slightly reduce the estimated risk to the mink (HQ = 1.38). Because the magnitude of exceedance was low for both the NOAEL- and LOAEL-based HQs, the LOAEL-based TRV selected by EPA is likely conservative, and because selenium was not elevated in Hickory Pond sediments, risk to the mink from exposure to selenium in Hickory Pond is considered low.

6.3.5 Uncertainty

Uncertainties are inherent in all risk assessments. In general, risks are over-estimated in this evaluation through the use of conservative exposure, effects, and risk characterization assumptions described in the previous sections. A qualitative evaluation of the major general uncertainties associated with this assessment is presented below.

6.3.5.1. Effects Assessment Uncertainties

Literature- derived toxicity data based on laboratory studies were the only available data used to evaluate risk to all receptor groups. It was assumed that effects observed in laboratory species were indicative of effects that would occur in wild species. The suitability of this assumption is unknown.

The use of UFs in the development of TRVs is designed to ensure that the TRV is a conservative estimate of a toxicological effect level or endpoint. However, there is some additional uncertainty associated with extrapolating TRVs between toxicological endpoints, species, duration, and study conditions to site conditions.

Undetected chemicals for which no toxicological data were available were identified as posing no risk. Although some uncertainty is associated with this approach, it was assumed that if chemicals were present at ecologically relevant levels, they would be detected in some samples. Additionally, those analytes that were detected but lacked toxicological data were also identified as posing no risk though they were considered an uncertainty. A lack of toxicological data demonstrates that these chemicals historically have not been identified as significant ecological risk drivers and it is unlikely these chemicals pose an ecological risk.

The TRVs developed from literature studies are usually based on a highly soluble and bioavailable form of the chemical. It is generally accepted that forms present in environmental media are not likely to be in a highly soluble form and, due to physical and chemical processes in the environment, are likely to be far less than 100 percent bioavailable. This difference between literature studies and site conditions may contribute to an over-estimation of potential exposure and risks from the COPCs.

Standard industry laboratory methods of analysis were used for the development of detection limits. In some instances, the methods produced detection limits that were higher than the ESVs. This is considered an acceptable uncertainty. Because these chemicals were not detected, they are not known to be present onsite, but the potential for risks cannot be totally discounted because the reporting limits for at least some samples are higher than the screening values.

6.3.5.2. Exposure Assessment Uncertainties

Exposure Media and Pathways

Wildlife doses were estimated based on the ingestion pathway only. This is due to limitations in the field of ERA with regard to adequately evaluating the volatilization (inhalation) and dermal absorption pathways. Although these pathways would not be expected to contribute significantly to the overall dose that receptors might receive from COPCs at this site, this is nonetheless an uncertainty inherent in the assessment.

Bioavailability

The exposure dose estimates in this assessment assume that 100 percent of the chemical concentrations to which receptors are exposed are in the bioavailable form. However, most chemicals will not be 100 percent bioavailable. In cases where bioavailability is less than 100 percent, risk is over-estimated.

Exposure Point Concentrations

The exposure concentrations used in the evaluation of trophic transfer were assumed to remain constant for the duration of exposure. Physical, chemical, and biological processes that could reduce chemical concentrations and their bioavailability over time were not factored into the calculation of the exposure concentrations. Use of this additional conservative assumption is also likely to over-estimate exposure to the COPCs.

Exposure Assumptions

Analytical chemistry data collected within the exposure area were assumed to adequately represent the exposure to wildlife and exposure concentrations were assumed to represent the distribution of constituents present. These assumptions could either under- or over-estimate risk.

Receptor Life History Data

No avian or mammalian life history data specific to the site were available; therefore, exposure parameters were either modeled based on allometric relationships (e.g., food ingestion rates) or were based on data from these same species in other portions of their range. Because diet composition as well as food, water, and soil ingestion rates can differ among individuals and locations, published parameter values may not accurately reflect conditions at the site. Consequently, risk may be either over- or under-estimated.

Dietary Composition

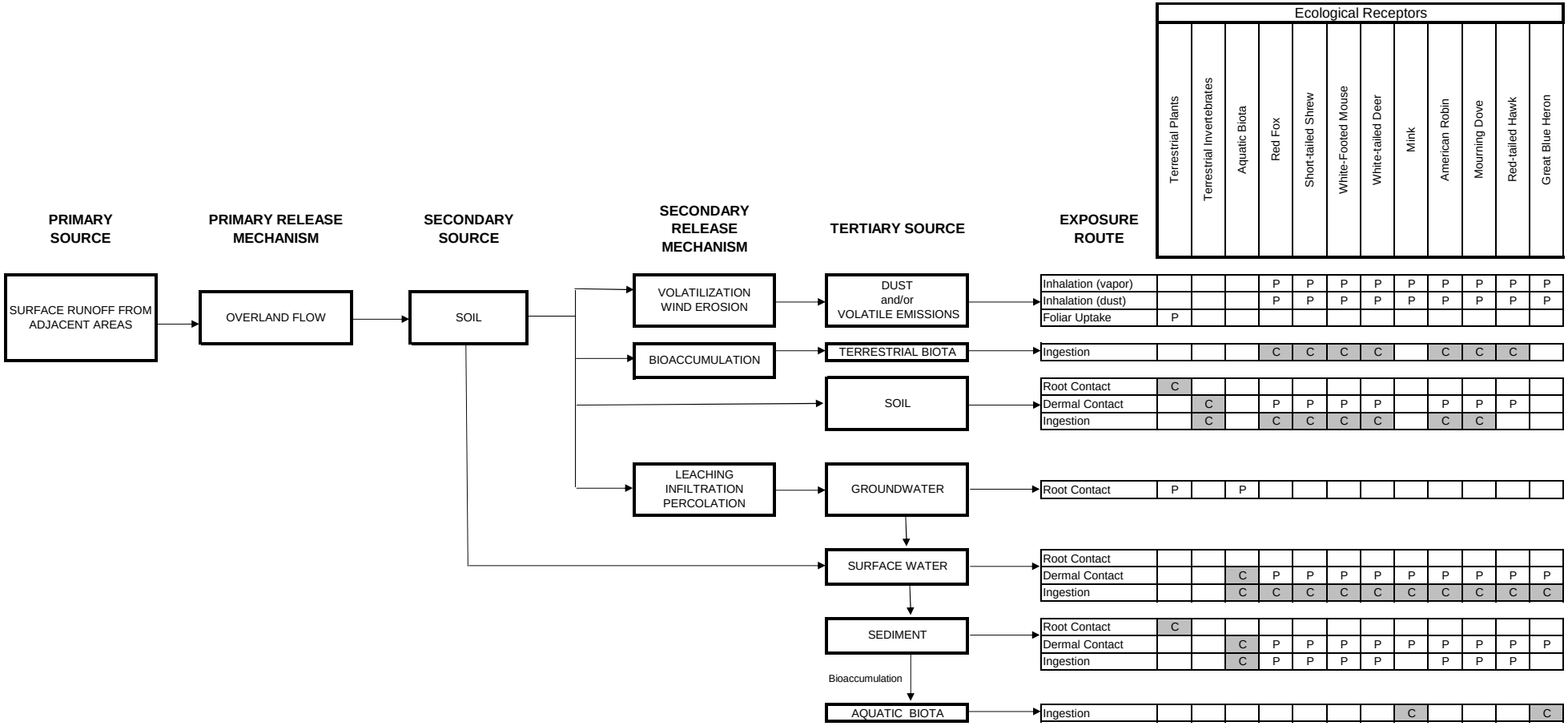
Dietary compositions were simplified for the site receptors to estimate concentrations in food items using bioaccumulation models. It was assumed that concentrations were similar in comparable food types. The suitability of this assumption is unknown. Consequently, risk may be either over- or under-estimated.

Estimating Prey Tissue Concentration

There is uncertainty associated with the estimated chemical concentrations in tissue of prey. With the exception of fish tissue data, prey tissue concentrations were estimated using literature-based values for all dietary items. Potential risks based on these tissue concentration estimates, therefore, could be either over- or under-estimated.

6.4 Ecological Risk Summary

Significant risks to ecological receptor populations from exposure to soil, surface water, and sediment are not expected. While some risk was identified for lower trophic level receptors exposed to pesticides and PCBs in sediment at both ponds, no risk to upper trophic level receptors was identified. Additionally, fish populations within the ponds appeared to be abundant and breeding populations of sunfish and bass were noted in the ponds, suggesting that an adequate prey population is present. Consequently, overall risk to populations of receptors in these ponds is considered low.



C - Pathway considered complete for purposes of ecological risk assessment

P - Pathway considered potentially complete, but insignificant

Pathways evaluated quantitatively in ecological risk assessment

FIGURE 6-1

Conceptual Site Model of Ecological Exposures

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, North Carolina

SECTION 7

Conclusions

Direct exposure to soil within the proposed recreational improvement areas and sediment and surface water in Henderson and Hickory Ponds do not result in unacceptable risks to human health and the environment. Additionally, fish populations within the ponds appeared to be abundant and breeding populations of sunfish and bass were noted in the ponds, suggesting that an adequate prey population is present. Consequently, overall risk to populations of ecological receptors in these ponds is considered low.

Carcinogenic risks associated with ingestion of fish from either Henderson or Hickory Pond by adults, children, and lifetime anglers are within acceptable USEPA levels. However, ingestion of fish from Henderson or Hickory Pond, based on RME assumptions, would result in non-carcinogenic hazards above acceptable USEPA levels for adults and children. The hazard is associated with non-dioxin like PCBs for Henderson Pond and mercury for Hickory Pond. The following uncertainties are provided for risk management consideration and/or further evaluation.

- The CTE hazard associated with ingestion of fish from Henderson Pond and Hickory Pond are within acceptable USEPA levels.
- The NC Department of Water Quality maintains a database of PCB concentrations measured in various aquatic species across North Carolina (http://portal.ncdenr.org/web/wq/ess/bau/fish-tissue-data). According to the database, total PCBs (based on PCB Aroclor analysis) were not detected in bass fillet samples collected in 1998 from Brinson Creek and Northeast Creek which are located adjacent to MCIEAST- MCB CAMLEJ.
- The concentration of mercury in fillet tissue samples collected from Hickory Pond was 0.625 mg/kg for bass, which falls within the range (0.35 mg/kg to 1.4 mg/kg) of mercury measured in predator fish fillet tissue samples in North Carolina (NCDHHS, 2006).
- The North Carolina database that compiles information on PCB and mercury concentrations in fish tissue samples should not be construed as background studies and the ranges reported from the NCDHHS (2006) study and at http://portal.ncdenr.org/web/wq/ess/bau/fish-tissue-data may contain samples from water bodies impacted by PCB and/ or mercury releases.
- Henderson Pond and Hickory Pond are stocked with fish brought in from off-Base locations where there could be potential sources.
- The risk calculations are conservative and assume that only fish from either Henderson or Hickory Pond is ingested, and not from other water bodies. If only one-quarter of the fish ingested is from Henderson Pond or Hickory Pond, there would be no unacceptable risk associated with consumption of fish from these ponds alone.
- The NCDHHS has a statewide fish advisory for fish containing mercury. The NCDHHS guidance for eating fish containing mercury (NCDHHS, 2006) recommends that women of childbearing age and children less than 15 years of age should not eat fish containing methyl mercury at concentrations greater than 0.4 mg/kg. Furthermore, it is also recommended that the general public should limit their consumption of fish containing methyl mercury to one meal per week. Since the mercury concentration in bass fillet tissue from Hickory Pond was 0.625 mg/kg, consumers should follow the NCDHHS guidance.

SECTION 8

References

Agency for Toxic Substances and Disease Registry (ATSDR). 2008. *Toxicological Profile for Chromium*. U.S. Department of Health and Human Services. September.

Baker. 1995. Final Record of Decision, Operable Unit Number 4 – Sites 41 and 74, Marine Corps Base Camp Lejeune, North Carolina. October.

Bechtel Jacobs. 1998a. *Empirical models for the uptake of inorganic chemicals from soil by plants.* Prepared for U.S. Department of Energy. BJC/OR-133. September 1998.

Bechtel Jacobs. 1998b. *Biota sediment accumulation factors for invertebrates: review and recommendations for Oak Ridge Reservation.* Prepared for U.S. Department of Energy. BJC/OR-112. August 1998.

Beyer, W.N., E.E. Connor, and S. Gerould. 1994. Estimates of soil ingestion by wildlife. Journal of Wildlife Management. 58:375-382.

CH2M HILL. 2008. *Final Marine Corps Base Camp Lejeune Master Project Plans,* Marine Corps Base Camp Lejeune, Jacksonville, North Carolina. June.

CH2M HILL. 2011a. *Henderson Pond/IR 74 Work Plan MILCON Confirmation Sampling,* Marine Corps Base Camp Lejeune, Jacksonville, North Carolina. November.

CH2M HILL. 2011b. *Investigation and Remediation Waste Management Plan,* Marine Corps Base Camp Lejeune, Jacksonville, North Carolina. May.

CH2M HILL. 2011c. *Final Expanded Soil Background Study Report*, Marine Corps Base Camp Lejeune, Jacksonville, North Carolina. August.

CH2M HILL. 2012a. *Henderson Pond/Hickory Pond Work Plan Addendum,* Marine Corps Base Camp Lejeune, North Carolina. April.

CH2M HILL. 2012b. Technical Memorandum: *Confirmatory Sampling Investigation IR Site 74 – Henderson Pond,* Marine Corps Base Camp Lejeune, Jacksonville, North Carolina. February.

Cornell University. 2011. The Cornell Lab of Ornithology: All About Birds. http://www.allaboutbirds.org/Page.aspx?pid=1189, website accessed December 19, 2011.

Department of the Navy (DoN). 2000. *Overview of Screening, Risk Ratio, and Toxicological Evaluation*. Procedures for Northern Division Human Health Risk Assessments. May.

DoN. 2003. *Navy Guidance for Conducting Ecological Risk Assessments.* Originally published April 5, 1999. Website version last updated February 28, 2003. http://web.ead.anl.gov/ecorisk/process/pdf/index.cfm

Department of Toxic Substance Control (DTSC). 2006. *Environmental Chemistry Laboratory User's Manual.* Appendix C.

Fairfax County Public Schools. 2011. White-footed mouse. http://www.fcps.edu/islandcreekes/ecology/white-footed_mouse.htm, website accessed December 19, 2011.

Great Lakes Sport Fish Advisory Task Force. 1993. *Protocol for a Uniform Great Lakes Sport Fish Consumption Advisory.* Appendix II. September.

Ingersoll, C.G., P.S. Haverland, E.L. Brunson, T.J. Canfield, F.J. Dwyer, C.E. Henke, N.E. Kemble, D.R. Mount, and R.G. Fox. 1996. Calculation and evaluation of sediment effect concentrations for the amphipod *Chironomus riparius*. *Journal of Great Lakes Research* 22:602-623.

Jones, D.S., G.W. Suter II, and R.N. Hull (Jones et al.). 1997. *Toxicological benchmarks for screening contaminants of potential concern for effects on sediment-associated biota: 1997 revision.* Environmental Restoration Division, ORNL Environmental Restoration Program. ES/ER/TM-95/R4.

Levey, D.J. and W.H. Karasov. 1989. Digestive responses of temperate birds switched to fruit or insect diets. *Auk.* 106:675-686.

MacDonald, D.D. 1994. *Approach to the Assessment of Sediment Quality in Florida Coastal Waters*. Volume 1-Development and Evaluation of Sediment Quality Assessment Guidelines. November.

Martin, A.C., H.S. Zim, and A.L. Nelson. 1951. *American wildlife and plants: a guide to wildlife food habits.* Dover Publications, Inc. New York, NY. 500 pp.

Nagy, K. A. 2001. Food requirements of wild animals: predictive equations for free-living mammals, reptiles, and birds. *Nutrition Abstracts and Reviews. Series B.* 71:21R-31R.

NatureWorks. 2011. http://www.nhptv.org/natureworks/nw4.htm, website accessed December 19, 2011.

North Carolina Department of Environment and Natural Resources (NCDENR). 2003. *Guidelines for Performing Screening Level Ecological Risk Assessments within the North Carolina Division of Waste Management*.

NCDENR. 2012. Federal Remediation Branch Target Screening Values Table. http://portal.ncdenr.org/web/wm/sf.

North Carolina Department of Health and Human Services (NCDHHS). 2006. Health Effects of Methylmercury and North Carolina's Advice on Eating Fish. Dr. Luanne K. Williams, Toxicologist North Carolina Occupational and Environmental Epidemiology Branch. March.

Pennsylvania State University. 2002. Short-tailed shrew species page. http://www.psu.edu/dept/nkbiology/naturetrail/speciespages/shorttailshrew.htm, website accessed December 19, 2011.

Persaud, D., R. Jaagumagi, and A. Hayton. 1993. Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario. Water Resources Branch, Ontario Ministry of the Environment. Toronto.

Quinney, T.E. and P.C. Smith. 1980. Comparative foraging behavior and efficiency of adult and juvenile great blue herons. *Canadian Journal of Zoology.* 58:1168-1173.

Range and Munitions Use Subcommittee (RMUS). 2009. Operational Range Assessment Values. Final Version 5.0. January 28, 2009.

Sample, B., J.J. Beauchamp, R. Efroymson, G.W. Suter, II, and T. Ashwood. 1997. Development and validation of bioaccumulation models for earthworms. Oak Ridge National Laboratory. ES/ER/TM-220.

Sample, B.E., D.M. Opresko, and G.W. Suter II. 1996. *Toxicological benchmarks for wildlife: 1996 revision.* Environmental Restoration Division, ORNL Environmental Restoration Program. ES/ER/TM-86/R3.

Sample, B.E. and G.W. Suter II. 1994. *Estimating exposure of terrestrial wildlife to contaminants.* Environmental Restoration Division, ORNL Environmental Restoration Program. ES/ER/TM-125.

Sample et al. 1997.

Sample et al. 1998.

Simmons, G.J. and M.J. McKee. 1992. Alkoxyresorufin metabolism in white-footed mice at relevant environmental concentrations of Aroclor 1254*. Fundamental and Applied Toxicology.* 19:446-452.

Texas Council of Environmental Quality (TCEQ). 2006. Update to Guidance for Conducting Ecological Risk Assessments at Remediation Sites In Texas RG-263 (Revised). Remediation Division. January.

Tomlinson, R.E., D.D. Dolton, R.R. George, and R.E. Mirarchi. 1994. Mourning dove. Pages 5-26 IN Tacha, T.C. and C.E. Braun (eds). Migratory shore and upland game bird management in North America. Allen Press, Lawrence, KS. 223 pp.

United States Army Corps of Engineers (USACE). 2010. *BSAF Database.* http://el.erdc.usace.army.mil/bsafnew/bsaf.html. Accessed February 2010.

United States Environmental Protection Agency (USEPA). 1986. *Guidelines for Health Risk Assessment of Chemical Mixtures*. Federal Register Vol. 51 34014-34041. September 24, 1986.

USEPA. 1989. *Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual, Part A, Interim Final.* Office of Solid Waste and Emergency Response. EPA/540/1-89/002. December 1989.

USEPA. 1991a. *Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors.* OSWER Directive No. 9285.6-03. Office of Solid Waste and Emergency Response. March 25.

USEPA. 1991b. *Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual, Part B: "Development of Risk-based Preliminary Remedial Goals*".

USEPA. 1993. *Wildlife exposure factors handbook. Volume I of II.* EPA/600/R-93/187a.

USEPA. 1995. *Great Lakes Water Quality Initiative criteria documents for the protection of wildlife: DDT, mercury, 2,3,7,8-TCDD, PCBs*. EPA/820/B-95/008.

USEPA. 1996. *PCBs: Cancer Dose-Response Assessment and Application to Environmental Mixtures.* EPA/600/P-96/001F. September.

USEPA. 1997a. *Exposure Factors Handbook, Volume 1, General Factors*. EPA/600/P-95/002Fa. National Center for Environmental Assessment. Washington, DC. August.

USEPA. 1997b. *Health Effects Assessment Summary Tables, Annual Update*. U. S. Environmental Protection Agency, Environmental Criterion Assessment Office, Office of Research and Development, Cincinnati, OH. July.

USEPA. 1997c. *Ecological Risk Assessment Guidance for Superfund (RAGS): Process for Designing and Conducting Ecological Risk Assessments*.

USEPA. 1997d. *Mercury Study Report to Congress Volume III: Fate and Transport of Mercury in the Environment*.

USEPA. 1999. *Screening level ecological risk assessment protocol for hazardous waste combustion facilities.* EPA/530/D-99/001A. Peer Review Draft. August.

USEPA. 2000a. *Supplemental Guidance to RAGS: Region 4 Bulletins*, Human Health Risk Assessment Bulletins. EPA Region 4, originally published November 1995, Website version last updated May 2000: http://www.epa.gov/region 4/waste/oftecser/healthbul.htm Office of Technical Services, USEPA Region 4. May 2000.

USEPA. 2000b. *Guidance for Assessment Chemical Contaminant Data for Use in Fish Advisories*, Volume 2, Appendix C, Risk Assessment and Fish Consumption Limits. Third edition. EPA 823-B-00-008. November.

USEPA. 2000c. *Bioaccumulation Testing and Interpretation for the Purpose of Sediment Quality Assessment: Status and Needs*. Bioaccumulation Analysis Workgroup, Washington D.C. EPA/823/R-00/001.

USEPA. 2001a. *Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments*. Office of Solid Waste and Emergency Response. EPA 540-R-97-033. OSWER 9285.7-01D. December.

USEPA. 2001b. *Region 4 Ecological Risk Assessment Bulletins—Supplement to RAGS*.

USEPA. 2002. *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites*. OSWER 9355.4-24. December.

USEPA. 2003. *Human Health Toxicity Values in Superfund Risk Assessments.* OSWER Directive 9285.7-53. December.

USEPA. 2004. *Risk Assessment Guidance for Superfund, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final*. OSWER 9285.7-02EP. July.

USEPA. 2005a. *Ecological soil screening levels for barium.* OSWER Directive 9285.7-63. February.

USEPA. 2005b. *Ecological soil screening levels for lead.* OSWER Directive 9285.7-70. March.

USEPA. 2006. EPA Region III BTAG Freshwater Sediment Screening Benchmarks. http://www.epa.gov/reg3hwmd/risk/eco/btag/sbv/fwsed/screenbench.htm.

USEPA. 2007a*. Guidance for developing ecological soil screening levels. Attachment 4-1.* OSWER Directive 9285.7-55. April.

USEPA. 2007b. *Ecological soil screening levels for Manganese.* OSWER Directive 9285.7-71. April.

USEPA. 2007c. *Ecological soil screening levels for Zinc.* OSWER Directive 9285.7-73. June.

USEPA. 2007d. *Ecological soil screening levels for DDT and metabolites*. OSWER Directive 9285.7-57. April.

USEPA. 2007e. *Ecological soil screening levels for copper*. OSWER Directive 9285.7-68. February.

USEPA. 2007f. *Ecological soil screening levels for Selenium*. OSWER Directive 9285.7-68. July.

USEPA. 2008a. *Child-Specific Exposure Factors Handbook*. EPA/600/R-06/096F. National Center for Environmental Assessment, Office of Research and Development, Washington, DC. September.

USEPA. 2008b. *Ecological soil screening levels for chromium.* OSWER Directive 9285.7-66. March 2005 and revised April 2008.

USEPA. 2010a. *ProUCL User's Guide: Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations*. EPA/600/R-07/041.

USEPA. 2010b. *Recommended Toxicity Equivalence Factors (TEFs) for Human Health Risk Assessments of 2,3,7,8-Tetrachlorodibenzo-p-dioxin and Dioxin-Like Compounds. Risk Assessment Forum, Washington, DC.* EPA/100/R-10/005.

USEPA. 2010c. *Ecological Soil Screening Levels.* http://www.epa.gov/ecotox/ecossl/

USEPA. 2011. National Recommended Water Quality Criteria. http://water.epa.gov/scitech/swguidance/standards/current/index.cfm

USEPA. 2012a. Regional Screening Levels for Chemicals at Superfund Sites. May.

USEPA. 2012b. Integrated Risk Information System (IRIS) Database. (Accessed June 2012)

United States Marine Corps (USMC). 2006. Integrated Natural Resource Management Plan (INRMP) 2007-2011, Marine Corps Base Camp Lejeune, Onslow County, North Carolina. November.

Van den Berg, M. et. al. 1998. Toxic equivalency factors (TEFs) for PCBs, PCDDs, PCDFs for humans and wildlife. Environ. Health Persp. 106(12):775-792.

Van den Berg, M., L.S. Birnbaum, M. Denison, M. De Vito,W. Farland, M. Feeley, H. Fiedler, H Hakansson, A. Hanberg, L. Haws, M. Rose, S. Safe, D. Schrenk, C. Tohyama, A. Tritscher, J. Tuomisto, M. Tysklind, N. Walker, and R. E. Peterson (Van den Berg, M., et al.). 2006. The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds. *Toxicological Sciences* 93(2): 223-241. July.

Water and Air Research (WAR). 1983. *Initial Assessment Study of Marine Corps Base, Camp Lejeune. North Carolina*. Prepared for Naval Energy and Environmental Support Activity.

Wentsel, R.S., T.W. LaPoint, M. Simini, R.T. Checkai, D. Ludwig, and L.W. Brewer. 1996. *Tri-service procedural guidelines for ecological risk assessments.* U.S. Department of the Navy, U.S. Department of the Air Force, and U.S. Department of the Army. June.

Zabik, M.E., M.J. Zabik, A.M. Booren, M. Nettles, J.H. Song, R. Welch and H. Humphrey (Zabik et al.). 1995. Pesticides and Total Polychlorinated Biphenyls in Chinook Salmon and Carp Harvested from the Great Lakes: Effects of Skin-on and Skin-off Processing and Selected Cooking Methods. *J. Agric. Food Chem.* Vol. 43. pp. 993–1001.

Appendix A
Fish Tissue Sampling Sheets

APPENDIX A

Henderson and Hickory Pond Fish Sampling Outcomes

Fish were sampled from Henderson and Hickory Ponds between April 24 and May 3rd, 2012. Sampling was conducted using procedures consistent with those documented in *Henderson Pond/Hickory Pond Work Plan Addendum Marine Corps Base Camp Lejeune, Jacksonville, North Carolina* (CH2M HILL 2012). Samples were collected using gill nets, seines, hoop nets, jug lines, and long lines. Gill nets and jug lines were continuously deployed while sampling a pond. Seines were used strategically along shoreline areas considered the most likely to have grouped fish populations, while long lines were used primarily during limited periods of the morning and evening when the fish were most likely to be actively feeding. A backpack electroshocker was used in the shallow reaches of Henderson Pond, but no fish were retrieved with this method.

A summary of the fish collected from each of the ponds is presented in Table A-1, along with the date and method used to collect each fish, the length and weight of the each fish, and the ID of each sample grouping. As shown in Table A-1, fish samples were collected from two areas in Henderson Pond, instead of the three areas originally targeted in the work plan (CH2M HILL 2012). Fish were only present in the middle and lower (adjacent to the dam) portions of this pond due to extremely low water levels in the upper reaches. A total of four fish samples were collected in Area 1 (middle portion of the pond), and consisted of one bass, one catfish, and one sunfish sample. One sample was collected from Area 2 (lower portion of the pond adjacent to the dam), and consisted of one bass and one catfish sample. Carp collected from both Areas 1 and 2 were combined into a single sample for analysis. Although carp were not originally targeted as a species for collection, they were included in the analysis because they are a dominant species in Henderson Pond and are representative of a bottom-feeding species, similar to catfish.

Fish samples were grouped into one area for Hickory Pond, instead of the two areas that were originally targeted in the work plan (CH2M HILL 2012). Fish were combined into a single area grouping because of the limited numbers that were present in this water body. A total of three fish samples were collected, consisting of one bass, one sunfish, and one carp sample.

Immediately following collection, identification, and measuring, fish were placed into a sample cooler with dry ice. Samples were delivered to the analytical laboratory on April 24 and 27, and May 3rd, 2012.

TABLE A-1

Summary of Fish Collected from Henderson Pond and Hickory Pond

Henderson Pond/Hickory Pond Investigation

MCBIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Henderson Pond Area 1						
Fish ID Number	**Collection Date**	**Collection Method**	**Sample ID**	**Fish Species**	**Length (inches)**	**Weight (kg)**
1	4/25/2012	Gill Net	HEND-FS-CP01-F-12B HEND-FS-CP01-O-12B	Carp*	20.0	2.95
2	4/26/2012	Gill Net		Carp*	19.0	2.15
3	4/24/2012	Gill Net	HEND-FS-S01-F-12B HEND-FS-S01-O-12B	Sunfish	9.8	0.25
4	4/24/2012	Gill Net		Sunfish	7.3	0.10
5	4/24/2012	Gill Net		Sunfish	7.0	0.10
6	4/25/2012	Gill Net		Sunfish	8.0	0.20
7	4/25/2012	Gill Net		Sunfish	7.6	0.10
8	4/25/2012	Gill Net		Sunfish	7.7	0.12
9	4/25/2012	Gill Net		Sunfish	7.4	0.10
10	4/25/2012	Gill Net		Sunfish	7.4	0.10
11	4/26/2012	Gill Net		Sunfish	9.1	0.25
12	4/26/2012	Gill Net		Sunfish	9.5	0.25
13	4/25/2012	Jug Line	HEND-FS-C02-F-12B HEND-FS-C02-O-12B	Catfish	19.6	1.15
14	4/27/2012	Gill Net		Catfish	20.5	1.55
15	4/27/2012	Gill Net		Catfish	25.2	2.45
16	4/26/2012	Gill Net	HEND-FS-B03-F-12B HEND-FS-B03-O-12B	Bass	11.5	0.30
17	4/25/2012	Long Line		Bass	12.9	0.35
18	4/25/2012	Long Line		Bass	12.4	0.30
19	4/25/2012	Long Line		Bass	11.7	0.30
Henderson Pond Area 2						
Fish ID Number	**Collection Date**	**Collection Method**	**Sample ID**	**Species**	**Length (inches)**	**Weight (kg)**
1	4/24/2012	Gill Net	HEND-FS-C06-F-12B HEND-FS-C06-0-12B HEND-FS-C06D-F-12B HEND-FS-C06D-0-12B	Catfish	22.0	1.50
2	4/24/2012	Gill Net		Catfish	23.0	2.00
3	4/24/2012	Gill Net		Catfish	19.0	1.20
4	4/24/2012	Gill Net		Catfish	22.0	1.85
5	4/24/2012	Gill Net		Catfish	20.5	1.40
6	4/24/2012	SEINE	HEND-FS-CP01-F-12B HEND-FS-CP01-O-12B	Carp*	24.0	2.80
7	4/24/2012	SEINE	HEND-FS-B05-F-12B HEND-FS-B05-O-12B	Bass	12.0	0.30
8	4/25/2012	Long Line		Bass	14.3	0.65
9	4/26/2012	Long Line		Bass	13.0	0.35
Hickory Pond Area 1						
Fish ID Number	**Collection Date**	**Collection Method**	**Sample ID**	**Species**	**Length (inches)**	**Weight (kg)**
1	4/26/2012	Long Line	HICP-FS-B01-F-12B HICP-FS-B01-F-12B	Bass	6.0	0.0275
2	4/27/2012	Jug Line/Fish Noodle		Bass	12.5	0.35
3	4/25/2012	Long Line	HICP-FS-S01-F-12B HICP-FS-S01-O-12B	Sunfish	9.0	0.20
4	4/27/2012	Gill Net		Sunfish	10.1	0.30
5	4/27/2012	Hoop Net		Sunfish	4.8	0.03
6	4/27/2012	Hoop Net		Sunfish	4.9	0.03
7	4/27/2012	Hoop Net		Sunfish	7.5	0.15
8	4/27/2012	Gill Net	HICP-FS-CP01-F-12B HICP-FS-CP01-F-12B	Carp	28.1	3.10
9	4/27/2012	Gill Net		Carp	29.2	3.65

Notes:

* - The carp samples from Henderson Pond were collected as a composite sample from both areas.

Appendix B
Validated Laboratory Analytical Data

CTO-WE14
MCIEAST - MCB CAMLEJ
Henderson Pond Validated Surface Soil Raw Analytical Results

Station ID	HENP-IS01	HENP-IS02	HENP-IS03	HENP-IS04	HENP-IS05		HENP-IS06	HENP-IS07	HENP-IS08	HENP-IS09	HENP-IS10
Sample ID	HENP-SS01-0-1-12B	HENP-SS02-0-1-12B	HENP-SS03-0-1-12B	HENP-SS04-0-1-12B	HENP-SS05-0-1-12B	HENP-SS05D-0-1-12B	HENP-SS06-0-1-12B	HENP-SS07-0-1-12B	HENP-SS08-0-1-12B	HENP-SS09-0-1-12B	HENP-SS10-0-1-12B
Sample Date	04/23/12	05/03/12	05/03/12	05/03/12	05/03/12	05/03/12	05/02/12	05/02/12	05/03/12	05/02/12	05/03/12
Chemical Name											
Semivolatile Organic Compounds (µg/kg)											
Acenaphthene	28 U	33 U	27 U	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Anthracene	28 U	33 U	27 U	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Benzo(a)anthracene	28 U	21 J	19 J	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Benzo(a)pyrene	28 U	33 U	8.3 J	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Benzo(b)fluoranthene	28 U	33 U	27 U	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Benzo(g,h,i)perylene	28 U	33 U	27 U	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Benzo(k)fluoranthene	28 U	33 U	27 U	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Chrysene	28 U	33 U	13 J	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Dibenz(a,h)anthracene	28 U	33 U	27 U	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Fluoranthene	28 U	33 U	27 U	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Fluorene	28 U	33 U	27 U	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Indeno(1,2,3-cd)pyrene	28 U	33 U	27 U	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Naphthalene	28 U	33 U	27 U	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Phenanthrene	28 U	33 U	27 U	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Pyrene	28 U	33 U	27 U	28 U	29 U	28 U	27 U	27 U	27 U	27 U	26 U
Pesticide/Polychlorinated Biphenyls (µg/kg)											
4,4'-DDD	1.1 U	1.3 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	21 U	1.1 U	1 U
4,4'-DDE	1.1 U	1.3 UJ	1.1 UJ	1.1 UJ	1.2 UJ	1.1 UJ	1.1 UJ	1.1 UJ	21 UJ	1.1 UJ	1 UJ
4,4'-DDT	1.1 U	1.3 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	21 U	1.1 U	1 U
Aldrin	1.1 U	1.3 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	21 U	1.1 U	1 U
alpha-Chlordane	1.1 U	1.3 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	21 U	1.1 U	1 U
Aroclor-1260	11 U	13 U	11 U	11 U	12 U	11 U	11 U	11 U	1,300 J	11 U	10 U
Dieldrin	1.1 U	1.3 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	21 U	1.1 U	1 U
gamma-Chlordane	1.1 U	1.3 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	21 U	1.1 U	1 U
Heptachlor	1.1 U	1.3 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	21 U	1.1 U	1 U
Total Metals (mg/kg)											
Aluminum	3,010 J	3,310 J	1,070 J	4,340 J	3,860 J	2,320 J	399	474	9,580 J	2,440 J	1,220 J
Antimony	1.87 U	1.83 UJ	1.48 UJ	0.402 J	1.64 UJ	0.308 J	1.9 U	1.74 U	1.47 UJ	1.66 U	1.26 UJ
Arsenic	0.773 J	0.934 J	1.48 U	0.619 J	0.533 J	0.505 J	1.9 U	0.489 J	2.17 J	0.94 J	0.567 J
Barium	6.25	14	2.73	7.82	3.04	3.29	4.29	7.41	9.1	8.89	5.29
Beryllium	0.0249 J	0.0218 J	0.0371 U	0.0357 J	0.023 J	0.0159 J	0.0476 U	0.0152 J	0.0748	0.0394 J	0.028 J
Cadmium	0.0937 U	0.0572 J	0.0741 U	0.0761 U	0.0819 U	0.0641 U	0.0952 U	0.0872 U	0.0735 U	0.0254 J	0.0631 U
Calcium	171	80.4 U	27.8 U	32.2 U	57.8 U	115 U	89 U	70 U	52.3 U	1,560 J	138
Chromium (hexavalent)	0.22 U	0.27 U	0.22 U	0.82 J	0.24 U	0.22 U	0.21 U	0.21 U	0.21 U	0.22 U	0.21 U
Chromium	1.97	4.01	1.21	4.95	3.82	2.17	1.07	0.655 J	10.7	3.04	1.44
Cobalt	0.468 U	0.457 U	0.371 U	0.38 U	0.41 U	0.321 U	0.476 U	0.436 U	0.368 U	0.416 U	0.316 U
Copper	0.729 J	1.72	0.693 J	0.801	0.493 J	0.432 J	0.389 J	0.808 J	2.29	0.815 J	1.46
Iron	987 J	1,520 J	584 J	1,780 J	1,600 J	1,070 J	346	265	10,500 J	2,130 J	817 J
Lead	3.59 J	12.2	3.99	3.69	4.01	4.34	5.61	5.78	5.96	5.36	5.16
Magnesium	47.1	46.6	15.4 J	80.5	41.3	34.7	13 J	14.1 J	149	90.7	28.1 J
Manganese	3.69	7.83	2.87	4.09	1.23 J	1.34	4.49	2.1	4.63	11.4	3.72
Mercury	0.00957 J	0.0539	0.00349 J	0.025	0.0254 J	0.00827 J	0.00608 U	0.00607 U	0.0101 J	0.0247	0.00341 J
Nickel	0.681 J	0.908 J	0.345 J	0.985	1.02	0.442 J	0.0933 J	0.13 J	1.27	0.518 J	0.305 J
Potassium	54.3	50.6	16.2 J	84.5	39.3 J	31.9 J	23.8 U	16.4 J	132	93.2	39
Vanadium	3.37	4.62	1.91	6.86	5.78	3.58	1.19	1.25	17.9	5.44	2.89
Zinc	0.894 J	18.6	2.99	1.37 J	1.17 J	1.54	0.458 J	0.827 J	2.32	1.77	3.15

\\Tarheel\Proj\EBL\Navy Clean\OU 4 (Sites 41 and 74)\2012 Henderson Pond Mod 2\Report\Draft Report\Appendices\Appendix B_Analytical Data\[CTO-WE14_HENP_SS_Val_RDE_tbl_r1.xls], thorn1, 06/11/2012

Notes:

Shading indicates detections

NA - Not analyzed

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

mg/kg - Milligrams per kilogram

µg/kg - Micrograms per kilogram

CTO-WE14
MCIEAST - MCB CAMLEJ
Henderson Pond Validated Subsurface Soil Raw Analytical Results

Station ID	HENP-IS01	HENP-IS02	HENP-IS03	HENP-IS04	HENP-IS05	HENP-IS06	HENP-IS07	HENP-IS08	HENP-IS09	HENP-IS10
Sample ID	HENP-SB01-1-4-12B	HENP-SB02-1-4-12B	HENP-SB03-1-4-12B	HENP-SB04-1-4-12B	HENP-SB05-1-4-12B	HENP-SB06-1-4-12B	HENP-SB07-1-4-12B	HENP-SB08-1-4-12B	HENP-SB09-1-4-12B	HENP-SB10-1-4-12B
Sample Date	04/23/12	05/03/12	05/03/12	05/03/12	05/03/12	05/02/12	05/02/12	05/03/12	05/02/12	05/03/12
Chemical Name										
Semivolatile Organic Compounds (µg/kg)										
Acenaphthene	28 U	28 U	26 U	27 U	28 U	28 U	28 U	28 U	27 U	28 U
Anthracene	28 U	28 U	26 U	27 U	28 U	28 U	28 U	28 U	27 U	28 U
Benzo(a)anthracene	28 U	28 U	26 U	27 U	28 U	28 U	28 U	28 U	27 U	28 U
Benzo(a)pyrene	28 U	28 U	26 U	27 U	28 U	28 U	28 U	28 U	27 U	28 U
Benzo(b)fluoranthene	28 U	28 U	26 U	27 U	28 U	28 U	28 U	28 U	27 U	28 U
Benzo(g,h,i)perylene	28 U	28 U	26 U	27 U	28 U	28 U	28 U	28 U	27 U	28 U
Benzo(k)fluoranthene	28 U	28 U	26 U	27 U	28 U	28 U	28 U	28 U	27 U	28 U
Chrysene	28 U	28 U	26 U	27 U	28 U	28 U	28 U	28 U	27 U	28 U
Dibenz(a,h)anthracene	28 U	28 U	26 U	27 U	28 U	28 U	28 U	28 U	27 U	28 U
Fluoranthene	28 U	28 U	26 U	27 U	28 U	28 U	28 U	28 U	27 U	28 U
Fluorene	28 U	28 U	26 U	27 U	28 U	28 U	28 U	28 U	27 U	28 U
Indeno(1,2,3-cd)pyrene	28 U	28 U	26 U	27 U	28 U	28 U	28 U	28 U	27 U	28 U
Naphthalene	28 U	28 U	26 U	27 U	28 U	28 U	28 U	28 U	27 U	28 U
Phenanthrene	28 U	28 U	26 U	27 U	28 U	28 U	28 U	28 U	27 U	28 U
Pyrene	28 U	28 U	26 U	27 U	28 U	28 U	28 U	28 U	27 U	28 U
Pesticide/Polychlorinated Biphenyls (µg/kg)										
4,4'-DDD	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
4,4'-DDE	1.1 U	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ
4,4'-DDT	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Aldrin	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
alpha-Chlordane	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Aroclor-1260	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Dieldrin	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
gamma-Chlordane	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Heptachlor	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Total Metals (mg/kg)										
Aluminum	7,160 J	7,320 J	1,920 J	996 J	5,110 J	5,490 J	3,460 J	7,700 J	8,560 J	2,130 J
Antimony	1.72 U	1.54 UJ	1.25 UJ	1.71 UJ	1.67 UJ	1.62 U	1.94 U	1.63 UJ	1.92 U	1.41 UJ
Arsenic	1.6 J	1.1 J	0.425 J	1.71 U	0.829 J	0.888 J	0.911 J	4.4	2.84 J	0.671 J
Barium	12.1	9.49	3.93	3.83	5	8.81	6.01	9.86	11.3	4.78
Beryllium	0.0569 J	0.0352 J	0.0152 J	0.0167 J	0.0298 J	0.0436 J	0.0263 J	0.0716 J	0.0678 J	0.0269 J
Cadmium	0.086 U	0.0769 U	0.0626 U	0.0853 U	0.0837 U	0.0812 U	0.0972 U	0.0317 J	0.0958 U	0.0704 U
Calcium	39.5 U	66.2 U	46.8 U	36.1 U	28.8 U	336	21.4 U	94.2 U	397	48.2 U
Chromium (hexavalent)	0.89 J	1.3	0.14 J	0.22 J	0.69 J	1.9	0.24 J	1.5	1.5	0.22 U
Chromium	6.43	7.21	2	1.05	5.1	6.01	3.07	10.4	10.1	2.6
Cobalt	0.43 U	0.384 U	0.313 U	0.427 U	0.419 U	0.406 U	0.486 U	0.408 U	0.479 U	0.352 U
Copper	1.35	0.406 J	1.03	0.213 J	0.357 J	2.64	0.419 J	1.26	0.922 J	0.413 J
Iron	2,960 J	3,390 J	846 J	580 J	2,090 J	2,480 J	2,830 J	5,900 J	12,200 J	954 J
Lead	4.15	4.28	2.29 J	3.05 J	2.84 J	3.89	3.14 J	5.29	5.13	2.55 J
Magnesium	153	162	36.8	18.3 J	132	132	59.2	174	145	47.2
Manganese	2.68	2.62	2.74	3.97	1.54 J	3.18	2.62	2.64	2.66	7.14
Mercury	0.0188	0.0139 J	0.00342 J	0.00318 J	0.0138 J	0.0107 J	0.00809 J	0.0118 J	0.00784 J	0.0067 J
Nickel	1.05	1.31	0.634	0.299 J	0.878	1.22	0.689 J	0.913	0.876 J	0.863
Potassium	174	111	27.5 J	27.1 J	105	113	52	204	152	54.1
Vanadium	10.8	8.84	2.32	1.99	6.64	7.2	6.59	15.9	18.2	2.99
Zinc	1.66 J	1.28 J	2.06	0.555 J	1.3 J	1.95	1.04 J	1.96	1.75 J	0.742 J

\\Tarheel\Proj\EBL\Navy Clean\OU 4 (Sites 41 and 74)\2012 Henderson Pond Mod 2\Report\Draft Report\Appendices\Appendix B_Analytical Data\[CTO-WE14_HENP_SB_Val_RDE_tbl_r1.xls], thorn1, 06/11/2012

Notes:

Shading indicates detections

J - Analyte present, value may or may not be accurate or precise

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UJ - Analyte not detected, quantitation limit may be inaccurate

mg/kg - Milligrams per kilogram

µg/kg - Micrograms per kilogram

Station ID	IR74-HP-SW/SD01	IR74-HP-SW/SD02	IR74-HP-SW/SD03	IR74-HP-SW/SD04	IR74-HP-SW/SD05		HENP-SD01		HENP-SD02	HENP-SD03
Sample ID	IR74-HP-SD01-0-0_5-11D	IR74-HP-SD02-0-0_5-11D	IR74-HP-SD03-0-0_5-11D	IR74-HP-SD04-0-0_5-11D	IR74-HP-SD05-0-0_5-11D	IR74-HP-SD05D-0-0_5-11D	HENP-SD01-0-0_5-12B	HENP-SD01D-0-0_5-12B	HENP-SD02-0-0_5-12B	HENP-SD03-0-0_5-12B
Sample Date	11/16/11	11/16/11	11/16/11	11/16/11	11/16/11	11/16/11	04/30/12	04/30/12	04/30/12	04/30/12
Chemical Name										
Volatile Organic Compounds (µg/kg)										
1,1,1-Trichloroethane	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	4.8 U	4.4 UJ	3.9 U	1.5 U	4 U	5.8 UJ	NA	NA	NA	NA
1,1,2-Trichloroethane	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
1,1-Dichloroethane	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
1,1-Dichloroethene	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
1,2,4-Trichlorobenzene	4.8 UJ	4.4 UJ	3.9 U	1.5 UJ	2.4 UJ	5.8 UJ	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	4.8 UJ	4.4 UJ	3.9 U	1.5 UJ	2.4 UJ	5.8 UJ	NA	NA	NA	NA
1,2-Dibromoethane	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
1,2-Dichlorobenzene	4.8 UJ	4.4 UJ	3.9 U	1.5 UJ	2.4 UJ	5.8 UJ	NA	NA	NA	NA
1,2-Dichloroethane	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
1,2-Dichloropropane	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
1,3-Dichlorobenzene	4.8 UJ	4.4 UJ	3.9 U	1.5 UJ	2.4 UJ	5.8 UJ	NA	NA	NA	NA
1,4-Dichlorobenzene	4.8 UJ	4.4 UJ	3.9 U	1.5 UJ	2.4 UJ	5.8 UJ	NA	NA	NA	NA
2-Butanone	19 J	11 UJ	38	3.8 U	3.9 J	20 J	NA	NA	NA	NA
2-Hexanone	12 U	11 UJ	9.7 U	3.8 U	6 U	15 UJ	NA	NA	NA	NA
4-Methyl-2-pentanone	12 R	11 R	9.7 R	3.8 R	6 R	15 R	NA	NA	NA	NA
Acetone	100 J	32 J	97	19 U	17 J	150 J	NA	NA	NA	NA
Benzene	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Bromodichloromethane	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Bromoform	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Bromomethane	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Carbon disulfide	24 U	22 UJ	19 U	7.5 U	12 U	29 UJ	NA	NA	NA	NA
Carbon tetrachloride	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Chlorobenzene	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Chloroethane	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Chloroform	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Chloromethane	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
cis-1,2-Dichloroethene	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
cis-1,3-Dichloropropene	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Cyclohexane	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Dibromochloromethane	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Dichlorodifluoromethane (Freon-12)	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Ethylbenzene	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Isopropylbenzene	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
m- and p-Xylene	9.6 U	8.9 UJ	7.8 U	3 U	4.8 U	12 UJ	NA	NA	NA	NA
Methyl acetate	24 U	22 UJ	19 U	7.5 U	12 U	29 UJ	NA	NA	NA	NA
Methylcyclohexane	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Methylene chloride	24 U	22 UJ	19 U	7.5 U	12 U	29 UJ	NA	NA	NA	NA
Methyl-tert-butyl ether (MTBE)	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
o-Xylene	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Styrene	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Tetrachloroethene	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Toluene	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
trans-1,2-Dichloroethene	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
trans-1,3-Dichloropropene	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Trichloroethene	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Trichlorofluoromethane (Freon-11)	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA
Vinyl chloride	4.8 U	4.4 UJ	3.9 U	1.5 U	2.4 U	5.8 UJ	NA	NA	NA	NA

Station ID	IR74-HP-SW/SD01	IR74-HP-SW/SD02	IR74-HP-SW/SD03	IR74-HP-SW/SD04	IR74-HP-SW/SD05		HENP-SD01		HENP-SD02	HENP-SD03
Sample ID	IR74-HP-SD01-0-0_5-11D	IR74-HP-SD02-0-0_5-11D	IR74-HP-SD03-0-0_5-11D	IR74-HP-SD04-0-0_5-11D	IR74-HP-SD05-0-0_5-11D	IR74-HP-SD05D-0-0_5-11D	HENP-SD01-0-0_5-12B	HENP-SD01D-0-0_5-12B	HENP-SD02-0-0_5-12B	HENP-SD03-0-0_5-12B
Sample Date	11/16/11	11/16/11	11/16/11	11/16/11	11/16/11	11/16/11	04/30/12	04/30/12	04/30/12	04/30/12
Chemical Name										
Semivolatile Organic Compounds (µg/kg)										
1,1-Biphenyl	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
2,4,5-Trichlorophenol	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
2,4,6-Trichlorophenol	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
2,4-Dichlorophenol	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
2,4-Dimethylphenol	370 U	400 U	780 U	190 U	240 U	320 U	NA	NA	NA	NA
2,4-Dinitrophenol	1,100 U	1,200 U	2,300 U	580 R	710 U	970 U	NA	NA	NA	NA
2,4-Dinitrotoluene	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
2,6-Dinitrotoluene	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
2-Chloronaphthalene	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
2-Chlorophenol	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
2-Methylnaphthalene	92 U	100 U	97 U	48 U	60 U	81 U	NA	NA	NA	NA
2-Methylphenol	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
2-Nitroaniline	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
2-Nitrophenol	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
3- and 4-Methylphenol	740 U	800 U	1,600 U	390 UJ	480 U	650 U	NA	NA	NA	NA
3,3'-Dichlorobenzidine	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
3-Nitroaniline	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	1,100 U	1,200 U	2,300 U	580 U	710 U	970 U	NA	NA	NA	NA
4-Bromophenyl-phenylether	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
4-Chloro-3-methylphenol	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
4-Chloroaniline	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
4-Chlorophenyl-phenylether	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
4-Nitroaniline	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
4-Nitrophenol	370 U	400 U	780 U	190 U	240 U	320 U	NA	NA	NA	NA
Acenaphthene	92 U	100 U	97 U	48 U	60 U	81 U	NA	NA	NA	NA
Acenaphthylene	92 U	100 U	97 U	48 U	60 U	81 U	NA	NA	NA	NA
Acetophenone	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
Anthracene	92 U	100 U	97 U	48 U	60 U	81 U	NA	NA	NA	NA
Atrazine	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
Benzaldehyde	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
Benzo(a)anthracene	92 U	100 U	97 U	48 U	60 U	81 U	NA	NA	NA	NA
Benzo(a)pyrene	92 U	100 U	97 U	48 U	60 U	81 U	NA	NA	NA	NA
Benzo(b)fluoranthene	92 U	100 U	97 U	48 U	60 U	81 U	NA	NA	NA	NA
Benzo(g,h,i)perylene	92 U	100 U	97 U	48 U	60 U	81 U	NA	NA	NA	NA
Benzo(k)fluoranthene	92 U	100 U	97 U	48 U	60 U	81 U	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
bis(2-Chloroethyl)ether	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
bis(2-Chloroisopropyl)ether	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	370 U	400 U	780 U	190 UJ	240 U	550 J	NA	NA	NA	NA
Butylbenzylphthalate	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
Caprolactam	740 U	800 U	1,600 U	390 UJ	480 U	650 U	NA	NA	NA	NA
Carbazole	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
Chrysene	92 U	100 U	97 U	48 U	60 U	81 U	NA	NA	NA	NA
Dibenz(a,h)anthracene	92 U	100 U	97 U	48 U	60 U	81 U	NA	NA	NA	NA
Dibenzofuran	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
Diethylphthalate	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
Dimethoate	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
Dimethyl phthalate	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
Di-n-butylphthalate	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
Di-n-octylphthalate	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
Fluoranthene	92 U	100 U	97 U	48 U	60 U	81 U	NA	NA	NA	NA
Fluorene	92 U	100 U	97 U	48 U	60 U	81 U	NA	NA	NA	NA
Hexachlorobenzene	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
Hexachlorobutadiene	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
Hexachlorocyclopentadiene	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
Hexachloroethane	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	92 U	100 U	97 U	48 U	60 U	81 U	NA	NA	NA	NA
Isophorone	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
Naphthalene	92 U	100 U	97 U	48 U	60 U	81 U	NA	NA	NA	NA
n-Nitroso-di-n-propylamine	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
n-Nitrosodiphenylamine	740 U	800 U	1,600 U	390 UJ	480 U	650 U	NA	NA	NA	NA
Nitrobenzene	370 U	400 U	780 U	190 UJ	240 U	320 U	NA	NA	NA	NA
Pentachlorophenol	1,100 U	1,200 U	2,300 U	580 U	710 U	970 U	NA	NA	NA	NA
Phenanthrene	92 U	100 U	97 U	48 U	60 U	81 U	NA	NA	NA	NA
Phenol	370 U	400 U	780 U	190 U	240 U	320 U	NA	NA	NA	NA
Phorate	370 U	80 U	78 U	190	48 UJ	320 UJ	NA	NA	NA	NA
Pyrene	92 U	100 U	97 U	48 U	60 U	81 U	NA	NA	NA	NA

Station ID	IR74-HP-SW/SD01	IR74-HP-SW/SD02	IR74-HP-SW/SD03	IR74-HP-SW/SD04	IR74-HP-SW/SD05		HENP-SD01		HENP-SD02	HENP-SD03
Sample ID	IR74-HP-SD01-0-0_5-11D	IR74-HP-SD02-0-0_5-11D	IR74-HP-SD03-0-0_5-11D	IR74-HP-SD04-0-0_5-11D	IR74-HP-SD05-0-0_5-11D	IR74-HP-SD05D-0-0_5-11D	HENP-SD01-0-0_5-12B	HENP-SD01D-0-0_5-12B	HENP-SD02-0-0_5-12B	HENP-SD03-0-0_5-12B
Sample Date	11/16/11	11/16/11	11/16/11	11/16/11	11/16/11	11/16/11	04/30/12	04/30/12	04/30/12	04/30/12
Chemical Name										
Pesticide/Polychlorinated Biphenyls (µg/kg)										
4,4'-DDD	3.7 U	4 U	3.9 U	1.9 U	2.4 U	3.2 U	NA	NA	NA	NA
4,4'-DDE	11 J	11 J	2.6 J	1.9 UJ	5.6 J	3.2 J	2.5 J	6.7 J	15 J	1.6 UJ
4,4'-DDT	3.7 U	4 U	3.9 U	78 J	2.4 U	3.2 U	2.4 UJ	2.3 UJ	3.3 UJ	31 J
Aldrin	3.7 U	4 U	3.9 U	1.9 UJ	2.4 U	3.2 U	NA	NA	NA	NA
alpha-BHC	3.7 U	4 U	3.9 U	1.9 UJ	2.4 U	3.2 U	NA	NA	NA	NA
alpha-Chlordane	3.7 U	4 U	3.9 U	1.9 UJ	2.4 U	3.2 U	NA	NA	NA	NA
Aroclor-1016	74 U	80 U	78 U	39 U	48 U	65 U	NA	NA	NA	NA
Aroclor-1221	74 U	80 U	78 U	39 U	48 U	65 U	NA	NA	NA	NA
Aroclor-1232	74 U	80 U	78 U	39 U	48 U	65 U	NA	NA	NA	NA
Aroclor-1242	74 U	80 U	78 U	39 U	48 U	65 U	NA	NA	NA	NA
Aroclor-1248	74 U	80 U	78 U	39 U	48 U	65 U	NA	NA	NA	NA
Aroclor-1254	74 U	80 U	78 U	39 U	48 U	65 U	NA	NA	NA	NA
Aroclor-1260	240 J	220 J	85 J	39 U	65 J	110 J	16 J	11 J	120 J	160 J
Azinphos methyl	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
beta-BHC	3.7 U	4 U	3.9 U	1.9 U	2.4 U	3.2 U	NA	NA	NA	NA
Bolstar	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
Chlorpyrifos	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
Coumaphos	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
delta-BHC	3.7 U	4 U	3.9 U	1.9 UJ	2.4 U	3.2 U	NA	NA	NA	NA
Demeton	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
Diazinon	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
Dichlorvos	370 UJ	80 U	78 U	190 UJ	48 UJ	320 UJ	NA	NA	NA	NA
Dieldrin	3.7 U	4 U	3.9 U	1.9 UJ	2.4 U	3.2 U	NA	NA	NA	NA
Disulfoton	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
Endosulfan I	3.7 U	4 U	3.9 U	1.9 U	2.4 U	3.2 U	NA	NA	NA	NA
Endosulfan II	3.7 U	4 U	3.9 U	1.9 U	2.4 U	3.2 U	NA	NA	NA	NA
Endosulfan sulfate	3.7 U	4 U	3.9 U	1.9 U	2.4 U	3.2 U	NA	NA	NA	NA
Endrin	3.7 U	4 U	3.9 U	1.9 UJ	2.4 U	3.2 U	NA	NA	NA	NA
Endrin aldehyde	3.7 U	4 U	3.9 U	1.9 U	2.4 U	3.2 U	NA	NA	NA	NA
Endrin ketone	3.7 U	4 U	3.9 U	1.9 U	2.4 U	3.2 U	NA	NA	NA	NA
Ethoprop	370 UJ	80 U	78 U	190 UJ	48 UJ	320 UJ	NA	NA	NA	NA
Fensulfothion	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
Ethyl p-nitrophenyl phenylphosphorothioate	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
Fenthion	370 UJ	80 UJ	78 UJ	190 UJ	48 UJ	320 UJ	NA	NA	NA	NA
gamma-BHC (Lindane)	3.7 U	4 U	3.9 U	1.9 UJ	2.4 U	3.2 U	NA	NA	NA	NA
gamma-Chlordane	3.7 U	4 U	3.9 U	1.9 UJ	2.4 U	3.2 U	NA	NA	NA	NA
Heptachlor	3.7 U	4 U	3.9 U	1.9 U	2.4 U	3.2 U	NA	NA	NA	NA
Heptachlor epoxide	3.7 U	4 U	3.9 U	1.9 UJ	2.4 U	3.2 U	NA	NA	NA	NA
Malathion	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
Merphos	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
Methoxychlor	3.7 U	4 U	3.9 U	1.9 UJ	2.4 U	3.2 U	NA	NA	NA	NA
Methyl parathion	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
Mevinphos	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
Monocrotophos	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
Naled	370 UJ	80 U	78 U	190 UJ	48 UJ	320 UJ	NA	NA	NA	NA
Parathion	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
Ronnel	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
Sulfotepp	370 UJ	80 U	78 U	190 UJ	48 UJ	320 UJ	NA	NA	NA	NA
Tetrachlorovinphos	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
Tetraethyl pyrophosphate (TEPP)	370 UJ	80 U	78 U	190 UJ	48 UJ	320 UJ	NA	NA	NA	NA
Tokuthion (Prothiophos)	370 U	80 U	78 U	190 U	48 UJ	320 UJ	NA	NA	NA	NA
Toxaphene	74 UJ	80 UJ	78 UJ	39 UJ	48 UJ	65 UJ	NA	NA	NA	NA

Henderson Pond Validated Sediment Raw Analytical Results

Station ID	IR74-HP-SW/SD01	IR74-HP-SW/SD02	IR74-HP-SW/SD03	IR74-HP-SW/SD04	IR74-HP-SW/SD05		HENP-SD01		HENP-SD02	HENP-SD03
Sample ID	IR74-HP-SD01-0-0_5-11D	IR74-HP-SD02-0-0_5-11D	IR74-HP-SD03-0-0_5-11D	IR74-HP-SD04-0-0_5-11D	IR74-HP-SD05-0-0_5-11D	IR74-HP-SD05D-0-0_5-11D	HENP-SD01-0-0_5-12B	HENP-SD01D-0-0_5-12B	HENP-SD02-0-0_5-12B	HENP-SD03-0-0_5-12B
Sample Date	11/16/11	11/16/11	11/16/11	11/16/11	11/16/11	11/16/11	04/30/12	04/30/12	04/30/12	04/30/12
Chemical Name										
Total Metals (mg/kg)										
Aluminum	16,300 J	13,100 J	10,100 J	2,340 J	5,370 J	8,350 J	NA	NA	NA	NA
Antimony	3.68 UJ	4.99 UJ	1.37 J	0.951 J	2.38 UJ	4 UJ	NA	NA	NA	NA
Arsenic	3.4 J	2.47 J	3.13 J	0.891 J	1.11 J	2.13 J	2.76 J	1.84 J	3.68 J	1.2 J
Barium	52.3	53.9	35.5	10.4	17.7	28.4	55.6	47.7	83.3	20
Beryllium	0.462	0.412	0.257 J	0.0452 J	0.125	0.172 J	NA	NA	NA	NA
Cadmium	0.412	0.272 J	0.188 J	0.414	0.0914 J	0.105 J	NA	NA	NA	NA
Calcium	5,490	5,700	4,010	5,230	1,990	2,470	NA	NA	NA	NA
Chromium (hexavalent)	0.74 U	0.8 U	0.78 U	1.9 U	0.48 U	0.65 U	NA	NA	NA	NA
Chromium	17.4	13.5	11.7	4	6.31	9.77	NA	NA	NA	NA
Cobalt	2.65	1.64 J	1.55 J	0.479 J	0.777 J	0.866 J	NA	NA	NA	NA
Copper	33.3	78.3	75.9	15.2	32.5	18.6	6.61	5.57	10.6	3.99
Iron	7,580	5,560	6,350	1,770	3,190	4,940	NA	NA	NA	NA
Lead	31.9	30	21	10.5	11.3	19	NA	NA	NA	NA
Magnesium	571	460	435	1,870	201	290	NA	NA	NA	NA
Manganese	18.7	23.4	23.6	19.4	12.6	14.8	NA	NA	NA	NA
Mercury	0.0676	0.0721	0.0617 J	0.0078 J	0.0208 J	0.0543	NA	NA	NA	NA
Nickel	8.38	6.37	5.82	1.87	2.53	3.28	NA	NA	NA	NA
Potassium	533	402	430	118 J	205	296	NA	NA	NA	NA
Selenium	1.36 J	4.99 U	5.26 U	3.27 U	2.38 U	4 U	NA	NA	NA	NA
Silver	0.64 J	1.25 U	1.31 U	0.818 U	0.595 U	0.999 U	NA	NA	NA	NA
Sodium	68.6 U	69.3 U	67.7 U	20.6 U	32.4 U	47.2 U	NA	NA	NA	NA
Thallium	1.84 U	2.49 U	2.63 U	1.64 U	1.19 U	2 U	NA	NA	NA	NA
Vanadium	30.8	23.4	19.7	5	9.95	15.4	NA	NA	NA	NA
Zinc	95.3 J	56.5 J	48.8 J	77.5 J	22.4 J	24.7 J	NA	NA	NA	NA
Wet Chemistry										
Total organic carbon (TOC) (mg/kg)	NA	NA	NA	NA	NA	NA	49,000	63,000	65,000	21,000

\\Tarheel\Proj\EBL\Navy Clean\OU 4 (Sites 41 and 74)\2012 Henderson Pond Mod 2\Report\Draft Report\Appendices\Appendix B_Analytical Data\[CTO-WE14_HENP_SD_Val_RDE_tbl_r3.xls], thorn1, 06/11/2012

Notes:

Shading indicates detections

NA - Not analyzed

J - Analyte present, value may or may not be accurate or precise

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

mg/kg - Milligrams per kilogram

µg/kg - Micrograms per kilogram

Station ID	HENP-SD04	HENP-SD05	HENP-SD06	HENP-SD07	HENP-SD08	HENP-SD09	HENP-SD10
Sample ID	HENP-SD04-0-0_5-12B	HENP-SD05-0-0_5-12B	HENP-SD06-0-0_5-12B	HENP-SD07-0-0_5-12B	HENP-SD08-0-0_5-12B	HENP-SD09-0-0_5-12B	HENP-SD10-0-0_5-12B
Sample Date	04/30/12	04/30/12	04/30/12	04/30/12	04/30/12	04/30/12	04/30/12
Chemical Name							
Volatile Organic Compounds (µg/kg)							
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane (Freon-12)	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA
m- and p-Xylene	NA	NA	NA	NA	NA	NA	NA
Methyl acetate	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA
Methyl-tert-butyl ether (MTBE)	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane (Freon-11)	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA

Station ID	HENP-SD04	HENP-SD05	HENP-SD06	HENP-SD07	HENP-SD08	HENP-SD09	HENP-SD10
Sample ID	HENP-SD04-0-0_5-12B	HENP-SD05-0-0_5-12B	HENP-SD06-0-0_5-12B	HENP-SD07-0-0_5-12B	HENP-SD08-0-0_5-12B	HENP-SD09-0-0_5-12B	HENP-SD10-0-0_5-12B
Sample Date	04/30/12	04/30/12	04/30/12	04/30/12	04/30/12	04/30/12	04/30/12
Chemical Name							
Semivolatile Organic Compounds (µg/kg)							
1,1-Biphenyl	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NA	NA	NA	NA	NA	NA	NA
3- and 4-Methylphenol	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NA	NA	NA	NA	NA	NA	NA
Acetophenone	NA	NA	NA	NA	NA	NA	NA
Anthracene	NA	NA	NA	NA	NA	NA	NA
Atrazine	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	NA	NA	NA	NA	NA	NA	NA
Caprolactam	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	NA	NA	NA	NA	NA
Chrysene	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	NA	NA	NA	NA	NA	NA	NA
Dimethoate	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NA
Isophorone	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA
n-Nitroso-di-n-propylamine	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA
Phenol	NA	NA	NA	NA	NA	NA	NA
Phorate	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA

Station ID	HENP-SD04	HENP-SD05	HENP-SD06	HENP-SD07	HENP-SD08	HENP-SD09	HENP-SD10
Sample ID	HENP-SD04-0-0_5-12B	HENP-SD05-0-0_5-12B	HENP-SD06-0-0_5-12B	HENP-SD07-0-0_5-12B	HENP-SD08-0-0_5-12B	HENP-SD09-0-0_5-12B	HENP-SD10-0-0_5-12B
Sample Date	04/30/12	04/30/12	04/30/12	04/30/12	04/30/12	04/30/12	04/30/12
Chemical Name							
Pesticide/Polychlorinated Biphenyls (µg/kg)							
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	14 J	4.9 J	3.6 J	5 J	5.9 J	1.7 UJ	2 UJ
4,4'-DDT	18 J	1.6 UJ	8.8	11 J	22 J	1.7 UJ	2 UJ
Aldrin	NA	NA	NA	NA	NA	NA	NA
alpha-BHC	NA	NA	NA	NA	NA	NA	NA
alpha-Chlordane	NA	NA	NA	NA	NA	NA	NA
Aroclor-1016	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	76 J	23 J	37 J	36 J	55 J	17 UJ	7.8 J
Azinphos methyl	NA	NA	NA	NA	NA	NA	NA
beta-BHC	NA	NA	NA	NA	NA	NA	NA
Bolstar	NA	NA	NA	NA	NA	NA	NA
Chlorpyrifos	NA	NA	NA	NA	NA	NA	NA
Coumaphos	NA	NA	NA	NA	NA	NA	NA
delta-BHC	NA	NA	NA	NA	NA	NA	NA
Demeton	NA	NA	NA	NA	NA	NA	NA
Diazinon	NA	NA	NA	NA	NA	NA	NA
Dichlorvos	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA	NA	NA	NA
Disulfoton	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	NA	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	NA	NA	NA	NA	NA	NA	NA
Endrin	NA	NA	NA	NA	NA	NA	NA
Endrin aldehyde	NA	NA	NA	NA	NA	NA	NA
Endrin ketone	NA	NA	NA	NA	NA	NA	NA
Ethoprop	NA	NA	NA	NA	NA	NA	NA
Fensulfothion	NA	NA	NA	NA	NA	NA	NA
Ethyl p-nitrophenyl phenylphosphorothioate	NA	NA	NA	NA	NA	NA	NA
Fenthion	NA	NA	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	NA	NA	NA	NA	NA	NA	NA
Heptachlor	NA	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	NA	NA	NA	NA	NA	NA	NA
Malathion	NA	NA	NA	NA	NA	NA	NA
Merphos	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	NA	NA	NA	NA	NA	NA	NA
Methyl parathion	NA	NA	NA	NA	NA	NA	NA
Mevinphos	NA	NA	NA	NA	NA	NA	NA
Monocrotophos	NA	NA	NA	NA	NA	NA	NA
Naled	NA	NA	NA	NA	NA	NA	NA
Parathion	NA	NA	NA	NA	NA	NA	NA
Ronnel	NA	NA	NA	NA	NA	NA	NA
Sulfotepp	NA	NA	NA	NA	NA	NA	NA
Tetrachlorovinphos	NA	NA	NA	NA	NA	NA	NA
Tetraethyl pyrophosphate (TEPP)	NA	NA	NA	NA	NA	NA	NA
Tokuthion (Prothiophos)	NA	NA	NA	NA	NA	NA	NA
Toxaphene	NA	NA	NA	NA	NA	NA	NA

Henderson Pond Validated Sediment Raw Analytical Results

Station ID	HENP-SD04	HENP-SD05	HENP-SD06	HENP-SD07	HENP-SD08	HENP-SD09	HENP-SD10
Sample ID	HENP-SD04-0-0_5-12B	HENP-SD05-0-0_5-12B	HENP-SD06-0-0_5-12B	HENP-SD07-0-0_5-12B	HENP-SD08-0-0_5-12B	HENP-SD09-0-0_5-12B	HENP-SD10-0-0_5-12B
Sample Date	04/30/12	04/30/12	04/30/12	04/30/12	04/30/12	04/30/12	04/30/12
Chemical Name							
Total Metals (mg/kg)							
Aluminum	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA
Arsenic	1.37 J	0.929 J	1.06 J	2.1 J	4.24 J	1.21 J	2.45 J
Barium	35.1	14.3	16.1	38.8	85.7	15.6	38.3
Beryllium	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA
Calcium	NA	NA	NA	NA	NA	NA	NA
Chromium (hexavalent)	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	NA	NA	NA	NA	NA	NA
Copper	3.14	1.16	3.51	5.55	9.84	6.84	10.1
Iron	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA
Magnesium	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA
Potassium	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA
Sodium	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA
Wet Chemistry							
Total organic carbon (TOC) (mg/kg)	53,000	22,000	18,000	41,000	83,000	18,000	28,000

\\Tarheel\Proj\EBL\Navy Clean\OU 4 (Sites 41 and 74)\2012 Henderson Pond Mo

Notes:

Shading indicates detections

NA - Not analyzed

J - Analyte present, value may or may not be accurate or precise

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

mg/kg - Milligrams per kilogram

µg/kg - Micrograms per kilogram

CTO-WE14
MCIEAST - MCB CAMLEJ
Henderson Pond Validated Surface Water Raw Analytical Results

Station ID	IR74-HP-SW/SD01	IR74-HP-SW/SD02	IR74-HP-SW/SD03		IR74-HP-SW/SD04			IR74-HP-SW/SD05		
Sample ID	IR74-HP-SW01-0-0_5-11D	IR74-HP-SW02-0-0_5-11D	IR74-HP-SW03-0-0_5-11D	IR74-HP-SW03-0-0_5-11D-2	IR74-HP-SW04-0-0_5-11D	IR74-HP-SW04D-0-0_5-11D	IR74-HP-SW04-0-0_5-11D-2	IR74-HP-SW05-0-0_5-11D	IR74-HP-SW05D-0-0_5-11D	IR74-HP-SW05-0-0_5-11D-2
Sample Date	11/16/11	11/16/11	11/16/11	11/17/11	11/16/11	11/16/11	11/17/11	11/16/11	11/16/11	11/17/11
Chemical Name										
Volatile Organic Compounds (µg/l)										
1,1,1-Trichloroethane	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
1,1,2-Trichloroethane	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
1,1-Dichloroethane	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
1,1-Dichloroethene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
1,2,4-Trichlorobenzene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
1,2-Dibromo-3-chloropropane	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
1,2-Dibromoethane	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
1,2-Dichlorobenzene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
1,2-Dichloroethane	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
1,2-Dichloropropane	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
1,3-Dichlorobenzene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
1,4-Dichlorobenzene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
2-Butanone	12 R	12 R	12 R	NA	12 R	12 R	NA	12 R	12 R	NA
2-Hexanone	2.5 U	2.5 U	2.5 U	NA	2.5 U	2.5 U	NA	2.5 U	2.5 U	NA
4-Methyl-2-pentanone	12 R	12 R	12 R	NA	12 R	12 R	NA	12 R	12 R	NA
Acetone	12 U	12 U	12 U	NA	12 U	12 U	NA	12 U	12 U	NA
Benzene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Bromodichloromethane	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Bromoform	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Bromomethane	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Carbon disulfide	5 U	5 U	5 U	NA	5 U	5 U	NA	5 U	5 U	NA
Carbon tetrachloride	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Chlorobenzene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Chloroethane	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Chloroform	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Chloromethane	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
cis-1,2-Dichloroethene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
cis-1,3-Dichloropropene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Cyclohexane	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Dibromochloromethane	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Dichlorodifluoromethane (Freon-12)	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Ethylbenzene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Isopropylbenzene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
m- and p-Xylene	2 U	2 U	2 U	NA	2 U	2 U	NA	2 U	2 U	NA
Methyl acetate	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Methylcyclohexane	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Methylene chloride	5 U	5 U	5 U	NA	5 U	5 U	NA	5 U	5 U	NA
Methyl-tert-butyl ether (MTBE)	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
o-Xylene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Styrene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Tetrachloroethene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Toluene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
trans-1,2-Dichloroethene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
trans-1,3-Dichloropropene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Trichloroethene	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Trichlorofluoromethane (Freon-11)	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Vinyl chloride	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Semivolatile Organic Compounds (µg/l)										
1,1-Biphenyl	10 U	9 U	9 U	NA	9 U	9 U	NA	9 U	9 U	NA
2,4,5-Trichlorophenol	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
2,4,6-Trichlorophenol	6.7 U	6 U	6 U	NA	6 U	6 UJ	NA	6 U	6 U	NA
2,4-Dichlorophenol	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
2,4-Dimethylphenol	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
2,4-Dinitrophenol	6.7 U	6 U	6 U	NA	6 U	6 R	NA	6 U	6 U	NA
2,4-Dinitrotoluene	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
2,6-Dinitrotoluene	3.3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA

Station ID	IR74-HP-SW/SD01	IR74-HP-SW/SD02	IR74-HP-SW/SD03		IR74-HP-SW/SD04			IR74-HP-SW/SD05		
Sample ID	IR74-HP-SW01-0-0_5-11D	IR74-HP-SW02-0-0_5-11D	IR74-HP-SW03-0-0_5-11D	IR74-HP-SW03-0-0_5-11D-2	IR74-HP-SW04-0-0_5-11D	IR74-HP-SW04D-0-0_5-11D	IR74-HP-SW04-0-0_5-11D-2	IR74-HP-SW05-0-0_5-11D	IR74-HP-SW05D-0-0_5-11D	IR74-HP-SW05-0-0_5-11D-2
Sample Date	11/16/11	11/16/11	11/16/11	11/17/11	11/16/11	11/16/11	11/17/11	11/16/11	11/16/11	11/17/11
Chemical Name										
2-Chloronaphthalene	3.3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA
2-Chlorophenol	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
2-Methylnaphthalene	0.08 U	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA
2-Methylphenol	3.3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA
2-Nitroaniline	3.3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA
2-Nitrophenol	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
3- and 4-Methylphenol	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
3,3'-Dichlorobenzidine	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
3-Nitroaniline	3.3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA
4,6-Dinitro-2-methylphenol	6.7 U	6 U	6 U	NA	6 U	6 UJ	NA	6 U	6 U	NA
4-Bromophenyl-phenylether	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
4-Chloro-3-methylphenol	6.7 UJ	6 UJ	6 UJ	NA	6 UJ	6 U	NA	6 U	6 U	NA
4-Chloroaniline	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
4-Chlorophenyl-phenylether	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
4-Nitroaniline	3.3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA
4-Nitrophenol	3.3 UJ	3 UJ	3 UJ	NA	3 UJ	3 U	NA	3 U	3 U	NA
Acenaphthene	0.08 U	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA
Acenaphthylene	0.08 U	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA
Acetophenone	3.3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA
Anthracene	0.08 U	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA
Atrazine	3.3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA
Benzaldehyde	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
Benzo(a)anthracene	0.08 U	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA
Benzo(a)pyrene	0.08 U	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA
Benzo(b)fluoranthene	0.08 U	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA
Benzo(g,h,i)perylene	0.08 U	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA
Benzo(k)fluoranthene	0.08 U	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA
bis(2-Chloroethoxy)methane	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
bis(2-Chloroethyl)ether	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
bis(2-Chloroisopropyl)ether	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
bis(2-Ethylhexyl)phthalate	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
Butylbenzylphthalate	3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA
Caprolactam	3.3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA
Carbazole	3.3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA
Chrysene	0.08 U	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA
Dibenz(a,h)anthracene	0.08 U	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA
Dibenzofuran	3.3 U	3 U	3 U	NA	3 U	3 UJ	NA	3 U	3 U	NA
Diethylphthalate	3.3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA
Dimethoate	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Dimethyl phthalate	3.3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA
Di-n-butylphthalate	3.3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA
Di-n-octylphthalate	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
Fluoranthene	0.08 U	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA
Fluorene	0.08 U	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA
Hexachlorobenzene	3.3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA
Hexachlorobutadiene	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
Hexachlorocyclopentadiene	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
Hexachloroethane	3.3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA
Indeno(1,2,3-cd)pyrene	0.08 U	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA
Isophorone	3.3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA
Naphthalene	0.08 U	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA
n-Nitroso-di-n-propylamine	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
n-Nitrosodiphenylamine	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
Nitrobenzene	6.7 U	6 U	6 U	NA	6 U	6 U	NA	6 U	6 U	NA
Pentachlorophenol	10 U	9 U	9 U	NA	9 U	9 UJ	NA	9 U	9 U	NA
Phenanthrene	0.08 U	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA
Phenol	3.3 U	3 U	3 U	NA	3 U	3 U	NA	3 U	3 U	NA
Phorate	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Pyrene	0.08 U	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA	0.08 U	0.08 U	NA
Pesticide/Polychlorinated Biphenyls (µg/l)										

CTO-WE14
MCIEAST - MCB CAMLEJ
Henderson Pond Validated Surface Water Raw Analytical Results

Station ID	IR74-HP-SW/SD01	IR74-HP-SW/SD02	IR74-HP-SW/SD03		IR74-HP-SW/SD04			IR74-HP-SW/SD05		
Sample ID	IR74-HP-SW01-0-0_5-11D	IR74-HP-SW02-0-0_5-11D	IR74-HP-SW03-0-0_5-11D	IR74-HP-SW03-0-0_5-11D-2	IR74-HP-SW04-0-0_5-11D	IR74-HP-SW04D-0-0_5-11D	IR74-HP-SW04-0-0_5-11D-2	IR74-HP-SW05-0-0_5-11D	IR74-HP-SW05D-0-0_5-11D	IR74-HP-SW05-0-0_5-11D-2
Sample Date	11/16/11	11/16/11	11/16/11	11/17/11	11/16/11	11/16/11	11/17/11	11/16/11	11/16/11	11/17/11
Chemical Name										
4,4'-DDD	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
4,4'-DDE	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
4,4'-DDT	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
Aldrin	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
alpha-BHC	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
alpha-Chlordane	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
Aroclor-1016	0.34 U	0.34 U	0.34 U	NA	0.34 U	0.34 U	NA	0.34 U	0.34 U	NA
Aroclor-1221	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA
Aroclor-1232	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA
Aroclor-1242	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA
Aroclor-1248	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA
Aroclor-1254	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA
Aroclor-1260	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA
Azinphos methyl	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
beta-BHC	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
Bolstar	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Chlorpyrifos	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Coumaphos	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
delta-BHC	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 UJ	NA	0.05 U	0.05 U	NA
Demeton	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Diazinon	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Dichlorvos	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Dieldrin	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
Disulfoton	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Endosulfan I	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
Endosulfan II	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
Endosulfan sulfate	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
Endrin	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
Endrin aldehyde	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
Endrin ketone	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 UJ	NA	0.05 U	0.05 U	NA
Ethoprop	0.4 UJ	0.4 UJ	0.4 UJ	NA	0.4 UJ	0.4 UJ	NA	0.4 UJ	0.4 U	NA
Fensulfothion	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Ethyl p-nitrophenyl phenylphosphorothioate	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Fenthion	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
gamma-BHC (Lindane)	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
gamma-Chlordane	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
Heptachlor	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
Heptachlor epoxide	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
Malathion	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Merphos	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Methoxychlor	0.05 U	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA
Methyl parathion	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Mevinphos	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Monocrotophos	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Naled	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 UJ	NA
Parathion	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Ronnel	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Sulfotepp	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Tetrachlorovinphos	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Tetraethyl pyrophosphate (TEPP)	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Tokuthion (Prothiophos)	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA	0.4 U	0.4 U	NA
Toxaphene	0.64 U	0.64 U	0.64 U	NA	0.64 U	0.64 U	NA	0.64 U	0.64 U	NA
Total Metals (µg/l)										
Aluminum	167 J	173 J	156 J	NA	145 J	168 J	NA	138 J	130 J	NA
Antimony	20 U	20 U	20 U	NA	20 U	20 U	NA	20 U	20 U	NA
Arsenic	20 U	20 U	20 U	NA	4.39 J	20 U	NA	20 U	20 U	NA
Barium	4.87 J	4.6 J	4.38 J	NA	5.37 J	5.59 J	NA	4.93 J	4.76 J	NA
Beryllium	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA
Cadmium	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Calcium	13,500	13,300	13,100	NA	13,200	13,300	NA	13,300	13,300	NA

CTO-WE14
MCIEAST - MCB CAMLEJ
Henderson Pond Validated Surface Water Raw Analytical Results

Station ID	IR74-HP-SW/SD01	IR74-HP-SW/SD02	IR74-HP-SW/SD03		IR74-HP-SW/SD04			IR74-HP-SW/SD05		
Sample ID	IR74-HP-SW01-0-0_5-11D	IR74-HP-SW02-0-0_5-11D	IR74-HP-SW03-0-0_5-11D	IR74-HP-SW03-0-0_5-11D-2	IR74-HP-SW04-0-0_5-11D	IR74-HP-SW04D-0-0_5-11D	IR74-HP-SW04-0-0_5-11D-2	IR74-HP-SW05-0-0_5-11D	IR74-HP-SW05D-0-0_5-11D	IR74-HP-SW05-0-0_5-11D-2
Sample Date	11/16/11	11/16/11	11/16/11	11/17/11	11/16/11	11/16/11	11/17/11	11/16/11	11/16/11	11/17/11
Chemical Name										
Chromium	5 U	0.354 J	5 U	NA	0.351 J	5 U	NA	5 U	5 U	NA
Cobalt	5 U	5 U	5 U	NA	5 U	5 U	NA	5 U	5 U	NA
Copper	2.67 J	3.14 J	3.03 J	NA	3.52 J	50.3 J	NA	3.35 J	3.11 J	NA
Iron	117	121	89	NA	102	106	NA	83.7	82.2	NA
Lead	10 U	10 U	10 U	NA	10 U	3.02 J	NA	10 U	10 U	NA
Magnesium	1,110	1,120	1,100	NA	1,100	1,140	NA	1,120	1,090	NA
Manganese	3.91 J	5.94 J	2.76 J	NA	2.43 J	2.39 J	NA	10 U	10 U	NA
Mercury	0.069 U	0.069 U	0.069 U	NA	0.069 U	0.069 U	NA	0.069 U	0.069 U	NA
Nickel	5 U	5 U	5 U	NA	5 U	5 U	NA	5 U	5 U	NA
Potassium	973 J	989 J	933 J	NA	1,030 J	971 J	NA	931 J	971 J	NA
Selenium	20 U	20 U	20 U	NA	20 U	20 U	NA	20 U	20 U	NA
Silver	5 U	5 U	5 U	NA	5 U	5 U	NA	5 U	5 U	NA
Sodium	4,830	4,800	4,730	NA	4,750	4,740	NA	4,930	4,760	NA
Thallium	10 U	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA
Vanadium	1.63 J	1.43 J	1.52 J	NA	1.62 J	1.76 J	NA	1.56 J	1.73 J	NA
Zinc	5 U	5 U	5 U	NA	5 U	32.6	NA	5 U	5 U	NA
Dissolved Metals (µg/l)										
Aluminum, Dissolved	112 J	90.7 J	119 J	NA	98.3 J	86.5 J	NA	118 J	101 J	NA
Antimony, Dissolved	20 U	20 U	20 U	NA	4.38 J	20 U	NA	20 U	20 U	NA
Arsenic, Dissolved	20 U	20 U	5.22 J	NA	20 U	20 U	NA	20 U	20 U	NA
Barium, Dissolved	5.9 J	4.88 J	5.56 J	NA	5.92 J	5.27 J	NA	5.05 J	5.61 J	NA
Beryllium, Dissolved	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA
Cadmium, Dissolved	1 U	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	NA
Calcium, Dissolved	13,300	13,100	13,200	NA	13,000	13,700	NA	13,500	13,100	NA
Chromium, Dissolved	0.353 J	5 U	5 U	NA	0.498 J	5 U	NA	5 U	0.265 J	NA
Cobalt, Dissolved	5 U	5 U	5 U	NA	5 U	5 U	NA	5 U	5 U	NA
Copper, Dissolved	3.09 J	3.45 J	4.26 J	NA	4.06 J	3.27 J	NA	3.1 J	4.23 J	NA
Iron, Dissolved	86.1	88.6	70.6	NA	79.6	74.8	NA	73.7	77.4	NA
Lead, Dissolved	10 U	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA
Magnesium, Dissolved	1,100	1,090	1,090	NA	1,090	1,130	NA	1,120	1,090	NA
Manganese, Dissolved	3.17 J	5.03 J	2.03 J	NA	2.14 J	1.79 J	NA	1.38 J	1.46 J	NA
Mercury, Dissolved	0.069 U	0.069 U	0.069 U	NA	0.069 U	0.069 U	NA	0.069 U	0.069 U	NA
Nickel, Dissolved	1.05 J	0.842 J	1.05 J	NA	1.22 J	0.751 J	NA	0.44 J	1.11 J	NA
Potassium, Dissolved	1,010 J	947 J	971 J	NA	1,040 J	1,000 J	NA	946 J	986 J	NA
Selenium, Dissolved	20 U	20 U	20 U	NA	20 U	20 U	NA	20 U	20 U	NA
Silver, Dissolved	5 U	5 U	5 U	NA	5 U	5 U	NA	5 U	5 U	NA
Sodium, Dissolved	4,870	4,850	4,900	NA	4,920	4,900	NA	4,940	4,900	NA
Thallium, Dissolved	10 U	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA
Vanadium, Dissolved	5 U	5 U	5 U	NA	5 U	5 U	NA	5 U	5 U	NA
Zinc, Dissolved	4.39 J	3.13 J	5 U	NA	5 U	5 U	NA	5 U	5 U	NA
Wet Chemistry										
Chromium (hexavalent) (mg/l)	0.015 U	0.015 U	0.015 U	NA	0.015 U	0.015 U	NA	0.015 U	0.015 U	NA
Total organic carbon (TOC) (mg/l)	NA	NA	NA	11	NA	NA	7.1	NA	NA	7.4

Notes:

Shading indicates detections

NA - Not analyzed

J - Analyte present, value may or may not be accurate or precise

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

mg/l - Milligrams per liter

µg/l - Micrograms per liter

CTO-WE14
MCIEAST - MCB CAMLEJ
Henderson Pond Validated Fish Tissue Raw Analytical Results

Station ID	HENP-TI01		HENP-TI02						HENP-TI03					
Sample ID	HENP-FS-CP01-F-12B	HENP-FS-CP01-O-12B	HENP-FS-B03-F-12B	HENP-FS-B03-O-12B	HENP-FS-C02-F-12B	HENP-FS-C02-O-12B	HENP-FS-S01-F-12B	HENP-FS-S01-O-12B	HENP-FS-C06D-F-12B	HENP-FS-C06D-O-12B	HENP-FS-C06-F-12B	HENP-FS-C06-O-12B	HENP-FS-B05-F-12B	HENP-FS-B05-O-12B
Sample Date	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12	04/24/12	04/24/12	04/24/12	04/24/12	04/27/12	04/27/12
Chemical Name														
Pesticide/Polychlorinated Biphenyls (µg/kg)														
4,4'-DDE	1.1 J	14 J	0.83 J	7.2 J	4.9 J	38 J	1 UJ	7.2 J	1.8 J	13 J	0.87 J	11 J	1 UJ	11 J
4,4'-DDT	1 UJ	21 J	6.7 J	18 J	13 J	65 J	1 UJ	15 J	7.8	24 J	1 UJ	19 J	1 UJ	30 J
Polychlorinated biphenyls (PCBs)	13.2	606	69.7	677	236	1,010	8.58	220	84.8	498	67.1	286	35.6	522
Polychlorinated Biphenyl Congeners (pg/g)														
2-Chlorobiphenyl (1)	2.92 U	163 U	3.14 U	144 U	29.4 U	330 U	2.99 U	30 U	30.8 U	153 U	16.3 U	64.7 U	2.72 U	149 U
3-Chlorobiphenyl (2)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
4-Chlorobiphenyl (3)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,2'-Dichlorobiphenyl (4)	2.33 U	130 U	2.5 U	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	2.17 U	119 U
2,3-Dichlorobiphenyl (5)	2.33 U	130 U	2.5 U	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	2.17 U	119 U
2,3'-Dichlorobiphenyl (6)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,4-Dichlorobiphenyl (7)	2.33 U	130 U	2.5 U	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	2.17 U	119 U
2,4'-Dichlorobiphenyl (8)	11.7 U	651 U	12.5 U	576 U	117 U	1,320 U	11.9 U	120 U	123 U	612 U	65.1 U	259 U	10.9 U	596 U
2,5-Dichlorobiphenyl (9)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,6-Dichlorobiphenyl (10)	2.33 U	130 U	2.5 U	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	2.17 U	119 U
3,3'-Dichlorobiphenyl (11)	29.2 U	1,630 U	31.4 U	1,440 U	294 U	3,300 U	29.9 U	300 U	308 U	1,530 U	163 U	647 U	27.2 U	1,490 U
3,5-Dichlorobiphenyl (14)	2.33 U	130 U	2.5 U	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	2.17 U	119 U
4,4'-Dichlorobiphenyl (15)	11.7 U	651 U	12.5 U	576 U	117 U	1,320 U	11.9 U	120 U	123 U	612 U	65.1 U	259 U	10.9 U	596 U
2,2',3-Trichlorobiphenyl (16)	2.33 U	130 U	2.5 U	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	1.49 J	119 U
2,2',4-Trichlorobiphenyl (17)	2.33 U	130 U	2.5 U	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	5.56	119 U
2,2',6-Trichlorobiphenyl (19)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,3,4'-Trichlorobiphenyl (22)	1.84 J	130 U	4.04	115 U	23.4 U	263 U	1.77 J	23.9 U	24.5 U	122 U	13 U	51.6 U	7.04	119 U
2,3,5-Trichlorobiphenyl (23)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,3,6-Trichlorobiphenyl (24)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,3',4-Trichlorobiphenyl (25)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	2.39	59.6 U
2,3',6-Trichlorobiphenyl (27)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	0.857 J	59.6 U
2,4',5-Trichlorobiphenyl (31)	3.12 J	325 U	6.67 J	288 U	58.6 U	658 U	3.03 J	59.8 U	61.3 U	306 U	32.5 U	129 U	18.4	298 U
2,4',6-Trichlorobiphenyl (32)	1.17 U	65.1 U	0.65 J	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	3.71	59.6 U
2,3',5'-Trichlorobiphenyl (34)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
3,3',4-Trichlorobiphenyl (35)	2.33 U	130 U	2.5 U	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	2.17 U	119 U
3,3',5-Trichlorobiphenyl (36)	2.33 U	130 U	2.5 U	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	2.17 U	119 U
3,4,4'-Trichlorobiphenyl (37)	11.7 U	651 U	8 J	576 U	117 U	1,320 U	11.9 U	120 U	123 U	612 U	65.1 U	259 U	8.14 J	596 U
3,4,5-Trichlorobiphenyl (38)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
3,4',5-Trichlorobiphenyl (39)	2.33 U	130 U	2.5 U	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	2.17 U	119 U
2,2',3,4-Tetrachlorobiphenyl (41)	1.17 U	65.1 U	1.52 J	57.6 U	11.7 U	132 U	0.748 J	12 U	12.3 U	61.2 U	6.51 U	25.9 U	2.5	59.6 U
2,2',3,4'-Tetrachlorobiphenyl (42)	0.984 J	65.1 U	1.91	57.6 U	11.7 U	132 U	1.17 J	12 U	12.3 U	61.2 U	6.51 U	25.9 U	14.5	50.7 J
2,2',3,5-Tetrachlorobiphenyl (43)	2.33 U	130 U	2.5 U	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	3.96	119 U
2,2',3,6'-Tetrachlorobiphenyl (46)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.84	59.6 U
2,2',4,5-Tetrachlorobiphenyl (48)	0.68 J	65.1 U	1.78 J	57.6 U	11.7 U	132 U	0.983 J	12 U	12.3 U	61.2 U	6.51 U	25.9 U	9.45	30.7 J
2,2',5,5'-Tetrachlorobiphenyl (52)	4.91 U	121 U	8.61	57.6 U	11.7 U	132 U	5.27 U	37.5 U	12.3 U	61.2 U	13.6 U	69.1 U	99.3	367 U
2,2',6,6'-Tetrachlorobiphenyl (54)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,3,3',4-Tetrachlorobiphenyl (55)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	3.27	59.6 U
2,3,3',4'-Tetrachlorobiphenyl (56)	2.76 J	130 U	5.86	115 U	23.4 U	263 U	3.73	13.1 J	24.5 U	122 U	13 U	51.6 U	24	77.8 J
2,3,3',5-Tetrachlorobiphenyl (57)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	0.805 J	59.6 U
2,3,3',5'-Tetrachlorobiphenyl (58)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	0.993 J	59.6 U
2,3,4,4'-Tetrachlorobiphenyl (60)	1.56 J	130 U	3.64 J	115 U	23.4 U	263 U	2.02 J	23.9 U	24.5 U	122 U	13 U	51.6 U	11	119 U
2,3,4',5-Tetrachlorobiphenyl (63)	2.92 U	163 U	3.14 U	144 U	29.4 U	330 U	2.99 U	30 U	30.8 U	153 U	16.3 U	64.7 U	4.09 J	149 U
2,3,4',6-Tetrachlorobiphenyl (64)	1.65 J	65.1 U	3.17	57.6 U	6.62 J	132 U	1.6 J	12 U	12.3 U	61.2 U	5.44 J	20.8 J	23.4	81.9 J
2,3',4,4'-Tetrachlorobiphenyl (66)	5.95 U	163 U	17.9	144 U	49.9 U	330 U	8.5 U	65.8 U	30.8 U	153 U	27.9 U	96.2 U	87.5	316 U
2,3',4,5-Tetrachlorobiphenyl (67)	1.17 U	65.1 U	0.776 J	57.6 U	11.7 U	132 U	0.666 J	12 U	12.3 U	61.2 U	6.51 U	25.9 U	3.24	59.6 U
2,3',4,5'-Tetrachlorobiphenyl (68)	1.17 U	65.1 U	1.18 J	57.6 U	11.7 U	132 U	0.612 J	7.24 J	12.3 U	61.2 U	6.51 U	25.9 U	4.03	59.6 U
2,3',5,5'-Tetrachlorobiphenyl (72)	2.33 U	130 U	1.37 J	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	4.2	119 U
2,3',5',6-Tetrachlorobiphenyl (73)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
3,3',4,4'-Tetrachlorobiphenyl (77)	0.898 J	65.1 U	1.48 J	57.6 U	11.7 U	132 U	0.96 J	8.63 J	12.3 U	61.2 U	6.51 U	25.9 U	6.01	30.7 J
3,3',4,5-Tetrachlorobiphenyl (78)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
3,3',4,5'-Tetrachlorobiphenyl (79)	2.33 U	130 U	1.34 J	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	4.7	119 U
3,3',5,5'-Tetrachlorobiphenyl (80)	2.33 U	130 U	2.5 U	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	2.17 U	119 U
3,4,4',5-Tetrachlorobiphenyl (81)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,2',3,3',4-Pentachlorobiphenyl (82)	1.47 J	163 U	2.88 J	144 U	29.4 U	330 U	1 J	8.47 J	30.8 U	153 U	16.3 U	64.7 U	11.2	53.4 J
2,2',3,3',5-Pentachlorobiphenyl (83)	1.91	126	5.03	61.2 J	11.7 U	132 U	0.888 J	25.8	12.3 U	32 J	7.8 J	31.8 J	11.2	61.8 J
2,2',3,3',6-Pentachlorobiphenyl (84)	2.63	65.1 U	2.5	57.6 U	11.7 U	132 U	1.75 J	14.1 J	12.3 U	61.2 U	7.69 J	33 J	33.3	117
2,2',3,4,6'-Pentachlorobiphenyl (89)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	0.919 J	59.6 U
2,2',3,5,5'-Pentachlorobiphenyl (92)	33	1,710	142	1,170	375	1,640	29.6	739	220	1,220	176	824	145	1,240
2,2',3,5,6'-Pentachlorobiphenyl (94)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.34 J	59.6 U
2,2',3,5',6-Pentachlorobiphenyl (95)	20.7	1,150	38.3	327 U	54.1 U	303 U	20	270	37.9 U	210	59.1	381	160	803
2,2',3,6,6'-Pentachlorobiphenyl (96)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	0.554 J	59.6 U

CTO-WE14
MCIEAST - MCB CAMLEJ
Henderson Pond Validated Fish Tissue Raw Analytical Results

Station ID	HENP-TI01		HENP-TI02						HENP-TI03					
Sample ID	HENP-FS-CP01-F-12B	HENP-FS-CP01-O-12B	HENP-FS-B03-F-12B	HENP-FS-B03-O-12B	HENP-FS-C02-F-12B	HENP-FS-C02-O-12B	HENP-FS-S01-F-12B	HENP-FS-S01-O-12B	HENP-FS-C06D-F-12B	HENP-FS-C06D-O-12B	HENP-FS-C06-F-12B	HENP-FS-C06-O-12B	HENP-FS-B05-F-12B	HENP-FS-B05-O-12B
Sample Date	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12	04/24/12	04/24/12	04/24/12	04/24/12	04/27/12	04/27/12
Chemical Name														
2,2',4,4',5-Pentachlorobiphenyl (99)	71.2	3,170	357	2,980	1,260	5,160	60.4	1,550	549	3,030	440	1,860	404	3,240
2,2',4,5',6-Pentachlorobiphenyl (103)	3.05 J	163 U	10.6	102 J	17.5 J	83.6 J	2.44 J	67.6	15.8 J	87.1 J	9.35 J	64.7 U	14.6	115 J
2,2',4,6,6'-Pentachlorobiphenyl (104)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,3,3',4,4'-Pentachlorobiphenyl (105)	5.11	193	31.1	241	104	455	6.05	110	42.1	230	36.5	162	56.2	337
2,3,3',4,5-Pentachlorobiphenyl (106)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,3,3',4',5-Pentachlorobiphenyl (107)	13.5	550	93.5	746	245	946	12.2	309	53	292	78.5	316	81	615
2,3,3',5,5'-Pentachlorobiphenyl (111)	1.33 J	54 J	8.22	63.6 J	11.7 U	132 U	1 J	26.5	10.6 J	43.9 J	6.46 J	27.4 J	5.05	50.7 J
2,3,3',5,6-Pentachlorobiphenyl (112)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,3,4,4',5-Pentachlorobiphenyl (114)	1.17 U	54.1 J	6	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	2.43	59.6 U
2,3',4,4',5-Pentachlorobiphenyl (118)	31.4	1,300	188	1,610	671	2,820	35.1	684	262 J	1,410	216	964	247	1,750
2,3',4,5,5'-Pentachlorobiphenyl (120)	4.87	213	36.6	285	95.8	132 U	4.55	120	40.9	226	30.8	119	22.1	249
2,3',4,5',6-Pentachlorobiphenyl (121)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	0.699 J	59.6 U
2,3,3',4',5'-Pentachlorobiphenyl (122)	1.17 U	65.1 U	1.68 J	57.6 U	11.7 U	132 U	1.19 U	6.22 J	12.3 U	61.2 U	6.51 U	25.9 U	2.07	59.6 U
2,3',4,4',5'-Pentachlorobiphenyl (123)	0.792 J	65.1 U	5.04	60.8 J	16.8 J	109 J	0.97 J	36.3	9.61 J	37.3 J	6.18 J	25.5 J	5.25	59.6 U
3,3',4,4',5-Pentachlorobiphenyl (126)	1.13 J	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.44 J	20	11.4 J	61.2 U	5.67 J	29.5 J	3.25	59.6 U
3,3',4,5,5'-Pentachlorobiphenyl (127)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	82	3,700	337	3,110	1,430	5,520	54.4	1,470	158	1,070	390	1,640	209	2,510
2,2',3,3',4,6-Hexachlorobiphenyl (131)	1.28 J	65.1 U	5.42	48.1 J	11.7 U	132 U	0.704 J	13.5 J	12.3 U	61.2 U	6.51 U	13.3 J	4.58	42.4 J
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	145	6,670	208	1,910	681	2,940	60.7	1,320	133	917	378	1,730	218	1,920
2,2',3,3',5,5'-Hexachlorobiphenyl (133)	31.1	1,430	183	1,670	592	2,390	24.2	661	221	1,260	161	668	103	1,310
2,2',3,3',5,6-Hexachlorobiphenyl (134)	16.2	65.1 U	29.9	236	98.2	158 J	8.51	181	23.7	110	42.5	185	33.9	257
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	34.1	1,750	20.8	236	26.8	174 J	17.4	366	30.5	180	40	312	53	358
2,2',3,4,4',5-Hexachlorobiphenyl (137)	6.1	65.1 U	38.5	406	126	602	4.89	112	47.9	346	33.7	169	25.4	287
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	213	10,000	1,200	11,100	3,910	15,700	156	4,000	1,390	8,050	1,080	4,810	610	8,220
2,2',3,4,5,6-Hexachlorobiphenyl (142)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,2',3,4,5,6'-Hexachlorobiphenyl (143)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,2',3,4,5',6-Hexachlorobiphenyl (144)	25.8	1,160	114	1,030	167	733	16.7	404	83.5	461	71.7	319	62.8	820
2,2',3,4,6,6'-Hexachlorobiphenyl (145)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	437	21,200	3,160	30,500	10,400	42,500	350	9,560	3,630	21,200	2,740	11,200	1,500	21,500
2,2',3,4',5,6'-Hexachlorobiphenyl (148)	2.26	104	15.6	153	48.4	213	1.89	54.9	16.8 J	103	13.5	60.5	11.2	119
2,2',3,4',6,6'-Hexachlorobiphenyl (150)	1.23 J	60.4 J	2.59	33.4 J	11.7 U	132 U	0.736 J	16.1 J	12.3 U	61.2 U	3.32 J	14.5 J	4.91	39 J
2,2',3,5,6,6'-Hexachlorobiphenyl (152)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,2',4,4',5,6'-Hexachlorobiphenyl (154)	26.8	1,260	216	2,100	646	2,640	24.9	713	231	1,360	176	729	127	1,610
2,2',4,4',6,6'-Hexachlorobiphenyl (155)	1.17 U	65.1 U	0.655 J	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	2.07	59.6 U
2,3,3',4,4',6-Hexachlorobiphenyl (158)	73.5	3,240	513	4,600	1,720	6,780	61.2	1,500	585	3,340	432	1,790	244	3,220
2,3,3',4,5,5'-Hexachlorobiphenyl (159)	18.4	906	37.6	60.4 J	145	616	8.38	209	75.5	424	62.7	280	24.5	308
2,3,3',4,5,6-Hexachlorobiphenyl (160)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,3,3',4,5',6-Hexachlorobiphenyl (161)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,3,3',4',5,5'-Hexachlorobiphenyl (162)	24	1,150	107	468	428	1,620	15.1	402	97	551	112	453	57	740
2,3,3',4',5',6-Hexachlorobiphenyl (164)	95.6	4,600	393	3,360	1,190	4,670	59.6	1,440	430	2,340	409	1,780	230	2,680
2,3,3',5,5',6-Hexachlorobiphenyl (165)	1.17 U	65.1 U	7.31	78.7 J	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	4.9	59.6 U
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	39.9 J	1,790 J	321 J	3,070 J	1,080 J	4,400 J	34.5 J	931 J	378 J	2,240 J	303 J	1,250 J	146 J	2,120 J
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	2.57	59.6 U
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	551	24,100	3,540	34,300	11,500	51,100	359	9,120	4,310	25,700	3,100	14,100	1,440	24,700
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	168	7,020	912	8,390	3,200	13,400	92.8	2,360	1,100	6,150	837	3,410	381	6,270
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	707	33,000	1,180	10,900	5,030	19,900	308	7,380	2,470	14,000	2,270	10,000	805	9,070
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	25.6	1,170	160	1,450	518	2,010	17.1	425	177	972	133	558	69.3	1,020
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	49	2,200	46.6	503	111	481	17.6	434	76.7	439	82.5	358	43.3	450
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	438	20,400	1,080	10,400	6,280	23,800	241	5,980	825	5,190	1,840	7,480	703	8,620
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	188	8,560	741	7,460	2,960	11,700	128	3,350	1,180	6,850	842	3,670	428	5,930
2,2',3,3',5,6,6'-Heptachlorobiphenyl (179)	174	8,070	103	1,260	542	2,390	75.7	2,010	366	2,230	288	1,690	156	1,340
2,2',3,4,4',5,6-Heptachlorobiphenyl (181)	1.17 U	65.1 U	10.1	90.1	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	4.8	59.6 U
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	4.13	290	29.7	464	83.9	471	1.19 U	138	62.4	217	35.4	144	13.8	239
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	1.17 U	65.1 U	4.59	50 J	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	2.81	39.1 J
2,2',3,4,5,6,6'-Heptachlorobiphenyl (186)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	1,100	51,500	7,600 J	75,000	25,700	104,000	835	21,900	9,050	52,900	6,570	27,700	3,410 J	53,000
2,2',3,4',5,6,6'-Heptachlorobiphenyl (188)	1.17 U	75.5 J	11.1	97.8	11.7 U	122 J	1.16 J	12 U	12.3 U	83.6 J	6.51 U	25.9 U	8.78	94.7
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	24.9	1,170	144	1,540	528	2,300	15.4	415	191 J	1,140	139	593	59.9	1,160
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	117	4,860	768	7,460	2,510	11,300	79.9	2,040	956	5,700	703	2,970	326	5,450
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	19.2	822	119	1,090	390	1,640	11.7	279	138	783	100	400	47.1	780
2,3,3',4,5,5',6-Heptachlorobiphenyl (192)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	337	17,000	1,590	18,700	6,210	32,300	157	4,550	2,450	14,900	1,670	7,460	661	16,200
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	128	6,090	697	7,370	2,420	12,200	73.2	1,850	907	5,420	627	2,920	293	6,130
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	165	7,210	757	8,130	2,550	13,300	75	1,890	1,040	6,380	657	3,020	319	6,760
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	44.5	1,960	169	1,530	595	2,770	22.6	511	209	1,140	143	631	87.7	1,340
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)	82.7	3,940	241	2,640	1,030	4,840	48.3	1,230	507	2,930	318	1,500	163	2,540
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	276	12,300	1,290	14,600	4,500	24,100	135	3,450	1,990	12,300	1,340	6,190	570	12,900
2,2',3,4,4',5,6,6'-Octachlorobiphenyl (204)	1.17 U	65.1 U	1.25 U	57.6 U	11.7 U	132 U	1.19 U	12 U	12.3 U	61.2 U	6.51 U	25.9 U	1.09 U	59.6 U

CTO-WE14
MCIEAST - MCB CAMLEJ
Henderson Pond Validated Fish Tissue Raw Analytical Results

Station ID	HENP-TI01		HENP-TI02						HENP-TI03					
Sample ID	HENP-FS-CP01-F-12B	HENP-FS-CP01-O-12B	HENP-FS-B03-F-12B	HENP-FS-B03-O-12B	HENP-FS-C02-F-12B	HENP-FS-C02-O-12B	HENP-FS-S01-F-12B	HENP-FS-S01-O-12B	HENP-FS-C06D-F-12B	HENP-FS-C06D-O-12B	HENP-FS-C06-F-12B	HENP-FS-C06-O-12B	HENP-FS-B05-F-12B	HENP-FS-B05-O-12B
Sample Date	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12	04/24/12	04/24/12	04/24/12	04/24/12	04/27/12	04/27/12
Chemical Name														
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	18.1	864	89.2	940	309	1,550	8.64	228	127	727	91.2	395	36.7	785
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)	206	10,700	593	6,840	2,330	13,600	71.9	2,080	1,470	8,610	879	4,010	331	7,500
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)	18.1	869	56.4	593	180	1,030	6.78	161	88.6	518	48.8	216	33.6	644
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)	60.3	3,010	89.2	1,040	510	2,910	21.1	555	361 J	2,040	209	950	80.6	1,330
Decachlorobiphenyl (209)	28.3	1,350	44.2	507	173	1,150	10.7	186	168	983	109	484	58.1	812
Congeners (13/12)	4.68 U	261 U	5.01 U	231 U	47 U	528 U	4.78 U	47.9 U	49.2 U	245 U	26 U	103 U	4.35 U	239 U
Congeners (21/33)	2.44 J	261 U	6.63 J	231 U	47 U	528 U	2.73 J	47.9 U	49.2 U	245 U	26 U	103 U	10.8 J	239 U
Congeners (26/29)	2.33 U	130 U	2.5 U	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	5.51 J	119 U
Congeners (28/20)	11.7 U	651 U	10.7 J	576 U	117 U	1,320 U	11.9 U	120 U	123 U	612 U	65.1 U	259 U	34.1 J	596 U
Congeners (30/18)	2.33 U	130 U	1.26 J	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	5.49 J	119 U
Congeners (40/71)	2.09 J	130 U	4.43 J	115 U	23.4 U	263 U	2.04 J	23.9 U	24.5 U	122 U	13 U	51.6 U	28.7 J	102 J
Congeners (44/47/65)	5.66 J	125 J	11.2 J	173 U	30.1 J	395 U	6.9 J	46.6 J	20.1 J	184 U	23.1 J	84.2 J	82.4 J	326 J
Congeners (45/51)	2.33 U	130 U	2.5 U	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	7.01 J	119 U
Congeners (50/53)	2.33 U	130 U	2.5 U	115 U	23.4 U	263 U	2.38 U	23.9 U	24.5 U	122 U	13 U	51.6 U	5.6 J	119 U
Congeners (59/62/75)	3.5 U	195 U	3.76 U	173 U	35.2 U	395 U	3.58 U	35.9 U	36.8 U	184 U	19.5 U	77.5 U	7.05 J	179 U
Congeners (61/70/74/76)	10.6 U	261 U	24.7 J	231 U	47 U	528 U	13.3 U	79.8 U	49.2 U	245 U	26 U	103 U	131 J	452 U
Congeners (69/49)	3.06 J	98.6 J	6.18 J	115 U	15.4 J	263 U	2.97 J	32.5 J	13.4 J	122 U	14.4 J	54.7 J	69.1 J	267 J
Congeners (86/87/97/109/119/125)	27 J	1,220 J	107 J	845 J	263 J	1,160 J	23.5 J	456 J	111 J	625 J	118 J	504 J	167 J	1,100 J
Congeners (88/91)	8.84 J	419 J	15.6 J	144 J	44.3 J	207 J	4.52 J	97.8 J	32.8 J	166 J	34.8 J	149 J	57.1 J	285 J
Congeners (93/100)	1.19 J	130 U	7.4 J	62.6 J	23.4 U	263 U	2.38 U	33.7 J	12.8 J	65.9 J	7.72 J	28.2 J	13.9 J	75.2 J
Congeners (98/102)	1.53 J	75.5 J	5.36 J	115 U	23.4 U	263 U	2.38 U	14.9 J	24.5 U	122 U	13 U	26.5 J	10.5 J	119 U
Congeners (108/124)	2.82 J	120 J	15.2 J	131 J	14.9 J	263 U	2.7 J	61.2 J	24.5 U	122 U	6.6 J	51.6 U	14 J	111 J
Congeners (110/115)	95.1 J	4,100 J	213 J	1,700 J	557 J	2,360 J	42.5 J	815 J	99.8 U	698 J	294 J	1,320 J	335 J	2,270 J
Congeners (113/90/101)	100 J	4,960 J	428 J	3,550 J	674 J	2,900 J	89 J	1,900 J	427 J	2,250 J	374 J	1,600 J	512 J	4,110 J
Congeners (117/116/85)	5.97 J	195 U	28.1 J	232 J	104 J	395 U	5.56 J	120 J	43.5 J	245 J	36 J	158 J	50.8 J	321 J
Congeners (128/166)	53.9 J	2,300 J	361 J	3,110 J	1,220 J	4,700 J	46.3 J	1,100 J	414 J	2,380 J	326 J	1,350 J	208 J	2,310 J
Congeners (138/163/129)	1,080 J	50,500 J	7,690 J	72,100 J	25,600 J	104,000 J	921 J	24,000 J	7,400 J	43,600 J	6,580 J	28,300 J	3,760 J	52,500 J
Congeners (139/140)	7.77 J	371 J	61.3 J	526 J	173 J	697 J	7.34 J	185 J	64.8 J	361 J	46.8 J	196 J	35.7 J	413 J
Congeners (147/149)	741 J	35,400 J	2,360 J	21,700 J	4,650 J	19,700 J	423 J	10,500 J	2,030 J	11,500 J	2,170 J	9,450 J	1,690 J	18,700 J
Congeners (151/135)	290 J	13,500 J	980 J	9,960 J	2,270 J	10,600 J	204 J	5,420 J	1,380 J	8,320 J	980 J	5,630 J	734 J	8,900 J
Congeners (153/168)	1,340 J	64,400 J	10,000 J	99,500 J	34,700 J	143,000 J	1,090 J	30,300 J	11,900 J	70,400 J	9,150 J	37,100 J	4,680 J	70,700 J
Congeners (156/157)	35.9 J	1,580 J	282 J	2,570 J	917 J	3,800 J	36.6 J	793 J	338 J	1,940 J	248 J	1,080 J	144 J	1,900 J
Congeners (171/173)	185 J	7,900 J	1,170 J	10,400 J	3,760 J	14,300 J	125 J	3,120 J	1,280 J	7,110 J	983 J	3,980 J	497 J	7,080 J
Congeners (180/193)	1,830 J	78,400 J	11,100 J	108,000 J	38,800 J	168,000 J	1,070 J	27,700 J	13,700 J	80,400 J	10,400 J	42,200 J	4,440 J	79,300 J
Congeners (183/185)	411 J	18,900 J	2,820 J	25,900 J	8,830 J	34,300 J	286 J	7,140 J	3,150 J	17,500 J	2,320 J	9,530 J	1,160 J	17,700 J
Congeners (197/200)	49.7 J	2,070 J	83.2 J	817 J	297 J	1,510 J	16.1 J	364 J	137 J	771 J	104 J	464 J	45.9 J	734 J
Congeners (198/199)	514 J	23,000 J	1,870 J	20,700 J	7,490 J	40,900 J	237 J	5,950 J	3,250 J	20,200 J	2,180 J	9,800 J	923 J	19,200 J
Total Non-Dioxin-Like Congeners	13,100	600,000	68,700	668,000	233,000	996,000	8,450	217,000	83,600	491,000	66,100	282,000	35,000	514,000
Dioxin/Furans (pg/g)														
Toxic Equivalents (Total TEQ)	0.117	0.182	0.0294	0.273	0.0995	0.416	0.148	2.09	1.18	0.21	0.595	3.07	0.423	0.221
Total Metals (mg/kg)														
Arsenic	1.67 U	2.17 U	1.59 U	2.04 U	1.27 U	1.28 U	1.82 U	1.82 U	1 U	1.75 U	1.92 U	1.72 U	1.27 U	1.27 U
Wet Chemistry														
% Solids (pct)	20.3	23.8	18.9	29.2	18	22.4	19.8	28.5	18.6	25.2	17.7	25.7	19.9	29.2
Lipids (%) (pct)	0.606	4.68	0.0643	0.503	2.18	2.23	0.113	1.49	0.517	3.1	0.205	1.17	0.19	8.7

\\Tarheel\Proj\EBL\Navy Clean\OU 4 (Sites 41 and 74)\2012 Henderson Pond Mod 2\Report\Draft Report\Appendices\Appendix B_Analytical Data\[CTO-WE14_HENP_FS_Val_RD_tbl.xls], thorn1, 06/18/2012

Notes:

Shading indicates detections

NA - Not analyzed

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

mg/kg - Milligrams per kilogram

pct - Percent

pg/g - Picograms per gram

µg/kg - Micrograms per kilogram

Station ID	HICP-SW/SD01	HICP-SW/SD02	HICP-SW/SD03	HICP-SW/SD04	HICP-SW/SD05	
Sample ID	HICP-SD01-0-0_5-12B	HICP-SD02-0-0_5-12B	HICP-SD03-0-0_5-12B	HICP-SD04-0-0_5-12B	HICP-SD05-0-0_5-12B	HICP-SD05D-0-0_5-12B
Sample Date	05/01/12	05/01/12	05/02/12	05/02/12	05/02/12	05/02/12
Chemical Name						
Volatile Organic Compounds (µg/kg)						
1,1,1-Trichloroethane	2.6 U	2.3 U	1.6 U	1.2 U	1.1 U	1 U
1,1,2,2-Tetrachloroethane	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	2.6 U	2.3 U	1.6 U	1.2 U	1.1 U	1 U
1,1,2-Trichloroethane	2.6 U	2.3 U	1.6 U	1.2 U	1.1 U	1 U
1,1-Dichloroethane	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
1,1-Dichloroethene	2.6 U	2.3 U	1.6 U	1.2 U	1.1 U	1 U
1,2,4-Trichlorobenzene	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
1,2-Dibromo-3-chloropropane	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
1,2-Dibromoethane	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
1,2-Dichlorobenzene	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
1,2-Dichloroethane	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
1,2-Dichloropropane	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
1,3-Dichlorobenzene	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
1,4-Dichlorobenzene	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
2-Butanone	17 J	40 J	16 J	4.8 J	4.3 J	5.2 J
2-Hexanone	6.4 U	5.7 U	4.1 UJ	3 U	2.6 U	2.5 U
4-Methyl-2-pentanone	6.4 R	5.7 R	4.1 R	3 R	2.6 R	2.5 R
Acetone	130	180	73	35	28	26
Benzene	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
Bromodichloromethane	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
Bromoform	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
Bromomethane	2.6 U	2.3 U	1.6 U	1.2 U	1.1 U	1 U
Carbon disulfide	13 U	11 U	8.2 U	6.1 U	5.3 U	5 U
Carbon tetrachloride	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
Chlorobenzene	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
Chloroethane	2.6 U	2.3 U	1.6 U	1.2 U	1.1 U	1 U
Chloroform	2.6 U	2.3 U	1.6 U	1.2 U	1.1 U	1 U
Chloromethane	2.6 U	2.3 U	1.6 U	1.2 U	1.1 U	1 U
cis-1,2-Dichloroethene	2.6 U	2.3 U	1.6 U	1.2 U	1.1 U	1 U
cis-1,3-Dichloropropene	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
Cyclohexane	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
Dibromochloromethane	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
Dichlorodifluoromethane (Freon-12)	2.6 U	2.3 U	1.6 U	1.2 U	1.1 U	1 U
Ethylbenzene	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
Isopropylbenzene	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
m- and p-Xylene	5.1 U	4.6 U	3.3 UJ	2.4 U	2.1 U	2 U
Methyl acetate	13 U	11 U	8.2 U	6.1 U	5.3 U	5 U
Methylcyclohexane	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
Methylene chloride	13 U	11 U	8.2 U	6.1 U	5.3 U	5 U
Methyl-tert-butyl ether (MTBE)	2.6 U	2.3 U	1.6 U	1.2 U	1.1 U	1 U
o-Xylene	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
Styrene	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
Tetrachloroethene	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
Toluene	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
trans-1,2-Dichloroethene	2.6 U	2.3 U	1.6 U	1.2 U	1.1 U	1 U
trans-1,3-Dichloropropene	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
Trichloroethene	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
Trichlorofluoromethane (Freon-11)	2.6 U	2.3 U	1.6 U	1.2 U	1.1 U	1 U
Vinyl chloride	2.6 U	2.3 U	1.6 UJ	1.2 U	1.1 U	1 U
Semivolatile Organic Compounds (µg/kg)						
1,1-Biphenyl	210 UJ	200 U	160 UJ	140 U	120 U	130 U
2,4,5-Trichlorophenol	210 U	200 U	160 U	140 U	120 U	130 U
2,4,6-Trichlorophenol	210 U	200 U	160 U	140 U	120 U	130 U
2,4-Dichlorophenol	210 U	200 U	160 U	140 U	120 U	130 U
2,4-Dimethylphenol	210 U	200 U	160 U	140 U	120 U	130 U
2,4-Dinitrophenol	620 R	600 R	490 R	430 R	370 R	380 R
2,4-Dinitrotoluene	210 UJ	200 U	160 U	140 U	120 U	130 U
2,6-Dinitrotoluene	210 UJ	200 U	160 U	140 U	120 U	130 U
2-Chloronaphthalene	210 UJ	200 U	160 U	140 U	120 U	130 U
2-Chlorophenol	210 U	200 U	160 U	140 U	120 U	130 U
2-Methylnaphthalene	51 U	50 U	41 U	36 U	31 U	32 U
2-Methylphenol	210 U	200 U	160 U	140 U	120 U	130 U
2-Nitroaniline	210 UJ	200 U	160 U	140 U	120 U	130 U
2-Nitrophenol	210 U	200 U	160 U	140 U	120 U	130 U
3- and 4-Methylphenol	410 U	400 U	330 U	290 U	250 U	250 U
3,3'-Dichlorobenzidine	210 UJ	200 U	160 U	140 U	120 U	130 U
3-Nitroaniline	210 UJ	200 U	160 U	140 U	120 U	130 U
4,6-Dinitro-2-methylphenol	620 UJ	600 UJ	490 UJ	430 UJ	370 UJ	380 UJ
4-Bromophenyl-phenylether	210 UJ	200 U	160 U	140 U	120 U	130 U
4-Chloro-3-methylphenol	210 U	200 U	160 U	140 U	120 U	130 U
4-Chloroaniline	210 UJ	200 U	160 U	140 U	120 U	130 U
4-Chlorophenyl-phenylether	210 UJ	200 U	160 U	140 U	120 U	130 U
4-Nitroaniline	210 UJ	200 U	160 U	140 U	120 U	130 U
4-Nitrophenol	210 U	200 U	160 U	140 U	120 U	130 U
Acenaphthene	51 U	50 U	41 U	36 U	31 U	32 U
Acenaphthylene	51 U	50 U	41 U	36 U	31 U	32 U
Acetophenone	210 UJ	200 U	160 U	140 U	120 U	130 U
Anthracene	51 U	50 U	41 U	36 U	31 U	32 U
Atrazine	210 UJ	200 U	160 U	140 U	120 U	130 U
Benzaldehyde	210 UJ	200 U	160 UJ	140 U	120 U	130 U
Benzo(a)anthracene	20 J	50 U	41 U	36 U	31 U	32 U
Benzo(a)pyrene	51 U	50 U	41 U	36 U	31 U	32 U
Benzo(b)fluoranthene	51 U	50 U	41 U	36 U	31 U	32 U
Benzo(g,h,i)perylene	51 U	50 U	41 U	36 U	31 U	32 U
Benzo(k)fluoranthene	51 U	50 U	41 U	36 U	31 U	32 U
bis(2-Chloroethoxy)methane	210 UJ	200 U	160 U	140 U	120 U	130 U
bis(2-Chloroethyl)ether	210 UJ	200 U	160 U	140 U	120 U	130 U
bis(2-Chloroisopropyl)ether	210 UJ	200 U	160 U	140 U	120 U	130 U
bis(2-Ethylhexyl)phthalate	210 UJ	200 U	160 U	140 U	120 U	130 U
Butylbenzylphthalate	210 UJ	200 U	160 U	140 U	120 U	130 U
Caprolactam	410 UJ	400 U	330 U	290 U	250 U	250 U
Carbazole	210 UJ	200 U	160 U	140 U	120 U	130 U
Chrysene	51 U	50 U	41 U	36 U	31 U	32 U
Dibenz(a,h)anthracene	51 U	50 U	41 U	36 U	31 U	32 U
Dibenzofuran	210 UJ	200 U	160 UJ	140 U	120 U	130 U
Diethylphthalate	210 UJ	200 U	160 U	140 U	120 U	130 U
Dimethyl phthalate	210 UJ	200 U	160 U	140 U	120 U	130 U
Di-n-butylphthalate	210 UJ	200 U	160 UJ	140 U	120 U	130 U
Di-n-octylphthalate	210 UJ	200 U	160 U	140 U	120 U	130 U
Fluoranthene	51 U	50 U	41 U	36 U	31 U	32 U
Fluorene	51 U	50 U	41 U	36 U	31 U	32 U
Hexachlorobenzene	210 UJ	200 U	160 U	140 U	120 U	130 U
Hexachlorobutadiene	210 UJ	200 U	160 UJ	140 U	120 U	130 U
Hexachlorocyclopentadiene	210 UJ	200 U	160 U	140 U	120 U	130 U
Hexachloroethane	210 UJ	200 U	160 UJ	140 U	120 U	130 U
Indeno(1,2,3-cd)pyrene	51 U	50 U	41 U	36 U	31 U	32 U
Isophorone	210 UJ	200 U	160 U	140 U	120 U	130 U
Naphthalene	51 U	50 U	41 U	36 U	31 U	32 U
n-Nitroso-di-n-propylamine	210 UJ	200 U	160 U	140 U	120 U	130 U

Station ID	HICP-SW/SD01	HICP-SW/SD02	HICP-SW/SD03	HICP-SW/SD04	HICP-SW/SD05	
Sample ID	HICP-SD01-0-0_5-12B	HICP-SD02-0-0_5-12B	HICP-SD03-0-0_5-12B	HICP-SD04-0-0_5-12B	HICP-SD05-0-0_5-12B	HICP-SD05D-0-0_5-12B
Sample Date	05/01/12	05/01/12	05/02/12	05/02/12	05/02/12	05/02/12
Chemical Name						
n-Nitrosodiphenylamine	410 UJ	400 U	330 UJ	290 U	250 U	250 U
Nitrobenzene	210 UJ	200 U	160 U	140 U	120 U	130 U
Pentachlorophenol	620 UJ	600 UJ	490 UJ	430 UJ	370 UJ	380 UJ
Phenanthrene	51 U	50 U	41 U	36 U	31 U	32 U
Phenol	210 U	200 U	160 U	140 U	120 U	130 U
Pyrene	51 U	50 U	41 U	36 U	31 U	32 U
Pesticide/Polychlorinated Biphenyls (µg/kg)						
4,4'-DDD	2.1 UJ	2 U	1.6 UJ	1.4 UJ	3	6.7 J
4,4'-DDE	1.5 J	2 U	1.7 J	1.4 UJ	1.2 J	7.6 J
4,4'-DDT	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
Aldrin	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
alpha-BHC	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
alpha-Chlordane	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
Aroclor-1016	41 UJ	40 R	33 R	29 R	25 R	25 R
Aroclor-1221	41 UJ	40 U	33 UJ	29 UJ	25 UJ	25 U
Aroclor-1232	41 UJ	40 U	33 UJ	29 UJ	25 UJ	25 U
Aroclor-1242	41 UJ	40 U	33 UJ	29 UJ	25 UJ	25 U
Aroclor-1248	41 UJ	40 U	33 UJ	29 UJ	25 UJ	25 U
Aroclor-1254	41 UJ	40 U	33 UJ	29 UJ	25 UJ	25 U
Aroclor-1260	21 UJ	20 U	16 UJ	14 UJ	12 UJ	13 U
Azinphos methyl	210 UJ	200 U	33 U	140 U	120 U	130 U
beta-BHC	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
Bolstar	210 UJ	200 U	33 U	140 U	120 U	130 U
Chlorpyrifos	210 UJ	200 U	33 U	140 U	120 U	130 U
Coumaphos	210 UJ	200 U	33 U	140 U	120 U	130 U
delta-BHC	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
Demeton	210 UJ	200 U	33 U	140 U	120 U	130 U
Diazinon	210 UJ	200 U	33 U	140 U	120 U	130 U
Dichlorvos	210 UJ	200 U	33 U	140 U	120 U	130 U
Dieldrin	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
Dimethoate	210 UJ	200 U	33 U	140 U	120 U	130 U
Disulfoton	210 UJ	200 U	33 U	140 U	120 U	130 U
Endosulfan I	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
Endosulfan II	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
Endosulfan sulfate	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
Endrin	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
Endrin aldehyde	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
Endrin ketone	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
Ethoprop	210 UJ	200 U	33 U	140 U	120 U	130 U
Fensulfothion	210 UJ	200 U	33 U	140 U	120 U	130 U
Ethyl p-nitrophenyl phenylphosphorothioate	210 UJ	200 U	33 U	140 U	120 U	130 U
Fenthion	210 UJ	200 U	33 U	140 U	120 U	130 U
gamma-BHC (Lindane)	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
gamma-Chlordane	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
Heptachlor	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
Heptachlor epoxide	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
Malathion	210 UJ	200 U	33 U	140 U	120 U	130 U
Merphos	210 UJ	200 U	33 U	140 U	120 U	130 U
Methoxychlor	2.1 UJ	2 U	1.6 UJ	1.4 UJ	1.2 U	1.3 UJ
Methyl parathion	210 UJ	200 U	33 U	140 U	120 U	130 U
Mevinphos	210 UJ	200 U	33 U	140 U	120 U	130 U
Monocrotophos	210 R	200 R	33 R	140 R	120 R	130 R
Naled	340 UJ	330 U	54 R	240 U	210 U	210 U
Parathion	210 UJ	200 U	33 U	140 U	120 U	130 U
Phorate	210 UJ	200 U	33 U	140 U	120 U	130 U
Ronnel	210 UJ	200 U	33 U	140 U	120 U	130 U
Sulfotepp	210 UJ	200 U	33 U	140 U	120 U	130 U
Tetraethyl pyrophosphate (TEPP)	680 UJ	660 U	110 R	470 U	410 U	420 U
Tetrachlorvinphos	210 UJ	200 U	33 U	140 U	120 U	130 U
Tokuthion (Prothiophos)	210 UJ	200 U	33 U	140 U	120 U	130 U
Toxaphene	82 U	80 U	33 UJ	57 U	25 U	25 UJ
Total Metals (mg/kg)						
Aluminum	4,150 J	3,520 J	6,120 J	5,990 J	2,060 J	2,900 J
Antimony	1.87 UJ	2.01 UJ	1.64 UJ	1.63 UJ	1.25 UJ	1.56 UJ
Arsenic	1.35 J	1.02 J	1.37 J	0.703 J	1.25 U	1.56 U
Barium	37.3	25.2	30.1	24.3	10	15.7
Beryllium	0.204	0.273	0.176	0.145	0.0571 J	0.0618 J
Cadmium	0.0797 J	0.0707 J	0.0313 J	0.0813 U	0.0624 U	0.0779 U
Calcium	771	1,040 J	850 J	546	210	352
Chromium (hexavalent)	0.24 J	0.4 U	1.6 U	0.29 U	0.25 U	0.25 U
Chromium	4.59	3.46	4.61	6.32	2.78	3.59
Cobalt	0.57 J	0.649 J	0.363 J	0.425 J	0.312 U	0.39 U
Copper	4.02	5.52	1.32	1.54	0.474 J	0.585 J
Iron	2,630 J	2,020 J	2,730 J	2,560 J	928 J	1,090 J
Lead	11.8	8.89	11.1	7	3.11	4.4
Magnesium	169	108	183	227	79.8	101
Manganese	7.45	4.35	9.43	5.76	2.21	2.49
Mercury	0.0327	0.0345	0.0319	0.0187 J	0.00647 U	0.00654 U
Nickel	1.5 U	1.83 U	1.33 U	1.14 U	0.45 U	0.599 U
Potassium	124	76.7	109	186	66.1	75.7
Selenium	0.812 J	0.713 J	0.672 J	0.579 J	1.25 U	1.56 U
Silver	0.467 U	0.503 U	0.41 U	0.407 U	0.312 U	0.39 U
Sodium	29.6 U	25.2 U	21.4 U	20.3 U	15.6 U	19.5 U
Thallium	1.87 U	2.01 U	1.64 U	1.63 U	1.25 U	1.56 U
Vanadium	8.62	5.4	8.23	8.18	3.78	4.7
Zinc	12	15.2	8.32	7.5	2.29	3.38
Wet Chemistry						
Total organic carbon (TOC) (mg/kg)	28,000	45,000	26,000	9,100	1,200	2,000

\\Tarheel\Proj\EBL\Navy Clean\OU 4 (Sites 41 and 74)\2012 Henderson Pond Mod 2\Report\Draft Report\Appendices\Appendix B_Analytical Data\[CTO-WE14_HICP_SD_Val_RDE_tbl_r1.xls], thorn1, 06/11/2012

Notes:

Shading indicates detections

J - Analyte present, value may or may not be accurate or precise

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

mg/kg - Milligrams per kilogram

µg/kg - Micrograms per kilogram

CTO-WE14
MCIEAST - MCB CAMLEJ
Hickory Pond Validated Surface Water Raw Analytical Results

Station ID	HICP-SW/SD01	HICP-SW/SD02	HICP-SW/SD03		HICP-SW/SD04	HICP-SW/SD05
Sample ID	HICP-SW01-0-1-12B	HICP-SW02-0-1-12B	HICP-SW03-0-1-12B	HICP-SW03D-0-1-12B	HICP-SW04-0-1-12B	HICP-SW05-0-1-12B
Sample Date	05/01/12	05/01/12	05/01/12	05/01/12	05/01/12	05/01/12
Chemical Name						
Volatile Organic Compounds (µg/l)						
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	12 R	12 R	12 R	12 R	12 R	12 R
2-Hexanone	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
4-Methyl-2-pentanone	2.5 R	2.5 R	2.5 R	2.5 R	2.5 R	2.5 R
Acetone	14 J	17 J	19 J	17 J	16 J	16 J
Benzene	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	5 U	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Cyclohexane	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane (Freon-12)	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	1 U	1 U	1 U	1 U	1 U	1 U
m- and p-Xylene	2 U	2 U	2 U	2 U	2 U	2 U
Methyl acetate	1 U	1 U	1 U	1 U	1 U	1 U
Methylcyclohexane	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	5 U	5 U	5 U	5 U	5 U	5 U
Methyl-tert-butyl ether (MTBE)	1 U	1 U	1 U	1 U	1 U	1 U
o-Xylene	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane (Freon-11)	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	1 U	1 U	1 U	1 U	1 U	1 U
Semivolatile Organic Compounds (µg/l)						
1,1-Biphenyl	9 UJ	9 UJ	9 U	9 UJ	9 UJ	9 R
2,4,5-Trichlorophenol	6 U	6 U	6 U	6 U	6 U	6 R
2,4,6-Trichlorophenol	6 U	6 U	6 U	6 U	6 U	6 R
2,4-Dichlorophenol	6 U	6 U	6 U	6 U	6 UJ	6 R
2,4-Dimethylphenol	6 U	6 U	6 U	6 U	6 U	6 R
2,4-Dinitrophenol	6 U	6 U	6 U	6 U	6 U	6 R
2,4-Dinitrotoluene	6 UJ	6 UJ	6 U	6 UJ	6 UJ	6 R
2,6-Dinitrotoluene	3 UJ	3 UJ	3 U	3 UJ	3 UJ	3 R
2-Chloronaphthalene	3 UJ	3 UJ	3 U	3 UJ	3 UJ	3 R
2-Chlorophenol	6 U	6 U	6 U	6 U	6 U	6 R
2-Methylnaphthalene	0.08 U	0.08 U	0.08 U	0.08 U	0.08 UJ	0.08 U
2-Methylphenol	3 U	3 U	3 U	3 U	3 UJ	3 R
2-Nitroaniline	3 UJ	3 UJ	3 U	3 UJ	3 UJ	3 R
2-Nitrophenol	6 U	6 U	6 U	6 U	6 U	6 R
3- and 4-Methylphenol	6 U	6 U	6 U	6 U	6 U	6 R
3,3'-Dichlorobenzidine	6 UJ	6 UJ	6 U	6 UJ	6 UJ	6 R
3-Nitroaniline	3 UJ	3 UJ	3 U	3 UJ	3 UJ	3 R
4,6-Dinitro-2-methylphenol	6 U	6 U	6 U	6 U	6 U	6 R
4-Bromophenyl-phenylether	6 UJ	6 UJ	6 U	6 UJ	6 UJ	6 R
4-Chloro-3-methylphenol	6 U	6 U	6 U	6 U	6 U	6 R
4-Chloroaniline	6 UJ	6 UJ	6 U	6 UJ	6 UJ	6 R
4-Chlorophenyl-phenylether	6 UJ	6 UJ	6 U	6 UJ	6 UJ	6 R
4-Nitroaniline	3 UJ	3 UJ	3 U	3 UJ	3 UJ	3 R
4-Nitrophenol	3 U	3 U	3 U	3 U	3 U	3 R
Acenaphthene	0.08 U	0.08 U	0.08 U	0.08 U	0.08 UJ	0.08 U
Acenaphthylene	0.08 U	0.08 U	0.08 U	0.08 U	0.08 UJ	0.08 U
Acetophenone	3 UJ	3 UJ	3 U	3 UJ	3 UJ	3 R
Anthracene	0.08 U	0.08 U	0.08 U	0.08 U	0.08 UJ	0.08 U
Atrazine	3 UJ	3 UJ	3 U	3 UJ	3 UJ	3 R
Benzaldehyde	6 UJ	6 UJ	6 U	6 UJ	6 UJ	6 R
Benzo(a)anthracene	0.08 U	0.08 U	0.08 U	0.08 U	0.08 UJ	0.08 U
Benzo(a)pyrene	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
Benzo(b)fluoranthene	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
Benzo(g,h,i)perylene	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
Benzo(k)fluoranthene	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
bis(2-Chloroethoxy)methane	6 UJ	6 UJ	6 U	6 UJ	6 UJ	6 R
bis(2-Chloroethyl)ether	6 UJ	6 UJ	6 U	6 UJ	6 UJ	6 R
bis(2-Chloroisopropyl)ether	6 UJ	6 UJ	6 U	6 UJ	6 UJ	6 R
bis(2-Ethylhexyl)phthalate	6 UJ	6 UJ	6 U	6 UJ	6 UJ	6 R
Butylbenzylphthalate	3 UJ	3 UJ	3 U	3 UJ	3 UJ	3 R
Caprolactam	3 UJ	3 UJ	3 U	3 UJ	3 UJ	3 R
Carbazole	3 UJ	3 UJ	3 U	3 UJ	3 UJ	3 R
Chrysene	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
Dibenz(a,h)anthracene	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
Dibenzofuran	3 UJ	3 UJ	3 U	3 UJ	3 UJ	3 R
Diethylphthalate	3 UJ	3 UJ	3 U	3 UJ	3 UJ	3 R
Dimethyl phthalate	3 UJ	3 UJ	3 U	3 UJ	3 UJ	3 R
Di-n-butylphthalate	3 UJ	3 UJ	3 U	3 UJ	3 UJ	3 R
Di-n-octylphthalate	6 UJ	6 UJ	6 U	6 UJ	6 UJ	3.5 J
Fluoranthene	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
Fluorene	0.08 U	0.08 U	0.08 U	0.08 U	0.08 UJ	0.08 U
Hexachlorobenzene	3 UJ	3 UJ	3 U	3 UJ	3 UJ	3 R
Hexachlorobutadiene	6 UJ	6 UJ	6 U	6 UJ	6 UJ	6 R
Hexachlorocyclopentadiene	6 UJ	6 UJ	6 U	6 UJ	6 UJ	6 R
Hexachloroethane	3 UJ	3 UJ	3 U	3 UJ	3 UJ	3 R
Indeno(1,2,3-cd)pyrene	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
Isophorone	3 UJ	3 UJ	3 U	3 UJ	3 UJ	3 R

CTO-WE14
MCIEAST - MCB CAMLEJ
Hickory Pond Validated Surface Water Raw Analytical Results

Station ID	HICP-SW/SD01	HICP-SW/SD02	HICP-SW/SD03		HICP-SW/SD04	HICP-SW/SD05
Sample ID	HICP-SW01-0-1-12B	HICP-SW02-0-1-12B	HICP-SW03-0-1-12B	HICP-SW03D-0-1-12B	HICP-SW04-0-1-12B	HICP-SW05-0-1-12B
Sample Date	05/01/12	05/01/12	05/01/12	05/01/12	05/01/12	05/01/12
Chemical Name						
Naphthalene	0.08 U	0.08 U	0.08 U	0.08 U	0.08 UJ	0.08 U
n-Nitroso-di-n-propylamine	6 UJ	6 UJ	6 U	6 UJ	6 UJ	6 R
n-Nitrosodiphenylamine	6 UJ	6 UJ	6 U	6 UJ	6 UJ	6 R
Nitrobenzene	6 UJ	6 UJ	6 U	6 UJ	6 UJ	6 R
Pentachlorophenol	9 UJ	9 UJ	9 UJ	9 UJ	9 UJ	9 R
Phenanthrene	0.08 U	0.08 U	0.08 U	0.08 U	0.08 UJ	0.08 U
Phenol	3 U	3 U	3 U	3 U	3 U	3 R
Pyrene	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
Pesticide/Polychlorinated Biphenyls (µg/l)						
4,4'-DDD	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4,4'-DDE	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
4,4'-DDT	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Aldrin	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
alpha-BHC	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
alpha-Chlordane	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Aroclor-1016	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor-1221	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor-1232	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor-1242	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor-1248	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor-1254	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor-1260	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Azinphos methyl	3 U	3 U	3 U	3 U	3 U	3 U
beta-BHC	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Bolstar	3 U	3 U	3 U	3 U	3 U	3 U
Chlorpyrifos	3 U	3 U	3 U	3 U	3 U	3 U
Coumaphos	3 UJ	3 UJ	3 UJ	3 UJ	3 UJ	3 UJ
delta-BHC	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Demeton	3 U	3 U	3 U	3 U	3 UJ	3 U
Diazinon	3 U	3 U	3 U	3 U	3 U	3 U
Dichlorvos	3 U	3 U	3 U	3 U	3 U	3 U
Dieldrin	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dimethoate	3 U	3 U	3 U	3 U	3 U	3 U
Disulfoton	3 U	3 U	3 U	3 U	3 U	3 U
Endosulfan I	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan II	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan sulfate	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endrin	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endrin aldehyde	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endrin ketone	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ
Ethoprop	3 U	3 U	3 U	3 U	3 U	3 U
Fensulfothion	3 UJ	3 UJ	3 UJ	3 UJ	3 UJ	3 UJ
Ethyl p-nitrophenyl phenylphosphorothioate	3 UJ	3 UJ	3 UJ	3 UJ	3 UJ	3 UJ
Fenthion	3 U	3 U	3 U	3 U	3 U	3 U
gamma-BHC (Lindane)	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-Chlordane	0.05 U	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U
Heptachlor	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor epoxide	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Malathion	3 U	3 U	3 U	3 U	3 U	3 U
Merphos	3 U	3 U	3 U	3 U	3 U	3 U
Methoxychlor	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Methyl parathion	3 U	3 U	3 U	3 U	3 U	3 U
Mevinphos	3 U	3 U	3 U	3 U	3 U	3 U
Monocrotophos	3 R	3 R	3 R	3 R	3 R	3 R
Naled	9.5 U	9.5 U	9.5 U	9.5 U	9.5 R	9.5 U
Parathion	3 U	3 U	3 U	3 U	3 U	3 U
Phorate	3 U	3 U	3 U	3 U	3 U	3 U
Ronnel	3 U	3 U	3 U	3 U	3 U	3 U
Sulfotepp	3 U	3 U	3 U	3 U	3 UJ	3 U
Tetraethyl pyrophosphate (TEPP)	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U
Tetrachlorovinphos	3 U	3 U	3 U	3 U	3 U	3 U
Tokuthion (Prothiophos)	3 U	3 U	3 U	3 U	3 U	3 U
Toxaphene	0.64 UJ	0.64 UJ	0.64 UJ	0.64 UJ	0.64 UJ	0.64 UJ
Total Metals (µg/l)						
Aluminum	282 J	244 J	466	623	260 J	251 J
Antimony	20 U	20 U	20 U	20 U	20 U	20 U
Arsenic	20 U	20 U	20 U	20 U	20 U	20 U
Barium	29.8	30.4	31.8	31.4	29.9	29.4
Beryllium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cadmium	1 U	1 U	1 U	1 U	1 U	1 U
Calcium	6,630	6,770	6,650	6,420	6,670	6,690
Chromium (hexavalent)	15 U	15 U	15 U	15 U	15 U	15 U
Chromium	0.267 J	5 U	0.353 J	0.444 J	5 U	5 U
Cobalt	5 U	5 U	5 U	5 U	5 U	5 U
Copper	1.88 J	5 U	1.56 J	5 U	5 U	5 U
Iron	565	515	639	662	447	466
Lead	20 U	20 U	20 U	20 U	20 U	20 U
Magnesium	1,620	1,600	1,610	1,570	1,630	1,600
Manganese	13.9 J	13.1 J	12.9 J	12.3 J	11.9 J	11.9 J
Mercury	0.069 U	0.069 U	0.111 J	0.069 U	0.069 U	0.069 U
Nickel	5 U	5 U	5 U	5 U	5 U	5 U
Potassium	877	863	862	793	840	830
Selenium	20 U	20 U	20 U	20 U	20 U	20 U
Silver	5 U	5 U	5 U	5 U	5 U	5 U
Sodium	6,660	6,760	6,790	6,490	6,830	6,680
Thallium	20 U	20 U	20 U	20 U	20 U	20 U
Vanadium	1.6 J	0.983 J	1.8 J	1.91 J	1.04 J	1.43 J
Zinc	10 U	10 U	10 U	10 U	10 U	10 U
Dissolved Metals (µg/l)						
Aluminum, Dissolved	56.2 J	42 J	102 J	79.4 J	69.3 J	97.6 J
Antimony, Dissolved	20 U	20 U	20 U	20 U	20 U	20 U
Arsenic, Dissolved	4.47 J	20 U	5.39 J	5.74 J	5.4 J	4.97 J
Barium, Dissolved	27.5	26.3 U	25.9 U	25.3 U	25.2 U	25.7 U
Beryllium, Dissolved	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cadmium, Dissolved	1 U	1 U	1 U	1 U	1 U	1 U
Calcium, Dissolved	6,570	6,060	6,270	6,180	6,210	5,950
Chromium, Dissolved	5 U	5 U	5 U	5 U	5 U	5 U
Cobalt, Dissolved	5 U	0.386 J	5 U	5 U	5 U	5 U
Copper, Dissolved	5 U	5 U	5 U	5 U	5 U	5 U
Iron, Dissolved	132	125	92.2 J	54 J	72.9	118
Lead, Dissolved	20 U	20 U	20 U	20 U	20 U	20 U
Magnesium, Dissolved	1,580	1,470	1,540	1,530	1,520	1,430
Manganese, Dissolved	10 U	10 U	10 U	10 U	10 U	10 U
Mercury, Dissolved	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U
Nickel, Dissolved	5 U	5 U	5 U	5 U	5 U	5 U
Potassium, Dissolved	755	695	654	658	689	682
Selenium, Dissolved	20 U	20 U	20 U	20 U	20 U	20 U

CTO-WE14
MCIEAST - MCB CAMLEJ
Hickory Pond Validated Surface Water Raw Analytical Results

Station ID	HICP-SW/SD01	HICP-SW/SD02	HICP-SW/SD03		HICP-SW/SD04	HICP-SW/SD05
Sample ID	HICP-SW01-0-1-12B	HICP-SW02-0-1-12B	HICP-SW03-0-1-12B	HICP-SW03D-0-1-12B	HICP-SW04-0-1-12B	HICP-SW05-0-1-12B
Sample Date	05/01/12	05/01/12	05/01/12	05/01/12	05/01/12	05/01/12
Chemical Name						
Silver, Dissolved	5 U	5 U	5 U	5 U	5 U	5 U
Sodium, Dissolved	6,930	6,520	6,720	6,690	6,700	6,750
Thallium, Dissolved	20 U	20 U	20 U	20 U	20 U	20 U
Vanadium, Dissolved	0.704 J	0.666 J	5 U	0.933 J	0.591 J	0.582 J
Zinc, Dissolved	10 U	10 U	10 U	10 U	10 U	10 U

\\Tarheel\Proj\EBL\Navy Clean\OU 4 (Sites 41 and 74)\2012 Henderson Pond Mod 2\Report\Draft Report\Appendices\Appendix B_Analytical Data\[CTO-WE14_HICP_SW_Val_RDE_tbl_r2.xls], thorn1, 06/11/2012

Notes:

Shading indicates detections

J - Analyte present, value may or may not be accurate or precise

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

µg/l - Micrograms per liter

Station ID	HICP-TI01					
Sample ID	HICP-FS-B01-F-12B	HICP-FS-B01-O-12B	HICP-FS-CP01-F-12B	HICP-FS-CP01-O-12B	HICP-FS-S01-F-12B	HICP-FS-S01-O-12B
Sample Date	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12
Chemical Name						
Semivolatile Organic Compounds (µg/kg)						
1,1-Biphenyl	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
2,2'-Oxybis(1-chloropropane)	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
2,4,5-Trichlorophenol	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
2,4,6-Trichlorophenol	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
2,4-Dichlorophenol	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
2,4-Dimethylphenol	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
2,4-Dinitrophenol	6,000 R	5,900 R	3,000 R	3,000 R	6,000 R	3,000 R
2,4-Dinitrotoluene	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
2,6-Dinitrotoluene	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
2-Chloronaphthalene	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
2-Chlorophenol	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
2-Methylnaphthalene	25 U	25 U	120 U	120 U	25 U	120 U
2-Methylphenol	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
2-Nitroaniline	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
2-Nitrophenol	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
3- and 4-Methylphenol	4,000 U	3,900 U	2,000 U	2,000 U	4,000 U	2,000 U
3,3'-Dichlorobenzidine	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
3-Nitroaniline	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
4,6-Dinitro-2-methylphenol	6,000 UJ	5,900 UJ	3,000 UJ	3,000 UJ	6,000 UJ	3,000 UJ
4-Bromophenyl-phenylether	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
4-Chloro-3-methylphenol	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
4-Chloroaniline	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
4-Chlorophenyl-phenylether	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
4-Nitroaniline	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
4-Nitrophenol	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Acenaphthene	25 U	25 U	120 U	120 U	25 U	120 U
Acenaphthylene	25 U	25 U	120 U	120 U	25 U	120 U
Acetophenone	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Anthracene	25 U	25 U	120 U	120 U	25 U	120 U
Atrazine	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Benzaldehyde	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Benzo(a)anthracene	25 U	25 U	120 U	120 U	25 U	120 U
Benzo(a)pyrene	25 U	25 U	120 U	120 U	25 U	120 U
Benzo(b)fluoranthene	25 U	25 U	120 U	120 U	25 U	120 U
Benzo(g,h,i)perylene	25 U	25 U	120 U	120 U	25 U	120 U
Benzo(k)fluoranthene	25 U	25 U	120 U	120 U	25 U	120 U
bis(2-Chloroethoxy)methane	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
bis(2-Chloroethyl)ether	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
bis(2-Ethylhexyl)phthalate	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Butylbenzylphthalate	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Caprolactam	4,000 U	3,900 U	2,000 U	2,000 U	4,000 U	2,000 U
Carbazole	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Chrysene	25 U	25 U	120 U	120 U	25 U	120 U
Dibenz(a,h)anthracene	25 U	25 U	120 U	120 U	25 U	120 U
Dibenzofuran	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Diethylphthalate	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Dimethoate	200 U	200 U	100 U	100 U	200 U	100 U
Dimethyl phthalate	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Di-n-butylphthalate	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Di-n-octylphthalate	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Fluoranthene	25 U	25 U	120 U	120 U	25 U	120 U
Fluorene	25 U	25 U	120 U	120 U	25 U	120 U
Hexachlorobenzene	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Hexachlorobutadiene	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Hexachlorocyclopentadiene	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Hexachloroethane	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Indeno(1,2,3-cd)pyrene	25 U	25 U	120 U	120 U	25 U	120 U
Isophorone	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Naphthalene	25 U	25 U	120 U	120 U	25 U	120 U
n-Nitroso-di-n-propylamine	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
n-Nitrosodiphenylamine	4,000 U	3,900 U	2,000 U	2,000 U	4,000 U	2,000 U
Nitrobenzene	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Pentachlorophenol	6,000 UJ	5,900 UJ	3,000 UJ	3,000 UJ	6,000 UJ	3,000 UJ
Phenanthrene	25 U	25 U	120 U	120 U	25 U	120 U
Phenol	2,000 U	2,000 U	1,000 U	1,000 U	2,000 U	1,000 U
Phorate	200 U	200 U	100 U	100 U	200 U	100 U
Pyrene	25 U	25 U	120 U	120 U	25 U	120 U
Pesticide/Polychlorinated Biphenyls (µg/kg)						
4,4'-DDD	11 U	10 U	5 U	5 U	9.9 U	5 U
4,4'-DDE	11 U	19 J	4.5 J	50 J	9.9 U	52 J
4,4'-DDT	11 U	10 U	5 U	5 U	9.9 U	5 U
Aldrin	11 U	10 U	5 U	5 U	9.9 U	5 U
alpha-BHC	11 U	10 U	5 U	5 U	9.9 U	5 U
alpha-Chlordane	11 U	10 U	5 U	5 U	9.9 U	5 U
Azinphos methyl	200 U	200 U	100 U	100 U	200 U	100 U
beta-BHC	11 U	10 U	5 U	5 U	9.9 U	5 U
Bolstar	200 U	200 U	100 U	100 U	200 U	100 U
Chlorpyrifos	200 U	200 U	100 U	100 U	200 U	100 U
Coumaphos	200 U	200 U	100 U	100 U	200 U	100 U
delta-BHC	11 U	10 U	5 U	5 U	9.9 U	5 U
Demeton	200 U	200 U	100 U	100 U	200 U	100 U
Diazinon	200 U	200 U	100 U	100 U	200 U	100 U
Dichlorvos	200 U	200 U	100 U	100 U	200 U	100 U
Dieldrin	11 U	10 U	5 U	5 U	9.9 U	5 U
Disulfoton	200 U	200 U	100 U	100 U	200 U	100 U
Endosulfan I	11 U	10 U	5 U	5 U	9.9 U	5 U
Endosulfan II	11 U	10 U	5 U	5 U	9.9 U	5 U
Endosulfan sulfate	11 U	10 U	5 U	5 U	9.9 U	5 U
Endrin	11 U	10 U	5 U	5 U	9.9 U	5 U
Endrin aldehyde	11 U	10 U	5 U	5 U	9.9 U	5 U
Endrin ketone	11 U	10 U	5 U	5 U	9.9 U	5 U
Ethoprop	200 U	200 U	100 U	100 U	200 U	100 U
Fensulfothion	200 U	200 U	100 U	100 U	200 U	100 U
Ethyl p-nitrophenyl phenylphosphorothioate	200 UJ	200 UJ	100 UJ	100 UJ	200 UJ	100 UJ
Fenthion	200 U	200 U	100 U	100 U	200 U	100 U
gamma-BHC (Lindane)	11 U	10 U	5 U	5 U	9.9 U	5 U
gamma-Chlordane	11 U	10 U	5 U	5 U	9.9 U	5 U
Heptachlor	11 U	10 U	5 U	5 U	9.9 U	5 U
Heptachlor epoxide	11 U	10 U	5 U	5 U	9.9 U	5 U
Malathion	200 U	200 U	100 U	100 U	200 U	100 U
Merphos	200 U	200 U	100 U	100 U	200 U	100 U
Methoxychlor	11 UJ	10 UJ	5 UJ	5 UJ	9.9 UJ	5 UJ
Methyl parathion	200 U	200 U	100 U	100 U	200 U	100 U
Mevinphos	200 U	200 U	100 U	100 U	200 U	100 U
Monocrotophos	200 R	200 R	100 R	100 R	200 R	100 R
Naled	330 U	330 U	160 U	160 U	330 U	160 U
Parathion	200 U	200 U	100 U	100 U	200 U	100 U
Polychlorinated biphenyls (PCBs)	0.785	7.73	0.6	22.4	3.36	105
Ronnel	200 U	200 U	100 U	100 U	200 U	100 U

Station ID	HICP-TI01					
Sample ID	HICP-FS-B01-F-12B	HICP-FS-B01-O-12B	HICP-FS-CP01-F-12B	HICP-FS-CP01-O-12B	HICP-FS-S01-F-12B	HICP-FS-S01-O-12B
Sample Date	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12
Chemical Name						
Sulfotepp	200 U	200 U	100 U	100 U	200 U	100 U
Tetraethyl pyrophosphate (TEPP)	660 U	660 U	330 U	330 U	660 U	330 U
Tetrachlorovinphos	200 U	200 U	100 U	100 U	200 U	100 U
Tokuthion (Prothiophos)	200 U	200 U	100 U	100 U	200 U	100 U
Toxaphene	210 UJ	200 UJ	100 UJ	100 UJ	200 UJ	100 UJ
Polychlorinated Biphenyl Congeners (pg/g)						
2-Chlorobiphenyl (1)	3.17 U	3.31 U	3.3 U	3.33 U	3.29 U	15.3 U
3-Chlorobiphenyl (2)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
4-Chlorobiphenyl (3)	1.27 U	1.32 U	1.32 U	1.01 J	1.31 U	6.11 U
2,2'-Dichlorobiphenyl (4)	2.53 U	2.64 U	2.63 U	2.65 U	2.62 U	12.2 U
2,3-Dichlorobiphenyl (5)	2.53 U	2.64 U	2.63 U	2.65 U	2.62 U	12.2 U
2,3'-Dichlorobiphenyl (6)	1.27 U	0.864 J	1.32 U	1 J	1.31 U	6.11 U
2,4-Dichlorobiphenyl (7)	2.53 U	2.64 U	2.63 U	2.65 U	2.62 U	12.2 U
2,4'-Dichlorobiphenyl (8)	6.74 J	6.65 J	13.2 U	13.3 U	13.1 U	61.1 U
2,5-Dichlorobiphenyl (9)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,6-Dichlorobiphenyl (10)	2.53 U	2.64 U	2.63 U	2.65 U	2.62 U	12.2 U
3,3'-Dichlorobiphenyl (11)	16.1 J	33.1 U	33 U	24.1 J	32.9 U	153 U
3,5-Dichlorobiphenyl (14)	2.53 U	2.64 U	2.63 U	2.65 U	2.62 U	12.2 U
4,4'-Dichlorobiphenyl (15)	12.7 U	13.2 U	13.2 U	13.3 U	13.1 U	61.1 U
2,2',3-Trichlorobiphenyl (16)	2.53 U	2.64 U	2.63 U	1.82 J	2.62 U	12.2 U
2,2',4-Trichlorobiphenyl (17)	1.51 J	1.48 J	2.63 U	2.37 J	2.62 U	12.2 U
2,2',6-Trichlorobiphenyl (19)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,3,4'-Trichlorobiphenyl (22)	2.53 U	2.64 U	2.63 U	12.2	2.62 U	12.2 U
2,3,5-Trichlorobiphenyl (23)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,3,6-Trichlorobiphenyl (24)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,3',4-Trichlorobiphenyl (25)	1.27 U	1.32 U	1.32 U	1.84 J	1.31 U	6.11 U
2,3',6-Trichlorobiphenyl (27)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,4',5-Trichlorobiphenyl (31)	3.43 J	3.64 J	6.58 U	32.4	3.3 J	30.5 U
2,4',6-Trichlorobiphenyl (32)	1.27 U	0.67 J	1.32 U	1.15 J	1.31 U	6.11 U
2,3',5'-Trichlorobiphenyl (34)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
3,3',4-Trichlorobiphenyl (35)	2.53 U	2.64 U	2.63 U	2.65 U	2.62 U	12.2 U
3,3',5-Trichlorobiphenyl (36)	2.53 U	2.64 U	2.63 U	2.65 U	2.62 U	12.2 U
3,4,4'-Trichlorobiphenyl (37)	12.7 U	13.2 U	13.2 U	8.27 J	13.1 U	61.1 U
3,4,5-Trichlorobiphenyl (38)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
3,4',5-Trichlorobiphenyl (39)	2.53 U	2.64 U	2.63 U	2.65 U	2.62 U	12.2 U
2,2',3,4-Tetrachlorobiphenyl (41)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,2',3,4'-Tetrachlorobiphenyl (42)	1.27 U	1.32 U	1.32 U	7.58	1.31 U	6.11 U
2,2',3,5-Tetrachlorobiphenyl (43)	2.53 U	2.64 U	2.63 U	2.65 U	2.62 U	12.2 U
2,2',3,6'-Tetrachlorobiphenyl (46)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,2',4,5-Tetrachlorobiphenyl (48)	1.27 U	1.32 U	1.32 U	3.53	1.31 U	6.11 U
2,2',5,5'-Tetrachlorobiphenyl (52)	2.79 U	6.22 U	3.19 U	68.1	3.13 U	39.1
2,2',6,6'-Tetrachlorobiphenyl (54)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,3,3',4-Tetrachlorobiphenyl (55)	1.27 U	1.32 U	1.32 U	1.88 J	1.31 U	6.11 U
2,3,3',4'-Tetrachlorobiphenyl (56)	1.3 J	2.31 J	1.79 J	21.1	1.5 J	10 J
2,3,3',5-Tetrachlorobiphenyl (57)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,3,3',5'-Tetrachlorobiphenyl (58)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,3,4,4'-Tetrachlorobiphenyl (60)	2.53 U	1.75 J	2.63 U	13.1	2.62 U	12.2 U
2,3,4',5-Tetrachlorobiphenyl (63)	3.17 U	3.31 U	3.3 U	3.14 J	3.29 U	15.3 U
2,3,4',6-Tetrachlorobiphenyl (64)	0.776 J	1.35 J	0.877 J	19.3	1.31 U	3.56 J
2,3',4,4'-Tetrachlorobiphenyl (66)	3.17 U	9.17 U	3.56 U	66.2	3.56 U	49.2
2,3',4,5-Tetrachlorobiphenyl (67)	1.27 U	1.32 U	1.32 U	2.44	1.31 U	6.11 U
2,3',4,5'-Tetrachlorobiphenyl (68)	1.27 U	1.32 U	1.32 U	2.79	1.31 U	4.95 J
2,3',5,5'-Tetrachlorobiphenyl (72)	2.53 U	2.64 U	2.63 U	2.88 J	2.62 U	6.29 J
2,3',5',6-Tetrachlorobiphenyl (73)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
3,3',4,4'-Tetrachlorobiphenyl (77)	1.27 U	0.975 J	0.67 J	11.5	1.31 U	5.85 J
3,3',4,5-Tetrachlorobiphenyl (78)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
3,3',4,5'-Tetrachlorobiphenyl (79)	2.53 U	2.64 U	2.63 U	5.99	2.62 U	12.2 U
3,3',5,5'-Tetrachlorobiphenyl (80)	2.53 U	2.64 U	2.63 U	2.65 U	2.62 U	12.2 U
3,4,4',5-Tetrachlorobiphenyl (81)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,2',3,3',4-Pentachlorobiphenyl (82)	3.17 U	1.22 J	3.3 U	11.9	3.29 U	6 J
2,2',3,3',5-Pentachlorobiphenyl (83)	1.27 U	1 J	1.32 U	7.59	1.31 U	12.6
2,2',3,3',6-Pentachlorobiphenyl (84)	0.681 J	1.28 J	1.01 J	21.5	1.31 U	8.92 J
2,2',3,4,6'-Pentachlorobiphenyl (89)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,2',3,5,5'-Pentachlorobiphenyl (92)	2.12	13.8	2.01	53.7	11	361
2,2',3,5,6'-Pentachlorobiphenyl (94)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,2',3,5',6-Pentachlorobiphenyl (95)	2.85 U	8.15 U	3.91 U	87.5	6.36 U	150
2,2',3,6,6'-Pentachlorobiphenyl (96)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,2',4,4',5-Pentachlorobiphenyl (99)	4.8	43.1	5.21	208	24.3	816
2,2',4,5',6-Pentachlorobiphenyl (103)	3.17 U	3.31 U	3.3 U	2.19 J	1.01 J	33
2,2',4,6,6'-Pentachlorobiphenyl (104)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,3,3',4,4'-Pentachlorobiphenyl (105)	2.52	18	2.71	90.2	3.87	83.2
2,3,3',4,5-Pentachlorobiphenyl (106)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,3,3',4',5-Pentachlorobiphenyl (107)	1.6 J	13.3	1.51 J	57.3	5.91	166
2,3,3',5,5'-Pentachlorobiphenyl (111)	1.27 U	1.06 J	1.32 U	3.31	1.31 U	13.1
2,3,3',5,6-Pentachlorobiphenyl (112)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,3,4,4',5-Pentachlorobiphenyl (114)	1.27 U	1.35 J	1.32 U	3.82	1.31 U	6.11 U
2,3',4,4',5-Pentachlorobiphenyl (118)	8.3	73.5	9.24	294	14.6	437
2,3',4,5,5'-Pentachlorobiphenyl (120)	1.27 U	3.2	1.32 U	10.3	1.89 J	56.7
2,3',4,5',6-Pentachlorobiphenyl (121)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,3,3',4',5'-Pentachlorobiphenyl (122)	1.27 U	1.32 U	1.32 U	2.16	1.31 U	6.11 U
2,3',4,4',5'-Pentachlorobiphenyl (123)	1.27 U	1.86 J	1.32 U	7.16	1.31 U	19
3,3',4,4',5-Pentachlorobiphenyl (126)	1.27 U	1.56 J	1.32 U	3.71	1.31 U	9.06 J
3,3',4,5,5'-Pentachlorobiphenyl (127)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	2.54	26.2	3.17	122	22.1	672
2,2',3,3',4,6-Hexachlorobiphenyl (131)	1.27 U	1.32 U	1.32 U	4.61	1.31 U	9.42
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	3.43 U	18.9	7.16 U	212	22.6	622
2,2',3,3',5,5'-Hexachlorobiphenyl (133)	1.68 J	15.7	1.63 J	50.5	9.67	293
2,2',3,3',5,6-Hexachlorobiphenyl (134)	1.27 U	2.29	1.32 U	25	2.93	81
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	1.27 U	2.51	1.39 J	37.5	5.94	182
2,2',3,4,4',5-Hexachlorobiphenyl (137)	0.873 J	9.59	1.06 J	25.2	2.04	47.7
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	10.7	89.2	10.2	354	58	1,680
2,2',3,4,5,6-Hexachlorobiphenyl (142)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,2',3,4,5,6'-Hexachlorobiphenyl (143)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,2',3,4,5',6-Hexachlorobiphenyl (144)	1.1 J	8.02	1.24 J	37.7	6.12	197
2,2',3,4,6,6'-Hexachlorobiphenyl (145)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	22.2	245	17.4	677	131	4,210
2,2',3,4',5,6'-Hexachlorobiphenyl (148)	1.27 U	0.894 J	1.32 U	2.57	1.31 U	24.2
2,2',3,4',6,6'-Hexachlorobiphenyl (150)	1.27 U	1.32 U	1.32 U	1.32 J	1.31 U	8.12 J
2,2',3,5,6,6'-Hexachlorobiphenyl (152)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,2',4,4',5,6'-Hexachlorobiphenyl (154)	1.23 J	10.8	1.32 U	28.6	9.24	309
2,2',4,4',6,6'-Hexachlorobiphenyl (155)	1.27 U	1.32 U	1.32 U	0.717 J	1.31 U	6.11 U
2,3,3',4,4',6-Hexachlorobiphenyl (158)	4.96	46.5	4.65	151	22.1	662
2,3,3',4,5,5'-Hexachlorobiphenyl (159)	1.27 U	1.88 J	1.32 U	20.4	3.08	96.9
2,3,3',4,5,6-Hexachlorobiphenyl (160)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,3,3',4,5',6-Hexachlorobiphenyl (161)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,3,3',4',5,5'-Hexachlorobiphenyl (162)	1.29 J	11.5	1.32 U	34.8	6.66	181
2,3,3',4',5',6-Hexachlorobiphenyl (164)	2.97	26.4	3.89	131	22.2	653
2,3,3',5,5',6-Hexachlorobiphenyl (165)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	5.07	53.7	3.02	101	13.7	440
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	35.6	410	23.4	880	148	4,440

Hickory Pond Validated Fish Tissue Raw Analytical Results

Station ID	HICP-TI01					
Sample ID	HICP-FS-B01-F-12B	HICP-FS-B01-O-12B	HICP-FS-CP01-F-12B	HICP-FS-CP01-O-12B	HICP-FS-S01-F-12B	HICP-FS-S01-O-12B
Sample Date	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12	04/27/12
Chemical Name						
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	9.22	101	6.95	264	37.3	1,140
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	10.8	92.9	20.7	768	129	3,740
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	1.36 J	10.4	1.32 U	31.2	5.8	186
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	1.27 U	3.62	1.21 J	46.8	7.06	226
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	7.07	74.5	12.3	499	97.7	2,990
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	5.93	60	5.58	240	46.7	1,580
2,2',3,3',5,6,6'-Heptachlorobiphenyl (179)	1.28 J	9.65	3.68	151	29.6	1,010
2,2',3,4,4',5,6-Heptachlorobiphenyl (181)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	1.27 U	1.32 U	1.32 U	6.57	1.31 U	40
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	1.27 U	1.19 J	1.32 U	3.3	1.31 U	7.1 J
2,2',3,4,5,6,6'-Heptachlorobiphenyl (186)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	59.9	627	33.3	1,470	307	9,960
2,2',3,4',5,6,6'-Heptachlorobiphenyl (188)	1.27 U	1.21 J	1.32 U	3.01	1.31 U	14.9
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	2.84	27.7	1.48 J	46.6	6.66	215
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	9.27	103	5.03	165	33.2	1,070
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	1.48 J	13.5	1.32 U	29.7	4.46	130
2,3,3',4,5,5',6-Heptachlorobiphenyl (192)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	28.2	322	13.4	474	66.8	2,370
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	7.23	79.1	4.33	186	29.8	982
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	8.77	97.8	5.65	271	28.5	960
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	1.6 J	15.4	1.21 J	63.9	7.75	233
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)	3.4	34.1	3.64	137	19.4	628
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	18.6	212	10.2	484	54.7	1,900
2,2',3,4,4',5,6,6'-Octachlorobiphenyl (204)	1.27 U	1.32 U	1.32 U	1.33 U	1.31 U	6.11 U
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	1.77 J	18.5	1.03 J	31	3.72	129
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)	13.8	128	8.65	353	30.6	1,100
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)	1.57 J	12.1	1.01 J	41.5	2.54	76
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)	2.34	22	3.59	147	8.78	301
Decachlorobiphenyl (209)	4.03	28.1	3.88	129	4.62	146
Congeners (13/12)	5.08 U	5.29 U	5.28 U	5.33 U	5.26 U	24.5 U
Congeners (21/33)	2.62 J	5.29 U	5.28 U	7.81 J	5.26 U	24.5 U
Congeners (26/29)	2.53 U	2.64 U	2.63 U	5.54 J	2.62 U	12.2 U
Congeners (28/20)	12.7 U	13.2 U	13.2 U	53.6 J	13.1 U	61.1 U
Congeners (30/18)	1.82 J	2.09 J	1.54 J	9.38 J	1.44 J	12.2 U
Congeners (40/71)	2.53 U	2.64 U	2.63 U	6.62 J	2.62 U	12.2 U
Congeners (44/47/65)	3.8 U	5.49 U	3.95 U	51.8 J	3.94 U	34.8 J
Congeners (45/51)	2.53 U	2.64 U	2.63 U	2.39 J	2.62 U	12.2 U
Congeners (50/53)	2.53 U	2.64 U	2.63 U	2.65 U	2.62 U	12.2 U
Congeners (59/62/75)	3.8 U	3.96 U	3.95 U	4.21 J	3.94 U	18.3 U
Congeners (61/70/74/76)	5.16 U	12.7 U	6.22 U	126 J	5.72 U	67.8 J
Congeners (69/49)	2.53 U	2.6 J	1.36 J	33.1 J	1.5 J	24 J
Congeners (86/87/97/109/119/125)	7.77 J	24.2 J	9.38 J	162 J	11.2 J	256 J
Congeners (88/91)	2.53 U	1.99 J	2.63 U	20.3 J	1.69 J	52.5 J
Congeners (93/100)	2.53 U	2.64 U	2.63 U	1.5 J	2.62 U	13.1 J
Congeners (98/102)	2.53 U	2.64 U	2.63 U	1.35 J	2.62 U	12.2 U
Congeners (108/124)	2.53 U	2.75 J	2.63 U	15.6 J	2.62 U	35.1 J
Congeners (110/115)	5.85 U	29 J	9.85 U	273 J	14.5 J	362 J
Congeners (113/90/101)	11.6 U	67.9 J	14.8 U	423 J	34.3 J	1,000 J
Congeners (117/116/85)	3.8 U	9.68 J	3.95 U	46.1 J	1.99 J	75.2 J
Congeners (128/166)	3.39 J	35.5 J	2.95 J	120 J	17.3 J	493 J
Congeners (138/163/129)	62.9 J	649 J	55.8 J	1,930 J	353 J	10,500 J
Congeners (139/140)	2.53 U	4.92 J	2.63 U	16 J	2.28 J	85 J
Congeners (147/149)	20.6 U	159 J	29.1 J	1,040 J	169 J	5,020 J
Congeners (151/135)	7.6 U	57.3 J	8.24 U	304 J	73.6 J	2,470 J
Congeners (153/168)	102 J	1,110 J	72.8 J	2,710 J	419 J	13,700 J
Congeners (156/157)	6.11 J	57.8 J	4.1 J	130 J	13 J	416 J
Congeners (171/173)	8.09 J	84.5 J	6.41 J	237 J	43.8 J	1,340 J
Congeners (180/193)	133 J	1,560 J	77.1 J	2,990 J	454 J	13,900 J
Congeners (183/185)	21.3 J	240 J	15.4 J	609 J	104 J	3,230 J
Congeners (197/200)	2.53 U	9.35 J	1.53 J	67 J	6.02 J	181 J
Congeners (198/199)	27.4 J	304 J	17.8 J	915 J	97.8 J	3,350 J
Total Non-Dioxin-Like Congeners	760	7,490	578	21,800	3,300	103,000
Dioxin/Furans (pg/g)						
Toxic Equivalents (Total TEQ)	7.45E-04	0.163	6.83E-04	0.392	0.00155	0.955
Total Metals (mg/kg)						
Aluminum	13.5 U	4.38 J	14.9 U	3.08 J	21.3 U	48.2 J
Antimony	1.35 U	2.22 U	1.49 U	1.52 U	2.13 U	2.63 U
Arsenic	1.35 U	2.22 U	1.49 U	1.52 U	2.13 U	2.63 U
Barium	0.0295 J	4.29	0.0611 J	0.0842 J	0.0717 J	2.1
Beryllium	0.0338 U	0.0556 U	0.0373 U	0.0379 U	0.0532 U	0.0658 U
Cadmium	0.0676 U	0.111 U	0.0746 U	0.0758 U	0.106 U	0.132 U
Calcium	173	94,700 J	256	278	454	14,000 J
Chromium	0.0928 J	1.81	0.103 J	0.0888 J	0.0681 J	1.13 J
Cobalt	0.338 U	0.556 U	0.373 U	0.0566 J	0.532 U	0.658 U
Copper	0.338 U	0.618 U	0.373 U	1 U	0.532 U	0.658 U
Iron	6.76 U	16.9 J	5.06 J	58.5	10.6 U	58.5
Lead	1.35 U	2.22 U	1.49 U	1.52 U	2.13 U	2.63 U
Magnesium	313	1,760	247	112	333	417
Manganese	0.0645 J	1.66 J	0.0717 J	0.0492 J	0.0877 J	1.3 J
Mercury	0.625	0.416	0.0466	0.0243 J	0.0963	0.0467 J
Nickel	0.338 U	0.556 U	0.373 U	0.379 U	0.532 U	0.658 U
Potassium	3,890	2,760	3,790	1,850	4,160	2,470
Selenium	1.29 J	1.88 J	1.14 J	0.695 J	1.74 J	1.07 J
Silver	0.338 U	0.556 U	0.373 U	0.379 U	0.532 U	0.658 U
Sodium	732	2,890	428	1,220	620	1,240
Thallium	1.35 U	2.22 U	1.49 U	1.52 U	2.13 U	2.63 U
Vanadium	0.338 U	0.556 U	0.373 U	0.379 U	0.532 U	0.658 U
Zinc	4.35	37.1	3.09	5.4	6.43	22.6
Wet Chemistry						
% Solids (pct)	18.9	29.2	17	17	19.7	29.4
Lipids (%) (pct)	0.0892	0.434	0.151	1.32	0.103	1.46

\\Tarheel\Proj\EBL\Navy Clean\OU 4 (Sites 41 and 74)\2012 Henderson Pond Mod 2\Report\Draft Report\Appendices\Appendix B_Analytical Data\[CTO-WE14_HICP_FS_Val_RD_tbl.xls], thorn1, 06/18/2012

Notes:

Shading indicates detections

NA - Not analyzed

J - Analyte present, value may or may not be accurate or precise

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

mg/kg - Milligrams per kilogram

pct - Percent

pg/g - Picograms per gram

µg/kg - Micrograms per kilogram

Appendix C
Human Health Risk Assessment Tables

TABLE 1

Selection of Exposure Pathways

Henderson Pond Recreation Area

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/Future	Surface Soil	Surface Soil	Surface Soil	Recreational User	Adult	Ingestion	On-site	Quant	Recreational User may contact surface soil while camping, hiking, or biking.
						Dermal	On-site	Quant	Recreational User may contact surface soil while camping, hiking, or biking.
					Adolescent	Ingestion	On-site	Quant	Recreational User may contact surface soil while camping, hiking, or biking.
						Dermal	On-site	Quant	Recreational User may contact surface soil while camping, hiking, or biking.
					Child	Ingestion	On-site	Quant	Recreational User may contact surface soil while camping, hiking, or biking.
						Dermal	On-site	Quant	Recreational User may contact surface soil while camping, hiking, or biking.
				Game Warden	Adult	Ingestion	On-site	Quant	Game Warden could contact surface soil while performing activities at the site.
						Dermal Absorption	On-site	Quant	Game Warden could contact surface soil while performing activities at the site.
				Construction Worker	Adult	Ingestion	On-site	Quant	Construction worker could contact surface soil while performing activities at the site.
						Dermal Absorption	On-site	Quant	Construction worker could contact surface soil while performing activities at the site.
		Air	Emissions from Surface Soil	Recreational User	Adult	Inhalation	On-site	Quant	Recreational User could inhale dust from site surface soil.
					Adolescent	Inhalation	On-site	Quant	Recreational User could inhale dust from site surface soil.
					Child	Inhalation	On-site	Quant	Recreational User could inhale dust from site surface soil.
				Game Warden	Adult	Inhalation	On-site	Quant	Game Warden could inhale dust from site surface soil.
				Construction Worker	Adult	Inhalation	On-site	Quant	Construction Worker could inhale dust from site surface soil.
	Subsurface Soil	Subsurface Soil	Subsurface Soil	Recreational User	Adult	Ingestion	On-site	Quant	Recreational User may contact subsurface soil at the site while camping, hiking, or biking.
						Dermal	On-site	Quant	Recreational User may contact subsurface soil at the site while camping, hiking, or biking.
					Adolescent	Ingestion	On-site	Quant	Recreational User may contact subsurface soil at the site while camping, hiking, or biking.
						Dermal	On-site	Quant	Recreational User may contact subsurface soil at the site while camping, hiking, or biking.
					Child	Ingestion	On-site	Quant	Recreational User may contact subsurface soil at the site while camping, hiking, or biking.
						Dermal	On-site	Quant	Recreational User may contact subsurface soil at the site while camping, hiking, or biking.
				Game Warden	Adult	Ingestion	On-site	Quant	Game Warden could contact subsurface soil while performing activities at the site.
						Dermal Absorption	On-site	Quant	Game Warden could contact subsurface soil while performing activities at the site.

TABLE 1

Selection of Exposure Pathways

Henderson Pond Recreation Area

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/Future (cont'd)	Subsurface Soil	Subsurface Soil	Subsurface Soil	Construction Worker	Adult	Ingestion	On-site	Quant	Construction worker could contact subsurface soil while performing activities at the site.
						Dermal Absorption	On-site	Quant	Construction worker could contact subsurface soil while performing activities at the site.
	Subsurface Soil	Air	Emissions from Subsurface Soil	Recreational User	Adult	Inhalation	On-site	Quant	Recreational User could inhale dust from site subsurface soil.
					Adolescent	Inhalation	On-site	Quant	Recreational User could inhale dust from site subsurface soil.
					Child	Inhalation	On-site	Quant	Recreational User could inhale dust from site subsurface soil.
				Game Warden	Adult	Inhalation	On-site	Quant	Game Warden could inhale dust from site subsurface soil.
				Construction Worker	Adult	Inhalation	On-site	Quant	Construction Worker could inhale dust from site subsurface soil.
	Surface Water	Surface Water	Henderson Pond and Hickory Pond	Recreational User	Adult	Ingestion	On-site	Quant	Recreational User may contact surface water while fishing and/or boating.
						Dermal	On-site	Quant	Recreational User may contact surface water while fishing and/or boating.
					Adolescent	Ingestion	On-site	Quant	Recreational User may contact surface water while fishing and/or boating.
						Dermal	On-site	Quant	Recreational User may contact surface water while fishing and/or boating.
					Child	Ingestion	On-site	Quant	Recreational User may contact surface water while fishing and/or boating.
						Dermal	On-site	Quant	Recreational User may contact surface water while fishing and/or boating.
	Sediment	Sediment	Henderson Pond and Hickory Pond	Recreational User	Adult	Ingestion	On-site	Quant	Recreational User may contact sediment while fishing and/or boating.
						Dermal	On-site	Quant	Recreational User may contact sediment while fishing and/or boating.
					Adolescent	Ingestion	On-site	Quant	Recreational User may contact sediment while fishing and/or boating.
						Dermal	On-site	Quant	Recreational User may contact sediment while fishing and/or boating.
					Child	Ingestion	On-site	Quant	Recreational User may contact sediment while fishing and/or boating.
						Dermal	On-site	Quant	Recreational User may contact sediment while fishing and/or boating.
	Surface Water/ Sediment	Fish Tissue	Henderson Pond and Hickory Pond	Angler	Adult	Ingestion	On-site	Quant	Anglers fish in the ponds and may eat the fish they catch (assuming the currently posted catch-and-release advisory is not retained in the future or not followed).
					Child	Ingestion	On-site	Quant	Anglers fish in the ponds and may eat the fish they catch (assuming the currently posted catch-and-release advisory is not retained in the future or not followed).
					Child/Adult	Ingestion	On-site	Quant	Anglers fish in the ponds and may eat the fish they catch (assuming the currently posted catch-and-release advisory is not retained in the future or not followed).

TABLE 1

Selection of Exposure Pathways

Henderson Pond Recreation Area

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Surface Soil	Surface Soil	Surface Soil	Resident	Adult	Ingestion	On-site	Quant	Although unlikely, if site used for future residential development, residents could contact surface soil.
						Dermal Absorption	On-site	Quant	Although unlikely, if site used for future residential development, residents could contact surface soil.
					Child	Ingestion	On-site	Quant	Although unlikely, if site used for future residential development, residents could contact surface soil.
						Dermal Absorption	On-site	Quant	Although unlikely, if site used for future residential development, residents could contact surface soil.
					Child/Adult	Ingestion	On-site	Quant	Although unlikely, if site used for future residential development, residents could contact surface soil.
						Dermal Absorption	On-site	Quant	Although unlikely, if site used for future residential development, residents could contact surface soil.
	Surface Soil	Air	Emissions from Surface Soil	Resident	Adult	Inhalation	On-site	Quant	Although unlikely, if site used for future residential development, residents could inhale dust from surface soil.
					Child	Inhalation	On-site	Quant	Although unlikely, if site used for future residential development, residents could inhale dust from surface soil.
					Child/Adult	Inhalation	On-site	Quant	Although unlikely, if site used for future residential development, residents could inhale dust from surface soil.
	Subsurface Soil	Subsurface Soil	Subsurface Soil	Resident	Adult	Ingestion	On-site	Quant	Although unlikely, if site used for future residential development, residents could contact subsurface soil.
						Dermal Absorption	On-site	Quant	Although unlikely, if site used for future residential development, residents could contact subsurface soil.
					Child	Ingestion	On-site	Quant	Although unlikely, if site used for future residential development, residents could contact subsurface soil.
						Dermal Absorption	On-site	Quant	Although unlikely, if site used for future residential development, residents could contact subsurface soil.
					Child/Adult	Ingestion	On-site	Quant	Although unlikely, if site used for future residential development, residents could contact subsurface soil.
						Dermal Absorption	On-site	Quant	Although unlikely, if site used for future residential development, residents could contact subsurface soil.
	Subsurface Soil	Air	Emissions from Subsurface Soil	Resident	Adult	Inhalation	On-site	Quant	Although unlikely, if site used for future residential development, residents could inhale dust from subsurface soil.
					Child	Inhalation	On-site	Quant	Although unlikely, if site used for future residential development, residents could inhale dust from subsurface soil.
					Child/Adult	Inhalation	On-site	Quant	Although unlikely, if site used for future residential development, residents could inhale dust from subsurface soil.

Table 2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Surface Soil	83-32-9	Acenaphthene	ND	ND	MG/KG		0/10	0.035 - 0.044	4.4E-02	1.8E-03	3.4E+02 N	8.4E+00	NCSSL	NO	DLBSL
	120-12-7	Anthracene	ND	ND	MG/KG		0/10	0.035 - 0.044	4.4E-02	4.0E-03	1.7E+03 N	6.6E+02	NCSSL	NO	DLBSL
	56-55-3	Benzo(a)anthracene	1.9E-02 J	2.1E-02 J	MG/KG	HENP-SS02-0-1-12B	2/10	0.035 - 0.044	2.1E-02	1.0E-02	1.5E-01 C	1.8E-01	NCSSL	NO	BSL
	50-32-8	Benzo(a)pyrene	8.3E-03 J	8.3E-03 J	MG/KG	HENP-SS03-0-1-12B	1/10	0.035 - 0.044	8.3E-03	8.5E-03	1.5E-02 C	5.9E-02	NCSSL	NO	BSL
	205-99-2	Benzo(b)fluoranthene	ND	ND	MG/KG		0/10	0.035 - 0.044	4.4E-02	1.1E-02	1.5E-01 C	6.0E-01	NCSSL	NO	DLBSL
	191-24-2	Benzo(g,h,i)perylene	ND	ND	MG/KG		0/10	0.035 - 0.044	4.4E-02	7.0E-03	1.7E+02 N	7.8E+03	NCSSL	NO	DLBSL
	207-08-9	Benzo(k)fluoranthene	ND	ND	MG/KG		0/10	0.035 - 0.044	4.4E-02	8.8E-03	1.5E+00 C	5.9E+00	NCSSL	NO	DLBSL
	218-01-9	Chrysene	1.3E-02 J	1.3E-02 J	MG/KG	HENP-SS03-0-1-12B	1/10	0.035 - 0.044	1.3E-02	1.1E-02	1.5E+01 C	1.8E+01	NCSSL	NO	BSL
	53-70-3	Dibenz(a,h)anthracene	ND	ND	MG/KG		0/10	0.035 - 0.044	4.4E-02	3.1E-03	1.5E-02 C	1.9E-01	NCSSL	YES	DLASL
	206-44-0	Fluoranthene	ND	ND	MG/KG		0/10	0.035 - 0.044	4.4E-02	2.0E-02	2.3E+02 N	3.3E+02	NCSSL	NO	DLBSL
	86-73-7	Fluorene	ND	ND	MG/KG		0/10	0.035 - 0.044	4.4E-02	1.1E-03	2.3E+02 N	5.6E+01	NCSSL	NO	DLBSL
	193-39-5	Indeno(1,2,3-cd)pyrene	ND	ND	MG/KG		0/10	0.035 - 0.044	4.4E-02	9.2E-03	1.5E-01 C	2.0E+00	NCSSL	NO	DLBSL
	91-20-3	Naphthalene	ND	ND	MG/KG		0/10	0.035 - 0.044	4.4E-02	5.1E-03	3.6E+00 C	2.1E-01	NCSSL	NO	DLBSL
	85-01-8	Phenanthrene	ND	ND	MG/KG		0/10	0.035 - 0.044	4.4E-02	9.9E-03	1.7E+03 N	6.8E+01	NCSSL	NO	DLBSL
	129-00-0	Pyrene	ND	ND	MG/KG		0/10	0.035 - 0.044	4.4E-02	1.4E-02	1.7E+02 N	2.2E+02	NCSSL	NO	DLBSL
	72-54-8	4,4'-DDD	ND	ND	MG/KG		0/10	0.0018 - 0.036	3.6E-02	1.5E-02	2.0E+00 C	2.4E-01	NCSSL	NO	DLBSL
	72-55-9	4,4'-DDE	ND	ND	MG/KG		0/10	0.0018 - 0.036	3.6E-02	2.4E-02	1.4E+00 C	2.4E-01	NCSSL	NO	DLBSL
	50-29-3	4,4'-DDT	ND	ND	MG/KG		0/10	0.0018 - 0.036	3.6E-02	5.2E-03	1.7E+00 C	3.4E-01	NCSSL	NO	DLBSL
	309-00-2	Aldrin	ND	ND	MG/KG		0/10	0.0018 - 0.036	3.6E-02	1.8E-03	2.9E-02 C	3.0E-03	NCSSL	YES	DLASL
	5103-71-9	alpha-Chlordane	ND	ND	MG/KG		0/10	0.0018 - 0.036	3.6E-02	2.0E-03	1.6E+00 C	6.8E-02	NCSSL	NO	DLBSL
	11096-82-5	**Aroclor-1260**	**1.3E+00 J**	**1.3E+00 J**	**MG/KG**	**HENP-SS08-0-1-12B**	**1/10**	**0.018 - 0.023**	**1.3E+00**	**N/A**	**2.2E-01 C**	**1.4E-01**	**NCSSL**	**YES**	**ASL**
	60-57-1	Dieldrin	ND	ND	MG/KG		0/10	0.0018 - 0.036	3.6E-02	3.2E-03	3.0E-02 C	8.1E-04	NCSSL	YES	DLASL
	5103-74-2	gamma-Chlordane	ND	ND	MG/KG		0/10	0.0018 - 0.036	3.6E-02	2.2E-03	1.6E+00 C	6.8E-02	NCSSL	NO	DLBSL
	76-44-8	Heptachlor	ND	ND	MG/KG		0/10	0.0018 - 0.036	3.6E-02	6.7E-04	1.1E-01 C	6.6E-03	NCSSL	NO	DLBSL
	7429-90-5	Aluminum	4.0E+02	9.6E+03 J	MG/KG	HENP-SS08-0-1-12B	10/10	25.2 - 38.1	9.6E+03	1.3E+04	7.7E+03 N	N/A		NO	BBK
	7440-36-0	Antimony	3.1E-01 J	4.0E-01 J	MG/KG	HENP-SS04-0-1-12B	2/10	2.52 - 3.81	4.0E-01	1.9E+00	3.1E+00 N	9.0E-01	NCSSL	NO	BSL
	7440-38-2	**Arsenic**	**4.9E-01 J**	**2.2E+00 J**	**MG/KG**	**HENP-SS08-0-1-12B**	**8/10**	**2.52 - 3.81**	**2.2E+00**	**1.2E+00**	**3.9E-01 C**	**5.8E+00**	**NCSSL**	**YES**	**ASL**
	7440-39-3	Barium	2.7E+00	1.4E+01	MG/KG	HENP-SS02-0-1-12B	10/10	0.631 - 0.952	1.4E+01	3.7E+01	1.5E+03 N	5.8E+02	NCSSL	NO	BSL
	7440-41-7	Beryllium	1.5E-02 J	7.5E-02	MG/KG	HENP-SS08-0-1-12B	8/10	0.0631 - 0.0952	7.5E-02	2.0E-01	1.6E+01 N	6.3E+01	NCSSL	NO	BSL
	7440-43-9	Cadmium	2.5E-02 J	5.7E-02 J	MG/KG	HENP-SS02-0-1-12B	2/10	0.126 - 0.19	5.7E-02	2.0E-01	7.0E+00 N	3.0E+00	NCSSL	NO	BSL
	7440-70-2	Calcium	1.4E+02	1.6E+03 J	MG/KG	HENP-SS09-0-1-12B	3/10	31.6 - 47.6	1.6E+03	8.5E+03	N/A	N/A		NO	NUT
	18540-29-9	Chromium (hexavalent)	8.2E-01 J	8.2E-01 J	MG/KG	HENP-SS04-0-1-12B	1/10	1 - 1.3	8.2E-01	2.7E+00	2.9E-01 C	3.8E+00	NCSSL	NO	BBK
	7440-47-3	Chromium	6.6E-01 J	1.1E+01	MG/KG	HENP-SS08-0-1-12B	10/10	0.631 - 0.952	1.1E+01	1.7E+01	1.2E+04 N	N/A		NO	BSL
	7440-48-4	Cobalt	ND	ND	MG/KG		0/10	0.631 - 0.952	9.5E-01	4.1E-01	2.3E+00 N	9.0E-01	NCSSL	NO	DLBSL
	7440-50-8	Copper	3.9E-01 J	2.3E+00	MG/KG	HENP-SS08-0-1-12B	10/10	0.631 - 0.952	2.3E+00	1.7E+01	3.1E+02 N	7.0E+02	NCSSL	NO	BSL
	7439-89-6	**Iron**	**2.7E+02**	**1.1E+04 J**	**MG/KG**	**HENP-SS08-0-1-12B**	**10/10**	**12.6 - 19**	**1.1E+04**	**7.2E+03**	**5.5E+03 N**	**1.5E+02**	**NCSSL**	**YES**	**ASL**

Table 2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Surface Soil	7439-92-1	Lead	3.6E+00 J	1.2E+01	MG/KG	HENP-SS02-0-1-12B	10/10	2.52 - 3.81	1.2E+01	2.8E+01	4.0E+02 NL	2.7E+02	NCSSL	NO	BSL
(cont'd)	7439-95-4	Magnesium	1.3E+01 J	1.5E+02	MG/KG	HENP-SS08-0-1-12B	10/10	31.6 - 47.6	1.5E+02	9.0E+02	N/A	N/A		NO	NUT
	7439-96-5	Manganese	1.3E+00	1.1E+01	MG/KG	HENP-SS09-0-1-12B	10/10	1.26 - 1.9	1.1E+01	3.7E+01	1.8E+02 N	6.5E+01		NO	BSL
	7439-97-6	Mercury	3.4E-03 J	5.4E-02	MG/KG	HENP-SS02-0-1-12B	8/10	0.015 - 0.0185	5.4E-02	1.6E-01	2.3E+00 N	1.0E+00	NCSSL	NO	BSL
	7440-02-0	Nickel	9.3E-02 J	1.3E+00	MG/KG	HENP-SS08-0-1-12B	10/10	0.631 - 0.952	1.3E+00	3.1E+00	1.5E+02 N	1.3E+02	NCSSL	NO	BSL
	7440-09-7	Potassium	1.6E+01 J	1.3E+02	MG/KG	HENP-SS08-0-1-12B	9/10	31.6 - 47.6	1.3E+02	3.6E+02	N/A	N/A		NO	NUT
	7440-62-2	Vanadium	1.2E+00	1.8E+01	MG/KG	HENP-SS08-0-1-12B	10/10	0.631 - 0.952	1.8E+01	1.8E+01	3.9E+01 N	6.0E+00	NCSSL	NO	BSL
	7440-66-6	Zinc	4.6E-01 J	1.9E+01	MG/KG	HENP-SS02-0-1-12B	10/10	1.26 - 1.9	1.9E+01	2.9E+01	2.3E+03 N	1.2E+03	NCSSL	NO	BSL

[1] Minimum/Maximum detected concentrations.
[2] Maximum concentration is used for screening.
[3] Background values are the background threshold values (BTVs) for surface soil data in undeveloped areas (combined soil types).
Background values are from *Final Expanded Soil Background Study Report, Marine Corps Base Camp Lejeune, Jacksonville, North Carolina* , CH2M HILL, August 2011.
[4] Oak Ridge National Laboratory (ORNL). May 2012. Regional Screening Levels for Chemical Contaminants at Superfund Sites. [Online]. Adjusted (RSLs based on non-cancer (N) divided by 10) residential soil RSLs. Available: http://epa-prgs.ornl.gov/chemicals/index.shtml
RSL value for pyrene used as surrogate for benzo(g,h,i)perylene.
RSL value for anthracene used as surrogate for phenanthrene.
RSL value for technical chlordane used as surrogate for alpha-chlordane.
RSL value for technical chlordane used as surrogate for gamma-chlordane.
RSL value for Chromium(VI) used as screening value for hexavalent chromium; chromium (III) used as screening value for total chromium.
RSL value for Manganese (non-diet) used as surrogate for manganese.
[5] Rationale Codes

Selection Reason:	Above Screening Levels (ASL)
Deletion Reason:	Detection Limit Above Screening Level (DLASL), not quantitatively evaluated in HHRA
	No Toxicity Information (NTX)
	Essential Nutrient (NUT)
	Below Screening Level (BSL)
	Detection Limit Below Screening Level (DLBSL)
	Below Background Value (BBK)

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered
J = Estimated Value
C = Carcinogenic
N = Noncarcinogenic
NL = Noncarcinogenic lead residential soil RSL not adjusted by dividing by 10.
N/A = not available, not applicable
NCSSL = North Carolina Preliminary Soil Remediation Goal, June 2011
ND = Non-detect

Table 2.1a

Risk Ratio Screening for Surface Soil, Maximum Detected Concentration

Henderson Pond and Hickory Pond Recreational Area

MCB CamLej, North Carolina

Analyte	Detection Frequency	Maximum Detected Concentration (Qualifier)	Sample Location of Maximum Detected Concentration	Residential Soil RSL	Acceptable Risk Level	Corresponding Hazard Index[a]	Corresponding Cancer Risk[b]	Target Organ
Pesticaides/PCBs (mg/kg)								
Aroclor-1260	1 / 10	1.3E+00 J	HENP-SS08-0-1-12B	2.2E-01	1E-06	N/A	6E-06	N/A
Metals (mg/kg)								
Arsenic	8 / 10	2.2E+00 J	HENP-SS08-0-1-12B	3.9E-01	1E-06	N/A	6E-06	N/A
Iron	10 / 10	1.1E+04 J	HENP-SS08-0-1-12B	5.5E+04	1	0.2	N/A	Gastrointestinal
Cumulative Corresponding Hazard Index[c]						**0.2**		
Cumulative Corresponding Cancer Risk[d]							**1E-05**	
							Total Gastrointestinal HI =	0.2

Notes:

[a] Corresponding Hazard Index equals maximum detected concentration divided by the RSL divided by the acceptable risk level.

[b] Corresponding Cancer Risk equals maximum detected concentration divided by the RSL divided by the acceptable risk level.

[c] Cumulative Corresponding Hazard Index equals sum of Corresponding Hazard Indices for each constituent.

[d] Cumulative Corresponding Cancer Risk equals sum of Corresponding Cancer Risks for each constituent.

Constituent selected as COPC if it contributes to an overall Hazard Index by target organ greater than 0.5 or Cumulative Corresponding Cancer Risk greater than 5E-05, otherwise, constituent not selected as COPC.

Constituents selected as COPCs are indicated by shading.

COPC = Chemical of Potential Concern

HI = Hazard Index

J = Estimated Value

mg/kg = milligrams per kilogram

N/A = Not available/not applicable

Table 2.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Air

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Emissions from Surface Soil	83-32-9	Acenaphthene	ND	ND	MG/KG		0/10	--	2.6E-04	N/A	N/A	N/A	N/A	NO	NTX
	120-12-7	Anthracene	ND	ND	MG/KG		0/10	--	6.9E-05	N/A	N/A	N/A	N/A	NO	NTX
	56-55-3	Benzo(a)anthracene	1.4E-08 J	1.6E-08 J	MG/KG	HENP-SS02-0-1-12B	2/10	--	1.6E-08	N/A	8.7E-03 C	N/A	N/A	NO	BSL
	50-32-8	Benzo(a)pyrene	6.3E-09 J	6.3E-09 J	MG/KG	HENP-SS03-0-1-12B	1/10	--	6.3E-09	N/A	8.7E-04 C	N/A	N/A	NO	BSL
	205-99-2	Benzo(b)fluoranthene	ND	ND	MG/KG		0/10	--	3.3E-08	N/A	8.7E-03 C	N/A	N/A	NO	DLBSL
	191-24-2	Benzo(g,h,i)perylene	ND	ND	MG/KG		0/10	--	3.3E-08	N/A	N/A	N/A	N/A	NO	NTX
	207-08-9	Benzo(k)fluoranthene	ND	ND	MG/KG		0/10	--	3.3E-08	N/A	8.7E-03 C	N/A	N/A	NO	DLBSL
	218-01-9	Chrysene	9.8E-09 J	9.8E-09 J	MG/KG	HENP-SS03-0-1-12B	1/10	--	9.8E-09	N/A	8.7E-02 C	N/A	N/A	NO	BSL
	53-70-3	Dibenz(a,h)anthracene	ND	ND	MG/KG		0/10	--	3.3E-08	N/A	8.0E-04 C	N/A	N/A	NO	DLBSL
	206-44-0	Fluoranthene	ND	ND	MG/KG		0/10	--	3.3E-08	N/A	N/A	N/A	N/A	NO	NTX
	86-73-7	Fluorene	ND	ND	MG/KG		0/10	--	1.3E-04	N/A	N/A	N/A	N/A	NO	NTX
	193-39-5	Indeno(1,2,3-cd)pyrene	ND	ND	MG/KG		0/10	--	3.3E-08	N/A	8.7E-03 C	N/A	N/A	NO	DLBSL
	91-20-3	Naphthalene	ND	ND	MG/KG		0/10	--	7.8E-04	N/A	7.2E-02 C	N/A	N/A	NO	DLBSL
	85-01-8	Phenanthrene	ND	ND	MG/KG		0/10	--	3.3E-08	N/A	N/A	N/A	N/A	NO	NTX
	129-00-0	Pyrene	ND	ND	MG/KG		0/10	--	1.5E-05	N/A	N/A	N/A	N/A	NO	NTX
	72-54-8	4,4'-DDD	ND	ND	MG/KG		0/10	--	2.7E-08	N/A	3.5E-02 C	N/A	N/A	NO	DLBSL
	72-55-9	4,4'-DDE	ND	ND	MG/KG		0/10	--	2.7E-08	N/A	2.5E-02 C	N/A	N/A	NO	DLBSL
	50-29-3	4,4'-DDT	ND	ND	MG/KG		0/10	--	2.7E-08	N/A	2.5E-02 C	N/A	N/A	NO	DLBSL
	309-00-2	Aldrin	ND	ND	MG/KG		0/10	--	2.7E-08	N/A	5.0E-04 C	N/A	N/A	NO	DLBSL
	5103-71-9	alpha-Chlordane	ND	ND	MG/KG		0/10	--	2.7E-08	N/A	N/A	N/A	N/A	NO	NTX
	11096-82-5	Aroclor-1260	9.8E-07 J	9.8E-07 J	MG/KG	HENP-SS08-0-1-12B	1/10	--	9.8E-07	N/A	4.3E-03 C	N/A	N/A	NO	BSL
	60-57-1	Dieldrin	ND	ND	MG/KG		0/10	--	2.7E-08	N/A	5.3E-04 C	N/A	N/A	NO	DLBSL
	5103-74-2	gamma-Chlordane	ND	ND	MG/KG		0/10	--	2.7E-08	N/A	N/A	N/A	N/A	NO	NTX
	76-44-8	Heptachlor	ND	ND	MG/KG		0/10	--	2.7E-08	N/A	1.9E-03 C	N/A	N/A	NO	DLBSL
	7429-90-5	Aluminum	3.0E-04	7.3E-03 J	MG/KG	HENP-SS08-0-1-12B	10/10	--	7.3E-03	N/A	5.2E-01 N	N/A	N/A	NO	BSL
	7440-36-0	Antimony	2.3E-07 J	3.0E-07 J	MG/KG	HENP-SS04-0-1-12B	2/10	--	3.0E-07	N/A	N/A	N/A	N/A	NO	NTX
	7440-38-2	Arsenic	3.7E-07 J	1.6E-06 J	MG/KG	HENP-SS08-0-1-12B	8/10	--	1.6E-06	N/A	5.7E-04 C	N/A	N/A	NO	BSL
	7440-39-3	Barium	2.1E-06	1.1E-05	MG/KG	HENP-SS02-0-1-12B	10/10	--	1.1E-05	N/A	5.2E-02 N	N/A	N/A	NO	BSL
	7440-41-7	Beryllium	1.2E-08 J	5.7E-08	MG/KG	HENP-SS08-0-1-12B	8/10	--	5.7E-08	N/A	1.0E-03 C	N/A	N/A	NO	BSL
	7440-43-9	Cadmium	1.9E-08 J	4.3E-08 J	MG/KG	HENP-SS02-0-1-12B	2/10	--	4.3E-08	N/A	N/A	N/A	N/A	NO	NTX
	7440-70-2	Calcium	1.0E-04	1.2E-03 J	MG/KG	HENP-SS09-0-1-12B	3/10	--	1.2E-03	N/A	N/A	N/A	N/A	NO	NUT
	18540-29-9	Chromium (hexavalent)	6.2E-07 J	6.2E-07 J	MG/KG	HENP-SS04-0-1-12B	1/10	--	6.2E-07	N/A	1.1E-05 C	N/A	N/A	NO	BSL
	7440-47-3	Chromium	5.0E-07 J	8.1E-06	MG/KG	HENP-SS08-0-1-12B	10/10	--	8.1E-06	N/A	N/A	N/A	N/A	NO	NTX
	7440-48-4	Cobalt	ND	ND	MG/KG		0/10	--	7.2E-07	N/A	2.7E-04 C	N/A	N/A	NO	DLBSL
	7440-50-8	Copper	2.9E-07 J	1.7E-06	MG/KG	HENP-SS08-0-1-12B	10/10	--	1.7E-06	N/A	N/A	N/A	N/A	NO	NTX
	7439-89-6	Iron	2.0E-04	8.0E-03 J	MG/KG	HENP-SS08-0-1-12B	10/10	--	8.0E-03	N/A	N/A	N/A	N/A	NO	NTX

Table 2.2

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Henderson Pond and Hickory Pond Recreational Area

MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Air

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Emissions from	7439-92-1	Lead	2.7E-06 J	9.2E-06	MG/KG	HENP-SS02-0-1-12B	10/10	--	9.2E-06	N/A	1.5E-01 A	N/A	N/A	NO	BSL
Surface Soil	7439-95-4	Magnesium	9.8E-06 J	1.1E-04	MG/KG	HENP-SS08-0-1-12B	10/10	--	1.1E-04	N/A	N/A	N/A	N/A	NO	NUT
(cont'd)	7439-96-5	Manganese	1.0E-06	8.6E-06	MG/KG	HENP-SS09-0-1-12B	10/10	--	8.6E-06	N/A	N/A	N/A	N/A	NO	NTX
	7439-97-6	Mercury	2.6E-09 J	4.1E-08	MG/KG	HENP-SS02-0-1-12B	8/10	--	4.1E-08	N/A	3.1E-02 N	N/A	N/A	NO	BSL
	7440-02-0	Nickel	7.1E-08 J	9.6E-07	MG/KG	HENP-SS08-0-1-12B	10/10	--	9.6E-07	N/A	9.4E-03 N	N/A	N/A	NO	BSL
	7440-09-7	Potassium	1.2E-05 J	1.0E-04	MG/KG	HENP-SS08-0-1-12B	9/10	--	1.0E-04	N/A	N/A	N/A	N/A	NO	NUT
	7440-62-2	Vanadium	9.0E-07	1.4E-05	MG/KG	HENP-SS08-0-1-12B	10/10	--	1.4E-05	N/A	N/A	N/A	N/A	NO	NTX
	7440-66-6	Zinc	3.5E-07 J	1.4E-05	MG/KG	HENP-SS02-0-1-12B	10/10	--	1.4E-05	N/A	N/A	N/A	N/A	NO	NTX

[1] Minimum/Maximum calculated air concentrations from surface soil concentrations. Air concentrations calculated as Cair = Csoil*1000*(1/PEF + 1/VF).
PEF = 1.36E+09 m3/kg. VF calculated for volatile constituents only, on Table 2.2A. PEF and VF from USEPA's Soil Screening Guidance. (USEPA, July 1996)

[2] Maximum concentration is used for screening. If chemical was not detected, the maximum detection limit is used for screening.

[3] Background values not available.

[4] Oak Ridge National Laboratory (ORNL). May 2012. Regional Screening Levels for Chemical Contaminants at Superfund Sites. [Online]. Adjusted (RSLs based on non-cancer (N) divided by 10) residential air RSLs. Available: http://epa-prgs.ornl.gov/chemicals/index.shtml
RSL value for pyrene used as surrogate for benzo(g,h,i)perylene.
RSL value for anthracene used as surrogate for phenanthrene.
RSL value for technical chlordane used as surrogate for alpha-chlordane.
RSL value for technical chlordane used as surrogate for gamma-chlordane.
RSL value for Chromium(VI) used as a screening value for hexavalent chromium

[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)

Deletion Reason:
Detection Limit Above Screening Level (DLASL), not quantitatively evaluated in HHRA
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)
Detection Limit Below Screening Level (DLBSL)

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered
A = National Ambient Air Quality Standard
J = Estimated Value
C = Carcinogenic
N = Noncarcinogenic
N/A = not available, not applicable
ND = Non-detect

Table 2.2A
Calculation of Volatilization Factor
Henderson Pond and Hickory Pond Recreational Area
MCB Camp Lej, North Carolina

Chemical	CAS Number	Diffusivity in Air (D_i) (cm^2/s)	Henry's Law Constant (H') (unitless)	Diffusivity in Water (D_w) (cm^2/s)	Soil Organic Carbon Partition Coeff. (K_{oc}) (L/kg)	Soil Water Partition Coeff. ($K_d = K_{oc} \times F_{oc}$) ($g/cm^3$)	Solubility in Water (S) (mg/L)	Apparent Diffusivity (D_A) (cm^2/s)	Volatilization Factor (VF) (m^3/kg)	Soil Saturation Concentration (C_{sat}) (mg/kg)
Acenaphthene	83-32-9	5.1E-02	7.5E-03	8.3E-06	5.0E+03	3.0E+01	3.9E+00	6.7E-07	1.7E+05	1.2E+02
Anthracene	120-12-7	3.9E-02	2.3E-03	7.9E-06	1.6E+04	9.8E+01	4.3E-02	4.9E-08	6.4E+05	4.3E+00
Fluorene	86-73-7	4.4E-02	3.9E-03	7.9E-06	9.2E+03	5.5E+01	1.7E+00	1.7E-07	3.4E+05	9.3E+01
Naphthalene	91-20-3	6.0E-02	1.8E-02	8.4E-06	1.5E+03	9.3E+00	3.1E+01	6.2E-06	5.7E+04	2.9E+02
Pyrene	129-00-0	2.8E-02	4.9E-04	7.2E-06	5.4E+04	3.3E+02	1.4E-01	2.3E-09	2.9E+06	4.4E+01

Volatilization factor (VF) = (m^3/kg)

$$\frac{Q/C * (3.14 * D_A * T)^{1/2} * 10^{-4}\ m^2/cm^2}{2 * r_b * D_A}$$

Apparent Diffusivity (D_A) = (cm^2/s)

$$\frac{[(Q_a^{10/3} * D_i * H' + Q_w^{10/3} * D_w)/n^2]}{(r_b * K_d + Q_w + Q_a * H')}$$

aturation Concentration (C_{sat}) =

$$S/r_b * (K_d * r_b + Q_w + H' * Q_a)$$

Parameters	Values
Q/C - Inverse of the mean concentration at the center of a 0.5-acre-square source located in Raleigh-Durham, NC (g/m^2-s per kg/m^3)	77.26
T - Exposure interval(s)	9.5E+08
ρ_b - Soil bulk density (g/cm^3)	1.5
Θ_a - Air-filled soil porosity (L_{air}/L_{water}) = n - Θ_w	0.28
n - Total soil porosity (Lpore/Lsoil) = 1 - (ρ_b/ρ_s)	0.43
Θ_w - Water-filled soil porosity (Lwater/Lsoil)	0.15
ρ_s - Soil particle density (g/cm^3)	2.65
f_{oc} - fraction organic carbon in soil (g/g)	0.006

Notes:
Equations from USEPA, 1996. *Soil Screening Guidance: User's Guide.* EPA/540/R-96/018.
Physical/chemical properties from Oak Ridge National Laboratory (ORNL). May 2012. Regional Screening Levels for Chemical Contaminants at Superfund Sites.

Table 2.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Subsurface Soil	83-32-9	Acenaphthene	ND	ND	MG/KG		0/10	0.035 - 0.038	3.8E-02	N/A	3.4E+02 N	8.4E+00	NCSSL	NO	DLBSL
	120-12-7	Anthracene	ND	ND	MG/KG		0/10	0.035 - 0.038	3.8E-02	N/A	1.7E+03 N	6.6E+02	NCSSL	NO	DLBSL
	56-55-3	Benzo(a)anthracene	ND	ND	MG/KG		0/10	0.035 - 0.038	3.8E-02	2.0E-03	1.5E-01 C	1.8E-01	NCSSL	NO	DLBSL
	50-32-8	Benzo(a)pyrene	ND	ND	MG/KG		0/10	0.035 - 0.038	3.8E-02	1.2E-03	1.5E-02 C	5.9E-02	NCSSL	YES	DLASL
	205-99-2	Benzo(b)fluoranthene	ND	ND	MG/KG		0/10	0.035 - 0.038	3.8E-02	1.4E-03	1.5E-01 C	6.0E-01	NCSSL	NO	DLBSL
	191-24-2	Benzo(g,h,i)perylene	ND	ND	MG/KG		0/10	0.035 - 0.038	3.8E-02	N/A	1.7E+02 N	7.8E+03	NCSSL	NO	DLBSL
	207-08-9	Benzo(k)fluoranthene	ND	ND	MG/KG		0/10	0.035 - 0.038	3.8E-02	1.3E-03	1.5E+00 C	5.9E+00	NCSSL	NO	DLBSL
	218-01-9	Chrysene	ND	ND	MG/KG		0/10	0.035 - 0.038	3.8E-02	3.0E-03	1.5E+01 C	1.8E+01	NCSSL	NO	DLBSL
	53-70-3	Dibenz(a,h)anthracene	ND	ND	MG/KG		0/10	0.035 - 0.038	3.8E-02	N/A	1.5E-02 C	1.9E-01	NCSSL	YES	DLASL
	206-44-0	Fluoranthene	ND	ND	MG/KG		0/10	0.035 - 0.038	3.8E-02	4.6E-03	2.3E+02 N	3.3E+02	NCSSL	NO	DLBSL
	86-73-7	Fluorene	ND	ND	MG/KG		0/10	0.035 - 0.038	3.8E-02	N/A	2.3E+02 N	5.6E+01	NCSSL	NO	DLBSL
	193-39-5	Indeno(1,2,3-cd)pyrene	ND	ND	MG/KG		0/10	0.035 - 0.038	3.8E-02	7.7E-03	1.5E-01 C	2.0E+00	NCSSL	NO	DLBSL
	91-20-3	Naphthalene	ND	ND	MG/KG		0/10	0.035 - 0.038	3.8E-02	N/A	3.6E+00 C	2.1E-01	NCSSL	NO	DLBSL
	85-01-8	Phenanthrene	ND	ND	MG/KG		0/10	0.035 - 0.038	3.8E-02	4.1E-03	1.7E+03 N	6.8E+01	NCSSL	NO	DLBSL
	129-00-0	Pyrene	ND	ND	MG/KG		0/10	0.035 - 0.038	3.8E-02	3.6E-03	1.7E+02 N	2.2E+02	NCSSL	NO	DLBSL
	72-54-8	4,4'-DDD	ND	ND	MG/KG		0/10	0.0018 - 0.0019	1.9E-03	N/A	2.0E+00 C	2.4E-01	NCSSL	NO	DLBSL
	72-55-9	4,4'-DDE	ND	ND	MG/KG		0/10	0.0018 - 0.0019	1.9E-03	5.7E-04	1.4E+00 C	2.4E-01	NCSSL	NO	DLBSL
	50-29-3	4,4'-DDT	ND	ND	MG/KG		0/10	0.0018 - 0.0019	1.9E-03	1.2E-03	1.7E+00 C	3.4E-01	NCSSL	NO	DLBSL
	309-00-2	Aldrin	ND	ND	MG/KG		0/10	0.0018 - 0.0019	1.9E-03	N/A	2.9E-02 C	3.0E-03	NCSSL	NO	DLBSL
	5103-71-9	alpha-Chlordane	ND	ND	MG/KG		0/10	0.0018 - 0.0019	1.9E-03	3.1E-03	1.6E+00 C	6.8E-02	NCSSL	NO	DLBSL
	11096-82-5	Aroclor-1260	ND	ND	MG/KG		0/10	0.018 - 0.019	1.9E-02	N/A	2.2E-01 C	1.4E-01	NCSSL	NO	DLBSL
	60-57-1	Dieldrin	ND	ND	MG/KG		0/10	0.0018 - 0.0019	1.9E-03	1.5E-03	3.0E-02 C	8.1E-04	NCSSL	NO	DLBSL
	5103-74-2	gamma-Chlordane	ND	ND	MG/KG		0/10	0.0018 - 0.0019	1.9E-03	N/A	1.6E+00 C	6.8E-02	NCSSL	NO	DLBSL
	76-44-8	Heptachlor	ND	ND	MG/KG		0/10	0.0018 - 0.0019	1.9E-03	5.7E-04	1.1E-01 C	6.6E-03	NCSSL	NO	DLBSL
	7429-90-5	Aluminum	1.0E+03 J	8.6E+03 J	MG/KG	HENP-SB09-1-4-12B	10/10	25 - 38.9	8.6E+03	1.9E+04	7.7E+03 N	N/A		NO	BBK
	7440-36-0	Antimony	ND	ND	MG/KG		0/10	2.5 - 3.89	3.9E+00	1.1E+00	3.1E+00 N	9.0E-01	NCSSL	YES	DLASL
	7440-38-2	Arsenic	4.3E-01 J	4.4E+00	MG/KG	HENP-SB08-1-4-12B	9/10	2.5 - 3.89	4.4E+00	5.1E+00	3.9E-01 C	5.8E+00	NCSSL	NO	BBK
	7440-39-3	Barium	3.8E+00	1.2E+01	MG/KG	HENP-SB01-1-4-12B	10/10	0.626 - 0.972	1.2E+01	2.8E+01	1.5E+03 N	5.8E+02	NCSSL	NO	BSL
	7440-41-7	Beryllium	1.5E-02 J	7.2E-02 J	MG/KG	HENP-SB08-1-4-12B	10/10	0.0626 - 0.0972	7.2E-02	3.3E-01	1.6E+01 N	6.3E+01	NCSSL	NO	BSL
	7440-43-9	Cadmium	3.2E-02 J	3.2E-02 J	MG/KG	HENP-SB08-1-4-12B	1/10	0.125 - 0.194	3.2E-02	2.1E-01	7.0E+00 N	3.0E+00	NCSSL	NO	BSL
	7440-70-2	Calcium	3.4E+02	4.0E+02	MG/KG	HENP-SB09-1-4-12B	2/10	31.3 - 48.6	4.0E+02	1.5E+03	N/A	N/A		NO	NUT
	18540-29-9	Chromium (hexavalent)	1.4E-01 J	1.9E+00	MG/KG	HENP-SB06-1-4-12B	9/10	1.1 - 1.1	1.9E+00	3.7E+00	2.9E-01 C	3.8E+00	NCSSL	NO	BBK
	7440-47-3	Chromium	1.1E+00	1.0E+01	MG/KG	HENP-SB08-1-4-12B	10/10	0.626 - 0.972	1.0E+01	2.8E+01	1.2E+04 N	N/A		NO	BSL
	7440-48-4	Cobalt	ND	ND	MG/KG		0/10	0.626 - 0.972	9.7E-01	1.4E+00	2.3E+00 N	9.0E-01	NCSSL	NO	BSL
	7440-50-8	Copper	2.1E-01 J	2.6E+00	MG/KG	HENP-SB06-1-4-12B	10/10	0.626 - 0.972	2.6E+00	6.1E+00	3.1E+02 N	7.0E+02	NCSSL	NO	BSL
	7439-89-6	Iron	5.8E+02 J	1.2E+04 J	MG/KG	HENP-SB09-1-4-12B	10/10	12.5 - 19.4	1.2E+04	1.3E+04	5.5E+03 N	1.5E+02	NCSSL	NO	BBK

Table 2.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	7439-92-1	Lead	2.3E+00 J	5.3E+00	MG/KG	HENP-SB08-1-4-12B	10/10	2.5 - 3.89	5.3E+00	1.1E+01	4.0E+02 NL	2.7E+02	NCSSL	NO	BSL
	7439-95-4	Magnesium	1.8E+01 J	1.7E+02	MG/KG	HENP-SB08-1-4-12B	10/10	31.3 - 48.6	1.7E+02	7.8E+02	N/A	N/A		NO	NUT
	7439-96-5	Manganese	1.5E+00 J	7.1E+00	MG/KG	HENP-SB10-1-4-12B	10/10	1.25 - 1.94	7.1E+00	1.8E+01	1.8E+02 N	6.5E+01	NCSSL	NO	BSL
	7439-97-6	Mercury	3.2E-03 J	1.9E-02	MG/KG	HENP-SB01-1-4-12B	10/10	0.0158 - 0.0184	1.9E-02	8.5E-02	2.3E+00 N	1.0E+00	NCSSL	NO	BSL
	7440-02-0	Nickel	3.0E-01 J	1.3E+00	MG/KG	HENP-SB02-1-4-12B	10/10	0.626 - 0.972	1.3E+00	7.1E+00	1.5E+02 N	1.3E+02	NCSSL	NO	BSL
	7440-09-7	Potassium	2.7E+01 J	2.0E+02	MG/KG	HENP-SB08-1-4-12B	10/10	31.3 - 48.6	2.0E+02	6.2E+02	N/A	N/A		NO	NUT
	7440-62-2	Vanadium	2.0E+00	1.8E+01	MG/KG	HENP-SB09-1-4-12B	10/10	0.626 - 0.972	1.8E+01	3.6E+01	3.9E+01 N	6.0E+00	NCSSL	NO	BSL
	7440-66-6	Zinc	5.6E-01 J	2.1E+00	MG/KG	HENP-SB03-1-4-12B	10/10	1.25 - 1.94	2.1E+00	1.4E+01	2.3E+03 N	1.2E+03	NCSSL	NO	BSL

[1] Minimum/Maximum detected concentrations.
[2] Maximum concentration is used for screening. If chemical was not detected, the maximum detection limit is used for screening.
[3] Background values are the background threshold values (BTVs) for subsurface soil data in undeveloped areas (combined soil types).
Background values are from *Final Expanded Soil Background Study Report, Marine Corps Base Camp Lejeune, Jacksonville, North Carolina* , CH2M HILL, August 2011.
[4] Oak Ridge National Laboratory (ORNL). May 2012. Regional Screening Levels for Chemical Contaminants at Superfund Sites. [Online]. Adjusted (RSLs based on non-cancer (N) divided by 10) residential soil RSLs. Available: http://epa-prgs.ornl.gov/chemicals/index.shtml
RSL value for pyrene used as surrogate for benzo(g,h,i)perylene.
RSL value for anthracene used as surrogate for phenanthrene.
RSL value for technical chlordane used as surrogate for alpha-chlordane.
RSL value for technical chlordane used as surrogate for gamma-chlordane.
RSL value for Chromium(VI) used as screening value for hexavalent chromium; chromium (III) used as screening value for total chromium.
RSL value for Manganese (non-diet) used as surrogate for manganese.
[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)
Deletion Reason: Detection Limit Above Screening Level (DLASL), not quantitatively evaluated in HHRA
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)
Detection Limit Below Screening Level (DLBSL)
Below Background Value (BBK)

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered
J = Estimated Value
C = Carcinogenic
N = Noncarcinogenic
NL = Noncarcinogenic lead residential soil RSL not adjusted by dividing by 10.
N/A = not available, not applicable
NCSSL = North Carolina Preliminary Soil Remediation Goal, June 2011
ND = Non-detect

Table 2.4
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Subsurface Soil
Exposure Medium: Air

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Emissions from Subsurface Soil	83-32-9	Acenaphthene	ND	ND	MG/KG		0/10	--	2.2E-04	N/A	N/A	N/A	N/A	NO	NTX
	120-12-7	Anthracene	ND	ND	MG/KG		0/10	--	6.0E-05	N/A	N/A	N/A	N/A	NO	NTX
	56-55-3	Benzo(a)anthracene	ND	ND	MG/KG		2/10	--	2.9E-08	N/A	8.7E-03 C	N/A	N/A	NO	DLBSL
	50-32-8	Benzo(a)pyrene	ND	ND	MG/KG		1/10	--	2.9E-08	N/A	8.7E-04 C	N/A	N/A	NO	DLBSL
	205-99-2	Benzo(b)fluoranthene	ND	ND	MG/KG		0/10	--	2.9E-08	N/A	8.7E-03 C	N/A	N/A	NO	DLBSL
	191-24-2	Benzo(g,h,i)perylene	ND	ND	MG/KG		0/10	--	2.9E-08	N/A	N/A	N/A	N/A	NO	NTX
	207-08-9	Benzo(k)fluoranthene	ND	ND	MG/KG		0/10	--	2.9E-08	N/A	8.7E-03 C	N/A	N/A	NO	DLBSL
	218-01-9	Chrysene	ND	ND	MG/KG		1/10	--	2.9E-08	N/A	8.7E-02 C	N/A	N/A	NO	DLBSL
	53-70-3	Dibenz(a,h)anthracene	ND	ND	MG/KG		0/10	--	2.9E-08	N/A	8.0E-04 C	N/A	N/A	NO	DLBSL
	206-44-0	Fluoranthene	ND	ND	MG/KG		0/10	--	2.9E-08	N/A	N/A	N/A	N/A	NO	NTX
	86-73-7	Fluorene	ND	ND	MG/KG		0/10	--	1.1E-04	N/A	N/A	N/A	N/A	NO	NTX
	193-39-5	Indeno(1,2,3-cd)pyrene	ND	ND	MG/KG		0/10	--	2.9E-08	N/A	8.7E-03 C	N/A	N/A	NO	DLBSL
	91-20-3	Naphthalene	ND	ND	MG/KG		0/10	--	6.7E-04	N/A	7.2E-02 C	N/A	N/A	NO	DLBSL
	85-01-8	Phenanthrene	ND	ND	MG/KG		0/10	--	2.9E-08	N/A	N/A	N/A	N/A	NO	NTX
	129-00-0	Pyrene	ND	ND	MG/KG		0/10	--	1.3E-05	N/A	N/A	N/A	N/A	NO	NTX
	72-54-8	4,4'-DDD	ND	ND	MG/KG		0/10	--	1.4E-09	N/A	3.5E-02 C	N/A	N/A	NO	DLBSL
	72-55-9	4,4'-DDE	ND	ND	MG/KG		0/10	--	1.4E-09	N/A	2.5E-02 C	N/A	N/A	NO	DLBSL
	50-29-3	4,4'-DDT	ND	ND	MG/KG		0/10	--	1.4E-09	N/A	2.5E-02 C	N/A	N/A	NO	DLBSL
	309-00-2	Aldrin	ND	ND	MG/KG		0/10	--	1.4E-09	N/A	5.0E-04 C	N/A	N/A	NO	DLBSL
	5103-71-9	alpha-Chlordane	ND	ND	MG/KG		0/10	--	1.4E-09	N/A	N/A	N/A	N/A	NO	NTX
	11096-82-5	Aroclor-1260	ND	ND	MG/KG		1/10	--	1.4E-08	N/A	4.3E-03 C	N/A	N/A	NO	DLBSL
	60-57-1	Dieldrin	ND	ND	MG/KG		0/10	--	1.4E-09	N/A	5.3E-04 C	N/A	N/A	NO	DLBSL
	5103-74-2	gamma-Chlordane	ND	ND	MG/KG		0/10	--	1.4E-09	N/A	N/A	N/A	N/A	NO	NTX
	76-44-8	Heptachlor	ND	ND	MG/KG		0/10	--	1.4E-09	N/A	1.9E-03 C	N/A	N/A	NO	DLBSL
	7429-90-5	Aluminum	7.5E-04 J	6.5E-03 J	MG/KG	HENP-SB09-1-4-12B	10/10	--	6.5E-03	N/A	5.2E-01 N	N/A	N/A	NO	DLBSL
	7440-36-0	Antimony	ND	ND	MG/KG		0/10	--	2.9E-06	N/A	N/A	N/A	N/A	NO	NTX
	7440-38-2	Arsenic	3.2E-07 J	3.3E-06	MG/KG	HENP-SB08-1-4-12B	9/10	--	3.3E-06	N/A	5.7E-04 C	N/A	N/A	NO	BSL
	7440-39-3	Barium	2.9E-06	9.2E-06	MG/KG	HENP-SB01-1-4-12B	10/10	--	9.2E-06	N/A	5.2E-02 N	N/A	N/A	NO	BSL
	7440-41-7	Beryllium	1.2E-08 J	5.4E-08 J	MG/KG	HENP-SB08-1-4-12B	10/10	--	5.4E-08	N/A	1.0E-03 C	N/A	N/A	NO	BSL
	7440-43-9	Cadmium	2.4E-08 J	2.4E-08 J	MG/KG	HENP-SB08-1-4-12B	1/10	--	2.4E-08	N/A	N/A	N/A	N/A	NO	NTX
	7440-70-2	Calcium	2.5E-04	3.0E-04	MG/KG	HENP-SB09-1-4-12B	2/10	--	3.0E-04	N/A	N/A	N/A	N/A	NO	NUT
	18540-29-9	Chromium (hexavalent)	1.1E-07 J	1.4E-06	MG/KG	HENP-SB06-1-4-12B	9/10	--	1.4E-06	N/A	1.1E-05 C	N/A	N/A	NO	BSL
	7440-47-3	Chromium	8.0E-07	7.9E-06	MG/KG	HENP-SB08-1-4-12B	10/10	--	7.9E-06	N/A	N/A	N/A	N/A	NO	NTX
	7440-48-4	Cobalt	ND	ND	MG/KG		0/10	--	7.4E-07	N/A	2.7E-04 C	N/A	N/A	NO	DLBSL
	7440-50-8	Copper	1.6E-07 J	2.0E-06	MG/KG	HENP-SB06-1-4-12B	10/10	--	2.0E-06	N/A	N/A	N/A	N/A	NO	NTX
	7439-89-6	Iron	4.4E-04 J	9.2E-03 J	MG/KG	HENP-SB09-1-4-12B	10/10	--	9.2E-03	N/A	N/A	N/A	N/A	NO	NTX

Table 2.4
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Subsurface Soil
Exposure Medium: Air

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Emissions from	7439-92-1	Lead	1.7E-06 J	4.0E-06	MG/KG	HENP-SB08-1-4-12B	10/10	--	4.0E-06	N/A	1.5E-01 A	N/A	N/A	NO	BSL
Subsurface	7439-95-4	Magnesium	1.4E-05 J	1.3E-04	MG/KG	HENP-SB08-1-4-12B	10/10	--	1.3E-04	N/A	N/A	N/A	N/A	NO	NUT
Soil	7439-96-5	Manganese	1.2E-06 J	5.4E-06	MG/KG	HENP-SB10-1-4-12B	10/10	--	5.4E-06	N/A	N/A	N/A	N/A	NO	NTX
(cont'd)	7439-97-6	Mercury	2.4E-09 J	1.4E-08	MG/KG	HENP-SB01-1-4-12B	10/10	--	1.4E-08	N/A	3.1E-02 N	N/A	N/A	NO	BSL
	7440-02-0	Nickel	2.3E-07 J	9.9E-07	MG/KG	HENP-SB02-1-4-12B	10/10	--	9.9E-07	N/A	9.4E-03 N	N/A	N/A	NO	BSL
	7440-09-7	Potassium	2.1E-05 J	1.5E-04	MG/KG	HENP-SB08-1-4-12B	10/10	--	1.5E-04	N/A	N/A	N/A	N/A	NO	NUT
	7440-62-2	Vanadium	1.5E-06	1.4E-05	MG/KG	HENP-SB09-1-4-12B	10/10	--	1.4E-05	N/A	N/A	N/A	N/A	NO	NTX
	7440-66-6	Zinc	4.2E-07 J	1.6E-06	MG/KG	HENP-SB03-1-4-12B	10/10	--	1.6E-06	N/A	N/A	N/A	N/A	NO	NTX

[1] Minimum/Maximum calculated air concentrations from surface soil concentrations. Air concentrations calculated as Cair = Csoil*1000*(1/PEF + 1/VF).
PEF = 1.36E+09 m3/kg. VF calculated for volatile constituents only, on Table 2.2A. PEF and VF from USEPA's Soil Screening Guidance. (USEPA, July 1996)
[2] Maximum concentration is used for screening. If chemical was not detected, the maximum detection limit is used for screening.
[3] Background values not available.
[4] Oak Ridge National Laboratory (ORNL). May 2012. Regional Screening Levels for Chemical Contaminants at Superfund Sites. [Online]. Adjusted (RSLs based on non-cancer (N) divided by 10) residential air RSLs. Available: http://epa-prgs.ornl.gov/chemicals/index.shtml
RSL value for pyrene used as surrogate for benzo(g,h,i)perylene.
RSL value for anthracene used as surrogate for phenanthrene.
RSL value for technical chlordane used as surrogate for alpha-chlordane.
RSL value for technical chlordane used as surrogate for gamma-chlordane.
RSL value for Chromium(VI) used as a screening value for hexavalent chromium
[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)
Deletion Reason: Detection Limit Above Screening Level (DLASL), not quantitatively evaluated in HHRA
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)
Detection Limit Below Screening Level (DLBSL)

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered
A = National Ambient Air Quality Standard
J = Estimated Value
C = Carcinogenic
N = Noncarcinogenic
N/A = not available, not applicable
ND = Non-detect

Table 2.4A
Calculation of Volatilization Factor
Henderson Pond and Hickory Pond Recreational Area
MCB Camp Lej, North Carolina

Chemical	CAS Number	Diffusivity in Air (D_i) (cm^2/s)	Henry's Law Constant (H') (unitless)	Diffusivity in Water (D_w) (cm^2/s)	Soil Organic Carbon Partition Coeff. (K_{oc}) (L/kg)	Soil Water Partition Coeff. ($K_d = K_{oc} \times F_{oc}$) ($g/cm^3$)	Solubility in Water (S) (mg/L)	Apparent Diffusivity (D_A) (cm^2/s)	Volatilization Factor (VF) (m^3/kg)	Soil Saturation Concentration (C_{sat}) (mg/kg)
Acenaphthene	83-32-9	5.1E-02	7.5E-03	8.3E-06	5.0E+03	3.0E+01	3.9E+00	6.7E-07	1.7E+05	1.2E+02
Anthracene	120-12-7	3.9E-02	2.3E-03	7.9E-06	1.6E+04	9.8E+01	4.3E-02	4.9E-08	6.4E+05	4.3E+00
Fluorene	86-73-7	4.4E-02	3.9E-03	7.9E-06	9.2E+03	5.5E+01	1.7E+00	1.7E-07	3.4E+05	9.3E+01
Naphthalene	91-20-3	6.0E-02	1.8E-02	8.4E-06	1.5E+03	9.3E+00	3.1E+01	6.2E-06	5.7E+04	2.9E+02
Pyrene	129-00-0	2.8E-02	4.9E-04	7.2E-06	5.4E+04	3.3E+02	1.4E-01	2.3E-09	2.9E+06	4.4E+01

Volatilization factor (VF) = (m^3/kg)

$$\frac{Q/C * (3.14 * D_A * T)^{1/2} * 10^{-4}\ m^2/cm^2}{2 * r_b * D_A}$$

Apparent Diffusivity (D_A) = (cm^2/s)

$$\frac{[(Q_a^{10/3} * D_i * H' + Q_w^{10/3} * D_w)/n^2]}{(r_b * K_d + Q_w + Q_a * H')}$$

l Saturation Concentration (C_{sat}) =

$$S/r_b * (K_d * r_b + Q_w + H' * Q_a)$$

Parameters	Values
Q/C - Inverse of the mean concentration at the center of a 0.5-acre-square source located in Raleigh-Durham, NC (g/m^2-s per kg/m^3)	77.26
T - Exposure interval(s)	9.5E+08
ρ_b - Soil bulk density (g/cm^3)	1.5
Θ_a - Air-filled soil porosity (L_{air}/L_{water}) = n - Θ_w	0.28
n - Total soil porosity (Lpore/Lsoil) = 1 - (ρ_b/ρ_s)	0.43
Θ_w - Water-filled soil porosity (Lwater/Lsoil)	0.15
ρ_s - Soil particle density (g/cm^3)	2.65
f_{oc} - fraction organic carbon in soil (g/g)	0.006

Notes:
Equations from USEPA, 1996. *Soil Screening Guidance: User's Guide.* EPA/540/R-96/018.
Physical/chemical properties from Oak Ridge National Laboratory (ORNL). May 2012. Regional Screening Levels for Chemical Contaminants at Superfund Sites.

Table 2.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Henderson Pond	71-55-6	1,1,1-Trichloroethane	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	2.0E+02 M	7.5E+02	R-n	NO	DLBSL
	79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	4.0E+00 A	6.6E-02	R-c	NO	DLBSL
	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	5.3E+03 R-n	N/A	N/A	NO	DLBSL
	79-00-5	1,1,2-Trichloroethane	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.6E+01 A	4.1E-02	R-n	NO	DLBSL
	75-34-3	1,1-Dichloroethane	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	2.4E+00 R-c	N/A	N/A	NO	DLBSL
	75-35-4	1,1-Dichloroethene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	7.1E+03 A	2.4E+00	R-c	NO	DLBSL
	120-82-1	1,2,4-Trichlorobenzene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	7.0E+01 A	2.6E+01	R-n	NO	DLBSL
	96-12-8	1,2-Dibromo-3-chloropropane	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.2E-04 R-c	N/A	N/A	YES	DLASL
	106-93-4	1,2-Dibromoethane	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	6.5E-03 R-c	N/A	N/A	YES	DLASL
	95-50-1	1,2-Dichlorobenzene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.3E+03 A	2.8E+01	R-n	NO	DLBSL
	107-06-2	1,2-Dichloroethane	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.7E+01 A	1.5E-01	R-c	NO	DLBSL
	78-87-5	1,2-Dichloropropane	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.5E+01 A	3.8E-01	R-c	NO	DLBSL
	541-73-1	1,3-Dichlorobenzene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	9.6E+02 A	4.2E-01	R-c	NO	DLBSL
	106-46-7	1,4-Dichlorobenzene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.9E+02 A	4.2E-01	R-c	NO	DLBSL
	591-78-6	2-Hexanone	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	3.4E+00 R-n	N/A	N/A	YES	DLASL
	67-64-1	Acetone	ND	ND	UG/L		0/5	12 - 12	1.2E+01	N/A	1.2E+03 R-n	N/A	N/A	NO	DLBSL
	71-43-2	Benzene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	5.1E+01 N	2.2E+00	A	NO	DLBSL
	75-27-4	Bromodichloromethane	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.7E+01 A	1.2E-01	R-c	NO	DLBSL
	75-25-2	Bromoform	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.4E+02 A	7.9E+00	R-c	NO	DLBSL
	74-83-9	Bromomethane	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.5E+03 A	7.0E-01	R-n	NO	DLBSL
	75-15-0	Carbon disulfide	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	7.2E+01 R-n	N/A	N/A	NO	DLBSL
	56-23-5	Carbon tetrachloride	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.6E+00 N	2.3E-01	A	NO	DLBSL
	108-90-7	Chlorobenzene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.6E+03 A	7.2E+00	R-n	NO	DLBSL
	75-00-3	Chloroethane	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	2.1E+03 R-n	N/A	N/A	NO	DLBSL
	67-66-3	Chloroform	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	4.7E+02 A	1.9E-01	R-c	NO	DLBSL
	74-87-3	Chloromethane	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.9E+01 R-n	N/A	N/A	NO	DLBSL
	156-59-2	cis-1,2-Dichloroethene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	2.8E+00 R-n	N/A	N/A	NO	DLBSL
	10061-01-5	cis-1,3-Dichloropropene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	2.1E+01 A	4.1E-01	R-c	NO	DLBSL
	110-82-7	Cyclohexane	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.3E+03 R-n	N/A	N/A	NO	DLBSL
	124-48-1	Dibromochloromethane	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.3E+01 A	1.5E-01	R-c	NO	DLBSL
	75-71-8	Dichlorodifluoromethane (Freon-12)	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.9E+01 R-n	N/A	N/A	NO	DLBSL
	100-41-4	Ethylbenzene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	2.1E+03 A	1.3E+00	R-c	NO	DLBSL
	98-82-8	Isopropylbenzene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.9E+01 R-n	N/A	N/A	NO	DLBSL
	m&pXYLENE	m- and p-Xylene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.9E+01 R-n	N/A	N/A	NO	DLBSL
	79-20-9	Methyl acetate	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.6E+03 R-n	N/A	N/A	NO	DLBSL
	108-87-2	Methylcyclohexane	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	5.7E+01 R-n	N/A	N/A	NO	DLBSL
	75-09-2	Methylene chloride	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	5.9E+02 A	8.4E+00	R-n	NO	DLBSL
	1634-04-4	Methyl-tert-butyl ether (MTBE)	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.2E+01 R-c	N/A	N/A	NO	DLBSL
	95-47-6	o-Xylene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.9E+01 R-n	N/A	N/A	NO	DLBSL

Table 2.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Henderson Pond	100-42-5	Styrene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.1E+02 R-n	N/A	N/A	NO	DLBSL
(cont'd)	127-18-4	Tetrachloroethene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.3E+00 A	3.5E+00	R-n	NO	DLBSL
	108-88-3	Toluene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.5E+04 A	8.6E+01	R-n	NO	DLBSL
	156-60-5	trans-1,2-Dichloroethene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.0E+04 A	8.6E+00	R-n	NO	DLBSL
	10061-02-6	trans-1,3-Dichloropropene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	2.1E+01 A	8.6E+00	R-n	NO	DLBSL
	79-01-6	Trichloroethene	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.0E+01 N	2.5E+00	A	NO	DLBSL
	75-69-4	Trichlorofluoromethane (Freon-11)	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.1E+02 R-n	N/A	N/A	NO	DLBSL
	75-01-4	Vinyl chloride	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	2.4E+00 N	2.5E-02	A	NO	DLBSL
	92-52-4	1,1-Biphenyl	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	8.3E-02 R-n	N/A	N/A	YES	DLASL
	95-95-4	2,4,5-Trichlorophenol	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	3.6E+03 A	8.9E+01	R-n	NO	DLBSL
	88-06-2	2,4,6-Trichlorophenol	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	2.4E+00 A	9.0E-01	R-n	YES	DLASL
	120-83-2	2,4-Dichlorophenol	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	2.9E+02 A	3.5E+00	R-n	NO	DLBSL
	105-67-9	2,4-Dimethylphenol	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	8.5E+02 A	2.7E+01	R-n	NO	DLBSL
	51-28-5	2,4-Dinitrophenol	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	5.3E+03 A	3.0E+00	R-n	NO	DLBSL
	121-14-2	2,4-Dinitrotoluene	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	3.4E+00 A	2.0E-01	R-c	YES	DLASL
	606-20-2	2,6-Dinitrotoluene	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	1.5E+00 R-n	N/A	N/A	YES	DLASL
	91-58-7	2-Chloronaphthalene	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	1.6E+03 A	5.5E+01	R-n	NO	DLBSL
	95-57-8	2-Chlorophenol	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	1.5E+02 A	7.1E+00	R-n	NO	DLBSL
	91-57-6	2-Methylnaphthalene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	2.7E+00 R-n	N/A	N/A	NO	DLBSL
	95-48-7	2-Methylphenol	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	7.2E+01 R-n	N/A	N/A	NO	DLBSL
	88-74-4	2-Nitroaniline	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	1.5E+01 R-n	N/A	N/A	NO	DLBSL
	88-75-5	2-Nitrophenol	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	1.5E+02 A	7.1E+00	R-n	NO	DLBSL
	m&pCRESOL	3- and 4-Methylphenol	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	1.4E+02 R-n	N/A	N/A	NO	DLBSL
	91-94-1	3,3'-Dichlorobenzidine	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	2.8E-02 A	1.1E-01	R-c	YES	DLASL
	99-09-2	3-Nitroaniline	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	1.5E+01 R-n	N/A	N/A	NO	DLBSL
	534-52-1	4,6-Dinitro-2-methylphenol	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	2.8E+02 A	1.2E-01	R-n	NO	DLBSL
	101-55-3	4-Bromophenyl-phenylether	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	N/A	N/A	N/A	NO	NTX
	59-50-7	4-Chloro-3-methylphenol	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	1.5E+02 A	1.1E+02	R-n	NO	DLBSL
	106-47-8	4-Chloroaniline	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	3.2E-01 R-c	N/A	N/A	YES	DLASL
	7005-72-3	4-Chlorophenyl-phenylether	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	2.7E+00 R-n	N/A	N/A	YES	DLASL
	100-01-6	4-Nitroaniline	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	3.3E+00 R-c	N/A	N/A	YES	DLASL
	100-02-7	4-Nitrophenol	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	6.9E+02 A	1.2E-01	R-c	NO	DLBSL
	83-32-9	Acenaphthene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	9.9E+02 A	4.0E+01	R-n	NO	DLBSL
	208-96-8	Acenaphthylene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	9.9E+02 A	4.0E+01	R-n	NO	DLBSL
	98-86-2	Acetophenone	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	1.5E+02 R-n	N/A	N/A	NO	DLBSL
	120-12-7	Anthracene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	4.0E+04 A	1.3E+02	R-n	NO	DLBSL
	1912-24-9	Atrazine	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	2.6E-01 R-c	N/A	N/A	YES	DLASL
	100-52-7	Benzaldehyde	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	1.5E+02 R-n	N/A	N/A	NO	DLBSL
	56-55-3	Benzo(a)anthracene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.1E-02 N	1.8E-02	A	YES	DLASL
	50-32-8	Benzo(a)pyrene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.1E-02 N	1.8E-02	A	YES	DLASL

Table 2.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Henderson Pond	205-99-2	Benzo(b)fluoranthene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.1E-02 N	1.8E-02	A	YES	DLASL
(cont'd)	191-24-2	Benzo(g,h,i)perylene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	4.0E+03 A	8.7E+00	R-n	NO	DLBSL
	207-08-9	Benzo(k)fluoranthene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.1E-02 N	1.8E-02	A	YES	DLASL
	111-91-1	bis(2-Chloroethoxy)methane	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	4.7E+00 R-n	N/A	N/A	YES	DLASL
	111-44-4	bis(2-Chloroethyl)ether	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	5.3E-01 A	1.2E-02	R-c	YES	DLASL
	39638-32-9	bis(2-Chloroisopropyl)ether	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	N/A	N/A	N/A	NO	NTX
	117-81-7	bis(2-Ethylhexyl)phthalate	ND	ND	UG/L		0/5	10 - 10	1.0E+01	N/A	2.2E+00 A	7.1E-02	R-c	YES	DLASL
	85-68-7	Butylbenzylphthalate	ND	ND	UG/L		0/5	10 - 10	1.0E+01	N/A	1.9E+03 A	1.4E+01	R-c	NO	DLBSL
	105-60-2	Caprolactam	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	7.7E+02 R-n	N/A	N/A	NO	DLBSL
	86-74-8	Carbazole	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	N/A	N/A	N/A	NO	NTX
	218-01-9	Chrysene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.1E-02 N	1.8E-02	A	YES	DLASL
	53-70-3	Dibenz(a,h)anthracene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.1E-02 N	1.8E-02	A	YES	DLASL
	132-64-9	Dibenzofuran	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	5.8E-01 R-n	N/A	N/A	YES	DLASL
	84-66-2	Diethylphthalate	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	4.4E+04 A	1.1E+03	R-n	NO	DLBSL
	60-51-5	Dimethoate	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.1E-01 R-n	N/A	N/A	YES	DLASL
	131-11-3	Dimethyl phthalate	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	1.1E+06 A	N/A	N/A	NO	DLBSL
	84-74-2	Di-n-butylphthalate	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	4.5E+03 A	6.7E+01	R-n	NO	DLBSL
	117-84-0	Di-n-octylphthalate	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	6.3E+01 R-n	N/A	N/A	NO	DLBSL
	206-44-0	Fluoranthene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	1.4E+02 A	6.3E+01	R-n	NO	DLBSL
	86-73-7	Fluorene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	5.3E+03 A	2.2E+01	R-n	NO	DLBSL
	118-74-1	Hexachlorobenzene	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	2.9E-04 A	4.2E-02	R-c	YES	DLASL
	87-68-3	Hexachlorobutadiene	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	1.8E+01 N	N/A	N/A	NO	DLBSL
	77-47-4	Hexachlorocyclopentadiene	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	1.1E+03 A	2.2E+00	R-n	NO	DLBSL
	67-72-1	Hexachloroethane	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	3.3E+00 A	5.1E-01	R-n	YES	DLASL
	193-39-5	Indeno(1,2,3-cd)pyrene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.1E-02 N	1.8E-02	A	YES	DLASL
	78-59-1	Isophorone	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	9.6E+02 A	6.70E+01	R-c	NO	DLBSL
	91-20-3	Naphthalene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	1.4E-01 R-c	N/A	N/A	NO	DLBSL
	621-64-7	n-Nitroso-di-n-propylamine	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	5.1E-01 A	9.3E-03	R-c	YES	DLASL
	86-30-6	n-Nitrosodiphenylamine	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	6.0E+00 A	1.0E+01	R-c	YES	DLASL
	98-95-3	Nitrobenzene	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	6.9E+02 A	1.2E-01	R-c	NO	DLBSL
	87-86-5	Pentachlorophenol	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	3.0E+00 A	1.7E-01	R-c	YES	DLASL
	85-01-8	Phenanthrene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	9.9E+02 A	1.3E+02	R-n	NO	DLBSL
	108-95-2	Phenol	ND	ND	UG/L		0/5	10 - 11	1.1E+01	N/A	8.6E+05 A	4.5E+02	R-n	NO	DLBSL
	298-02-2	Phorate	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	2.3E-01 R-n	N/A	N/A	YES	DLASL
	129-00-0	Pyrene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	4.0E+03 A	8.7E+00	R-n	NO	DLBSL
	72-54-8	4,4'-DDD	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.1E-04 A	2.8E-01	R-c	YES	DLASL
	72-55-9	4,4'-DDE	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	2.2E-04 A	2.0E-01	R-c	YES	DLASL
	50-29-3	4,4'-DDT	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	2.0E-04 N	2.0E-01	R-c	YES	DLASL
	309-00-2	Aldrin	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	5.0E-05 A	2.1E-04	R-c	YES	DLASL
	319-84-6	alpha-BHC	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	4.9E-03 A	6.2E-03	R-c	YES	DLASL

Table 2.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Henderson Pond	5103-71-9	alpha-Chlordane	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	8.0E-04 N	2.7E-02	R-c	YES	DLASL
(cont'd)	12674-11-2	Aroclor-1016	ND	ND	UG/L		0/5	0.68 - 0.68	6.8E-01	N/A	1.1E-01 R-n	N/A	N/A	YES	DLASL
	11104-28-2	Aroclor-1221	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	4.3E-03 R-c	N/A	N/A	YES	DLASL
	11141-16-5	Aroclor-1232	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	4.3E-03 R-c	N/A	N/A	YES	DLASL
	53469-21-9	Aroclor-1242	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.4E-02 R-c	N/A	N/A	YES	DLASL
	12672-29-6	Aroclor-1248	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.4E-02 R-c	N/A	N/A	YES	DLASL
	11097-69-1	Aroclor-1254	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.1E-02 R-n	N/A	N/A	YES	DLASL
	11096-82-5	Aroclor-1260	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.4E-02 R-c	N/A	N/A	YES	DLASL
	86-50-0	Azinphos methyl	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	4.3E+00 R-n	N/A	N/A	NO	DLBSL
	319-85-7	beta-BHC	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	1.7E-02 A	2.2E-02	R-c	YES	DLASL
	35400-43-2	Bolstar	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	N/A	N/A	N/A	NO	NTX
	2921-88-2	Chlorpyrifos	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	6.2E-01 R-n	N/A	N/A	YES	DLASL
	56-72-4	Coumaphos	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	N/A	N/A	N/A	NO	NTX
	319-86-8	delta-BHC	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	2.2E-02 R-c	N/A	N/A	YES	DLASL
	8065-48-3	Demeton	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	5.2E-02 R-n	N/A	N/A	YES	DLASL
	333-41-5	Diazinon	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	7.9E-01 R-n	N/A	N/A	YES	DLASL
	62-73-7	Dichlorvos	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	2.3E-01 R-c	N/A	N/A	YES	DLASL
	60-57-1	Dieldrin	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	5.4E-05 A	1.5E-03	R-c	YES	DLASL
	298-04-4	Disulfoton	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.8E-02 R-n	N/A	N/A	YES	DLASL
	959-98-8	Endosulfan I	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	8.9E+01 A	7.8E+00	R-n	NO	DLBSL
	33213-65-9	Endosulfan II	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	8.9E+01 A	7.8E+00	R-n	NO	DLBSL
	1031-07-8	Endosulfan sulfate	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	8.9E+01 A	7.8E+00	R-n	NO	DLBSL
	72-20-8	Endrin	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	6.0E-02 A	1.7E-01	R-n	YES	DLASL
	7421-93-4	Endrin aldehyde	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.0E-01 A	1.7E-01	R-n	NO	DLBSL
	53494-70-5	Endrin ketone	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	6.0E-02 A	1.7E-01	R-n	YES	DLASL
	13194-48-4	Ethoprop	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	N/A	N/A	N/A	NO	NTX
	115-90-2	Fensulfothion	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	N/A	N/A	N/A	NO	NTX
	2104-64-5	Ethyl p-nitrophenyl phenylphosphorothioate	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	6.6E-03 R-n	N/A	N/A	YES	DLASL
	55-38-9	Fenthion	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	N/A	N/A	N/A	NO	NTX
	58-89-9	gamma-BHC (Lindane)	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	1.8E+00 A	3.6E-02	R-c	NO	DLBSL
	5103-74-2	gamma-Chlordane	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	2.7E-02 R-c	N/A	N/A	YES	DLASL
	76-44-8	Heptachlor	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	8.0E-05 N	1.8E-03	R-c	YES	DLASL
	1024-57-3	Heptachlor epoxide	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.9E-05 A	3.3E-03	R-c	YES	DLASL
	121-75-5	Malathion	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.0E+01 R-n	N/A	N/A	NO	DLBSL
	150-50-5	Merphos	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	4.7E-02 R-n	N/A	N/A	YES	DLASL
	72-43-5	Methoxychlor	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	1.0E+02 A	2.7E+00	N	NO	DLBSL
	298-00-0	Methyl parathion	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.4E-01 R-n	N/A	N/A	YES	DLASL
	7786-34-7	Mevinphos	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	N/A	N/A	N/A	NO	NTX
	6923-22-4	Monocrotophos	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	N/A	N/A	N/A	NO	NTX
	300-76-5	Naled	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.1E+00 R-n	N/A	N/A	NO	DLBSL

Table 2.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Henderson Pond	56-38-2	Parathion	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	6.5E+00 R-n	N/A	N/A	NO	DLBSL
(cont'd)	299-84-3	Ronnel	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.0E+01 R-n	N/A	N/A	NO	DLBSL
	3689-24-5	Sulfotepp	ND	ND	UG/L		0/5	0.5 - 0.5	5.0E-01	N/A	5.3E-01 R-n	N/A	N/A	NO	DLBSL
	107-49-3	Tetraethyl pyrophosphate (TEPP)	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	N/A	N/A	N/A	NO	NTX
	961-11-5	Tetrachlorovinphos	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	2.4E+00 R-c	N/A	N/A	NO	DLBSL
	34643-46-4	Tokuthion (Prothiophos)	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	N/A	N/A	N/A	NO	NTX
	8001-35-2	Toxaphene	ND	ND	UG/L		0/5	0.64 - 0.64	6.4E-01	N/A	2.8E-04 A	1.3E-02	R-c	YES	DLASL
	7429-90-5	Aluminum	1.4E+02 J	1.7E+02 J	UG/L	IR74-HP-SW02-0-0_5-11D	5/5	200 - 200	1.7E+02	N/A	1.6E+03 R-n	N/A	N/A	NO	BSL
	7440-36-0	Antimony	ND	ND	UG/L		0/5	40 - 40	4.0E+01	N/A	6.4E+02 A	6.0E-01	R-n	NO	DLBSL
	7440-38-2	Arsenic	4.4E+00 J	4.4E+00 J	UG/L	IR74-HP-SW04-0-0_5-11D	1/5	40 - 40	4.4E+00	N/A	1.0E+01 N	4.5E-02	R-c	NO	BSL
	7440-39-3	Barium	4.4E+00 J	5.6E+00 J	UG/L	IR74-HP-SW04D-0-0_5-11D	5/5	10 - 10	5.6E+00	N/A	1.0E+03 A	2.9E+02	R-n	NO	BSL
	7440-41-7	Beryllium	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.6E+00 R-n	N/A	N/A	NO	DLBSL
	7440-43-9	Cadmium	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	6.9E-01 R-n	N/A	N/A	YES	DLASL
	7440-70-2	Calcium	1.3E+04	1.4E+04	UG/L	IR74-HP-SW01-0-0_5-11D	5/5	500 - 500	1.4E+04	N/A	N/A	N/A	N/A	NO	NUT
	18540-29-9	Chromium (hexavalent)	ND	ND	UG/L		0/5	30 - 30	3.0E+01	N/A	3.1E-02 R-c	N/A	N/A	YES	DLASL
	7440-47-3	Chromium	3.5E-01 J	3.5E-01 J	UG/L	IR74-HP-SW02-0-0_5-11D	2/5	10 - 10	3.5E-01	N/A	1.0E+02 M	N/A	N/A	NO	BSL
	7440-48-4	Cobalt	ND	ND	UG/L		0/5	10 - 10	1.0E+01	N/A	4.7E-01 R-n	N/A	N/A	YES	DLASL
	7440-50-8	Copper	2.7E+00 J	5.0E+01 J	UG/L	IR74-HP-SW04D-0-0_5-11D	5/5	10 - 10	5.0E+01	N/A	6.2E+01 R-n	N/A	N/A	NO	BSL
	7439-89-6	Iron	8.4E+01	1.2E+02	UG/L	IR74-HP-SW02-0-0_5-11D	5/5	50 - 50	1.2E+02	N/A	1.1E+03 R-n	N/A	N/A	NO	BSL
	7439-92-1	Lead	3.0E+00 J	3.0E+00 J	UG/L	IR74-HP-SW04D-0-0_5-11D	1/5	20 - 20	3.0E+00	N/A	1.5E+01 M	N/A	N/A	NO	BSL
	7439-95-4	Magnesium	1.1E+03	1.1E+03	UG/L	IR74-HP-SW04D-0-0_5-11D	5/5	500 - 500	1.1E+03	N/A	N/A	N/A	N/A	NO	NUT
	7439-96-5	Manganese	2.4E+00 J	5.9E+00 J	UG/L	IR74-HP-SW02-0-0_5-11D	4/5	20 - 20	5.9E+00	N/A	1.0E+02 A	3.2E+01	R-n	NO	BSL
	7439-97-6	Mercury	ND	ND	UG/L		0/5	0.2 - 0.2	2.0E-01	N/A	4.3E-01 R-n	N/A	N/A	NO	DLBSL
	7440-02-0	Nickel	ND	ND	UG/L		0/5	10 - 10	1.0E+01	N/A	4.6E+03 A	3.0E+01	R-n	NO	DLBSL
	7440-09-7	Potassium	9.3E+02 J	1.0E+03 J	UG/L	IR74-HP-SW04-0-0_5-11D	5/5	2000 - 2000	1.0E+03	N/A	N/A	N/A	N/A	NO	NUT
	7782-49-2	Selenium	ND	ND	UG/L		0/5	40 - 40	4.0E+01	N/A	5.0E+01 M	7.8E+00	R-n	NO	DLBSL
	7440-22-4	Silver	ND	ND	UG/L		0/5	10 - 10	1.0E+01	N/A	7.1E+00 R-n	N/A	N/A	YES	DLASL
	7440-23-5	Sodium	4.7E+03	4.9E+03	UG/L	IR74-HP-SW05-0-0_5-11D	5/5	500 - 500	4.9E+03	N/A	N/A	N/A	N/A	NO	NUT
	7440-28-0	Thallium	ND	ND	UG/L		0/5	20 - 20	2.0E+01	N/A	4.7E-01 A	1.6E-02	R-n	YES	DLASL
	7440-62-2	Vanadium	1.4E+00 J	1.8E+00 J	UG/L	IR74-HP-SW04D-0-0_5-11D	5/5	10 - 10	1.8E+00	N/A	7.8E+00 R-n	N/A	N/A	NO	BSL
	7440-66-6	Zinc	3.3E+01	3.3E+01	UG/L	IR74-HP-SW04D-0-0_5-11D	1/5	20 - 20	3.3E+01	N/A	2.6E+04 A	4.7E+02	R-n	NO	BSL

[1] Minimum/Maximum detected concentrations.
[2] Maximum concentration is used for screening. If chemical was not detected, the maximum detection limit is used for screening.
[3] Background values not available.
[4] North Carolina 15A NCAC 2B surface water standards for human health, if available.
If North Carolina value not available, Federal Ambient Water Quality Criteria for Human Health (organisms only, if not available was used).
If none of these values were available, the tap water RSL (May 2012) was used.
RSL value for Methyl Isobutyl Ketone (4-methyl-2-pentanone) used as surrogate for 2-Hexanone.
RSL value for methoxychlor used as surrogate for 4-chlorophenyl-phenylether.

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered
J = Estimated Value
A= Federal Ambient Water Quality Criteria, Human Health Criteria, Organisms
N - North Carolina 15A NCAC 2B Human Health, amended Feb. 2010.
M = Safe Drinking Water Act Maximum Contaminant Level (MCL), since the National Recommended Water Quality Criteria (NR) refers to the MCL, value is the MCL.

Table 2.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection

RSL value for p-Cresol used as surrogate for 3- and 4-methylphenol.
RSL value for methoxychlor used as surrogate for 4-Chlorophenyl-phenylether.
RSL value for Nitrobenzene used as surrogate for 4-Nitrophenol.
RSL value for Acenaphthene used as surrogate for Acenaphthylene.
RSL value for pyrene used as surrogate for benzo(g,h,i)perylene.
RSL for di-n-octylphthalate calculated using the Risk Assessment Information System Preliminary Remediation Goal calculator and the non-cancer oral reference dose of 0.04 mg/kg-day from the PPRTV database.
RSL value for anthracene used as surrogate for phenanthrene.
RSL value for technical chlordane used as surrogate for alpha-chlordane.
RSL value for technical-HCH used as surrogate for delta-BHC.
RSL value for technical chlordane used as surrogate for gamma-chlordane.
RSL value for Chromium(VI) used as surrogate for chromium.
RSL value for Manganese (water) used as surrogate for manganese.
RSL value for Mercury (inorganic salts) used as surrogate for mercury.
RSL value for 1,3-dichloropropene used as a surrogate for cis-1,3-dichloropropene and trans-1,3-dichloropropene.
RSL value for endosulfan used as surrogate for endosulfan I, endosulfan II, and endosulfan sulfate.
RSL value for endrin used as surrogate for endrin aldehyde and endrin ketone.
RSL value for 2-chlorophenol used as surrogate for 4-chloro-3-methylphenol and 2-nitrophenol.

R-n = USEPA Regional Screening Level, noncarcinogenic (therefore, RSL divided by 10, see text)
R-c = USEPA Regional Screening Level, Carcinogenic
ND = Not Detected
µg/L = micrograms per liter

[5] Rationale Codes

Selection Reason:	Above Screening Levels (ASL)
Deletion Reason:	Detection Limit Above Screening Level (DLASL), not quantitatively evaluated in HHRA
	No Toxicity Information (NTX)
	Essential Nutrient (NUT)
	Below Screening Level (BSL)
	Detection Limit Below Screening Level (DLBSL)

Table 2.6
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Hickory Pond	71-55-6	1,1,1-Trichloroethane	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	2.0E+02 M	7.5E+02	R-n	NO	DLBSL
	79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	4.0E+00 A	6.6E-02	N/A	NO	DLBSL
	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	5.3E+03 R-n	N/A	N/A	NO	DLBSL
	79-00-5	1,1,2-Trichloroethane	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.6E+01 A	4.1E-02	R-n	NO	DLBSL
	75-34-3	1,1-Dichloroethane	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	2.4E+00 R-c	N/A	N/A	NO	DLBSL
	75-35-4	1,1-Dichloroethene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	7.1E+03 A	2.4E+00	R-c	NO	DLBSL
	120-82-1	1,2,4-Trichlorobenzene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	7.0E+01 A	2.6E+01	R-n	NO	DLBSL
	96-12-8	1,2-Dibromo-3-chloropropane	ND	ND	UG/L		0/5	10 - 10	1.0E+01	N/A	3.2E-04 R-c	N/A	N/A	YES	DLASL
	106-93-4	1,2-Dibromoethane	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	6.5E-03 R-c	N/A	N/A	YES	DLASL
	95-50-1	1,2-Dichlorobenzene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.3E+03 A	2.8E+01	R-n	NO	DLBSL
	107-06-2	1,2-Dichloroethane	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	3.7E+01 A	1.5E-01	R-c	NO	DLBSL
	78-87-5	1,2-Dichloropropane	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.5E+01 A	3.8E-01	R-c	NO	DLBSL
	541-73-1	1,3-Dichlorobenzene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	9.6E+02 A	4.2E-01	R-c	NO	DLBSL
	106-46-7	1,4-Dichlorobenzene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.9E+02 A	4.2E-01	R-c	NO	DLBSL
	591-78-6	2-Hexanone	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	3.4E+00 R-n	N/A	N/A	YES	DLASL
	67-64-1	Acetone	1.4E+01 J	1.9E+01 J	UG/L	HICP-SW03-0-1-12B	5/5	25 - 25	1.9E+01	N/A	1.2E+03 R-n	N/A	N/A	NO	BSL
	71-43-2	Benzene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	5.1E+01 N	2.2E+00	A	NO	DLBSL
	75-27-4	Bromodichloromethane	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.7E+01 A	1.2E-01	R-c	NO	DLBSL
	75-25-2	Bromoform	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.4E+02 A	7.9E+00	R-c	NO	DLBSL
	74-83-9	Bromomethane	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.5E+03 A	7.0E-01	R-n	NO	DLBSL
	75-15-0	Carbon disulfide	ND	ND	UG/L		0/5	10 - 10	1.0E+01	N/A	7.2E+01 R-n	N/A	N/A	NO	DLBSL
	56-23-5	Carbon tetrachloride	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.6E+00 N	2.3E-01	A	YES	DLASL
	108-90-7	Chlorobenzene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.6E+03 A	7.2E+00	R-n	NO	DLBSL
	75-00-3	Chloroethane	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	2.1E+03 R-n	N/A	N/A	NO	DLBSL
	67-66-3	Chloroform	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	4.7E+02 A	1.9E-01	R-c	NO	DLBSL
	74-87-3	Chloromethane	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.9E+01 R-n	N/A	N/A	NO	DLBSL
	156-59-2	cis-1,2-Dichloroethene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	2.8E+00 R-n	N/A	N/A	NO	DLBSL
	10061-01-5	cis-1,3-Dichloropropene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	2.1E+01 A	4.1E-01	R-c	NO	DLBSL
	110-82-7	Cyclohexane	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.3E+03 R-n	N/A	N/A	NO	DLBSL
	124-48-1	Dibromochloromethane	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.3E+01 A	1.5E-01	R-c	NO	DLBSL
	75-71-8	Dichlorodifluoromethane (Freon-12)	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.9E+01 R-n	N/A	N/A	NO	DLBSL
	100-41-4	Ethylbenzene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	2.1E+03 A	1.3E+00	R-c	NO	DLBSL
	98-82-8	Isopropylbenzene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	3.9E+01 R-n	N/A	N/A	NO	DLBSL
	m&pXYLENE	m- and p-Xylene	ND	ND	UG/L		0/5	4 - 4	4.0E+00	N/A	1.9E+01 R-n	N/A	N/A	NO	DLBSL

Table 2.6
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Hickory Pond	79-20-9	Methyl acetate	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.6E+03 R-n	N/A	N/A	NO	DLBSL
(cont'd)	108-87-2	Methylcyclohexane	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	5.7E+01 R-n	N/A	N/A	NO	DLBSL
	75-09-2	Methylene chloride	ND	ND	UG/L		0/5	10 - 10	1.0E+01	N/A	5.9E+02 A	8.4E+00	R-n	NO	DLBSL
	1634-04-4	Methyl-tert-butyl ether (MTBE)	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.2E+01 R-c	N/A	N/A	NO	DLBSL
	95-47-6	o-Xylene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.9E+01 R-n	N/A	N/A	NO	DLBSL
	100-42-5	Styrene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.1E+02 R-n	N/A	N/A	NO	DLBSL
	127-18-4	Tetrachloroethene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	6.9E-01 A	3.5E+00	R-n	YES	DLASL
	108-88-3	Toluene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.5E+04 A	8.6E+01	R-n	NO	DLBSL
	156-60-5	trans-1,2-Dichloroethene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.0E+04 A	8.6E+00	R-n	NO	DLBSL
	10061-02-6	trans-1,3-Dichloropropene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	2.1E+01 A	8.6E+00	R-n	NO	DLBSL
	79-01-6	Trichloroethene	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	3.0E+01 N	2.5E+00	A	NO	DLBSL
	75-69-4	Trichlorofluoromethane (Freon-11)	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	1.1E+02 R-n	N/A	N/A	NO	DLBSL
	75-01-4	Vinyl chloride	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	2.4E+00 N	2.5E-02	A	NO	DLBSL
	92-52-4	1,1-Biphenyl	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	8.3E-02 R-n	N/A	N/A	YES	DLASL
	95-95-4	2,4,5-Trichlorophenol	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	3.6E+03 A	8.9E+01	R-n	NO	DLBSL
	88-06-2	2,4,6-Trichlorophenol	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	2.4E+00 A	9.0E-01	R-n	YES	DLASL
	120-83-2	2,4-Dichlorophenol	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	2.9E+02 A	3.5E+00	R-n	NO	DLBSL
	105-67-9	2,4-Dimethylphenol	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	8.5E+02 A	2.7E+01	R-n	NO	DLBSL
	51-28-5	2,4-Dinitrophenol	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	5.3E+03 A	3.0E+00	R-n	NO	DLBSL
	121-14-2	2,4-Dinitrotoluene	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	3.4E+00 A	2.0E-01	R-c	YES	DLASL
	606-20-2	2,6-Dinitrotoluene	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	1.5E+00 R-n	N/A	N/A	YES	DLASL
	91-58-7	2-Chloronaphthalene	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	1.6E+03 A	5.5E+01	R-n	NO	DLBSL
	95-57-8	2-Chlorophenol	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	1.5E+02 A	7.1E+00	R-n	NO	DLBSL
	91-57-6	2-Methylnaphthalene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	2.7E+00 R-n	N/A	N/A	NO	DLBSL
	95-48-7	2-Methylphenol	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	7.2E+01 R-n	N/A	N/A	NO	DLBSL
	88-74-4	2-Nitroaniline	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	1.5E+01 R-n	N/A	N/A	NO	DLBSL
	88-75-5	2-Nitrophenol	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	1.5E+02 A	7.1E+00	R-n	NO	DLBSL
	m&pCRESOL	3- and 4-Methylphenol	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	1.4E+02 R-n	N/A	N/A	NO	DLBSL
	91-94-1	3,3'-Dichlorobenzidine	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	2.8E-02 A	1.1E-01	R-c	YES	DLASL
	99-09-2	3-Nitroaniline	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	1.5E+01 R-n	N/A	N/A	NO	DLBSL
	534-52-1	4,6-Dinitro-2-methylphenol	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	2.8E+02 A	1.2E-01	R-n	NO	DLBSL
	101-55-3	4-Bromophenyl-phenylether	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	N/A	N/A	N/A	NO	NTX
	59-50-7	4-Chloro-3-methylphenol	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	1.5E+02 A	1.1E+02	R-n	NO	DLBSL
	106-47-8	4-Chloroaniline	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	3.2E-01 R-c	N/A	N/A	YES	DLASL
	7005-72-3	4-Chlorophenyl-phenylether	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	2.7E+00 R-n	N/A	N/A	YES	DLASL
	100-01-6	4-Nitroaniline	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	3.3E+00 R-c	N/A	N/A	YES	DLASL
	100-02-7	4-Nitrophenol	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	6.9E+02 A	1.2E-01	R-c	NO	DLBSL
	83-32-9	Acenaphthene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	9.9E+02 A	4.0E+01	R-n	NO	DLBSL

Table 2.6
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Hickory Pond	208-96-8	Acenaphthylene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	9.9E+02 A	4.0E+01	R-n	NO	DLBSL
(cont'd)	98-86-2	Acetophenone	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	1.5E+02 R-n	N/A	N/A	NO	DLBSL
	120-12-7	Anthracene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	4.0E+04 A	1.3E+02	R-n	NO	DLBSL
	1912-24-9	Atrazine	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	2.6E-01 R-c	N/A	N/A	YES	DLASL
	100-52-7	Benzaldehyde	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	1.5E+02 R-n	N/A	N/A	NO	DLBSL
	56-55-3	Benzo(a)anthracene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.1E-02 N	1.8E-02	A	YES	DLASL
	50-32-8	Benzo(a)pyrene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.1E-02 N	1.8E-02	A	YES	DLASL
	205-99-2	Benzo(b)fluoranthene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.1E-02 N	1.8E-02	A	YES	DLASL
	191-24-2	Benzo(g,h,i)perylene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	4.0E+03 A	8.7E+00	R-n	NO	DLBSL
	207-08-9	Benzo(k)fluoranthene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.1E-02 N	1.8E-02	A	YES	DLASL
	111-91-1	bis(2-Chloroethoxy)methane	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	4.7E+00 R-n	N/A	N/A	YES	DLASL
	111-44-4	bis(2-Chloroethyl)ether	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	5.3E-01 A	1.2E-02	R-c	YES	DLASL
	39638-32-9	bis(2-Chloroisopropyl)ether	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	N/A	N/A	N/A	NO	NTX
	117-81-7	bis(2-Ethylhexyl)phthalate	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	2.2E+00 A	7.1E-02	R-c	YES	DLASL
	85-68-7	Butylbenzylphthalate	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	1.9E+03 A	1.4E+01	R-c	NO	DLBSL
	105-60-2	Caprolactam	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	7.7E+02 R-n	N/A	N/A	NO	DLBSL
	86-74-8	Carbazole	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	N/A	N/A	N/A	NO	NTX
	218-01-9	Chrysene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.1E-02 N	1.8E-02	A	YES	DLASL
	53-70-3	Dibenz(a,h)anthracene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.1E-02 N	1.8E-02	A	YES	DLASL
	132-64-9	Dibenzofuran	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	5.8E-01 R-n	N/A	N/A	YES	DLASL
	84-66-2	Diethylphthalate	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	4.4E+04 A	1.1E+03	R-n	NO	DLBSL
	60-51-5	Dimethoate	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	3.1E-01 R-n	N/A	N/A	YES	DLASL
	131-11-3	Dimethyl phthalate	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	1.1E+06 A	N/A	N/A	NO	DLBSL
	84-74-2	Di-n-butylphthalate	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	4.5E+03 A	6.7E+01	R-n	NO	DLBSL
	117-84-0	Di-n-octylphthalate	3.5E+00 J	3.5E+00 J	UG/L	HICP-SW05-0-1-12B	1/5	10 - 10	3.5E+00	N/A	6.3E+01 R-n	N/A	N/A	NO	BSL
	206-44-0	Fluoranthene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	1.4E+02 A	6.3E+01	R-n	NO	BSL
	86-73-7	Fluorene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	5.3E+03 A	2.2E+01	R-n	NO	DLBSL
	118-74-1	Hexachlorobenzene	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	2.9E-04 A	4.2E-02	R-c	YES	DLASL
	87-68-3	Hexachlorobutadiene	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	1.8E+01 N	N/A	N/A	NO	DLBSL
	77-47-4	Hexachlorocyclopentadiene	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	1.1E+03 A	2.2E+00	R-n	NO	DLBSL
	67-72-1	Hexachloroethane	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	3.3E+00 A	5.1E-01	R-n	YES	DLASL
	193-39-5	Indeno(1,2,3-cd)pyrene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.1E-02 N	1.8E-02	A	YES	DLASL
	78-59-1	Isophorone	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	9.6E+02 A	6.7E+01	R-c	NO	DLBSL
	91-20-3	Naphthalene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	1.4E-01 R-c	N/A	N/A	NO	DLBSL
	621-64-7	n-Nitroso-di-n-propylamine	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	5.1E-01 A	9.3E-03	R-c	YES	DLASL
	86-30-6	n-Nitrosodiphenylamine	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	6.0E+00 A	1.0E+01	R-c	YES	DLASL
	98-95-3	Nitrobenzene	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	6.9E+02 A	1.2E-01	R-c	NO	DLBSL
	87-86-5	Pentachlorophenol	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	3.0E+00 A	1.7E-01	R-c	YES	DLASL

Table 2.6
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Hickory Pond	85-01-8	Phenanthrene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	9.9E+02 A	1.3E+02	R-n	NO	DLBSL
(cont'd)	108-95-2	Phenol	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	8.6E+05 A	4.5E+02	R-n	NO	DLBSL
	298-02-2	Phorate	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	2.3E-01 R-n	N/A	N/A	YES	DLASL
	129-00-0	Pyrene	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	4.0E+03 A	8.7E+00	R-n	NO	DLBSL
	72-54-8	4,4'-DDD	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.1E-04 A	2.8E-01	R-c	YES	DLASL
	72-55-9	4,4'-DDE	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	2.2E-04 A	2.0E-01	R-c	YES	DLASL
	50-29-3	4,4'-DDT	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	2.0E-04 N	2.0E-01	R-c	YES	DLASL
	309-00-2	Aldrin	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	5.0E-05 A	2.1E-04	R-c	YES	DLASL
	319-84-6	alpha-BHC	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	4.9E-03 A	6.2E-03	R-c	YES	DLASL
	5103-71-9	alpha-Chlordane	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	8.0E-04 N	2.7E-02	R-c	YES	DLASL
	12674-11-2	Aroclor-1016	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.1E-01 R-n	N/A	N/A	YES	DLASL
	11104-28-2	Aroclor-1221	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	4.3E-03 R-c	N/A	N/A	YES	DLASL
	11141-16-5	Aroclor-1232	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	4.3E-03 R-c	N/A	N/A	YES	DLASL
	53469-21-9	Aroclor-1242	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.4E-02 R-c	N/A	N/A	YES	DLASL
	12672-29-6	Aroclor-1248	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.4E-02 R-c	N/A	N/A	YES	DLASL
	11097-69-1	Aroclor-1254	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.1E-02 R-n	N/A	N/A	YES	DLASL
	11096-82-5	Aroclor-1260	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	3.4E-02 R-c	N/A	N/A	YES	DLASL
	86-50-0	Azinphos methyl	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	4.3E+00 R-n	N/A	N/A	YES	DLASL
	319-85-7	beta-BHC	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	1.7E-02 A	2.2E-02	R-c	YES	DLASL
	35400-43-2	Bolstar	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	N/A	N/A	N/A	NO	NTX
	2921-88-2	Chlorpyrifos	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	6.2E-01 R-n	N/A	N/A	YES	DLASL
	56-72-4	Coumaphos	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	N/A	N/A	N/A	NO	NTX
	319-86-8	delta-BHC	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	2.2E-02 R-c	N/A	N/A	YES	DLASL
	8065-48-3	Demeton	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	5.2E-02 R-n	N/A	N/A	YES	DLASL
	333-41-5	Diazinon	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	7.9E-01 R-n	N/A	N/A	YES	DLASL
	62-73-7	Dichlorvos	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	2.3E-01 R-c	N/A	N/A	YES	DLASL
	60-57-1	Dieldrin	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	5.4E-05 A	1.5E-03	R-c	YES	DLASL
	298-04-4	Disulfoton	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	3.8E-02 R-n	N/A	N/A	YES	DLASL
	959-98-8	Endosulfan I	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	8.9E+01 A	7.8E+00	R-n	NO	DLBSL
	33213-65-9	Endosulfan II	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	8.9E+01 A	7.8E+00	R-n	NO	DLBSL
	1031-07-8	Endosulfan sulfate	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	8.9E+01 A	7.8E+00	R-n	NO	DLBSL
	72-20-8	Endrin	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	6.0E-02 A	1.7E-01	R-n	YES	DLASL
	7421-93-4	Endrin aldehyde	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.0E-01 A	1.7E-01	R-n	NO	DLBSL
	53494-70-5	Endrin ketone	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	6.0E-02 A	1.7E-01	R-n	YES	DLASL
	13194-48-4	Ethoprop	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	N/A	N/A	N/A	NO	NTX
	115-90-2	Fensulfothion	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	N/A	N/A	N/A	NO	NTX
	2104-64-5	Ethyl p-nitrophenyl phenylphosphorothioate	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	6.6E-03 R-n	N/A	N/A	YES	DLASL
	55-38-9	Fenthion	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	N/A	N/A	N/A	NO	NTX

Table 2.6
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Hickory Pond	58-89-9	gamma-BHC (Lindane)	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	1.8E+00 A	3.6E-02	R-c	NO	DLBSL
(cont'd)	5103-74-2	gamma-Chlordane	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	2.7E-02 R-c	N/A	N/A	YES	DLASL
	76-44-8	Heptachlor	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	8.0E-05 N	1.8E-03	R-c	YES	DLASL
	1024-57-3	Heptachlor epoxide	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	3.9E-05 A	3.3E-03	R-c	YES	DLASL
	121-75-5	Malathion	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	3.0E+01 R-n	N/A	N/A	NO	DLBSL
	150-50-5	Merphos	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	4.7E-02 R-n	N/A	N/A	YES	DLASL
	72-43-5	Methoxychlor	ND	ND	UG/L		0/5	0.1 - 0.1	1.0E-01	N/A	1.0E+02 A	2.7E+00	N	NO	DLBSL
	298-00-0	Methyl parathion	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	3.4E-01 R-n	N/A	N/A	YES	DLASL
	7786-34-7	Mevinphos	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	N/A	N/A	N/A	NO	NTX
	6923-22-4	Monocrotophos	ND	ND	UG/L		0/	-		N/A	N/A	N/A	N/A	NO	NTX
	300-76-5	Naled	ND	ND	UG/L		0/4	10 - 10	1.0E+01	N/A	3.1E+00 R-n	N/A	N/A	YES	DLASL
	56-38-2	Parathion	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	6.5E+00 R-n	N/A	N/A	NO	DLBSL
	299-84-3	Ronnel	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	3.0E+01 R-n	N/A	N/A	NO	DLBSL
	3689-24-5	Sulfotepp	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	5.3E-01 R-n	N/A	N/A	YES	DLASL
	107-49-3	Tetraethyl pyrophosphate (TEPP)	ND	ND	UG/L		0/5	10 - 10	1.0E+01	N/A	N/A	N/A	N/A	NO	NTX
	961-11-5	Tetrachlorovinphos	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	2.4E+00 R-c	N/A	N/A	YES	DLASL
	34643-46-4	Tokuthion (Prothiophos)	ND	ND	UG/L		0/5	5 - 5	5.0E+00	N/A	N/A	N/A	N/A	NO	NTX
	8001-35-2	Toxaphene	ND	ND	UG/L		0/5	1.3 - 1.3	1.3E+00	N/A	2.8E-04 A	1.3E-02	R-c	YES	DLASL
	7429-90-5	Aluminum	2.4E+02 J	6.2E+02	UG/L	HICP-SW03D-0-1-12B	5/5	400 - 400	6.2E+02	N/A	1.6E+03 R-n	N/A	N/A	NO	BSL
	7440-36-0	Antimony	ND	ND	UG/L		0/5	40 - 40	4.0E+01	N/A	6.4E+02 A	6.0E-01	R-n	NO	DLBSL
	7440-38-2	Arsenic	ND	ND	UG/L		0/5	40 - 40	4.0E+01	N/A	1.0E+01 N	4.5E-02	R-c	YES	DLASL
	7440-39-3	Barium	2.9E+01	3.2E+01	UG/L	HICP-SW03-0-1-12B	5/5	10 - 10	3.2E+01	N/A	1.0E+03 A	2.9E+02	R-n	NO	BSL
	7440-41-7	Beryllium	ND	ND	UG/L		0/5	1 - 1	1.0E+00	N/A	1.6E+00 R-n	N/A	N/A	NO	DLBSL
	7440-43-9	Cadmium	ND	ND	UG/L		0/5	2 - 2	2.0E+00	N/A	6.9E-01 R-n	N/A	N/A	YES	DLASL
	7440-70-2	Calcium	6.6E+03	6.8E+03	UG/L	HICP-SW02-0-1-12B	5/5	500 - 500	6.8E+03	N/A	N/A	N/A	N/A	NO	NUT
	18540-29-9	Chromium (hexavalent)	ND	ND	UG/L		0/5	30 - 30	3.0E+01	N/A	3.1E-02 R-c	N/A	N/A	YES	DLASL
	7440-47-3	Chromium	2.7E-01 J	4.4E-01 J	UG/L	HICP-SW03D-0-1-12B	2/5	10 - 10	4.4E-01	N/A	1.0E+02 M	N/A	N/A	NO	BSL
	7440-48-4	Cobalt	ND	ND	UG/L		0/5	10 - 10	1.0E+01	N/A	4.7E-01 R-n	N/A	N/A	YES	DLASL
	7440-50-8	Copper	1.6E+00 J	1.9E+00 J	UG/L	HICP-SW01-0-1-12B	2/5	10 - 10	1.9E+00	N/A	6.2E+01 R-n	N/A	N/A	NO	BSL
	7439-89-6	Iron	4.5E+02	6.6E+02	UG/L	HICP-SW03D-0-1-12B	5/5	50 - 50	6.6E+02	N/A	1.1E+03 R-n	N/A	N/A	NO	BSL
	7439-92-1	Lead	ND	ND	UG/L		0/5	40 - 40	4.0E+01	N/A	1.5E+01 M	N/A	N/A	YES	DLASL
	7439-95-4	Magnesium	1.6E+03	1.6E+03	UG/L	HICP-SW04-0-1-12B	5/5	500 - 500	1.6E+03	N/A	N/A	N/A	N/A	NO	NUT
	7439-96-5	Manganese	1.2E+01 J	1.4E+01 J	UG/L	HICP-SW01-0-1-12B	5/5	20 - 20	1.4E+01	N/A	1.0E+02 A	3.2E+01	R-n	NO	BSL
	7439-97-6	Mercury	1.1E-01 J	1.1E-01 J	UG/L	HICP-SW03-0-1-12B	1/5	0.2 - 0.2	1.1E-01	N/A	4.3E-01 R-n	N/A	N/A	NO	BSL
	7440-02-0	Nickel	ND	ND	UG/L		0/5	10 - 10	1.0E+01	N/A	4.6E+03 A	3.0E+01	R-n	NO	DLBSL
	7440-09-7	Potassium	8.3E+02	8.8E+02	UG/L	HICP-SW01-0-1-12B	5/5	500 - 500	8.8E+02	N/A	N/A	N/A	N/A	NO	NUT
	7782-49-2	Selenium	ND	ND	UG/L		0/5	40 - 40	4.0E+01	N/A	5.0E+01 M	7.8E+00	R-n	NO	DLBSL
	7440-22-4	Silver	ND	ND	UG/L		0/5	10 - 10	1.0E+01	N/A	7.1E+00 R-n	N/A	N/A	YES	DLASL

Table 2.6
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLej, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Hickory Pond	7440-23-5	Sodium	6.7E+03	6.8E+03	UG/L	HICP-SW04-0-1-12B	5/5	500 - 500	6.8E+03	N/A	N/A	N/A	N/A	NO	NUT
(cont'd)	7440-28-0	Thallium	ND	ND	UG/L		0/5	40 - 40	4.0E+01	N/A	4.7E-01 A	1.6E-02	R-n	YES	DLASL
	7440-62-2	Vanadium	9.8E-01 J	1.9E+00 J	UG/L	HICP-SW03D-0-1-12B	5/5	10 - 10	1.9E+00	N/A	7.8E+00 R-n	N/A	N/A	NO	BSL
	7440-66-6	Zinc	ND	ND	UG/L		0/5	20 - 20	2.0E+01	N/A	2.6E+04 A	4.7E+02	R-n	NO	DLBSL

[1] Minimum/Maximum detected concentrations.
[2] Maximum concentration is used for screening. If chemical was not detected, the maximum detection limit is used for screening.
[3] Background values not available.
[4] North Carolina 15A NCAC 2B surface water standards for human health, if available.
If North Carolina value not available, Federal Ambient Water Quality Criteria for Human Health (organisms only, if available).
If none of these values were available, the tap water RSL (May 2012) was used.
RSL value for Methyl Isobutyl Ketone (4-methyl-2-pentanone) used as surrogate for 2-Hexanone.
RSL value for methoxychlor used as surrogate for 4-chlorophenyl-phenylether.
RSL value for p-Cresol used as surrogate for 3- and 4-methylphenol.
RSL value for methoxychlor used as surrogate for 4-Chlorophenyl-phenylether.
RSL value for Nitrobenzene used as surrogate for 4-Nitrophenol.
RSL value for Acenaphthene used as surrogate for Acenaphthylene.
RSL for di-n-octylphthalate calculated using the Risk Assessment Information System Preliminary Remediation Goal calculator and the non-cancer oral reference dose of 0.04 mg/kg-day from the PPRTV database.
RSL value for pyrene used as surrogate for benzo(g,h,i)perylene.
RSL value for anthracene used as surrogate for phenanthrene.
RSL value for technical chlordane used as surrogate for alpha-chlordane.
RSL value for technical-HCH used as surrogate for delta-BHC.
RSL value for technical chlordane used as surrogate for gamma-chlordane.
RSL value for Chromium(VI) used as surrogate for chromium.
RSL value for Manganese (water) used as surrogate for manganese.
RSL value for Mercury (inorganic salts) used as surrogate for mercury.
RSL value for 1,3-dichloropropene used as a surrogate for cis-1,3-dichloropropene and trans-1,3-dichloropropene.
RSL value for endosulfan used as surrogate for endosulfan I, endosulfan II, and endosulfan sulfate.
RSL value for endrin used as surrogate for endrin aldehyde and endrin ketone.
RSL value for 2-chlorophenol used as surrogate for 4-chloro-3-methylphenol and 2-nitrophenol.
[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)
Deletion Reason: Detection Limit Above Screening Level (DLASL), not quantitatively evaluated in HHRA
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)
Detection Limit Below Screening Level (DLBSL)

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered
J = Estimated Value
A= Federal Ambient Water Quality Criteria, Human Health Criteria, Organisms
N - North Carolina 15A NCAC 2B Human Health, amended Feb. 2010.
M = Safe Drinking Water Act Maximum Contaminant Level (MCL), since the National Recommended Water Quality Criteria (NR) refers to the MCL, value is the MCL.
R-n = USEPA Regional Screening Level, noncarcinogenic (therefore, RSL divided by 10, see text)
R-c = USEPA Regional Screening Level, Carcinogenic
ND = Not Detected
µg/L = micrograms per liter

Table 2.7
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Henderson Pond	71-55-6	1,1,1-Trichloroethane	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	6.4E+02 SAT	N/A		NO	DLBSL
	79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	5.6E-01 C	N/A		NO	DLBSL
	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	9.1E+02 SAT	N/A		NO	DLBSL
	79-00-5	1,1,2-Trichloroethane	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	1.6E-01 C**	N/A		NO	DLBSL
	75-34-3	1,1-Dichloroethane	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	3.3E+00 C	N/A		NO	DLBSL
	75-35-4	1,1-Dichloroethene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	2.4E+01 N	N/A		NO	DLBSL
	120-82-1	1,2,4-Trichlorobenzene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	6.2E+00 C**	N/A		NO	DLBSL
	96-12-8	1,2-Dibromo-3-chloropropane	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	5.4E-03 C	N/A		YES	DLASL
	106-93-4	1,2-Dibromoethane	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	3.4E-02 C	N/A		NO	DLBSL
	95-50-1	1,2-Dichlorobenzene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	1.9E+02 N	N/A		NO	DLBSL
	107-06-2	1,2-Dichloroethane	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	4.3E-01 C	N/A		NO	DLBSL
	78-87-5	1,2-Dichloropropane	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	9.4E-01 C	N/A		NO	DLBSL
	541-73-1	1,3-Dichlorobenzene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	2.4E+00 C	N/A		NO	DLBSL
	106-46-7	1,4-Dichlorobenzene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	2.4E+00 C	N/A		NO	DLBSL
	78-93-3	2-Butanone	1.9E-02 J	3.8E-02	MG/KG	IR74-HP-SD03-0-0_5-11D	3/5	0.0075 - 0.029	3.8E-02	N/A	2.8E+03 N	N/A		NO	BSL
	591-78-6	2-Hexanone	ND	ND	MG/KG		0/5	0.0075 - 0.029	2.9E-02	N/A	2.1E+01 N	N/A		NO	DLBSL
	108-10-1	4-Methyl-2-pentanone	ND	ND	MG/KG		0/0 [6]	0 - 0	0.0E+00	N/A	5.3E+02 N	N/A		NO	DLBSL
	67-64-1	Acetone	3.2E-02 J	1.5E-01 J	MG/KG	IR74-HP-SD05D-0-0_5-11D	4/5	0.038 - 0.15	1.5E-01	N/A	6.1E+03 N	N/A		NO	BSL
	71-43-2	Benzene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	1.1E+00 C	N/A		NO	DLBSL
	75-27-4	Bromodichloromethane	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	2.7E-01 C	N/A		NO	DLBSL
	75-25-2	Bromoform	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	6.2E+01 C	N/A		NO	DLBSL
	74-83-9	Bromomethane	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	7.3E-01 N	N/A		NO	DLBSL
	75-15-0	Carbon disulfide	ND	ND	MG/KG		0/5	0.0075 - 0.029	2.9E-02	N/A	8.2E+01 N	N/A		NO	DLBSL
	56-23-5	Carbon tetrachloride	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	6.1E-01 C	N/A		NO	DLBSL
	108-90-7	Chlorobenzene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	2.9E+01 N	N/A		NO	DLBSL
	75-00-3	Chloroethane	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	1.5E+03 N	N/A		NO	DLBSL
	67-66-3	Chloroform	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	2.9E-01 C	N/A		NO	DLBSL
	74-87-3	Chloromethane	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	1.2E+01 N	N/A		NO	DLBSL
	156-59-2	cis-1,2-Dichloroethene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	1.6E+01 N	N/A		NO	DLBSL
	10061-01-5	cis-1,3-Dichloropropene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	1.7E+00 C	N/A		NO	DLBSL
	110-82-7	Cyclohexane	ND	ND	MG/KG		0/5	0.003 - 0.012	1.2E-02	N/A	1.2E+02 SAT	N/A		NO	DLBSL
	124-48-1	Dibromochloromethane	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	6.8E-01 C	N/A		NO	DLBSL
	75-71-8	Dichlorodifluoromethane (Freon-12)	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	9.4E+00 N	N/A		NO	DLBSL
	100-41-4	Ethylbenzene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	5.4E+00 C	N/A		NO	DLBSL
	98-82-8	Isopropylbenzene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	2.1E+02 N	N/A		NO	DLBSL
	m&pXYLENE	m- and p-Xylene	ND	ND	MG/KG		0/5	0.003 - 0.012	1.2E-02	N/A	5.9E+01 N	N/A		NO	DLBSL

Table 2.7
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	79-20-9	Methyl acetate	ND	ND	MG/KG		0/5	0.015 - 0.058	5.8E-02	N/A	7.8E+03 N	N/A		NO	DLBSL
	108-87-2	Methylcyclohexane	ND	ND	MG/KG		0/5	0.003 - 0.012	1.2E-02	N/A	5.7E+01 N	N/A		NO	DLBSL
	75-09-2	Methylene chloride	ND	ND	MG/KG		0/5	0.015 - 0.058	5.8E-02	N/A	3.6E+01 C**	N/A		NO	DLBSL
	1634-04-4	Methyl-tert-butyl ether (MTBE)	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	4.3E+01 C	N/A		NO	DLBSL
	95-47-6	o-Xylene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	6.9E+01 N	N/A		NO	DLBSL
	100-42-5	Styrene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	6.3E+02 N	N/A		NO	DLBSL
	127-18-4	Tetrachloroethene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	8.6E+00 C**	N/A		NO	DLBSL
	108-88-3	Toluene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	5.0E+02 N	N/A		NO	DLBSL
	156-60-5	trans-1,2-Dichloroethene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	1.5E+01 N	N/A		NO	DLBSL
	10061-02-6	trans-1,3-Dichloropropene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	1.7E+00 C	N/A		NO	DLBSL
	79-01-6	Trichloroethene	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	4.4E-01 C**	N/A		NO	DLBSL
	75-69-4	Trichlorofluoromethane (Freon-11)	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	7.9E+01 N	N/A		NO	DLBSL
	75-01-4	Vinyl chloride	ND	ND	MG/KG		0/5	0.0015 - 0.0058	5.8E-03	N/A	6.0E-02 C	N/A		NO	DLBSL
	92-52-4	1,1-Biphenyl	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	5.1E+00 N	N/A		NO	DLBSL
	95-95-4	2,4,5-Trichlorophenol	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	6.1E+02 N	N/A		NO	DLBSL
	88-06-2	2,4,6-Trichlorophenol	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	6.1E+00 C**	N/A		NO	DLBSL
	120-83-2	2,4-Dichlorophenol	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	1.8E+01 N	N/A		NO	DLBSL
	105-67-9	2,4-Dimethylphenol	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	1.2E+02 N	N/A		NO	DLBSL
	51-28-5	2,4-Dinitrophenol	ND	ND	MG/KG		0/4	0.79 - 2.6	2.6E+00	N/A	1.2E+01 N	N/A		NO	DLBSL
	121-14-2	2,4-Dinitrotoluene	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	1.6E+00 C	N/A		YES	DLASL
	606-20-2	2,6-Dinitrotoluene	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	6.1E+00 N	N/A		NO	DLBSL
	91-58-7	2-Chloronaphthalene	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	1.8E+02 SAT	N/A		NO	DLBSL
	95-57-8	2-Chlorophenol	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	3.9E+01 N	N/A		NO	DLBSL
	91-57-6	2-Methylnaphthalene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	2.3E+01 N	N/A		NO	DLBSL
	95-48-7	2-Methylphenol	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	3.1E+02 N	N/A		NO	DLBSL
	88-74-4	2-Nitroaniline	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	6.1E+01 N	N/A		NO	DLBSL
	88-75-5	2-Nitrophenol	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	3.9E+01 N	N/A		NO	DLBSL
	m&pCRESOL	3- and 4-Methylphenol	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	6.1E+02 N	N/A		NO	DLBSL
	91-94-1	3,3'-Dichlorobenzidine	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	1.1E+00 C	N/A		YES	DLASL
	99-09-2	3-Nitroaniline	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	N/A	N/A		NO	NTX
	534-52-1	4,6-Dinitro-2-methylphenol	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	4.9E-01 N	N/A		YES	DLASL
	101-55-3	4-Bromophenyl-phenylether	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	N/A	N/A		NO	NTX
	59-50-7	4-Chloro-3-methylphenol	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	6.1E+02 N	N/A		NO	DLBSL
	106-47-8	4-Chloroaniline	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	2.4E+00 C	N/A		YES	DLASL
	7005-72-3	4-Chlorophenyl-phenylether	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	3.1E+01 N	N/A		NO	DLBSL
	100-01-6	4-Nitroaniline	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	2.4E+01 N	N/A		NO	DLBSL
	100-02-7	4-Nitrophenol	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	4.8E+00 C	N/A		NO	DLBSL

Table 2.7
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	83-32-9	Acenaphthene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	3.4E+02 N	N/A		NO	DLBSL
	208-96-8	Acenaphthylene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	3.4E+02 N	N/A		NO	DLBSL
	98-86-2	Acetophenone	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	7.8E+02 N	N/A		NO	DLBSL
	120-12-7	Anthracene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	1.7E+03 N	N/A		NO	DLBSL
	1912-24-9	Atrazine	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	2.1E+00 C	N/A		YES	DLASL
	100-52-7	Benzaldehyde	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	7.8E+02 N	N/A		NO	DLBSL
	56-55-3	Benzo(a)anthracene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	1.5E-01 C	N/A		NO	DLBSL
	50-32-8	Benzo(a)pyrene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	1.5E-02 C	N/A		YES	DLASL
	205-99-2	Benzo(b)fluoranthene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	1.5E-01 C	N/A		NO	DLBSL
	191-24-2	Benzo(g,h,i)perylene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	1.7E+02 N	N/A		NO	DLBSL
	207-08-9	Benzo(k)fluoranthene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	1.5E+00 C	N/A		NO	DLBSL
	111-91-1	bis(2-Chloroethoxy)methane	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	1.8E+01 N	N/A		NO	DLBSL
	111-44-4	bis(2-Chloroethyl)ether	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	2.1E-01 C	N/A		YES	DLASL
	39638-32-9	bis(2-Chloroisopropyl)ether	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	N/A	N/A		NO	NTX
	117-81-7	bis(2-Ethylhexyl)phthalate	5.5E-01 J	5.5E-01 J	MG/KG	IR74-HP-SD05D-0-0_5-11D	1/5	0.64 - 2.6	5.5E-01	N/A	3.5E+01 C	N/A		NO	BSL
	85-68-7	Butylbenzylphthalate	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	2.6E+02 C	N/A		NO	DLBSL
	105-60-2	Caprolactam	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	3.1E+03 N	N/A		NO	DLBSL
	86-74-8	Carbazole	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	N/A	N/A		NO	NTX
	218-01-9	Chrysene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	1.5E+01 C	N/A		NO	DLBSL
	53-70-3	Dibenz(a,h)anthracene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	1.5E-02 C	N/A		YES	DLASL
	132-64-9	Dibenzofuran	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	7.8E+00 N	N/A		NO	DLBSL
	84-66-2	Diethylphthalate	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	4.9E+03 N	N/A		NO	DLBSL
	60-51-5	Dimethoate	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	1.2E+00 N	N/A		NO	DLBSL
	131-11-3	Dimethyl phthalate	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	N/A	N/A		NO	NTX
	84-74-2	Di-n-butylphthalate	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	6.1E+02 N	N/A		NO	DLBSL
	117-84-0	Di-n-octylphthalate	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	2.4E+02 N	N/A		NO	DLBSL
	206-44-0	Fluoranthene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	2.3E+02 N	N/A		NO	DLBSL
	86-73-7	Fluorene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	2.3E+02 N	N/A		NO	DLBSL
	118-74-1	Hexachlorobenzene	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	3.0E-01 C	N/A		YES	DLASL
	87-68-3	Hexachlorobutadiene	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	6.1E+00 C**	N/A		NO	DLBSL
	77-47-4	Hexachlorocyclopentadiene	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	3.7E+01 N	N/A		NO	DLBSL
	67-72-1	Hexachloroethane	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	4.3E+00 C**	N/A		NO	DLBSL
	193-39-5	Indeno(1,2,3-cd)pyrene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	1.5E-01 C	N/A		NO	DLBSL
	78-59-1	Isophorone	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	5.1E+02 C	N/A		NO	DLBSL
	91-20-3	Naphthalene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	3.6E+00 C	N/A		NO	DLBSL
	621-64-7	n-Nitroso-di-n-propylamine	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	6.9E-02 C	N/A		YES	DLASL
	86-30-6	n-Nitrosodiphenylamine	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	9.9E+01 C	N/A		NO	DLBSL

Table 2.7
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	98-95-3	Nitrobenzene	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	4.8E+00 C	N/A		NO	DLBSL
	87-86-5	Pentachlorophenol	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	8.9E-01 C	N/A		YES	DLASL
	85-01-8	Phenanthrene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	1.7E+03 N	N/A		NO	DLBSL
	108-95-2	Phenol	ND	ND	MG/KG		0/5	0.64 - 2.6	2.6E+00	N/A	1.8E+03 N	N/A		NO	DLBSL
	298-02-2	Phorate	1.9E-01	1.9E-01	MG/KG	IR74-HP-SD04-0-0_5-11D	1/5	0.079 - 0.61	1.9E-01	N/A	1.2E+00 N	N/A		NO	BSL
	129-00-0	Pyrene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	1.7E+02 N	N/A		NO	DLBSL
	72-54-8	4,4'-DDD	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	2.0E+00 C	N/A		NO	DLBSL
	72-55-9	4,4'-DDE	0.0026 J	0.015 J	MG/KG	HENP-SD02-0-0_5-12B	11/15	0.0027 - 0.0068	1.5E-02	N/A	1.4E+00 C	N/A		NO	BSL
	50-29-3	4,4'-DDT	0.0088	0.078 J	MG/KG	IR74-HP-SD04-0-0_5-11D	6/15	0.0027 - 0.0068	7.8E-02	N/A	1.7E+00 C	N/A		NO	BSL
	309-00-2	Aldrin	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	2.9E-02 C	N/A		NO	DLBSL
	319-84-6	alpha-BHC	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	7.7E-02 C	N/A		NO	DLBSL
	5103-71-9	alpha-Chlordane	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	1.6E+00 C	N/A		NO	DLBSL
	12674-11-2	Aroclor-1016	ND	ND	MG/KG		0/5	0.077 - 0.16	1.6E-01	N/A	3.9E-01 N	N/A		NO	DLBSL
	11104-28-2	Aroclor-1221	ND	ND	MG/KG		0/5	0.077 - 0.16	1.6E-01	N/A	1.4E-01 C	N/A		YES	DLASL
	11141-16-5	Aroclor-1232	ND	ND	MG/KG		0/5	0.077 - 0.16	1.6E-01	N/A	1.4E-01 C	N/A		YES	DLASL
	53469-21-9	Aroclor-1242	ND	ND	MG/KG		0/5	0.077 - 0.16	1.6E-01	N/A	2.2E-01 C	N/A		NO	DLBSL
	12672-29-6	Aroclor-1248	ND	ND	MG/KG		0/5	0.077 - 0.16	1.6E-01	N/A	2.2E-01 C	N/A		NO	DLBSL
	11097-69-1	Aroclor-1254	ND	ND	MG/KG		0/5	0.077 - 0.16	1.6E-01	N/A	1.1E-01 C**	N/A		YES	DLASL
	11096-82-5	**Aroclor-1260**	**0.0078 J**	**0.24 J**	**MG/KG**	**IR74-HP-SD01-0-0_5-11D**	**13/15**	**0.027 - 0.16**	**2.4E-01**	**N/A**	**2.2E-01 C**	**N/A**		**YES**	**ASL**
	86-50-0	Azinphos methyl	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	1.8E+01 N	N/A		NO	DLBSL
	319-85-7	beta-BHC	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	2.7E-01 C	N/A		NO	DLBSL
	35400-43-2	Bolstar	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	N/A	N/A		NO	NTX
	2921-88-2	Chlorpyrifos	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	6.1E+00 N	N/A		NO	DLBSL
	56-72-4	Coumaphos	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	N/A	N/A		NO	NTX
	319-86-8	delta-BHC	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	2.7E-01 C	N/A		NO	DLBSL
	8065-48-3	Demeton	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	2.4E-01 N	N/A		YES	DLASL
	333-41-5	Diazinon	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	4.3E+00 N	N/A		NO	DLBSL
	62-73-7	Dichlorvos	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	1.7E+00 C	N/A		NO	DLBSL
	60-57-1	Dieldrin	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	3.0E-02 C	N/A		NO	DLBSL
	298-04-4	Disulfoton	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	2.4E-01 N	N/A		YES	DLASL
	959-98-8	Endosulfan I	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	3.7E+01 N	N/A		NO	DLBSL
	33213-65-9	Endosulfan II	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	3.7E+01 N	N/A		NO	DLBSL
	1031-07-8	Endosulfan sulfate	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	3.7E+01 N	N/A		NO	DLBSL
	72-20-8	Endrin	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	1.8E+00 N	N/A		NO	DLBSL
	7421-93-4	Endrin aldehyde	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	1.8E+00 N	N/A		NO	DLBSL
	53494-70-5	Endrin ketone	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	1.8E+00 N	N/A		NO	DLBSL
	13194-48-4	Ethoprop	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	N/A	N/A		NO	NTX

Table 2.7
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	115-90-2	Fensulfothion	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	N/A	N/A		NO	NTX
	2104-64-5	Ethyl p-nitrophenyl phenylphosphorothioate	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	6.1E-02 N	N/A		YES	DLASL
	55-38-9	Fenthion	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	N/A	N/A		NO	NTX
	58-89-9	gamma-BHC (Lindane)	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	5.2E-01 C	N/A		NO	DLBSL
	5103-74-2	gamma-Chlordane	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	1.6E+00 C	N/A		NO	DLBSL
	76-44-8	Heptachlor	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	1.1E-01 C	N/A		NO	DLBSL
	1024-57-3	Heptachlor epoxide	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	5.3E-02 C	N/A		NO	DLBSL
	121-75-5	Malathion	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	1.2E+02 N	N/A		NO	DLBSL
	150-50-5	Merphos	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	1.8E-01 N	N/A		YES	DLASL
	72-43-5	Methoxychlor	ND	ND	MG/KG		0/5	0.0033 - 0.0068	6.8E-03	N/A	3.1E+01 N	N/A		NO	DLBSL
	298-00-0	Methyl parathion	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	1.5E+00 N	N/A		NO	DLBSL
	7786-34-7	Mevinphos	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	N/A	N/A		NO	NTX
	6923-22-4	Monocrotophos	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	N/A	N/A		NO	NTX
	300-76-5	Naled	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	1.2E+01 N	N/A		NO	DLBSL
	56-38-2	Parathion	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	3.7E+01 N	N/A		NO	DLBSL
	299-84-3	Ronnel	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	3.1E+02 N	N/A		NO	DLBSL
	3689-24-5	Sulfotepp	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	3.1E+00 N	N/A		NO	DLBSL
	107-49-3	Tetraethyl pyrophosphate (TEPP)	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	N/A	N/A		NO	NTX
	22248-79-9	Tetrachlorvinphos	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	N/A	N/A		NO	NTX
	34643-46-4	Tokuthion (Prothiophos)	ND	ND	MG/KG		0/5	0.079 - 0.61	6.1E-01	N/A	N/A	N/A		NO	NTX
	8001-35-2	Toxaphene	ND	ND	MG/KG		0/5	0.064 - 0.13	1.3E-01	N/A	4.4E-01 C	N/A		NO	DLBSL
	7429-90-5	**Aluminum**	**2.3E+03 J**	**1.6E+04 J**	**MG/KG**	**IR74-HP-SD01-0-0_5-11D**	**5/5**	**23.8 - 52.6**	**1.6E+04**	**N/A**	**7.7E+03 N**	**N/A**		**YES**	**ASL**
	7440-36-0	Antimony	9.5E-01 J	1.4E+00 J	MG/KG	IR74-HP-SD03-0-0_5-11D	2/5	4.76 - 10.5	1.4E+00	N/A	3.1E+00 N	N/A		NO	BSL
	7440-38-2	**Arsenic**	**8.9E-01 J**	**4.2E+00 J**	**MG/KG**	**HENP-SD08-0-0_5-12B**	**15/15**	**3.19 - 11.3**	**4.2E+00**	**N/A**	**3.9E-01 C**	**N/A**		**YES**	**ASL**
	7440-39-3	Barium	1.0E+01	8.6E+01	MG/KG	HENP-SD08-0-0_5-12B	15/15	0.797 - 2.83	8.6E+01	N/A	1.5E+03 N	N/A		NO	BSL
	7440-41-7	Beryllium	4.5E-02 J	4.6E-01	MG/KG	IR74-HP-SD01-0-0_5-11D	5/5	0.119 - 0.263	4.6E-01	N/A	1.6E+01 N	N/A		NO	BSL
	7440-43-9	Cadmium	1.1E-01 J	4.1E-01	MG/KG	IR74-HP-SD04-0-0_5-11D	5/5	0.238 - 0.526	4.1E-01	N/A	7.0E+00 N	N/A		NO	BSL
	7440-70-2	Calcium	2.5E+03	5.7E+03	MG/KG	IR74-HP-SD02-0-0_5-11D	5/5	59.5 - 131	5.7E+03	N/A	N/A	N/A		NO	NUT
	18540-29-9	Chromium (hexavalent)	ND	ND	MG/KG		0/5	2.4 - 9.3	9.3E+00	N/A	2.9E-01 C	N/A		YES	DLASL
	7440-47-3	Chromium, total	4.0E+00	1.7E+01	MG/KG	IR74-HP-SD01-0-0_5-11D	5/5	1.19 - 2.63	1.7E+01	N/A	1.2E+04 C	N/A		NO	BSL
	7440-48-4	**Cobalt**	**4.8E-01 J**	**2.7E+00**	**MG/KG**	**IR74-HP-SD01-0-0_5-11D**	**5/5**	**1.19 - 2.63**	**2.7E+00**	**N/A**	**2.3E+00 N**	**N/A**		**YES**	**ASL**
	7440-50-8	Copper	1.2E+00	7.8E+01	MG/KG	IR74-HP-SD02-0-0_5-11D	15/15	0.797 - 2.83	7.8E+01	N/A	3.1E+02 N	N/A		NO	BSL
	7439-89-6	**Iron**	**1.8E+03**	**7.6E+03**	**MG/KG**	**IR74-HP-SD01-0-0_5-11D**	**5/5**	**23.8 - 52.6**	**7.6E+03**	**N/A**	**5.5E+03 N**	**N/A**		**YES**	**ASL**
	7439-92-1	Lead	1.1E+01	3.2E+01	MG/KG	IR74-HP-SD01-0-0_5-11D	5/5	2.38 - 5.26	3.2E+01	N/A	4.0E+02 NL	N/A		NO	BSL
	7439-95-4	Magnesium	2.9E+02	1.9E+03	MG/KG	IR74-HP-SD04-0-0_5-11D	5/5	59.5 - 131	1.9E+03	N/A	N/A	N/A		NO	NUT
	7439-96-5	Manganese	1.5E+01	2.4E+01	MG/KG	IR74-HP-SD03-0-0_5-11D	5/5	2.38 - 5.26	2.4E+01	N/A	1.8E+02 N	N/A		NO	BSL

Table 2.7

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Henderson Pond and Hickory Pond Recreational Area

MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	7439-97-6	Mercury	7.8E-03 J	7.2E-02	MG/KG	IR74-HP-SD02-0-0_5-11D	5/5	0.0284 - 0.0647	7.2E-02	N/A	2.3E+00 N	N/A		NO	BSL
	7440-02-0	Nickel	1.9E+00	8.4E+00	MG/KG	IR74-HP-SD01-0-0_5-11D	5/5	1.19 - 2.63	8.4E+00	N/A	1.5E+02 N	N/A		NO	BSL
	7440-09-7	Potassium	1.2E+02 J	5.3E+02	MG/KG	IR74-HP-SD01-0-0_5-11D	5/5	119 - 263	5.3E+02	N/A	N/A	N/A		NO	NUT
	7782-49-2	Selenium	1.4E+00 J	1.4E+00 J	MG/KG	IR74-HP-SD01-0-0_5-11D	1/5	4.76 - 10.5	1.4E+00	N/A	3.9E+01 N	N/A		NO	BSL
	7440-22-4	Silver	6.4E-01 J	6.4E-01 J	MG/KG	IR74-HP-SD01-0-0_5-11D	1/5	1.19 - 2.63	6.4E-01	N/A	3.9E+01 N	N/A		NO	BSL
	7440-23-5	Sodium	ND	ND	MG/KG		0/5	59.5 - 131	1.3E+02	N/A	N/A	N/A		NO	NUT
	7440-28-0	Thallium	ND	ND	MG/KG		0/5	2.38 - 5.26	5.3E+00	N/A	7.8E-02 N	N/A		YES	DLASL
	7440-62-2	Vanadium	5.0E+00	3.1E+01	MG/KG	IR74-HP-SD01-0-0_5-11D	5/5	2.38 - 5.26	3.1E+01	N/A	3.9E+01 N	N/A		NO	BSL
	7440-66-6	Zinc	2.5E+01 J	9.5E+01 J	MG/KG	IR74-HP-SD01-0-0_5-11D	5/5	2.38 - 5.26	9.5E+01	N/A	2.3E+03 N	N/A		NO	BSL

[1] Minimum/Maximum detected concentrations.

[2] Maximum concentration is used for screening.

[3] Background values not available.

[4] Oak Ridge National Laboratory (ORNL). May 2012. Regional Screening Levels for Chemical Contaminants at Superfund Sites. [Online]. Adjusted (RSLs based on non-cancer (N) divided by 10) residential soil RSLs. Available: http://epa-prgs.ornl.gov/chemicals/index.shtml

RSL value for 1,4-dichlorobenzene used as surrogate for 1,3-dichlorobenzene.

RSL value for 1,3-dichloropropene used as a surrogate for cis-1,3-dichloropropene and trans-1,3-dichloropropene.

RSL value for n-hexane used as surrogate for methylcyclohexane.

RSL value for 2-chlorophenol used as surrogate for 4-chloro-3-methylphenol and 2-nitrophenol.

RSL value for p-cresol used as surrogate for 3- and 4-methylphenol.

RSL value for methoxychlor used as surrogate for 4-chlorophenyl-phenylether.

RSL value for nitrobenzene used as surrogate for 4-nitrophenol.

RSL value for acenaphthene used as surrogate for acenaphthylene.

RSL for di-n-octylphthalate calculated using the Risk Assessment Information System Preliminary Remediation Goal calculator and the non-cancer oral reference dose of 0.04 mg/kg-day from the PPRTV database.

RSL value for pyrene used as surrogate for benzo(g,h,i)perylene.

RSL value for anthracene used as surrogate for phenanthrene.

RSL value for endosulfan used as surrogate for endosulfan I, endosulfan II, and endosulfan sulfate.

RSL value for endrin used as surrogate for endrin aldehyde and endrin ketone.

RSL value for chromium(VI) used for chromium(hexavalent).

RSL value for chromium(III) insoluble salts used for chromium, total.

RSL value for mercuric chloride (and other mercury salts) used as surrogate for mercury.

[5] Rationale Codes

Selection Reason:	Above Screening Levels (ASL)
	Detection Limit Above Screening Level (DLASL), not quantitatively evaluated in HHRA
Deletion Reason:	Below Screening Level (BSL)
	Detection Limit Below Screening Level (DLBSL)
	No Toxicity Information (NTX)
	Essential Nutrient (NUT)

[6] All results R (rejected) qualified.

COPC = Chemical of Potential Concern

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered

L = Biased Low

C = Carcinogenic

C** = N SL < 10x C SL, therefore, N SL/10 used as screening value.

N = Noncarcinogenic

SAT = RSL exceeds saturation concentration (Csat) therefore, Csat used as screening value.

NL = Noncarcinogenic lead residential soil RSL not adjusted by dividing by 10.

TABLE 2.7a
Risk Ratio Screening for Henderson Pond Sediment, Maximum Detected Concentration
Henderson Pond and Hickory Pond Recreational Area
MCB Camp Lejeune, North Carolina

Analyte	Detection Frequency	Maximum Detected Concentration (Qualifier) (mg/kg)	Sample Location of Maximum Detected Concentration	Residential Soil RSL (mg/kg)	Acceptable Risk Level	Corresponding Hazard Index[a]	Corresponding Cancer Risk[b]	Target Organ
Aroclor-1260	13 / 15	2.4E-01 J	IR74-HP-SD01-0-0_5-11D	2.2E-01	1E-06	N/A	1E-06	NA
Aluminum	5 / 5	1.6E+04 J	IR74-HP-SD01-0-0_5-11D	7.7E+04	1	0.2	N/A	Neurological
Arsenic	15 / 15	4.2E+00 J	HENP-SD08-0-0_5-12B	3.9E-01	1E-06	N/A	1E-05	NA
Cobalt	5 / 5	2.7E+00	IR74-HP-SD01-0-0_5-11D	2.3E+01	1	0.1	N/A	Thyroid
Iron	5 / 5	7.6E+03	IR74-HP-SD01-0-0_5-11D	5.5E+04	1	0.1	N/A	Gastrointestinal
Cumulative Corresponding Hazard Index[c]						**0.5**		
Cumulative Corresponding Cancer Risk[d]							**1E-05**	

Notes:
a Corresponding Hazard Index equals maximum detected concentration divided by the RSL divided by the acceptable risk level.
b Corresponding Cancer Risk equals maximum detected concentration divided by the RSL divided by the acceptable risk level.
c Cumulative Corresponding Hazard Index equals sum of Corresponding Hazard Indices for each constituent.
d Cumulative Corresponding Cancer Risk equals sum of Corresponding Cancer Risks for each constituent.
Constituent selected as COPC if it contributes to an overall Hazard Index by target organ greater than 0.5 or Cumulative Corresponding Cancer Risk greater than 5E-05, otherwise, constituent not selected as COPC.
Constituents selected as COPCs are indicated by shading.
COPC = Constituent of Potential Concern
mg/kg = micrograms per kilogram
N/A = Not available/not applicable.

Table 2.8
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Hickory Pond	71-55-6	1,1,1-Trichloroethane	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	6.4E+02 SAT	N/A		NO	DLBSL
	79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	5.6E-01 C	N/A		NO	DLBSL
	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	9.1E+02 SAT	N/A		NO	DLBSL
	79-00-5	1,1,2-Trichloroethane	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	1.6E-01 C**	N/A		NO	DLBSL
	75-34-3	1,1-Dichloroethane	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	3.3E+00 C	N/A		NO	DLBSL
	75-35-4	1,1-Dichloroethene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	2.4E+01 N	N/A		NO	DLBSL
	120-82-1	1,2,4-Trichlorobenzene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	6.2E+00 C**	N/A		NO	DLBSL
	96-12-8	1,2-Dibromo-3-chloropropane	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	5.4E-03 C	N/A		NO	DLBSL
	106-93-4	1,2-Dibromoethane	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	3.4E-02 C	N/A		NO	DLBSL
	95-50-1	1,2-Dichlorobenzene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	1.9E+02 N	N/A		NO	DLBSL
	107-06-2	1,2-Dichloroethane	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	4.3E-01 C	N/A		NO	DLBSL
	78-87-5	1,2-Dichloropropane	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	9.4E-01 C	N/A		NO	DLBSL
	541-73-1	1,3-Dichlorobenzene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	2.4E+00 C	N/A		NO	DLBSL
	106-46-7	1,4-Dichlorobenzene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	2.4E+00 C	N/A		NO	DLBSL
	78-93-3	2-Butanone	4.8E-03 J	4.0E-02 J	MG/KG	HICP-SD02-0-0_5-12B	5/5	0.005 - 0.013	4.0E-02	N/A	2.8E+03 N	N/A		NO	BSL
	591-78-6	2-Hexanone	ND	ND	MG/KG		0/5	0.005 - 0.013	1.3E-02	N/A	2.1E+01 N	N/A		NO	DLBSL
	108-10-1	4-Methyl-2-pentanone	ND	ND	MG/KG		0/0 [6]	0 - 0	0.0E+00	N/A	5.3E+02 N	N/A		NO	DLBSL
	67-64-1	Acetone	2.8E-02	1.8E-01	MG/KG	HICP-SD02-0-0_5-12B	5/5	0.025 - 0.064	1.8E-01	N/A	6.1E+03 N	N/A		NO	BSL
	71-43-2	Benzene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	1.1E+00 C	N/A		NO	DLBSL
	75-27-4	Bromodichloromethane	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	2.7E-01 C	N/A		NO	DLBSL
	75-25-2	Bromoform	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	6.2E+01 C	N/A		NO	DLBSL
	74-83-9	Bromomethane	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	7.3E-01 N	N/A		NO	DLBSL
	75-15-0	Carbon disulfide	ND	ND	MG/KG		0/5	0.0099 - 0.026	2.6E-02	N/A	8.2E+01 N	N/A		NO	DLBSL
	56-23-5	Carbon tetrachloride	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	6.1E-01 C	N/A		NO	DLBSL
	108-90-7	Chlorobenzene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	2.9E+01 N	N/A		NO	DLBSL
	75-00-3	Chloroethane	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	1.5E+03 N	N/A		NO	DLBSL
	67-66-3	Chloroform	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	2.9E-01 C	N/A		NO	DLBSL
	74-87-3	Chloromethane	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	1.2E+01 N	N/A		NO	DLBSL
	156-59-2	cis-1,2-Dichloroethene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	1.6E+01 N	N/A		NO	DLBSL
	10061-01-5	cis-1,3-Dichloropropene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	1.7E+00 C	N/A		NO	DLBSL
	110-82-7	Cyclohexane	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	1.2E+02 SAT	N/A		NO	DLBSL
	124-48-1	Dibromochloromethane	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	6.8E-01 C	N/A		NO	DLBSL
	75-71-8	Dichlorodifluoromethane (Freon-12)	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	9.4E+00 N	N/A		NO	DLBSL
	100-41-4	Ethylbenzene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	5.4E+00 C	N/A		NO	DLBSL
	98-82-8	Isopropylbenzene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	2.1E+02 N	N/A		NO	DLBSL
	m&pXYLENE	m- and p-Xylene	ND	ND	MG/KG		0/5	0.004 - 0.01	1.0E-02	N/A	5.9E+01 N	N/A		NO	DLBSL

Table 2.8
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	79-20-9	Methyl acetate	ND	ND	MG/KG		0/5	0.0099 - 0.026	2.6E-02	N/A	7.8E+03 N	N/A		NO	DLBSL
	108-87-2	Methylcyclohexane	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	5.7E+01 N	N/A		NO	DLBSL
	75-09-2	Methylene chloride	ND	ND	MG/KG		0/5	0.0099 - 0.026	2.6E-02	N/A	3.6E+01 C**	N/A		NO	DLBSL
	1634-04-4	Methyl-tert-butyl ether (MTBE)	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	4.3E+01 C	N/A		NO	DLBSL
	95-47-6	o-Xylene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	6.9E+01 N	N/A		NO	DLBSL
	100-42-5	Styrene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	6.3E+02 N	N/A		NO	DLBSL
	127-18-4	Tetrachloroethene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	8.6E+00 C**	N/A		NO	DLBSL
	108-88-3	Toluene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	5.0E+02 N	N/A		NO	DLBSL
	156-60-5	trans-1,2-Dichloroethene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	1.5E+01 N	N/A		NO	DLBSL
	10061-02-6	trans-1,3-Dichloropropene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	1.7E+00 C	N/A		NO	DLBSL
	79-01-6	Trichloroethene	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	4.4E-01 C**	N/A		NO	DLBSL
	75-69-4	Trichlorofluoromethane (Freon-11)	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	7.9E+01 N	N/A		NO	DLBSL
	75-01-4	Vinyl chloride	ND	ND	MG/KG		0/5	0.002 - 0.0051	5.1E-03	N/A	6.0E-02 C	N/A		NO	DLBSL
	92-52-4	1,1-Biphenyl	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	5.1E+00 N	N/A		NO	DLBSL
	95-95-4	2,4,5-Trichlorophenol	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	6.1E+02 N	N/A		NO	DLBSL
	88-06-2	2,4,6-Trichlorophenol	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	6.1E+00 C**	N/A		NO	DLBSL
	120-83-2	2,4-Dichlorophenol	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	1.8E+01 N	N/A		NO	DLBSL
	105-67-9	2,4-Dimethylphenol	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	1.2E+02 N	N/A		NO	DLBSL
	51-28-5	2,4-Dinitrophenol	ND	ND	MG/KG		0/	0 - 0	0.0E+00	N/A	1.2E+01 N	N/A		NO	DLBSL
	121-14-2	2,4-Dinitrotoluene	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	1.6E+00 C	N/A		NO	DLBSL
	606-20-2	2,6-Dinitrotoluene	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	6.1E+00 N	N/A		NO	DLBSL
	91-58-7	2-Chloronaphthalene	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	1.8E+02 SAT	N/A		NO	DLBSL
	95-57-8	2-Chlorophenol	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	3.9E+01 N	N/A		NO	DLBSL
	91-57-6	2-Methylnaphthalene	ND	ND	MG/KG		0/5	0.041 - 0.068	6.8E-02	N/A	2.3E+01 N	N/A		NO	DLBSL
	95-48-7	2-Methylphenol	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	3.1E+02 N	N/A		NO	DLBSL
	88-74-4	2-Nitroaniline	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	6.1E+01 N	N/A		NO	DLBSL
	88-75-5	2-Nitrophenol	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	3.9E+01 N	N/A		NO	DLBSL
	m&pCRESOL	3- and 4-Methylphenol	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	6.1E+02 N	N/A		NO	DLBSL
	91-94-1	3,3'-Dichlorobenzidine	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	1.1E+00 C	N/A		NO	DLBSL
	99-09-2	3-Nitroaniline	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	N/A	N/A		NO	NTX
	534-52-1	4,6-Dinitro-2-methylphenol	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	4.9E-01 N	N/A		YES	DLASL
	101-55-3	4-Bromophenyl-phenylether	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	N/A	N/A		NO	NTX
	59-50-7	4-Chloro-3-methylphenol	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	6.1E+02 N	N/A		NO	DLBSL
	106-47-8	4-Chloroaniline	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	2.4E+00 C	N/A		NO	DLBSL
	7005-72-3	4-Chlorophenyl-phenylether	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	3.1E+01 N	N/A		NO	DLBSL
	100-01-6	4-Nitroaniline	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	2.4E+01 N	N/A		NO	DLBSL
	100-02-7	4-Nitrophenol	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	4.8E+00 C	N/A		NO	DLBSL

Table 2.8

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Henderson Pond and Hickory Pond Recreational Area

MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	83-32-9	Acenaphthene	ND	ND	MG/KG		0/5	0.041 - 0.068	6.8E-02	N/A	3.4E+02 N	N/A		NO	DLBSL
	208-96-8	Acenaphthylene	ND	ND	MG/KG		0/5	0.041 - 0.068	6.8E-02	N/A	3.4E+02 N	N/A		NO	DLBSL
	98-86-2	Acetophenone	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	7.8E+02 N	N/A		NO	DLBSL
	120-12-7	Anthracene	ND	ND	MG/KG		0/5	0.041 - 0.068	6.8E-02	N/A	1.7E+03 N	N/A		NO	DLBSL
	1912-24-9	Atrazine	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	2.1E+00 C	N/A		NO	DLBSL
	100-52-7	Benzaldehyde	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	7.8E+02 N	N/A		NO	DLBSL
	56-55-3	Benzo(a)anthracene	2.0E-02 J	2.0E-02 J	MG/KG	HICP-SD01-0-0_5-12B	1/5	0.041 - 0.068	2.0E-02	N/A	1.5E-01 C	N/A		NO	BSL
	50-32-8	Benzo(a)pyrene	ND	ND	MG/KG		0/5	0.041 - 0.068	6.8E-02	N/A	1.5E-02 C	N/A		YES	DLASL
	205-99-2	Benzo(b)fluoranthene	ND	ND	MG/KG		0/5	0.041 - 0.068	6.8E-02	N/A	1.5E-01 C	N/A		NO	DLBSL
	191-24-2	Benzo(g,h,i)perylene	ND	ND	MG/KG		0/5	0.041 - 0.068	6.8E-02	N/A	1.7E+02 N	N/A		NO	DLBSL
	207-08-9	Benzo(k)fluoranthene	ND	ND	MG/KG		0/5	0.041 - 0.068	6.8E-02	N/A	1.5E+00 C	N/A		NO	DLBSL
	111-91-1	bis(2-Chloroethoxy)methane	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	1.8E+01 N	N/A		NO	DLBSL
	111-44-4	bis(2-Chloroethyl)ether	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	2.1E-01 C	N/A		YES	DLASL
	39638-32-9	bis(2-Chloroisopropyl)ether	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	N/A	N/A		NO	NTX
	117-81-7	bis(2-Ethylhexyl)phthalate	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	3.5E+01 C	N/A		NO	DLBSL
	85-68-7	Butylbenzylphthalate	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	2.6E+02 C	N/A		NO	DLBSL
	105-60-2	Caprolactam	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	3.1E+03 N	N/A		NO	DLBSL
	86-74-8	Carbazole	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	N/A	N/A		NO	NTX
	218-01-9	Chrysene	ND	ND	MG/KG		0/5	0.041 - 0.068	6.8E-02	N/A	1.5E+01 C	N/A		NO	DLBSL
	53-70-3	Dibenz(a,h)anthracene	ND	ND	MG/KG		0/5	0.041 - 0.068	6.8E-02	N/A	1.5E-02 C	N/A		YES	DLASL
	132-64-9	Dibenzofuran	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	7.8E+00 N	N/A		NO	DLBSL
	84-66-2	Diethylphthalate	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	4.9E+03 N	N/A		NO	DLBSL
	60-51-5	Dimethoate	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	1.2E+00 N	N/A		NO	DLBSL
	131-11-3	Dimethyl phthalate	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	N/A	N/A		NO	NTX
	84-74-2	Di-n-butylphthalate	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	6.1E+02 N	N/A		NO	DLBSL
	117-84-0	Di-n-octylphthalate	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	2.4E+02 N	N/A		NO	DLBSL
	206-44-0	Fluoranthene	ND	ND	MG/KG		0/5	0.041 - 0.068	6.8E-02	N/A	2.3E+02 N	N/A		NO	DLBSL
	86-73-7	Fluorene	ND	ND	MG/KG		0/5	0.041 - 0.068	6.8E-02	N/A	2.3E+02 N	N/A		NO	DLBSL
	118-74-1	Hexachlorobenzene	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	3.0E-01 C	N/A		YES	DLASL
	87-68-3	Hexachlorobutadiene	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	6.1E+00 C**	N/A		NO	DLBSL
	77-47-4	Hexachlorocyclopentadiene	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	3.7E+01 N	N/A		NO	DLBSL
	67-72-1	Hexachloroethane	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	4.3E+00 C**	N/A		NO	DLBSL
	193-39-5	Indeno(1,2,3-cd)pyrene	ND	ND	MG/KG		0/5	0.041 - 0.068	6.8E-02	N/A	1.5E-01 C	N/A		NO	DLBSL
	78-59-1	Isophorone	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	5.1E+02 C	N/A		NO	DLBSL
	91-20-3	Naphthalene	ND	ND	MG/KG		0/5	0.041 - 0.068	6.8E-02	N/A	3.6E+00 C	N/A		NO	DLBSL
	621-64-7	n-Nitroso-di-n-propylamine	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	6.9E-02 C	N/A		YES	DLASL
	86-30-6	n-Nitrosodiphenylamine	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	9.9E+01 C	N/A		NO	DLBSL

Table 2.8
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	98-95-3	Nitrobenzene	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	4.8E+00 C	N/A		NO	DLBSL
	87-86-5	Pentachlorophenol	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	8.9E-01 C	N/A		NO	DLBSL
	85-01-8	Phenanthrene	ND	ND	MG/KG		0/5	0.041 - 0.068	6.8E-02	N/A	1.7E+03 N	N/A		NO	DLBSL
	108-95-2	Phenol	ND	ND	MG/KG		0/5	0.41 - 0.68	6.8E-01	N/A	1.8E+03 N	N/A		NO	DLBSL
	298-02-2	Phorate	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	1.2E+00 N	N/A		NO	DLBSL
	129-00-0	Pyrene	ND	ND	MG/KG		0/5	0.041 - 0.068	6.8E-02	N/A	1.7E+02 N	N/A		NO	DLBSL
	72-54-8	4,4'-DDD	6.7E-03 J	6.7E-03 J	MG/KG	HICP-SD05D-0-0_5-12B	1/5	0.0021 - 0.0035	6.7E-03	N/A	2.0E+00 C	N/A		NO	BSL
	72-55-9	4,4'-DDE	1.5E-03 J	7.6E-03 J	MG/KG	HICP-SD05D-0-0_5-12B	3/5	0.0021 - 0.0035	7.6E-03	N/A	1.4E+00 C	N/A		NO	BSL
	50-29-3	4,4'-DDT	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	1.7E+00 C	N/A		NO	DLBSL
	309-00-2	Aldrin	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	2.9E-02 C	N/A		NO	DLBSL
	319-84-6	alpha-BHC	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	7.7E-02 C	N/A		NO	DLBSL
	5103-71-9	alpha-Chlordane	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	1.6E+00 C	N/A		NO	DLBSL
	12674-11-2	Aroclor-1016	ND	ND	MG/KG		0/1	0.082 - 0.082	8.2E-02	N/A	3.9E-01 N	N/A		NO	DLBSL
	11104-28-2	Aroclor-1221	ND	ND	MG/KG		0/5	0.05 - 0.082	8.2E-02	N/A	1.4E-01 C	N/A		NO	DLBSL
	11141-16-5	Aroclor-1232	ND	ND	MG/KG		0/5	0.05 - 0.082	8.2E-02	N/A	1.4E-01 C	N/A		NO	DLBSL
	53469-21-9	Aroclor-1242	ND	ND	MG/KG		0/5	0.05 - 0.082	8.2E-02	N/A	2.2E-01 C	N/A		NO	DLBSL
	12672-29-6	Aroclor-1248	ND	ND	MG/KG		0/5	0.05 - 0.082	8.2E-02	N/A	2.2E-01 C	N/A		NO	DLBSL
	11097-69-1	Aroclor-1254	ND	ND	MG/KG		0/5	0.05 - 0.082	8.2E-02	N/A	1.1E-01 C**	N/A		NO	DLBSL
	11096-82-5	Aroclor-1260	ND	ND	MG/KG		0/5	0.021 - 0.035	3.5E-02	N/A	2.2E-01 C	N/A		NO	DLBSL
	86-50-0	Azinphos methyl	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	1.8E+01 N	N/A		NO	DLBSL
	319-85-7	beta-BHC	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	2.7E-01 C	N/A		NO	DLBSL
	35400-43-2	Bolstar	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	N/A	N/A		NO	NTX
	2921-88-2	Chlorpyrifos	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	6.1E+00 N	N/A		NO	DLBSL
	56-72-4	Coumaphos	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	N/A	N/A		NO	NTX
	319-86-8	delta-BHC	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	2.7E-01 C	N/A		NO	DLBSL
	8065-48-3	Demeton	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	2.4E-01 N	N/A		YES	DLASL
	333-41-5	Diazinon	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	4.3E+00 N	N/A		NO	DLBSL
	62-73-7	Dichlorvos	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	1.7E+00 C	N/A		NO	DLBSL
	60-57-1	Dieldrin	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	3.0E-02 C	N/A		NO	DLBSL
	298-04-4	Disulfoton	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	2.4E-01 N	N/A		YES	DLASL
	959-98-8	Endosulfan I	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	3.7E+01 N	N/A		NO	DLBSL
	33213-65-9	Endosulfan II	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	3.7E+01 N	N/A		NO	DLBSL
	1031-07-8	Endosulfan sulfate	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	3.7E+01 N	N/A		NO	DLBSL
	72-20-8	Endrin	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	1.8E+00 N	N/A		NO	DLBSL
	7421-93-4	Endrin aldehyde	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	1.8E+00 N	N/A		NO	DLBSL
	53494-70-5	Endrin ketone	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	1.8E+00 N	N/A		NO	DLBSL
	13194-48-4	Ethoprop	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	N/A	N/A		NO	NTX

Table 2.8
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	115-90-2	Fensulfothion	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	N/A	N/A		NO	NTX
	2104-64-5	Ethyl p-nitrophenyl phenylphosphorothioate	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	6.1E-02 N	N/A		YES	DLASL
	55-38-9	Fenthion	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	N/A	N/A		NO	NTX
	58-89-9	gamma-BHC (Lindane)	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	5.2E-01 C	N/A		NO	DLBSL
	5103-74-2	gamma-Chlordane	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	1.6E+00 C	N/A		NO	DLBSL
	76-44-8	Heptachlor	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	1.1E-01 C	N/A		NO	DLBSL
	1024-57-3	Heptachlor epoxide	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	5.3E-02 C	N/A		NO	DLBSL
	121-75-5	Malathion	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	1.2E+02 N	N/A		NO	DLBSL
	150-50-5	Merphos	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	1.8E-01 N	N/A		YES	DLASL
	72-43-5	Methoxychlor	ND	ND	MG/KG		0/5	0.0021 - 0.0035	3.5E-03	N/A	3.1E+01 N	N/A		NO	DLBSL
	298-00-0	Methyl parathion	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	1.5E+00 N	N/A		NO	DLBSL
	7786-34-7	Mevinphos	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	N/A	N/A		NO	NTX
	6923-22-4	Monocrotophos	ND	ND	MG/KG		0/0 [6]	0 - 0	0.0E+00	N/A	N/A	N/A		NO	NTX
	300-76-5	Naled	ND	ND	MG/KG		0/4	0.21 - 0.34	3.4E-01	N/A	1.2E+01 N	N/A		NO	DLBSL
	56-38-2	Parathion	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	3.7E+01 N	N/A		NO	DLBSL
	299-84-3	Ronnel	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	3.1E+02 N	N/A		NO	DLBSL
	3689-24-5	Sulfotepp	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	3.1E+00 N	N/A		NO	DLBSL
	107-49-3	Tetraethyl pyrophosphate (TEPP)	ND	ND	MG/KG		0/4	0.41 - 0.68	6.8E-01	N/A	N/A	N/A		NO	NTX
	22248-79-9	Tetrachlorvinphos	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	N/A	N/A		NO	NTX
	34643-46-4	Tokuthion (Prothiophos)	ND	ND	MG/KG		0/5	0.066 - 0.41	4.1E-01	N/A	N/A	N/A		NO	NTX
	8001-35-2	Toxaphene	ND	ND	MG/KG		0/5	0.041 - 0.14	1.4E-01	N/A	4.4E-01 C	N/A		NO	DLBSL
	7429-90-5	Aluminum	2.9E+03 J	6.1E+03 J	MG/KG	HICP-SD03-0-0_5-12B	5/5	25 - 40.2	6.1E+03	N/A	7.7E+03 N	N/A		NO	BSL
	7440-36-0	Antimony	ND	ND	MG/KG		0/5	2.5 - 4.02	4.0E+00	N/A	3.1E+00 N	N/A		YES	DLASL
	7440-38-2	**Arsenic**	**7.0E-01 J**	**1.4E+00 J**	**MG/KG**	**HICP-SD03-0-0_5-12B**	**4/5**	**2.5 - 4.02**	**1.4E+00**	**N/A**	**3.9E-01 C**	**N/A**		**YES**	**ASL**
	7440-39-3	Barium	1.6E+01	3.7E+01	MG/KG	HICP-SD01-0-0_5-12B	5/5	0.624 - 1.01	3.7E+01	N/A	1.5E+03 N	N/A		NO	BSL
	7440-41-7	Beryllium	6.2E-02 J	2.7E-01	MG/KG	HICP-SD02-0-0_5-12B	5/5	0.0624 - 0.101	2.7E-01	N/A	1.6E+01 N	N/A		NO	BSL
	7440-43-9	Cadmium	3.1E-02 J	8.0E-02 J	MG/KG	HICP-SD01-0-0_5-12B	3/5	0.125 - 0.201	8.0E-02	N/A	7.0E+00 N	N/A		NO	BSL
	7440-70-2	Calcium	3.5E+02	1.0E+03 J	MG/KG	HICP-SD02-0-0_5-12B	5/5	31.2 - 50.3	1.0E+03	N/A	N/A	N/A		NO	NUT
	18540-29-9	Chromium (hexavalent)	2.4E-01 J	2.4E-01 J	MG/KG	HICP-SD01-0-0_5-12B	1/5	1.2 - 7.9	2.4E-01	N/A	2.9E-01 C	N/A		NO	BSL
	7440-47-3	Chromium, total	3.5E+00	6.3E+00	MG/KG	HICP-SD04-0-0_5-12B	5/5	0.624 - 1.01	6.3E+00	N/A	1.2E+04 C	N/A		NO	BSL
	7440-48-4	Cobalt	3.6E-01 J	6.5E-01 J	MG/KG	HICP-SD02-0-0_5-12B	4/5	0.624 - 1.01	6.5E-01	N/A	2.3E+00 N	N/A		NO	BSL
	7440-50-8	Copper	5.9E-01 J	5.5E+00	MG/KG	HICP-SD02-0-0_5-12B	5/5	0.624 - 1.01	5.5E+00	N/A	3.1E+02 N	N/A		NO	BSL
	7439-89-6	Iron	1.1E+03 J	2.7E+03 J	MG/KG	HICP-SD03-0-0_5-12B	5/5	12.5 - 20.1	2.7E+03	N/A	5.5E+03 N	N/A		NO	BSL
	7439-92-1	Lead	4.4E+00	1.2E+01	MG/KG	HICP-SD01-0-0_5-12B	5/5	2.5 - 4.02	1.2E+01	N/A	4.0E+02 NL	N/A		NO	BSL
	7439-95-4	Magnesium	1.0E+02	2.3E+02	MG/KG	HICP-SD04-0-0_5-12B	5/5	31.2 - 50.3	2.3E+02	N/A	N/A	N/A		NO	NUT
	7439-96-5	Manganese	2.5E+00	9.4E+00	MG/KG	HICP-SD03-0-0_5-12B	5/5	1.25 - 2.01	9.4E+00	N/A	1.8E+02 N	N/A		NO	BSL
	7439-97-6	Mercury	1.9E-02 J	3.5E-02	MG/KG	HICP-SD02-0-0_5-12B	4/5	0.0184 - 0.0326	3.5E-02	N/A	2.3E+00 N	N/A		NO	BSL

Table 2.8

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Henderson Pond and Hickory Pond Recreational Area

MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	7440-02-0	Nickel	ND	ND	MG/KG		0/5	0.624 - 1.01	1.0E+00	N/A	1.5E+02 N	N/A		NO	DLBSL
	7440-09-7	Potassium	7.6E+01	1.9E+02	MG/KG	HICP-SD04-0-0_5-12B	5/5	31.2 - 50.3	1.9E+02	N/A	N/A	N/A		NO	NUT
	7782-49-2	Selenium	5.8E-01 J	8.1E-01 J	MG/KG	HICP-SD01-0-0_5-12B	4/5	2.5 - 4.02	8.1E-01	N/A	3.9E+01 N	N/A		NO	BSL
	7440-22-4	Silver	ND	ND	MG/KG		0/5	0.624 - 1.01	1.0E+00	N/A	3.9E+01 N	N/A		NO	DLBSL
	7440-23-5	Sodium	ND	ND	MG/KG		0/5	31.2 - 50.3	5.0E+01	N/A	N/A	N/A		NO	NUT
	7440-28-0	Thallium	ND	ND	MG/KG		0/5	2.5 - 4.02	4.0E+00	N/A	7.8E-02 N	N/A		YES	DLASL
	7440-62-2	Vanadium	4.7E+00	8.6E+00	MG/KG	HICP-SD01-0-0_5-12B	5/5	0.624 - 1.01	8.6E+00	N/A	3.9E+01 N	N/A		NO	BSL
	7440-66-6	Zinc	3.4E+00	1.5E+01	MG/KG	HICP-SD02-0-0_5-12B	5/5	1.25 - 2.01	1.5E+01	N/A	2.3E+03 N	N/A		NO	BSL

[1] Minimum/Maximum detected concentrations.

[2] Maximum concentration is used for screening.

[3] Background values not available.

[4] Oak Ridge National Laboratory (ORNL). May 2012. Regional Screening Levels for Chemical Contaminants at Superfund Sites. [Online]. Adjusted (RSLs based on non-cancer (N) divided by 10) residential soil RSLs. Available: http://epa-prgs.ornl.gov/chemicals/index.shtml

RSL value for 1,4-dichlorobenzene used as surrogate for 1,3-dichlorobenzene.

RSL value for 1,3-dichloropropene used as a surrogate for cis-1,3-dichloropropene and trans-1,3-dichloropropene.

RSL value for n-hexane used as surrogate for methylcyclohexane.

RSL value for 2-chlorophenol used as surrogate for 4-chloro-3-methylphenol and 2-nitrophenol.

RSL value for p-cresol used as surrogate for 3- and 4-methylphenol.

RSL value for methoxychlor used as surrogate for 4-chlorophenyl-phenylether.

RSL value for nitrobenzene used as surrogate for 4-nitrophenol.

RSL value for acenaphthene used as surrogate for acenaphthylene.

RSL for di-n-octylphthalate calculated using the Risk Assessment Information System Preliminary Remediation Goal calculator and the non-cancer oral reference dose of 0.04 mg/kg-day from the PPRTV database.

RSL value for pyrene used as surrogate for benzo(g,h,i)perylene.

RSL value for anthracene used as surrogate for phenanthrene.

RSL value for technical chlordane used as surrogate for alpha-chlordane and gamma-chlordane.

RSL value for technical-HCH used as surrogate for delta-BHC.

RSL value for endosulfan used as surrogate for endosulfan I, endosulfan II, and endosulfan sulfate.

RSL value for endrin used as surrogate for endrin aldehyde and endrin ketone.

RSL value for chromium(VI) used for chromium(hexavalent).

RSL value for chromium(III) insoluble salts used for chromium, total.

RSL value for mercuric chloride (and other mercury salts) used as surrogate for mercury.

[5] Rationale Codes

Selection Reason:	Above Screening Levels (ASL)
	Detection Limit Above Screening Level (DLASL), not quantitatively evaluated in HHRA
Deletion Reason:	Below Screening Level (BSL)
	Detection Limit Below Screening Level (DLBSL)
	No Toxicity Information (NTX)
	Essential Nutrient (NUT)

[6] All results R (rejected) qualified.

COPC = Chemical of Potential Concern

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered

J = Estimated Value

C = Carcinogenic

C** = N SL < 10x C SL, therefore, N SL/10 used as screening value.

N = Noncarcinogenic

SAT = RSL exceeds saturation concentration (Csat) therefore, Csat used as screening value.

NL = Noncarcinogenic lead residential soil RSL not adjusted by dividing by 10.

TABLE 2.8a
Risk Ratio Screening for Hickory Pond Sediment, Maximum Detected Concentration
Henderson Pond and Hickory Pond Recreational Area
MCB Camp Lejeune, North Carolina

Analyte	Detection Frequency	Maximum Detected Concentration (Qualifier) (mg/kg)	Sample Location of Maximum Detected Concentration	Residential Soil RSL (mg/kg)	Acceptable Risk Level	Corresponding Hazard Index[a]	Corresponding Cancer Risk[b]	Target Organ
Arsenic	4 / 5	1.4E+00 J	HICP-SD03-0-0_5-12B	3.9E-01	1E-06	N/A	4E-06	NA
Cumulative Corresponding Hazard Index[c]						**N/A**		
Cumulative Corresponding Cancer Risk[d]							**4E-06**	

Notes:
a Corresponding Hazard Index equals maximum detected concentration divided by the RSL divided by the acceptable risk level.
b Corresponding Cancer Risk equals maximum detected concentration divided by the RSL divided by the acceptable risk level.
c Cumulative Corresponding Hazard Index equals sum of Corresponding Hazard Indices for each constituent.
d Cumulative Corresponding Cancer Risk equals sum of Corresponding Cancer Risks for each constituent.
Constituent selected as COPC if it contributes to an overall Hazard Index by target organ greater than 0.5 or Cumulative Corresponding Cancer Risk greater than 5E-05, otherwise, constituent not selected as COPC.
Constituents selected as COPCs are indicated by shading.
COPC = Constituent of Potential Concern
mg/kg = micrograms per kilogram
N/A = Not available/not applicable.

Table 2.9

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Henderson Pond and Hickory Pond Recreational Area

MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water/ Sediment
Exposure Medium: Fish Tissue

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Henderson Pond	72-55-9	4,4'-DDE	8.3E-04 J	4.9E-03 J	MG/KG	HENP-FS-C02-F-12B	4/6	N/A	4.9E-03	N/A	9.3E-03 C	N/A		NO	BSL
	50-29-3	**4,4'-DDT**	**6.7E-03 J**	**1.3E-02 J**	**MG/KG**	**HENP-FS-C02-F-12B**	**3/6**	**N/A**	**1.3E-02**	**N/A**	**9.3E-03 C**	**N/A**		**YES**	**ASL**
		Dioxin-like PCB TEQ	**2.9E-08**	**1.2E-06**	**MG/KG**	**HENP-FS-C06D-F-12B**	**6/6**	**N/A**	**1.2E-06**	**N/A**	**2.4E-08 C**	**N/A**		**YES**	**ASL**
		Total Non-dioxin like PCB congeners	**8.4E-03**	**2.3E-01**	**MG/KG**	**HENP-FS-C02-F-12B**	**6/6**	**N/A**	**2.3E-01**	**N/A**	**1.6E-03 C**	**N/A**		**YES**	**ASL**
		Total PCB congeners	**8.6E-03**	**2.4E-01**	**MG/KG**	**HENP-FS-C02-F-12B**	**6/6**	**N/A**	**2.4E-01**	**N/A**	**1.6E-03 C**	**N/A**		**YES**	**ASL**
	7440-38-2	Arsenic	ND	ND	MG/KG		0/6	2 - 3.33	3.3E+00	N/A	2.1E-03 C	N/A		YES	DLASL

[1] Minimum/Maximum detected concentrations.

[2] Maximum concentration is used for screening.

[3] Background values not available.

[4] Oak Ridge National Laboratory (ORNL). November, 2010. Regional Screening Levels for Chemical Contaminants at Superfund Sites.
Available: http://epa-prgs.ornl.gov/chemicals/index.sh. Fish screening level calculated using RSL calculation tool for fish and default assumptions.
RSLs based on noncancer divided by 10, RSLs based on cancer used as cacluated by the tool.
RSL value for 2,3,7,8-TCDD (dioxin) used for Dioxin-like PCB TEQ Concentration.
RSL value for Aroclor 1260 used for Total Non-dioxin like PCB congeners Concentration.
RSL value for Aroclor 1254 used for Total PCB congeners Concentration.

[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)
Detection Limit Above Screening Level (DLASL), not quantitatively evaluated in HHRA

Deletion Reason: Below Screening Level (BSL)
Detection Limit Below Screening Level (DLBSL)

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered
J = Estimated Value
C = Carcinogenic
N = Noncarcinogenic

Table 2.9a
PCB Concentration Calculations, Henderson Pond Fish Tissue, Fillet Only
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

StationID		HENP-TI01		HENP-TI02		HENP-TI02		HENP-TI02		HENP-TI03		HENP-TI03		HENP-TI03	
SampleID	**TEF**	HENP-FS-CP01-F-12B		HENP-FS-B03-F-12B		HENP-FS-C02-F-12B		HENP-FS-S01-F-12B		HENP-FS-C06D-F-12B		HENP-FS-C06-F-12B		HENP-FS-B05-F-12B	
SampleDate		4/27/2012		4/27/2012		4/27/2012		4/27/2012		4/24/2012		4/24/2012		4/27/2012	
		Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc
Dioxin-Like PCB Congeners (PG/G)															
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	0.00003	**24.9**	**0.000747**	**144**	**0.00432**	**528**	**0.01584**	**15.4**	**0.000462**	**191 J**	**0.00573**	**139**	**0.00417**	**59.9**	**0.001797**
2,3,3',4,4'-Pentachlorobiphenyl (105)	0.00003	**5.11**	**0.0001533**	**31.1**	**0.000933**	**104**	**0.00312**	**6.05**	**0.0001815**	**42.1**	**0.001263**	**36.5**	**0.001095**	**56.2**	**0.001686**
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	0.00003	**39.9 J**	**0.001197**	**321 J**	**0.00963**	**1080 J**	**0.0324**	**34.5 J**	**0.001035**	**378 J**	**0.01134**	**303 J**	**0.00909**	**146 J**	**0.00438**
2,3,4,4',5-Pentachlorobiphenyl (114)	0.00003	1.17 U		**6**	**0.00018**	11.7 U		1.19 U		12.3 U		6.51 U		**2.43**	**7.29E-05**
2,3',4,4',5-Pentachlorobiphenyl (118)	0.00003	**31.4**	**0.000942**	**188**	**0.00564**	**671**	**0.02013**	**35.1**	**0.001053**	**262 J**	**0.00786**	**216**	**0.00648**	**247**	**0.00741**
2,3',4,4',5'-Pentachlorobiphenyl (123)	0.00003	**0.792 J**	**2.376E-05**	**5.04**	**0.0001512**	**16.8 J**	**0.000504**	**0.97 J**	**0.0000291**	**9.61 J**	**0.0002883**	**6.18 J**	**0.0001854**	**5.25**	**0.000158**
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	0.03	1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		**2.57**	**0.0771**
3,3',4,4',5-Pentachlorobiphenyl (126)	0.1	**1.13 J**	**0.113**	1.25 U		11.7 U		**1.44 J**	**0.144**	**11.4 J**	**1.14**	**5.67 J**	**0.567**	**3.25**	**0.325**
3,3',4,4'-Tetrachlorobiphenyl (77)	0.0001	**0.898 J**	**0.0000898**	**1.48 J**	**0.000148**	11.7 U		**0.96 J**	**0.000096**	12.3 U		6.51 U		**6.01**	**0.000601**
3,4,4',5-Tetrachlorobiphenyl (81)	0.0003	1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
Congeners (156/157)	0.00003	**35.9 J**	**0.001077**	**282 J**	**0.00846**	**917 J**	**0.02751**	**36.6 J**	**0.001098**	**338 J**	**0.01014**	**248 J**	**0.00744**	**144 J**	**0.00432**
Dioxin TEQ Concentration (detects only)			0.1172299		0.0294622		0.099504		0.1479546		1.1766213		0.5954604		0.422524
Non-Dioxin Like PCB Congeners (PG/G)															
2-Chlorobiphenyl (1)		2.92 U		3.14 U		29.4 U		2.99 U		30.8 U		16.3 U		2.72 U	
3-Chlorobiphenyl (2)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
4-Chlorobiphenyl (3)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,2'-Dichlorobiphenyl (4)		2.33 U		2.5 U		23.4 U		2.38 U		24.5 U		13 U		2.17 U	
2,3-Dichlorobiphenyl (5)		2.33 U		2.5 U		23.4 U		2.38 U		24.5 U		13 U		2.17 U	
2,3'-Dichlorobiphenyl (6)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,4-Dichlorobiphenyl (7)		2.33 U		2.5 U		23.4 U		2.38 U		24.5 U		13 U		2.17 U	
2,4'-Dichlorobiphenyl (8)		11.7 U		12.5 U		117 U		11.9 U		123 U		65.1 U		10.9 U	
2,5-Dichlorobiphenyl (9)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,6-Dichlorobiphenyl (10)		2.33 U		2.5 U		23.4 U		2.38 U		24.5 U		13 U		2.17 U	
3,3'-Dichlorobiphenyl (11)		29.2 U		31.4 U		294 U		29.9 U		308 U		163 U		27.2 U	
3,5-Dichlorobiphenyl (14)		2.33 U		2.5 U		23.4 U		2.38 U		24.5 U		13 U		2.17 U	
4,4'-Dichlorobiphenyl (15)		11.7 U		12.5 U		117 U		11.9 U		123 U		65.1 U		10.9 U	
2,2',3-Trichlorobiphenyl (16)		2.33 U		2.5 U		23.4 U		2.38 U		24.5 U		13 U		**1.49 J**	
2,2',4-Trichlorobiphenyl (17)		2.33 U		2.5 U		23.4 U		2.38 U		24.5 U		13 U		**5.56**	
2,2',6-Trichlorobiphenyl (19)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,3,4'-Trichlorobiphenyl (22)		**1.84 J**		**4.04**		23.4 U		**1.77 J**		24.5 U		13 U		**7.04**	
2,3,5-Trichlorobiphenyl (23)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,3,6-Trichlorobiphenyl (24)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,3',4-Trichlorobiphenyl (25)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		**2.39**	
2,3',6-Trichlorobiphenyl (27)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		**0.857 J**	
2,4',5-Trichlorobiphenyl (31)		**3.12 J**		**6.67 J**		58.6 U		**3.03 J**		61.3 U		32.5 U		**18.4**	
2,4',6-Trichlorobiphenyl (32)		1.17 U		**0.65 J**		11.7 U		1.19 U		12.3 U		6.51 U		**3.71**	
2,3',5'-Trichlorobiphenyl (34)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
3,3',4-Trichlorobiphenyl (35)		2.33 U		2.5 U		23.4 U		2.38 U		24.5 U		13 U		2.17 U	
3,3',5-Trichlorobiphenyl (36)		2.33 U		2.5 U		23.4 U		2.38 U		24.5 U		13 U		2.17 U	
3,4,4'-Trichlorobiphenyl (37)		11.7 U		**8 J**		117 U		11.9 U		123 U		65.1 U		**8.14 J**	
3,4,5-Trichlorobiphenyl (38)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
3,4',5-Trichlorobiphenyl (39)		2.33 U		2.5 U		23.4 U		2.38 U		24.5 U		13 U		2.17 U	
2,2',3,4-Tetrachlorobiphenyl (41)		1.17 U		**1.52 J**		11.7 U		**0.748 J**		12.3 U		6.51 U		**2.5**	
2,2',3,4'-Tetrachlorobiphenyl (42)		**0.984 J**		**1.91**		11.7 U		**1.17 J**		12.3 U		6.51 U		**14.5**	
2,2',3,5-Tetrachlorobiphenyl (43)		2.33 U		2.5 U		23.4 U		2.38 U		24.5 U		13 U		**3.96**	
2,2',3,6'-Tetrachlorobiphenyl (46)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		**1.84**	
2,2',4,5-Tetrachlorobiphenyl (48)		**0.68 J**		**1.78 J**		11.7 U		**0.983 J**		12.3 U		6.51 U		**9.45**	
2,2',5,5'-Tetrachlorobiphenyl (52)		4.91 U		**8.61**		11.7 U		5.27 U		12.3 U		13.6 U		**99.3**	
2,2',6,6'-Tetrachlorobiphenyl (54)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	

Table 2.9a
PCB Concentration Calculations, Henderson Pond Fish Tissue, Fillet Only
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

StationID		HENP-TI01		HENP-TI02		HENP-TI02		HENP-TI02		HENP-TI03		HENP-TI03		HENP-TI03	
SampleID	**TEF**	HENP-FS-CP01-F-12B		HENP-FS-B03-F-12B		HENP-FS-C02-F-12B		HENP-FS-S01-F-12B		HENP-FS-C06D-F-12B		HENP-FS-C06-F-12B		HENP-FS-B05-F-12B	
SampleDate		4/27/2012		4/27/2012		4/27/2012		4/27/2012		4/24/2012		4/24/2012		4/27/2012	
		Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc
2,3,3',4-Tetrachlorobiphenyl (55)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		**3.27**	
2,3,3',4'-Tetrachlorobiphenyl (56)		**2.76 J**		**5.86**		23.4 U		**3.73**		24.5 U		13 U		**24**	
2,3,3',5-Tetrachlorobiphenyl (57)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		**0.805 J**	
2,3,3',5'-Tetrachlorobiphenyl (58)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		**0.993 J**	
2,3,4,4'-Tetrachlorobiphenyl (60)		**1.56 J**		**3.64 J**		23.4 U		**2.02 J**		24.5 U		13 U		**11**	
2,3,4',5-Tetrachlorobiphenyl (63)		2.92 U		3.14 U		29.4 U		2.99 U		30.8 U		16.3 U		**4.09 J**	
2,3,4',6-Tetrachlorobiphenyl (64)		**1.65 J**		**3.17**		**6.62 J**		**1.6 J**		12.3 U		**5.44 J**		**23.4**	
2,3',4,4'-Tetrachlorobiphenyl (66)		5.95 U		**17.9**		49.9 U		8.5 U		30.8 U		27.9 U		**87.5**	
2,3',4,5-Tetrachlorobiphenyl (67)		1.17 U		**0.776 J**		11.7 U		**0.666 J**		12.3 U		6.51 U		**3.24**	
2,3',4,5'-Tetrachlorobiphenyl (68)		1.17 U		**1.18 J**		11.7 U		**0.612 J**		12.3 U		6.51 U		**4.03**	
2,3',5,5'-Tetrachlorobiphenyl (72)		2.33 U		**1.37 J**		23.4 U		2.38 U		24.5 U		13 U		**4.2**	
2,3',5',6-Tetrachlorobiphenyl (73)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
3,3',4,5-Tetrachlorobiphenyl (78)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
3,3',4,5'-Tetrachlorobiphenyl (79)		2.33 U		**1.34 J**		23.4 U		2.38 U		24.5 U		13 U		**4.7**	
3,3',5,5'-Tetrachlorobiphenyl (80)		2.33 U		2.5 U		23.4 U		2.38 U		24.5 U		13 U		2.17 U	
2,2',3,3',4-Pentachlorobiphenyl (82)		**1.47 J**		**2.88 J**		29.4 U		**1 J**		30.8 U		16.3 U		**11.2**	
2,2',3,3',5-Pentachlorobiphenyl (83)		**1.91**		**5.03**		11.7 U		**0.888 J**		12.3 U		**7.8 J**		**11.2**	
2,2',3,3',6-Pentachlorobiphenyl (84)		**2.63**		**2.5**		11.7 U		**1.75 J**		12.3 U		**7.69 J**		**33.3**	
2,2',3,4,6'-Pentachlorobiphenyl (89)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		**0.919 J**	
2,2',3,5,5'-Pentachlorobiphenyl (92)		**33**		**142**		**375**		**29.6**		**220**		**176**		**145**	
2,2',3,5,6'-Pentachlorobiphenyl (94)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		**1.34 J**	
2,2',3,5',6-Pentachlorobiphenyl (95)		**20.7**		**38.3**		54.1 U		**20**		37.9 U		**59.1**		**160**	
2,2',3,6,6'-Pentachlorobiphenyl (96)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		**0.554 J**	
2,2',4,4',5-Pentachlorobiphenyl (99)		**71.2**		**357**		**1260**		**60.4**		**549**		**440**		**404**	
2,2',4,5',6-Pentachlorobiphenyl (103)		**3.05 J**		**10.6**		**17.5 J**		**2.44 J**		**15.8 J**		**9.35 J**		**14.6**	
2,2',4,6,6'-Pentachlorobiphenyl (104)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,3,3',4,5-Pentachlorobiphenyl (106)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,3,3',4',5-Pentachlorobiphenyl (107)		**13.5**		**93.5**		**245**		**12.2**		**53**		**78.5**		**81**	
2,3,3',5,5'-Pentachlorobiphenyl (111)		**1.33 J**		**8.22**		11.7 U		**1 J**		**10.6 J**		**6.46 J**		**5.05**	
2,3,3',5,6-Pentachlorobiphenyl (112)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,3',4,5,5'-Pentachlorobiphenyl (120)		**4.87**		**36.6**		**95.8**		**4.55**		**40.9**		**30.8**		**22.1**	
2,3',4,5',6-Pentachlorobiphenyl (121)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		**0.699 J**	
2,3,3',4',5'-Pentachlorobiphenyl (122)		1.17 U		**1.68 J**		11.7 U		1.19 U		12.3 U		6.51 U		**2.07**	
3,3',4,5,5'-Pentachlorobiphenyl (127)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,2',3,3',4,5'-Hexachlorobiphenyl (130)		**82**		**337**		**1430**		**54.4**		**158**		**390**		**209**	
2,2',3,3',4,6-Hexachlorobiphenyl (131)		**1.28 J**		**5.42**		11.7 U		**0.704 J**		12.3 U		6.51 U		**4.58**	
2,2',3,3',4,6'-Hexachlorobiphenyl (132)		**145**		**208**		**681**		**60.7**		**133**		**378**		**218**	
2,2',3,3',5,5'-Hexachlorobiphenyl (133)		**31.1**		**183**		**592**		**24.2**		**221**		**161**		**103**	
2,2',3,3',5,6-Hexachlorobiphenyl (134)		**16.2**		**29.9**		**98.2**		**8.51**		**23.7**		**42.5**		**33.9**	
2,2',3,3',6,6'-Hexachlorobiphenyl (136)		**34.1**		**20.8**		**26.8**		**17.4**		**30.5**		**40**		**53**	
2,2',3,4,4',5-Hexachlorobiphenyl (137)		**6.1**		**38.5**		**126**		**4.89**		**47.9**		**33.7**		**25.4**	
2,2',3,4,5,5'-Hexachlorobiphenyl (141)		**213**		**1200**		**3910**		**156**		**1390**		**1080**		**610**	
2,2',3,4,5,6-Hexachlorobiphenyl (142)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,2',3,4,5,6'-Hexachlorobiphenyl (143)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,2',3,4,5',6-Hexachlorobiphenyl (144)		**25.8**		**114**		**167**		**16.7**		**83.5**		**71.7**		**62.8**	
2,2',3,4,6,6'-Hexachlorobiphenyl (145)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,2',3,4',5,5'-Hexachlorobiphenyl (146)		**437**		**3160**		**10400**		**350**		**3630**		**2740**		**1500**	
2,2',3,4',5,6'-Hexachlorobiphenyl (148)		**2.26**		**15.6**		**48.4**		**1.89**		**16.8 J**		**13.5**		**11.2**	
2,2',3,4',6,6'-Hexachlorobiphenyl (150)		**1.23 J**		**2.59**		11.7 U		**0.736 J**		12.3 U		**3.32 J**		**4.91**	
2,2',3,5,6,6'-Hexachlorobiphenyl (152)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,2',4,4',5,6'-Hexachlorobiphenyl (154)		**26.8**		**216**		**646**		**24.9**		**231**		**176**		**127**	

Table 2.9a
PCB Concentration Calculations, Henderson Pond Fish Tissue, Fillet Only
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

StationID		HENP-TI01		HENP-TI02		HENP-TI02		HENP-TI02		HENP-TI03		HENP-TI03		HENP-TI03	
SampleID	**TEF**	HENP-FS-CP01-F-12B		HENP-FS-B03-F-12B		HENP-FS-C02-F-12B		HENP-FS-S01-F-12B		HENP-FS-C06D-F-12B		HENP-FS-C06-F-12B		HENP-FS-B05-F-12B	
SampleDate		4/27/2012		4/27/2012		4/27/2012		4/27/2012		4/24/2012		4/24/2012		4/27/2012	
		Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc
2,2',4,4',6,6'-Hexachlorobiphenyl (155)		1.17 U		**0.655 J**		11.7 U		1.19 U		12.3 U		6.51 U		**2.07**	
2,3,3',4,4',6-Hexachlorobiphenyl (158)		**73.5**		**513**		**1720**		**61.2**		**585**		**432**		**244**	
2,3,3',4,5,5'-Hexachlorobiphenyl (159)		**18.4**		**37.6**		**145**		**8.38**		**75.5**		**62.7**		**24.5**	
2,3,3',4,5,6-Hexachlorobiphenyl (160)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,3,3',4,5',6-Hexachlorobiphenyl (161)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,3,3',4',5,5'-Hexachlorobiphenyl (162)		**24**		**107**		**428**		**15.1**		**97**		**112**		**57**	
2,3,3',4',5',6-Hexachlorobiphenyl (164)		**95.6**		**393**		**1190**		**59.6**		**430**		**409**		**230**	
2,3,3',5,5',6-Hexachlorobiphenyl (165)		1.17 U		**7.31**		11.7 U		1.19 U		12.3 U		6.51 U		**4.9**	
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)		**551**		**3540**		**11500**		**359**		**4310**		**3100**		**1440**	
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)		**168**		**912**		**3200**		**92.8**		**1100**		**837**		**381**	
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)		**707**		**1180**		**5030**		**308**		**2470**		**2270**		**805**	
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)		**25.6**		**160**		**518**		**17.1**		**177**		**133**		**69.3**	
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)		**49**		**46.6**		**111**		**17.6**		**76.7**		**82.5**		**43.3**	
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)		**438**		**1080**		**6280**		**241**		**825**		**1840**		**703**	
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)		**188**		**741**		**2960**		**128**		**1180**		**842**		**428**	
2,2',3,3',5,6,6'-Heptachlorobiphenyl (179)		**174**		**103**		**542**		**75.7**		**366**		**288**		**156**	
2,2',3,4,4',5,6-Heptachlorobiphenyl (181)		1.17 U		**10.1**		11.7 U		1.19 U		12.3 U		6.51 U		**4.8**	
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)		**4.13**		**29.7**		**83.9**		1.19 U		**62.4**		**35.4**		**13.8**	
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)		1.17 U		**4.59**		11.7 U		1.19 U		12.3 U		6.51 U		**2.81**	
2,2',3,4,5,6,6'-Heptachlorobiphenyl (186)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)		**1100**		**7600 J**		**25700**		**835**		**9050**		**6570**		**3410 J**	
2,2',3,4',5,6,6'-Heptachlorobiphenyl (188)		1.17 U		**11.1**		11.7 U		**1.16 J**		12.3 U		6.51 U		**8.78**	
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)		**117**		**768**		**2510**		**79.9**		**956**		**703**		**326**	
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)		**19.2**		**119**		**390**		**11.7**		**138**		**100**		**47.1**	
2,3,3',4,5,5',6-Heptachlorobiphenyl (192)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)		**337**		**1590**		**6210**		**157**		**2450**		**1670**		**661**	
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)		**128**		**697**		**2420**		**73.2**		**907**		**627**		**293**	
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)		**165**		**757**		**2550**		**75**		**1040**		**657**		**319**	
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)		**44.5**		**169**		**595**		**22.6**		**209**		**143**		**87.7**	
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)		**82.7**		**241**		**1030**		**48.3**		**507**		**318**		**163**	
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)		**276**		**1290**		**4500**		**135**		**1990**		**1340**		**570**	
2,2',3,4,4',5,6,6'-Octachlorobiphenyl (204)		1.17 U		1.25 U		11.7 U		1.19 U		12.3 U		6.51 U		1.09 U	
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)		**18.1**		**89.2**		**309**		**8.64**		**127**		**91.2**		**36.7**	
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)		**206**		**593**		**2330**		**71.9**		**1470**		**879**		**331**	
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)		**18.1**		**56.4**		**180**		**6.78**		**88.6**		**48.8**		**33.6**	
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)		**60.3**		**89.2**		**510**		**21.1**		**361 J**		**209**		**80.6**	
Decachlorobiphenyl (209)		**28.3**		**44.2**		**173**		**10.7**		**168**		**109**		**58.1**	
Congeners (13/12)		4.68 U		5.01 U		47 U		4.78 U		49.2 U		26 U		4.35 U	
Congeners (21/33)		**2.44 J**		**6.63 J**		47 U		**2.73 J**		49.2 U		26 U		**10.8 J**	
Congeners (26/29)		2.33 U		2.5 U		23.4 U		2.38 U		24.5 U		13 U		**5.51 J**	
Congeners (28/20)		11.7 U		**10.7 J**		117 U		11.9 U		123 U		65.1 U		**34.1 J**	
Congeners (30/18)		2.33 U		**1.26 J**		23.4 U		2.38 U		24.5 U		13 U		**5.49 J**	
Congeners (40/71)		**2.09 J**		**4.43 J**		23.4 U		**2.04 J**		24.5 U		13 U		**28.7 J**	
Congeners (44/47/65)		**5.66 J**		**11.2 J**		**30.1 J**		**6.9 J**		**20.1 J**		**23.1 J**		**82.4 J**	
Congeners (45/51)		2.33 U		2.5 U		23.4 U		2.38 U		24.5 U		13 U		**7.01 J**	
Congeners (50/53)		2.33 U		2.5 U		23.4 U		2.38 U		24.5 U		13 U		**5.6 J**	
Congeners (59/62/75)		3.5 U		3.76 U		35.2 U		3.58 U		36.8 U		19.5 U		**7.05 J**	
Congeners (61/70/74/76)		10.6 U		**24.7 J**		47 U		13.3 U		49.2 U		26 U		**131 J**	
Congeners (69/49)		**3.06 J**		**6.18 J**		**15.4 J**		**2.97 J**		**13.4 J**		**14.4 J**		**69.1 J**	
Congeners (86/87/97/109/119/125)		**27 J**		**107 J**		**263 J**		**23.5 J**		**111 J**		**118 J**		**167 J**	
Congeners (88/91)		**8.84 J**		**15.6 J**		**44.3 J**		**4.52 J**		**32.8 J**		**34.8 J**		**57.1 J**	

Table 2.9a
PCB Concentration Calculations, Henderson Pond Fish Tissue, Fillet Only
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

StationID		HENP-TI01		HENP-TI02		HENP-TI02		HENP-TI02		HENP-TI03		HENP-TI03		HENP-TI03	
SampleID	**TEF**	HENP-FS-CP01-F-12B		HENP-FS-B03-F-12B		HENP-FS-C02-F-12B		HENP-FS-S01-F-12B		HENP-FS-C06D-F-12B		HENP-FS-C06-F-12B		HENP-FS-B05-F-12B	
SampleDate		4/27/2012		4/27/2012		4/27/2012		4/27/2012		4/24/2012		4/24/2012		4/27/2012	
		Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc
Congeners (93/100)		**1.19 J**		**7.4 J**		23.4 U		2.38 U		**12.8 J**		**7.72 J**		**13.9 J**	
Congeners (98/102)		**1.53 J**		**5.36 J**		23.4 U		2.38 U		24.5 U		13 U		**10.5 J**	
Congeners (108/124)		**2.82 J**		**15.2 J**		**14.9 J**		**2.7 J**		24.5 U		**6.6 J**		**14 J**	
Congeners (110/115)		**95.1 J**		**213 J**		**557 J**		**42.5 J**		99.8 U		**294 J**		**335 J**	
Congeners (113/90/101)		**100 J**		**428 J**		**674 J**		**89 J**		**427 J**		**374 J**		**512 J**	
Congeners (117/116/85)		**5.97 J**		**28.1 J**		**104 J**		**5.56 J**		**43.5 J**		**36 J**		**50.8 J**	
Congeners (128/166)		**53.9 J**		**361 J**		**1220 J**		**46.3 J**		**414 J**		**326 J**		**208 J**	
Congeners (138/163/129)		**1080 J**		**7690 J**		**25600 J**		**921 J**		**7400 J**		**6580 J**		**3760 J**	
Congeners (139/140)		**7.77 J**		**61.3 J**		**173 J**		**7.34 J**		**64.8 J**		**46.8 J**		**35.7 J**	
Congeners (147/149)		**741 J**		**2360 J**		**4650 J**		**423 J**		**2030 J**		**2170 J**		**1690 J**	
Congeners (151/135)		**290 J**		**980 J**		**2270 J**		**204 J**		**1380 J**		**980 J**		**734 J**	
Congeners (153/168)		**1340 J**		**10000 J**		**34700 J**		**1090 J**		**11900 J**		**9150 J**		**4680 J**	
Congeners (171/173)		**185 J**		**1170 J**		**3760 J**		**125 J**		**1280 J**		**983 J**		**497 J**	
Congeners (180/193)		**1830 J**		**11100 J**		**38800 J**		**1070 J**		**13700 J**		**10400 J**		**4440 J**	
Congeners (183/185)		**411 J**		**2820 J**		**8830 J**		**286 J**		**3150 J**		**2320 J**		**1160 J**	
Congeners (197/200)		**49.7 J**		**83.2 J**		**297 J**		**16.1 J**		**137 J**		**104 J**		**45.9 J**	
Congeners (198/199)		**514 J**		**1870 J**		**7490 J**		**237 J**		**3250 J**		**2180 J**		**923 J**	
Total Non-dioxin like PCB congeners (detects only)		**13,063**		**68,657**		**232,733**		**8,421**		**83,437**		**66,008**		**34,962**	
Total PCBs Concentration (detects only)		**13,203**		**69,636**		**236,050**		**8,552**		**84,669**		**66,962**		**35,635**	

Table 2.10
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water/ Sediment
Exposure Medium: Fish Tissue

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
Hickory Pond	92-52-4	1,1-Biphenyl	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	3.9E-01 C	N/A		YES	DLASL
	108-60-1	2,2'-Oxybis(1-chloropropane)	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	4.5E-02 C	N/A		YES	DLASL
	95-95-4	2,4,5-Trichlorophenol	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	1.4E+01 N	N/A		NO	DLBSL
	88-06-2	2,4,6-Trichlorophenol	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	2.9E-01 C	N/A		YES	DLASL
	120-83-2	2,4-Dichlorophenol	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	4.1E-01 N	N/A		YES	DLASL
	105-67-9	2,4-Dimethylphenol	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	2.7E+00 N	N/A		NO	DLBSL
	51-28-5	2,4-Dinitrophenol	ND	ND	MG/KG		0/0 [6]	1 - 2	2.0E+00	N/A	2.7E-01 N	N/A		YES	DLASL
	121-14-2	2,4-Dinitrotoluene	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	1.0E-02 C	N/A		YES	DLASL
	606-20-2	2,6-Dinitrotoluene	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	1.4E-01 N	N/A		YES	DLASL
	91-58-7	2-Chloronaphthalene	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	1.1E+01 N	N/A		NO	DLBSL
	95-57-8	2-Chlorophenol	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	6.8E-01 N	N/A		YES	DLASL
	91-57-6	2-Methylnaphthalene	ND	ND	MG/KG		0/3	0.033 - 0.033	3.3E-02	N/A	5.4E-01 N	N/A		NO	DLBSL
	95-48-7	2-Methylphenol	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	6.8E+00 N	N/A		NO	DLBSL
	88-74-4	2-Nitroaniline	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	1.4E+00 N	N/A		YES	DLASL
	88-75-5	2-Nitrophenol	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	N/A	N/A		NO	NTX
	m&pCRESOL	3- and 4-Methylphenol	ND	ND	MG/KG		0/3	2 - 4	4.0E+00	N/A	1.4E+01 N	N/A		NO	DLBSL
	91-94-1	3,3'-Dichlorobenzidine	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	7.0E-03 C	N/A		YES	DLASL
	99-09-2	3-Nitroaniline	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	1.4E+00 N	N/A		YES	DLASL
	534-52-1	4,6-Dinitro-2-methylphenol	ND	ND	MG/KG		0/3	3 - 6	3.0E+00	N/A	1.1E-02 N	N/A		YES	DLASL
	101-55-3	4-Bromophenyl-phenylether	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	N/A	N/A		NO	NTX
	59-50-7	4-Chloro-3-methylphenol	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	1.4E+01 N	N/A		NO	DLBSL
	106-47-8	4-Chloroaniline	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	1.6E-02 C	N/A		YES	DLASL
	7005-72-3	4-Chlorophenyl-phenylether	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	1.4E+01 N	N/A		NO	DLBSL
	100-01-6	4-Nitroaniline	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	1.6E-01 C	N/A		YES	DLASL
	100-02-7	4-Nitrophenol	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	2.7E-01 N	N/A		YES	DLASL
	83-32-9	Acenaphthene	ND	ND	MG/KG		0/3	0.033 - 0.033	3.3E-02	N/A	8.1E+00 N	N/A		NO	DLBSL
	208-96-8	Acenaphthylene	ND	ND	MG/KG		0/3	0.033 - 0.033	3.3E-02	N/A	8.1E+00 N	N/A		NO	DLBSL
	98-86-2	Acetophenone	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	1.4E+01 N	N/A		NO	DLBSL
	120-12-7	Anthracene	ND	ND	MG/KG		0/3	0.033 - 0.033	3.3E-02	N/A	4.1E+01 N	N/A		NO	DLBSL
	1912-24-9	Atrazine	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	1.4E-02 C	N/A		YES	DLASL
	100-52-7	Benzaldehyde	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	1.4E+01 N	N/A		NO	DLBSL
	56-55-3	Benzo(a)anthracene	ND	ND	MG/KG		0/3	0.033 - 0.033	3.3E-02	N/A	4.3E-03 C	N/A		YES	DLASL
	50-32-8	Benzo(a)pyrene	ND	ND	MG/KG		0/3	0.033 - 0.033	3.3E-02	N/A	4.3E-04 C	N/A		YES	DLASL
	205-99-2	Benzo(b)fluoranthene	ND	ND	MG/KG		0/3	0.033 - 0.033	3.3E-02	N/A	4.3E-03 C	N/A		YES	DLASL
	191-24-2	Benzo(g,h,i)perylene	ND	ND	MG/KG		0/3	0.033 - 0.033	3.3E-02	N/A	4.1E+00 N	N/A		NO	DLBSL
	207-08-9	Benzo(k)fluoranthene	ND	ND	MG/KG		0/3	0.033 - 0.033	3.3E-02	N/A	4.3E-02 C	N/A		NO	DLBSL

Table 2.10
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water/ Sediment
Exposure Medium: Fish Tissue

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	111-91-1	bis(2-Chloroethoxy)methane	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	4.1E-01 N	N/A		YES	DLASL
	111-44-4	bis(2-Chloroethyl)ether	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	2.9E-03 C	N/A		YES	DLASL
	117-81-7	bis(2-Ethylhexyl)phthalate	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	2.3E-01 C	N/A		YES	DLASL
	85-68-7	Butylbenzylphthalate	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	1.7E+00 C	N/A		YES	DLASL
	105-60-2	Caprolactam	ND	ND	MG/KG		0/3	2 - 4	4.0E+00	N/A	6.8E+01 N	N/A		NO	DLBSL
	86-74-8	Carbazole	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	N/A	N/A		NO	NTX
	218-01-9	Chrysene	ND	ND	MG/KG		0/3	0.033 - 0.033	3.3E-02	N/A	4.3E-01 C	N/A		NO	DLBSL
	53-70-3	Dibenz(a,h)anthracene	ND	ND	MG/KG		0/3	0.033 - 0.033	3.3E-02	N/A	4.3E-04 C	N/A		YES	DLASL
	132-64-9	Dibenzofuran	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	1.4E-01 N	N/A		YES	DLASL
	84-66-2	Diethylphthalate	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	1.1E+02 N	N/A		NO	DLBSL
	60-51-5	Dimethoate	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	2.7E-02 N	N/A		YES	DLASL
	131-11-3	Dimethyl phthalate	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	N/A	N/A		NO	NTX
	84-74-2	Di-n-butylphthalate	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	1.4E+01 N	N/A		NO	DLBSL
	117-84-0	Di-n-octylphthalate	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	5.4E+00 N	N/A		NO	DLBSL
	206-44-0	Fluoranthene	ND	ND	MG/KG		0/3	0.033 - 0.033	3.3E-02	N/A	5.4E+00 N	N/A		NO	DLBSL
	86-73-7	Fluorene	ND	ND	MG/KG		0/3	0.033 - 0.033	3.3E-02	N/A	5.4E+00 N	N/A		NO	DLBSL
	118-74-1	Hexachlorobenzene	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	2.0E-03 C	N/A		YES	DLASL
	87-68-3	Hexachlorobutadiene	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	4.0E-02 C	N/A		YES	DLASL
	77-47-4	Hexachlorocyclopentadiene	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	8.1E-01 N	N/A		YES	DLASL
	67-72-1	Hexachloroethane	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	7.9E-02 C	N/A		YES	DLASL
	193-39-5	Indeno(1,2,3-cd)pyrene	ND	ND	MG/KG		0/3	0.033 - 0.033	3.3E-02	N/A	4.3E-03 C	N/A		YES	DLASL
	78-59-1	Isophorone	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	3.3E+00 C	N/A		NO	DLBSL
	91-20-3	Naphthalene	ND	ND	MG/KG		0/3	0.033 - 0.033	3.3E-02	N/A	2.7E+00 N	N/A		NO	DLBSL
	621-64-7	n-Nitroso-di-n-propylamine	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	4.5E-04 C	N/A		YES	DLASL
	86-30-6	n-Nitrosodiphenylamine	ND	ND	MG/KG		0/3	2 - 4	4.0E+00	N/A	6.4E-01 C	N/A		YES	DLASL
	98-95-3	Nitrobenzene	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	2.7E-01 N	N/A		YES	DLASL
	87-86-5	Pentachlorophenol	ND	ND	MG/KG		0/3	3 - 6	6.0E+00	N/A	7.9E-03 C	N/A		YES	DLASL
	85-01-8	Phenanthrene	ND	ND	MG/KG		0/3	0.033 - 0.033	3.3E-02	N/A	4.1E+01 N	N/A		NO	DLBSL
	108-95-2	Phenol	ND	ND	MG/KG		0/3	1 - 2	2.0E+00	N/A	4.1E+01 N	N/A		NO	DLBSL
	298-02-2	Phorate	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	2.7E-02 N	N/A		YES	DLASL
	129-00-0	Pyrene	ND	ND	MG/KG		0/3	0.033 - 0.033	3.3E-02	N/A	4.1E+00 N	N/A		NO	DLBSL
	72-54-8	4,4'-DDD	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	1.3E-02 C	N/A		NO	DLBSL
	72-55-9	4,4'-DDE	4.5E-03 J	4.5E-03 J	MG/KG	HICP-FS-CP01-F-12B	1/3	0.005 - 0.011	4.5E-03	N/A	9.3E-03 C	N/A		NO	BSL
	50-29-3	4,4'-DDT	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	9.3E-03 C	N/A		YES	DLASL
	309-00-2	Aldrin	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	1.9E-04 C	N/A		YES	DLASL
	319-84-6	alpha-BHC	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	5.0E-04 C	N/A		YES	DLASL
	5103-71-9	alpha-Chlordane	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	9.0E-03 C	N/A		YES	DLASL

Table 2.10
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water/ Sediment
Exposure Medium: Fish Tissue

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	86-50-0	Azinphos methyl	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	4.1E-01 N	N/A		NO	DLBSL
	319-85-7	beta-BHC	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	1.8E-03 C	N/A		YES	DLASL
	35400-43-2	Bolstar	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	N/A	N/A		NO	NTX
	2921-88-2	Chlorpyrifos	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	1.4E-01 N	N/A		YES	DLASL
	56-72-4	Coumaphos	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	N/A	N/A		NO	NTX
	319-86-8	delta-BHC	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	1.8E-03 C	N/A		YES	DLASL
	8065-48-3	Demeton	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	5.4E-03 N	N/A		YES	DLASL
	333-41-5	Diazinon	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	9.5E-02 N	N/A		YES	DLASL
	62-73-7	Dichlorvos	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	1.1E-02 C	N/A		YES	DLASL
	60-57-1	Dieldrin	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	2.0E-04 C	N/A		YES	DLASL
	298-04-4	Disulfoton	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	5.4E-03 N	N/A		YES	DLASL
	959-98-8	Endosulfan I	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	8.1E-01 N	N/A		NO	DLBSL
	33213-65-9	Endosulfan II	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	8.1E-01 N	N/A		NO	DLBSL
	1031-07-8	Endosulfan sulfate	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	8.1E-01 N	N/A		NO	DLBSL
	72-20-8	Endrin	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	4.1E-02 N	N/A		NO	DLBSL
	7421-93-4	Endrin aldehyde	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	4.1E-02 N	N/A		NO	DLBSL
	53494-70-5	Endrin ketone	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	4.1E-02 N	N/A		NO	DLBSL
	13194-48-4	Ethoprop	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	N/A	N/A		NO	NTX
	115-90-2	Fensulfothion	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	N/A	N/A		NO	NTX
	2104-64-5	Ethyl p-nitrophenyl phenylphosphorothioate	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	1.4E-03 N	N/A		YES	DLASL
	55-38-9	Fenthion	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	N/A	N/A		NO	NTX
	58-89-9	gamma-BHC (Lindane)	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	2.9E-03 C	N/A		YES	DLASL
	5103-74-2	gamma-Chlordane	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	9.0E-03 C	N/A		YES	DLASL
	76-44-8	Heptachlor	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	7.0E-04 C	N/A		YES	DLASL
	1024-57-3	Heptachlor epoxide	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	3.5E-04 C	N/A		YES	DLASL
	121-75-5	Malathion	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	2.7E+00 N	N/A		NO	DLBSL
	150-50-5	Merphos	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	4.1E-03 N	N/A		YES	DLASL
	72-43-5	Methoxychlor	ND	ND	MG/KG		0/3	0.005 - 0.011	1.1E-02	N/A	6.8E-01 N	N/A		NO	DLBSL
	298-00-0	Methyl parathion	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	3.4E-02 N	N/A		YES	DLASL
	7786-34-7	Mevinphos	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	N/A	N/A		NO	NTX
	6923-22-4	Monocrotophos	ND	ND	MG/KG		0/0 [6]	0.1 - 0.2	2.0E-01	N/A	N/A	N/A		NO	NTX
	300-76-5	Naled	ND	ND	MG/KG		0/3	0.16 - 0.33	3.3E-01	N/A	2.7E-01 N	N/A		YES	DLASL
	56-38-2	Parathion	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	8.1E-01 N	N/A		NO	DLBSL
	299-84-3	Ronnel	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	6.8E+00 N	N/A		NO	DLBSL
	3689-24-5	Sulfotepp	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	6.8E-02 N	N/A		YES	DLASL
	107-49-3	Tetraethyl pyrophosphate (TEPP)	ND	ND	MG/KG		0/3	0.33 - 0.66	6.6E-01	N/A	N/A	N/A		NO	NTX

Table 2.10
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water/ Sediment
Exposure Medium: Fish Tissue

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection
	961-11-5	Tetrachlorovinphos	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	1.3E-01 C	N/A		YES	DLASL
	34643-46-4	Tokuthion (Prothiophos)	ND	ND	MG/KG		0/3	0.1 - 0.2	2.0E-01	N/A	N/A	N/A		NO	NTX
	8001-35-2	Toxaphene	ND	ND	MG/KG		0/3	0.1 - 0.21	2.1E-01	N/A	2.9E-03 C	N/A		YES	DLASL
		Dioxin-like PCB TEQ	6.8E-10	1.6E-09	MG/KG	HICP-FS-S01-F-12B	3/3	-	1.6E-09	N/A	2.4E-08 C	N/A		NO	BSL
		Total Non-dioxin like PCB congeners	**5.2E-04**	**3.3E-03**	**MG/KG**	**HICP-FS-S01-F-12B**	**3/3**	**-**	**3.3E-03**	**N/A**	**1.6E-03 C**	**N/A**		**YES**	**ASL**
		Total PCB congeners	**5.4E-04**	**3.3E-03**	**MG/KG**	**HICP-FS-S01-F-12B**	**3/3**	**-**	**3.3E-03**	**N/A**	**1.6E-03 C**	**N/A**		**YES**	**ASL**
	7429-90-5	Aluminum	ND	ND	MG/KG		0/3	13.5 - 21.3	2.1E+01	N/A	1.4E+02 N	N/A		NO	DLBSL
	7440-36-0	Antimony	ND	ND	MG/KG		0/3	2.7 - 2.7	2.7E+00	N/A	5.4E-02 N	N/A		YES	DLASL
	7440-38-2	Arsenic	ND	ND	MG/KG		0/3	2.7 - 2.7	2.7E+00	N/A	2.1E-03 C	N/A		YES	DLASL
	7440-39-3	Barium	3.0E-02 J	7.2E-02 J	MG/KG	HICP-FS-S01-F-12B	3/3	-	7.2E-02	N/A	2.7E+01 N	N/A		NO	BSL
	7440-41-7	Beryllium	ND	ND	MG/KG		0/3	0.0676 - 0.0676	6.8E-02	N/A	2.7E-01 N	N/A		NO	DLBSL
	7440-43-9	Cadmium	ND	ND	MG/KG		0/3	0.135 - 0.135	1.4E-01	N/A	1.4E-01 N	N/A		YES	DLASL
	7440-70-2	Calcium	1.7E+02	4.5E+02	MG/KG	HICP-FS-S01-F-12B	3/3	-	4.5E+02	N/A	N/A	N/A		NO	NUT
	7440-47-3	**Chromium**	**6.8E-02 J**	**1.0E-01 J**	**MG/KG**	**HICP-FS-CP01-F-12B**	**3/3**	**-**	**1.0E-01**	**N/A**	**6.3E-03 C**	**N/A**		**YES**	**ASL**
	7440-48-4	Cobalt	ND	ND	MG/KG		0/3	-		N/A	4.1E-02 N	N/A		NO	DLBSL
	7440-50-8	Copper	ND	ND	MG/KG		0/3	0.676 - 0.676	6.8E-01	N/A	5.4E+00 N	N/A		NO	DLBSL
	7439-89-6	Iron	5.1E+00 J	5.1E+00 J	MG/KG	HICP-FS-CP01-F-12B	1/3	-	5.1E+00	N/A	9.5E+01 N	N/A		NO	BSL
	7439-92-1	Lead	ND	ND	MG/KG		0/3	2.7 - 2.7	2.7E+00	N/A	N/A	N/A		NO	NTX
	7439-95-4	Magnesium	2.5E+02	3.3E+02	MG/KG	HICP-FS-S01-F-12B	3/3	-	3.3E+02	N/A	N/A	N/A		NO	NUT
	7439-96-5	Manganese	6.5E-02 J	8.8E-02 J	MG/KG	HICP-FS-S01-F-12B	3/3	-	8.8E-02	N/A	1.9E+01 N	N/A		NO	BSL
	7439-97-6	**Mercury**	**4.7E-02**	**6.3E-01**	**MG/KG**	**HICP-FS-B01-F-12B**	**3/3**	**0.048 - 0.048**	**6.3E-01**	**N/A**	**1.4E-02 N**	**N/A**		**YES**	**ASL**
	7440-02-0	Nickel	ND	ND	MG/KG		0/3	0.676 - 0.676	6.8E-01	N/A	2.7E+00 N	N/A		NO	DLBSL
	7440-09-7	Potassium	3.8E+03	4.2E+03	MG/KG	HICP-FS-S01-F-12B	3/3	53.2 - 53.2	4.2E+03	N/A	N/A	N/A		NO	NUT
	7782-49-2	**Selenium**	**1.1E+00 J**	**1.7E+00 J**	**MG/KG**	**HICP-FS-S01-F-12B**	**3/3**	**-**	**1.7E+00**	**N/A**	**6.8E-01 N**	**N/A**		**YES**	**ASL**
	7440-22-4	Silver	ND	ND	MG/KG		0/3	0.676 - 0.676	6.8E-01	N/A	6.8E-01 N	N/A		YES	DLASL
	7440-23-5	Sodium	4.3E+02	7.3E+02	MG/KG	HICP-FS-B01-F-12B	3/3	-	7.3E+02	N/A	N/A	N/A		NO	NUT
	7440-28-0	Thallium	ND	ND	MG/KG		0/3	2.7 - 2.7	2.7E+00	N/A	1.4E-03 N	N/A		YES	DLASL
	7440-62-2	Vanadium	ND	ND	MG/KG		0/3	0.676 - 0.676	6.8E-01	N/A	6.8E-01 N	N/A		NO	DLBSL
	7440-66-6	Zinc	3.1E+00	6.4E+00	MG/KG	HICP-FS-S01-F-12B	3/3	-	6.4E+00		4.1E+01 N			NO	BSL

Table 2.10

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Henderson Pond and Hickory Pond Recreational Area

MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water/ Sediment
Exposure Medium: Fish Tissue

Exposure Point	CAS Number	Chemical	Minimum [1] Concentration Qualifier	Maximum [1] Concentration Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration [2] Used for Screening	Background [3] Value	Screening [4] Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for [5] Contaminant Deletion or Selection

[1] Minimum/Maximum detected concentrations.

[2] Maximum concentration is used for screening.

[3] Background values not available.

[4] Oak Ridge National Laboratory (ORNL). November, 2010. Regional Screening Levels for Chemical Contaminants at Superfund Sites.
Available: http://epa-prgs.ornl.gov/chemicals/index.sh. Fish screening level calculated using RSL calculation tool for fish and default assumptions.
RSLs based on noncancer divided by 10, RSLs based on cancer used as cacluated by the tool.
RSL value for p-cresol used as surrogate for 3- and 4-methylphenol.
RSL value for nitrobenzene used as surrogate for 4-nitrophenol.
RSL value for acenaphthene used as surrogate for acenaphthylene.
RSL value for pyrene used as surrogate for benzo(g,h,i)perylene.
RSL value for anthracene used as surrogate for phenanthrene.
RSL for di-n-octylphthalate calculated using the Risk Assessment Information System Preliminary Remediation Goal calculator and the non-cancer oral reference dose of 0.04 mg/kg-day from the PPRTV database.
RSL value for technical-HCH used as surrogate for delta-BHC.
RSL value for technical chlordane used as surrogate for alpha-chlordane and gamma-chlordane.
RSL value for endosulfan used as surrogate for endosulfan I, endosulfan II, and endosulfan sulfate.
RSL value for endrin used as surrogate for endrin aldehyde and endrin ketone.
RSL value for 2,3,7,8-TCDD (dioxin) used for Dioxin-like PCB TEQ Concentration.
RSL value for Aroclor 1260 used for Total Non-dioxin like PCB congeners Concentration.
RSL value for Aroclor 1254 used for Total PCB congeners Concentration.
RSL value for chromium(VI) used as surrogate for chromium.
RSL value for methyl mercury used for mercury.

[5] Rationale Codes

Selection Reason: Above Screening Levels (ASL)

Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

[6] All results R (rejected) qualified.

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/ To Be Considered
J = Estimated Value
C = Carcinogenic
N = Noncarcinogenic

Table 2.10a
PCB Concentration Calculations, Hickory Pond Fish Tissue, Fillet Only
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

StationID		HICP-TI01		HICP-TI01		HICP-TI01	
SampleID	**TEF**	HICP-FS-B01-F-12B		HICP-FS-CP01-F-12B		HICP-FS-S01-F-12B	
SampleDate		4/27/2012		4/27/2012		4/27/2012	
		Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc
Dioxin-Like PCB Congeners (PG/G)							
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	0.00003	**2.84**	**0.0000852**	**1.48 J**	**0.0000444**	**6.66**	**0.0001998**
2,3,3',4,4'-Pentachlorobiphenyl (105)	0.00003	**2.52**	**0.0000756**	**2.71**	**0.0000813**	**3.87**	**0.0001161**
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	0.00003	**5.07**	**0.0001521**	**3.02**	**0.0000906**	**13.7**	**0.000411**
2,3,4,4',5-Pentachlorobiphenyl (114)	0.00003	1.27 U		1.32 U		1.31 U	
2,3',4,4',5-Pentachlorobiphenyl (118)	0.00003	**8.3**	**0.000249**	**9.24**	**0.0002772**	**14.6**	**0.000438**
2,3',4,4',5'-Pentachlorobiphenyl (123)	0.00003	1.27 U		1.32 U		1.31 U	
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	0.03	1.27 U		1.32 U		1.31 U	
3,3',4,4',5-Pentachlorobiphenyl (126)	0.1	1.27 U		1.32 U		1.31 U	
3,3',4,4'-Tetrachlorobiphenyl (77)	0.0001	1.27 U		**0.67 J**	**0.000067**	1.31 U	
3,4,4',5-Tetrachlorobiphenyl (81)	0.0003	1.27 U		1.32 U		1.31 U	
Congeners (156/157)	0.00003	**6.11 J**	**0.0001833**	**4.1 J**	**0.000123**	**13 J**	**0.00039**
Dioxin TEQ Concentration (detects only)			0.0007452		0.0006835		0.0015549
Non-Dioxin Like PCB Congeners (PG/G)							
2-Chlorobiphenyl (1)		3.17 U		3.3 U		3.29 U	
3-Chlorobiphenyl (2)		1.27 U		1.32 U		1.31 U	
4-Chlorobiphenyl (3)		1.27 U		1.32 U		1.31 U	
2,2'-Dichlorobiphenyl (4)		2.53 U		2.63 U		2.62 U	
2,3-Dichlorobiphenyl (5)		2.53 U		2.63 U		2.62 U	
2,3'-Dichlorobiphenyl (6)		1.27 U		1.32 U		1.31 U	
2,4-Dichlorobiphenyl (7)		2.53 U		2.63 U		2.62 U	
2,4'-Dichlorobiphenyl (8)		**6.74 J**		13.2 U		13.1 U	
2,5-Dichlorobiphenyl (9)		1.27 U		1.32 U		1.31 U	
2,6-Dichlorobiphenyl (10)		2.53 U		2.63 U		2.62 U	
3,3'-Dichlorobiphenyl (11)		**16.1 J**		33 U		32.9 U	
3,5-Dichlorobiphenyl (14)		2.53 U		2.63 U		2.62 U	
4,4'-Dichlorobiphenyl (15)		12.7 U		13.2 U		13.1 U	
2,2',3-Trichlorobiphenyl (16)		2.53 U		2.63 U		2.62 U	
2,2',4-Trichlorobiphenyl (17)		**1.51 J**		2.63 U		2.62 U	
2,2',6-Trichlorobiphenyl (19)		1.27 U		1.32 U		1.31 U	
2,3,4'-Trichlorobiphenyl (22)		2.53 U		2.63 U		2.62 U	
2,3,5-Trichlorobiphenyl (23)		1.27 U		1.32 U		1.31 U	
2,3,6-Trichlorobiphenyl (24)		1.27 U		1.32 U		1.31 U	
2,3',4-Trichlorobiphenyl (25)		1.27 U		1.32 U		1.31 U	
2,3',6-Trichlorobiphenyl (27)		1.27 U		1.32 U		1.31 U	
2,4',5-Trichlorobiphenyl (31)		**3.43 J**		6.58 U		**3.3 J**	
2,4',6-Trichlorobiphenyl (32)		1.27 U		1.32 U		1.31 U	
2,3',5'-Trichlorobiphenyl (34)		1.27 U		1.32 U		1.31 U	
3,3',4-Trichlorobiphenyl (35)		2.53 U		2.63 U		2.62 U	
3,3',5-Trichlorobiphenyl (36)		2.53 U		2.63 U		2.62 U	
3,4,4'-Trichlorobiphenyl (37)		12.7 U		13.2 U		13.1 U	
3,4,5-Trichlorobiphenyl (38)		1.27 U		1.32 U		1.31 U	
3,4',5-Trichlorobiphenyl (39)		2.53 U		2.63 U		2.62 U	
2,2',3,4-Tetrachlorobiphenyl (41)		1.27 U		1.32 U		1.31 U	
2,2',3,4'-Tetrachlorobiphenyl (42)		1.27 U		1.32 U		1.31 U	
2,2',3,5-Tetrachlorobiphenyl (43)		2.53 U		2.63 U		2.62 U	
2,2',3,6'-Tetrachlorobiphenyl (46)		1.27 U		1.32 U		1.31 U	
2,2',4,5-Tetrachlorobiphenyl (48)		1.27 U		1.32 U		1.31 U	
2,2',5,5'-Tetrachlorobiphenyl (52)		2.79 U		3.19 U		3.13 U	
2,2',6,6'-Tetrachlorobiphenyl (54)		1.27 U		1.32 U		1.31 U	
2,3,3',4-Tetrachlorobiphenyl (55)		1.27 U		1.32 U		1.31 U	
2,3,3',4'-Tetrachlorobiphenyl (56)		**1.3 J**		**1.79 J**		**1.5 J**	
2,3,3',5-Tetrachlorobiphenyl (57)		1.27 U		1.32 U		1.31 U	
2,3,3',5'-Tetrachlorobiphenyl (58)		1.27 U		1.32 U		1.31 U	
2,3,4,4'-Tetrachlorobiphenyl (60)		2.53 U		2.63 U		2.62 U	
2,3,4',5-Tetrachlorobiphenyl (63)		3.17 U		3.3 U		3.29 U	
2,3,4',6-Tetrachlorobiphenyl (64)		**0.776 J**		**0.877 J**		1.31 U	
2,3',4,4'-Tetrachlorobiphenyl (66)		3.17 U		3.56 U		3.56 U	
2,3',4,5-Tetrachlorobiphenyl (67)		1.27 U		1.32 U		1.31 U	
2,3',4,5'-Tetrachlorobiphenyl (68)		1.27 U		1.32 U		1.31 U	
2,3',5,5'-Tetrachlorobiphenyl (72)		2.53 U		2.63 U		2.62 U	
2,3',5',6-Tetrachlorobiphenyl (73)		1.27 U		1.32 U		1.31 U	
3,3',4,5-Tetrachlorobiphenyl (78)		1.27 U		1.32 U		1.31 U	

Table 2.10a
PCB Concentration Calculations, Hickory Pond Fish Tissue, Fillet Only
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

StationID		HICP-TI01		HICP-TI01		HICP-TI01	
SampleID	**TEF**	HICP-FS-B01-F-12B		HICP-FS-CP01-F-12B		HICP-FS-S01-F-12B	
SampleDate		4/27/2012		4/27/2012		4/27/2012	
		Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc
3,3',4,5'-Tetrachlorobiphenyl (79)		2.53 U		2.63 U		2.62 U	
3,3',5,5'-Tetrachlorobiphenyl (80)		2.53 U		2.63 U		2.62 U	
2,2',3,3',4-Pentachlorobiphenyl (82)		3.17 U		3.3 U		3.29 U	
2,2',3,3',5-Pentachlorobiphenyl (83)		1.27 U		1.32 U		1.31 U	
2,2',3,3',6-Pentachlorobiphenyl (84)		**0.681 J**		**1.01 J**		1.31 U	
2,2',3,4,6'-Pentachlorobiphenyl (89)		1.27 U		1.32 U		1.31 U	
2,2',3,5,5'-Pentachlorobiphenyl (92)		**2.12**		**2.01**		**11**	
2,2',3,5,6'-Pentachlorobiphenyl (94)		1.27 U		1.32 U		1.31 U	
2,2',3,5',6-Pentachlorobiphenyl (95)		2.85 U		3.91 U		6.36 U	
2,2',3,6,6'-Pentachlorobiphenyl (96)		1.27 U		1.32 U		1.31 U	
2,2',4,4',5-Pentachlorobiphenyl (99)		**4.8**		**5.21**		**24.3**	
2,2',4,5',6-Pentachlorobiphenyl (103)		3.17 U		3.3 U		**1.01 J**	
2,2',4,6,6'-Pentachlorobiphenyl (104)		1.27 U		1.32 U		1.31 U	
2,3,3',4,5-Pentachlorobiphenyl (106)		1.27 U		1.32 U		1.31 U	
2,3,3',4',5-Pentachlorobiphenyl (107)		**1.6 J**		**1.51 J**		**5.91**	
2,3,3',5,5'-Pentachlorobiphenyl (111)		1.27 U		1.32 U		1.31 U	
2,3,3',5,6-Pentachlorobiphenyl (112)		1.27 U		1.32 U		1.31 U	
2,3',4,5,5'-Pentachlorobiphenyl (120)		1.27 U		1.32 U		**1.89 J**	
2,3',4,5',6-Pentachlorobiphenyl (121)		1.27 U		1.32 U		1.31 U	
2,3,3',4',5'-Pentachlorobiphenyl (122)		1.27 U		1.32 U		1.31 U	
3,3',4,5,5'-Pentachlorobiphenyl (127)		1.27 U		1.32 U		1.31 U	
2,2',3,3',4,5'-Hexachlorobiphenyl (130)		**2.54**		**3.17**		**22.1**	
2,2',3,3',4,6-Hexachlorobiphenyl (131)		1.27 U		1.32 U		1.31 U	
2,2',3,3',4,6'-Hexachlorobiphenyl (132)		3.43 U		7.16 U		**22.6**	
2,2',3,3',5,5'-Hexachlorobiphenyl (133)		**1.68 J**		**1.63 J**		**9.67**	
2,2',3,3',5,6-Hexachlorobiphenyl (134)		1.27 U		1.32 U		**2.93**	
2,2',3,3',6,6'-Hexachlorobiphenyl (136)		1.27 U		**1.39 J**		**5.94**	
2,2',3,4,4',5-Hexachlorobiphenyl (137)		**0.873 J**		**1.06 J**		**2.04**	
2,2',3,4,5,5'-Hexachlorobiphenyl (141)		**10.7**		**10.2**		**58**	
2,2',3,4,5,6-Hexachlorobiphenyl (142)		1.27 U		1.32 U		1.31 U	
2,2',3,4,5,6'-Hexachlorobiphenyl (143)		1.27 U		1.32 U		1.31 U	
2,2',3,4,5',6-Hexachlorobiphenyl (144)		**1.1 J**		**1.24 J**		**6.12**	
2,2',3,4,6,6'-Hexachlorobiphenyl (145)		1.27 U		1.32 U		1.31 U	
2,2',3,4',5,5'-Hexachlorobiphenyl (146)		**22.2**		**17.4**		**131**	
2,2',3,4',5,6'-Hexachlorobiphenyl (148)		1.27 U		1.32 U		1.31 U	
2,2',3,4',6,6'-Hexachlorobiphenyl (150)		1.27 U		1.32 U		1.31 U	
2,2',3,5,6,6'-Hexachlorobiphenyl (152)		1.27 U		1.32 U		1.31 U	
2,2',4,4',5,6'-Hexachlorobiphenyl (154)		**1.23 J**		1.32 U		**9.24**	
2,2',4,4',6,6'-Hexachlorobiphenyl (155)		1.27 U		1.32 U		1.31 U	
2,3,3',4,4',6-Hexachlorobiphenyl (158)		**4.96**		**4.65**		**22.1**	
2,3,3',4,5,5'-Hexachlorobiphenyl (159)		1.27 U		1.32 U		**3.08**	
2,3,3',4,5,6-Hexachlorobiphenyl (160)		1.27 U		1.32 U		1.31 U	
2,3,3',4,5',6-Hexachlorobiphenyl (161)		1.27 U		1.32 U		1.31 U	
2,3,3',4',5,5'-Hexachlorobiphenyl (162)		**1.29 J**		1.32 U		**6.66**	
2,3,3',4',5',6-Hexachlorobiphenyl (164)		**2.97**		**3.89**		**22.2**	
2,3,3',5,5',6-Hexachlorobiphenyl (165)		1.27 U		1.32 U		1.31 U	
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)		**35.6**		**23.4**		**148**	
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)		**9.22**		**6.95**		**37.3**	
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)		**10.8**		**20.7**		**129**	
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)		**1.36 J**		1.32 U		**5.8**	
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)		1.27 U		**1.21 J**		**7.06**	
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)		**7.07**		**12.3**		**97.7**	
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)		**5.93**		**5.58**		**46.7**	
2,2',3,3',5,6,6'-Heptachlorobiphenyl (179)		**1.28 J**		**3.68**		**29.6**	
2,2',3,4,4',5,6-Heptachlorobiphenyl (181)		1.27 U		1.32 U		1.31 U	
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)		1.27 U		1.32 U		1.31 U	
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)		1.27 U		1.32 U		1.31 U	
2,2',3,4,5,6,6'-Heptachlorobiphenyl (186)		1.27 U		1.32 U		1.31 U	
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)		**59.9**		**33.3**		**307**	
2,2',3,4',5,6,6'-Heptachlorobiphenyl (188)		1.27 U		1.32 U		1.31 U	
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)		**9.27**		**5.03**		**33.2**	
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)		**1.48 J**		1.32 U		**4.46**	
2,3,3',4,5,5',6-Heptachlorobiphenyl (192)		1.27 U		1.32 U		1.31 U	
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)		**28.2**		**13.4**		**66.8**	

Table 2.10a
PCB Concentration Calculations, Hickory Pond Fish Tissue, Fillet Only
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

StationID		HICP-TI01		HICP-TI01		HICP-TI01	
SampleID	**TEF**	HICP-FS-B01-F-12B		HICP-FS-CP01-F-12B		HICP-FS-S01-F-12B	
SampleDate		4/27/2012		4/27/2012		4/27/2012	
		Conc	TEQ Conc	Conc	TEQ Conc	Conc	TEQ Conc
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)		**7.23**		**4.33**		**29.8**	
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)		**8.77**		**5.65**		**28.5**	
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)		**1.6 J**		**1.21 J**		**7.75**	
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)		**3.4**		**3.64**		**19.4**	
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)		**18.6**		**10.2**		**54.7**	
2,2',3,4,4',5,6,6'-Octachlorobiphenyl (204)		1.27 U		1.32 U		1.31 U	
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)		**1.77 J**		**1.03 J**		**3.72**	
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)		**13.8**		**8.65**		**30.6**	
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)		**1.57 J**		**1.01 J**		**2.54**	
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)		**2.34**		**3.59**		**8.78**	
Decachlorobiphenyl (209)		**4.03**		**3.88**		**4.62**	
Congeners (13/12)		5.08 U		5.28 U		5.26 U	
Congeners (21/33)		**2.62 J**		5.28 U		5.26 U	
Congeners (26/29)		2.53 U		2.63 U		2.62 U	
Congeners (28/20)		12.7 U		13.2 U		13.1 U	
Congeners (30/18)		**1.82 J**		**1.54 J**		**1.44 J**	
Congeners (40/71)		2.53 U		2.63 U		2.62 U	
Congeners (44/47/65)		3.8 U		3.95 U		3.94 U	
Congeners (45/51)		2.53 U		2.63 U		2.62 U	
Congeners (50/53)		2.53 U		2.63 U		2.62 U	
Congeners (59/62/75)		3.8 U		3.95 U		3.94 U	
Congeners (61/70/74/76)		5.16 U		6.22 U		5.72 U	
Congeners (69/49)		2.53 U		**1.36 J**		**1.5 J**	
Congeners (86/87/97/109/119/125)		**7.77 J**		**9.38 J**		**11.2 J**	
Congeners (88/91)		2.53 U		2.63 U		**1.69 J**	
Congeners (93/100)		2.53 U		2.63 U		2.62 U	
Congeners (98/102)		2.53 U		2.63 U		2.62 U	
Congeners (108/124)		2.53 U		2.63 U		2.62 U	
Congeners (110/115)		5.85 U		9.85 U		**14.5 J**	
Congeners (113/90/101)		11.6 U		14.8 U		**34.3 J**	
Congeners (117/116/85)		3.8 U		3.95 U		**1.99 J**	
Congeners (128/166)		**3.39 J**		**2.95 J**		**17.3 J**	
Congeners (138/163/129)		**62.9 J**		**55.8 J**		**353 J**	
Congeners (139/140)		2.53 U		2.63 U		**2.28 J**	
Congeners (147/149)		20.6 U		**29.1 J**		**169 J**	
Congeners (151/135)		7.6 U		8.24 U		**73.6 J**	
Congeners (153/168)		**102 J**		**72.8 J**		**419 J**	
Congeners (171/173)		**8.09 J**		**6.41 J**		**43.8 J**	
Congeners (180/193)		**133 J**		**77.1 J**		**454 J**	
Congeners (183/185)		**21.3 J**		**15.4 J**		**104 J**	
Congeners (197/200)		2.53 U		**1.53 J**		**6.02 J**	
Congeners (198/199)		**27.4 J**		**17.8 J**		**97.8 J**	
Total Non-dioxin like PCB congeners (detects only)		**692**		**517**		**3,282**	
Total PCBs Concentration (detects only)		**717**		**538**		**3,334**	

Table 3.1.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water/Sediment
Exposure Medium: Fish Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Henderson Pond									
	4,4'-DDT	MG/KG	7.9E-03	1.0E-02 (NP)	1.3E-02 J	1.0E-02	MG/KG	95% KM-t	1, 2
	Dioxin-like PCB TEQ	MG/KG	3.3E-07	1.1E-06 (G)	1.2E-06	1.1E-06	MG/KG	95% App-G	1, 3
	Total Non-dioxin like PCB congeners	MG/KG	7.4E-02	1.4E-01 (N)	2.3E-01	1.4E-01	MG/KG	95% Stud-t	1, 2, 3
	Total PCB congeners	MG/KG	7.5E-02	1.4E-01 (N)	2.4E-01	1.4E-01	MG/KG	95% Stud-t	1, 2, 3

Notes:

ProUCL Version 4.1.00 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. May 2010. Prepared by Lockheed Martin Environmental Services).

Options: 99% Kaplan-Meier(t) UCL (95% KM-t); 95% Approximate Gamma UCL (95% App-G); 95% Student's-t UCL (95% Stud-t)

(1) Shapiro-Wilk W Test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive (data are not normal, log-normal, or gamma-distributed).

mg/kg - milligrams per kilogram
G - Gamma
N - Normal
NP - Non-Parametric

Table 3.2.RME
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water/Sediment
Exposure Medium: Fish Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)		Exposure Point Concentration			
							Value	Units	Statistic	Rationale
Hickory Pond										
	Total Non-dioxin like PCB congeners	MG/KG	1.5E-03	N/A	3.3E-03		3.3E-03	MG/KG	Max	1
	Total PCB congeners	MG/KG	1.5E-03	N/A	3.3E-03		3.3E-03	MG/KG	Max	1
	Chromium	MG/KG	8.8E-02	N/A	1.0E-01	J	1.0E-01	MG/KG	Max	1
	Mercury	MG/KG	2.6E-01	N/A	6.3E-01		6.3E-01	MG/KG	Max	1
	Selenium	MG/KG	1.4E+00	N/A	1.7E+00	J	1.7E+00	MG/KG	Max	1

Notes:
ProUCL Version 4.1.00 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. May 2010. Prepared by Lockheed Martin Environmental Services).
Options: Maximum Detected Concentration (Max)

(1) Only 3 fish tissue samples collected from Hickory Pond.

Table 3.1.CTE
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water/Sediment
Exposure Medium: Fish Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Henderson Pond									
	4,4'-DDT	MG/KG	7.9E-03	1.0E-02 (NP)	1.3E-02 J	7.9E-03	MG/KG	Mean-NP	1, 2
	Dioxin-like PCB TEQ	MG/KG	3.3E-07	1.1E-06 (G)	1.2E-06	3.3E-07	MG/KG	Mean-N	1, 3
	Total Non-dioxin like PCB congeners	MG/KG	7.4E-02	1.4E-01 (N)	2.3E-01	7.4E-02	MG/KG	Mean-N	1, 2, 3
	Total PCB congeners	MG/KG	7.5E-02	1.4E-01 (N)	2.4E-01	7.5E-02	MG/KG	Mean-N	1, 2, 3

Notes:
ProUCL Version 4.1.00 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. May 2010. Prepared by Lockheed Martin Environmental Services).
Options: Kaplan-Meier Method Mean (Mean-NP); Normal Distribution Mean (Mean-N)

(1) Shapiro-Wilk W Test indicates data are log-normally distributed.
(2) Shapiro-Wilk W Test/Lilliefors indicates data are normally distributed.
(3) Test indicates data are gamma distributed.
(4) Distribution tests are inconclusive (data are not normal, log-normal, or gamma-distributed).

mg/kg - milligrams per kilogram
G - Gamma
N - Normal
NP - Non-Parametric

Table 3.2.CTE
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Henderson Pond and Hickory Pond Recreational Area
MCB CamLei, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water/Sediment
Exposure Medium: Fish Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)		Exposure Point Concentration			
							Value	Units	Statistic	Rationale
Hickory Pond										
	Total Non-dioxin like PCB congeners	MG/KG	1.5E-03	N/A	3.3E-03		1.5E-03	MG/KG	Mean-N	1
	Total PCB congeners	MG/KG	1.5E-03	N/A	3.3E-03		1.5E-03	MG/KG	Mean-N	1
	Chromium	MG/KG	8.8E-02	N/A	1.0E-01	J	8.8E-02	MG/KG	Mean-N	1
	Mercury	MG/KG	2.6E-01	N/A	6.3E-01		2.6E-01	MG/KG	Mean-N	1
	Selenium	MG/KG	1.4E+00	N/A	1.7E+00	J	1.4E+00	MG/KG	Mean-N	1

Notes:
ProUCL Version 4.1.00 used to determine distribution of data and calculate 95% UCL, following recommendations in users guide (USEPA. May 2010. Prepared by Lockheed Martin Environmental Services).
Options: Arithemetic Mean Concenration (Mean-N)

(1) Only 3 fish tissue samples collected from Hickory Pond.

TABLE 4.1.RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
Henderson Pond and Hickory Pond Recreational Area
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water / Sediment
Exposure Medium: Fish

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Angler	Adult	Henderson Pond and Hickory Pond	CFish	Chemical Concentration in Fish	Table 3.1.RME and 3.2.RME	mg/kg	Table 3.1.RME and 3.2.RME	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-Fish	Ingestion of Fish	25	g/day	EPA, 1997 (1)	CFish x IR-Fish x (1-PCF) x EF x ED x CF3 x 1/BW x 1/AT
				PCF	Preparation/cooking loss factor - for PCBs only	0.3		GLFA, 1993 (3)	
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	24	years	EPA, 1991	
				CF3	Conversion Factor 3	0.001	kg/g	- -	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8,760	days	EPA, 1989	
		Child	Henderson Pond and Hickory Pond	CFish	Chemical Concentration in Fish	Table 3.1.RME and 3.2.RME	mg/kg	Table 3.1.RME and 3.2.RME	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-Fish	Ingestion of Fish	12	g/day	EPA, 2008 (2)	CFish x IR-Fish x (1-PCF) x EF x ED x CF3 x 1/BW x 1/AT
				PCF	Preparation/cooking loss factor - for PCBs only	0.3		GLFA, 1993 (3)	
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	6	years	EPA, 1991	
				CF	Conversion Factor	0.001	kg/g	- -	
				BW	Body Weight	18.6	kg	EPA, 2008	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	

Notes:
(1) 95th percentile recreational freshwater anglers fish ingestion rate
(2) Fish ingestion rate for child is from EPA, 2008, Table 10-1, ingestion rate of Freshwater/Estuarine Fish for 3 to < 6 years, 95th percentile value.
(3) 30 percent reduction factor for lipophilic contaminants accounting for loss of contaminants due to cooking.

Sources:
EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.
EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.
EPA, 1997: Exposure Factors Handbook. EPA/ 600/P-95/Fa, Fb, and Fc.
EPA, 2008: Child-Specific Exposure Factors Handbook. September .
GLFA, 1993: Great Lakes Fish Advisory Task Force. Protocal for a Uniform Great Lakes Sport Fish Consumption Advisory, September.

TABLE 4.1.CTE
VALUES USED FOR DAILY INTAKE CALCULATIONS
CENTRAL TENDENCY EXPOSURE
Henderson Pond and Hickory Pond Recreational Area
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe: Current/Future
Medium: Surface Water / Sediment
Exposure Medium: Fish

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Angler	Adult	Henderson Pond and Hickory Pond	CFish	Chemical Concentration in Fish	Table 3.1.CTE and 3.2.CTE	mg/kg	Table 3.1.CTE and 3.2.CTE	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-Fish	Ingestion of Fish	8	g/day	EPA, 1997 (1)	CFish x IR-Fish x (1-PCF) x EF x ED x CF3 x 1/BW x 1/AT
				PCF	Preparation/cooking loss factor - for PCBs only	0.3		GLFA, 1993 (3)	
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	9	years	EPA, 2004	
				CF3	Conversion Factor 3	0.001	kg/g	- -	
				BW	Body Weight	70	kg	EPA, 1991	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	3,285	days	EPA, 1989	
		Child	Henderson Pond and Hickory Pond	CFish	Chemical Concentration in Fish	Table 3.1.CTE and 3.2.CTE	mg/kg	Table 3.1.CTE and 3.2.CTE	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-Fish	Ingestion of Fish	2.2	g/day	EPA, 2008 (2)	CFish x IR-Fish x (1-PCF) x EF x ED x CF3 x 1/BW x 1/AT
				PCF	Preparation/cooking loss factor - for PCBs only	0.3		GLFA, 1993 (3)	
				EF	Exposure Frequency	350	days/year	EPA, 1991	
				ED	Exposure Duration	6	years	EPA, 1991	
				CF	Conversion Factor	0.001	kg/g	- -	
				BW	Body Weight	18.6	kg	EPA, 2008	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	EPA, 1989	

Notes:
(1) Mean recreational freshwater anglers fish ingestion rate
(2) Fish ingestion rate for child is from EPA, 2008, Table 10-1, ingestion rate of Freshwater/Estuarine Fish for 3 to < 6 years, mean value.
(3) 30 percent reduction factor for lipophilic contaminants accounting for loss of contaminants due to cooking.

Sources:
EPA, 1989: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.
EPA, 1991: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual - Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.
EPA, 1997: Exposure Factors Handbook. EPA/ 600/P-95/Fa, Fb, and Fc.
EPA, 2004: Risk Assessment Guidance for Superfund. Vol.1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. July 2004.
EPA, 2008: Child-Specific Exposure Factors Handbook. September .
GLFA, 1993: Great Lakes Fish Advisory Task Force. Protocal for a Uniform Great Lakes Sport Fish Consumption Advisory, September.

TABLE 5.1

NON-CANCER TOXICITY DATA -- ORAL/DERMAL

Henderson Pond and Hickory Pond Recreational Area

MCB CamLej, North Carolina

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal RfD (2)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ (MM/DD/YY)
4,4'-DDT	Chronic	5.0E-04	mg/kg-day	70 - 90%	5.0E-04	mg/kg-day	Liver	100	IRIS	6/13/2012
	Subchronic	5.0E-04	mg/kg-day	70 - 90%	5.0E-04	mg/kg-day	Liver	N/A	ATSDR	11/18/2008
Aroclor-1254 (3)	Chronic	2.0E-05	mg/kg-day	81- 96%	2.0E-05	mg/kg-day	Ocular, Finger and Toe Nail	300	IRIS	6/13/2012
	Subchronic	N/A			N/A					
2,3,6,7-TCDD (4)	Chronic	7.0E-10	mg/kg-day	> 50%	7.0E-10	mg/kg-day	Sperm	30	IRIS	6/13/2012
	Subchronic	N/A			N/A					
Chromium, trivalent	Chronic	1.5E+00	mg/kg-day	1.3%	2.0E-02	mg/kg-day	None observed	100	IRIS	6/13/2012
	Subchronic	1.5E+00	mg/kg-day	1.3%	2.0E-02	mg/kg-day	None observed	100	HEAST	7/1/21997
Chromium, hexavalent	Chronic	3.0E-03	mg/kg-day	2.5%	7.5E-05	mg/kg-day	None observed	100	IRIS	6/13/2012
	Subchronic	5.0E-03	mg/kg-day	2.5%	1.3E-04	mg/kg-day	None observed		ATSDR	9/1/2008
Mercuric Chloride	Chronic	3.0E-04	mg/kg-day	7%	2.1E-05	mg/kg-day	Autoimmune effects	1000	IRIS	6/13/2012
	Subchronic	N/A			N/A					
Methylmercury	Chronic	1.0E-04	mg/kg-day	100%	1.0E-04	mg/kg-day	Developmental neuropsychological	10	IRIS	6/13/2012
	Subchronic				N/A					
Selenium	Chronic	5.0E-03	mg/kg-day	100%	5.0E-03	mg/kg-day	Selenosis (gastrointestinal, hair loss, nails,neurological, liver)	3	IRIS	6/13/2012
	Subchronic	N/A			N/A					

Notse:

(1) Source: Risk Assessment Guidance for Superfund. Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. Section 4.2 and Exhibit 4-1. USEPA recommends that the oral RfD should not be adjusted to estimate the absorbed dose for compounds when the absorption efficiency is greater than 50%. Constituents that do not have oral absorption efficiencies reported on this table were assumed to have an oral absorption efficiency of 100%.

Definitions: ATSDR = Agency for Toxic Substance and Disease Registry
HEAST= Health Effects Assessment Summary Tables
IRIS = Integrated Risk Information System
N/A = Not Available

(2) Adjusted based on RAGS Part E.

(3) Aroclor 1254 toxicity values used for the non-dioxin like PCB congeners (Henderson Pond) and the total PCB congeners (Hickory Pond)

(4) 2,3,7,8-TCDD toxicity values used for the dioxin-like PCBs

TABLE 6.1.RME

Cancer Toxicity Data -- Oral/Dermal

Henderson Pond and Hickory Pond Recreational Area

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal Cancer Slope Factor (2)	Units	EPA Carcinogen Group	Source	Date (MM/DD/YY)
4,4'-DDT	3.4E-01	70 - 90%	3.4E-01	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	6/13/2012
Total PCBs -RME value (3) (4)	2.0E+00	80 - 96%	2.0E+00	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	6/13/2012
Total PCBs -CTE value (3) (5)	1.0E+00	80 - 96%	1.0E+00	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	6/13/2012
2,3,7,8-TCDD (3)	1.3E+05	> 50%	1.3E+05	$(mg/kg\text{-}day)^{-1}$	B2	CalEPA	6/13/2012
Chromium, trivalent	N/A		N/A		D	IRIS	6/13/2012
Chromium, hexavalent	5.0E-01	2.5%	2.0E+01	$(mg/kg\text{-}day)^{-1}$	D	New Jersey	6/13/2012
Mercury	N/A		N/A		C	IRIS	6/13/2012
Selenium	N/A		N/A		D	IRIS	6/13/2012

(1) Source: Risk Assessment Guidance for Superfund. Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. Section 4.2 and Exhibit 4-1. USEPA recommends that the oral slope factor should not be adjusted to estimate the absorbed dose for compounds when the absorption efficiency is greater than 50%. Constituents that do not have oral absorption efficiencies reported on this table were assumed to have an oral absorption efficiency of 100%.

(2) Adjusted based on RAGS Part E.

(3) Total PCBs toxicity values used for the nondioxin like PCBs (Henderson Pond) and the total PCBs (Hickory Pond). 2,3,7,8-TCDD toxicity values used for dioxin-like PCBs.

(4) High risk and persistence; upper-bound slope factor.

(5) High risk and persistence; central-estimate slope factor.

Definitions:

CalEPA = California EPA
IRIS = Integrated Risk Information System
N/A = Not Available
New Jersey = New Jersey DEP

Weight of Evidence definitions:

Group A chemicals (known human carcinogens) are agents for which there is sufficient evidence to support the causal association between exposure to the agents in humans and cancer.

Group B1 chemicals (probable human carcinogens) are agents for which there is limited evidence of possible carcinogenicity in humans.

Group B2 chemicals (probable human carcinogens) are agents for which there is sufficient evidence of carcinogenicity in animals but inadequate or a lack of evidence in humans.

Group C chemicals (possible human carcinogens) are agents for which there is limited evidence of carcinogenicity in animals and inadequate or a lack of human data.

Group D chemicals (not classifiable as to human carcinogenicity) are agents with inadequate human and animal evidence of carcinogenicity or for which no data are available.

Group E chemicals (evidence of noncarcinogenicity in humans) are agents for which there is no evidence of carcinogenicity from human or animal studies, or both.

TABLE 7.1.RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

Henderson Pond and Hickory Pond Recreational Area

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe: Current/Future
Receptor Population: Angler
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water/ Sediment	Fish Tissue	Henderson Pond	Ingestion	4,4'-DDT	1.0E-02	mg/kg	1.2E-06	mg/kg/day	3.4E-01	1/mg/kg/day	4.1E-07	3.5E-06	mg/kg/day	5.0E-04	mg/kg/day	7.0E-03
				Dioxin-like PCB TEQ	1.1E-06	mg/kg	9.2E-11	mg/kg/day	1.3E+05	1/mg/kg/day	1.2E-05	2.7E-10	mg/kg/day	7.0E-10	mg/kg/day	3.8E-01
				Total Non-dioxin like PCB congeners	1.4E-01	mg/kg	1.2E-05	mg/kg/day	2.0E+00	1/mg/kg/day	2.3E-05	3.4E-05	mg/kg/day	2.0E-05	mg/kg/day	1.7E+00
				Total PCB congeners	1.4E-01	mg/kg	1.2E-05	mg/kg/day	N/A	N/A	N/A	3.5E-05	mg/kg/day	N/A	N/A	N/A
			Total								3.6E-05					2.1E+00
		Total									3.6E-05					2.1E+00
	Exposure Medium Total										3.6E-05					2.1E+00
Henderson Pond Fish Tissue Total											3.6E-05					2.1E+00
Surface Water/ Sediment	Fish Tissue	Hickory Pond	Ingestion	Total Non-dioxin like PCB congeners	3.3E-03	mg/kg	2.7E-07	mg/kg/day	N/A	N/A	N/A	7.9E-07	mg/kg/day	N/A	N/A	N/A
				Total PCB congeners	3.3E-03	mg/kg	2.7E-07	mg/kg/day	2.0E+00	mg/kg/day	5.5E-07	8.0E-07	mg/kg/day	2.0E-05	mg/kg/day	4.0E-02
				Chromium	1.0E-01	mg/kg	1.2E-05	mg/kg/day	5.0E-01	mg/kg/day	6.0E-06	3.5E-05	mg/kg/day	3.0E-03	mg/kg/day	1.2E-02
				Mercury	6.3E-01	mg/kg	7.3E-05	mg/kg/day	N/A	N/A	N/A	2.1E-04	mg/kg/day	1.0E-04	mg/kg/day	2.1E+00
				Selenium	1.7E+00	mg/kg	2.0E-04	mg/kg/day	N/A	N/A	N/A	6.0E-04	mg/kg/day	5.0E-03	mg/kg/day	1.2E-01
			Total								6.6E-06					2.3E+00
		Total									6.6E-06					2.3E+00
	Exposure Medium Total										6.6E-06					2.3E+00
Hickory Pond Fish Tissue Total											6.6E-06					2.3E+00

N/A = Not available/not applicable

Note - For Henderson Pond, since dioxin-like PCBs were identified as a COPC, risks and hazards associated with PCBs were calculated for the dioxin-like PCBs using 2,3,7,8-TCDD toxicity factors and for the non-dioxin like PCBs using Aroclor-1254 (for non-cancer) and PCB (for cancer) toxicity factors. They were not calculated using the total PCB congeners concentration. For Hickory Pond, since dioxin-like PCBs were not identified as a COPC, risks and hazards associated with PCBs were calculated using the total PCB concentration using Aroclor-1254 (for non-cancer) and PCB (for cancer) toxicity factors .

TABLE 7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURE
Henderson Pond and Hickory Pond Recreational Area
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe: Current/Future
Receptor Population: Angler
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water/ Sediment	Fish Tissue	Henderson Pond	Ingestion	4,4'-DDT	1.0E-02	mg/kg	5.4E-07	mg/kg/day	3.4E-01	1/mg/kg/day	1.8E-07	6.3E-06	mg/kg/day	5.0E-04	mg/kg/day	1.3E-02
				Dioxin-like PCB TEQ	1.1E-06	mg/kg	4.1E-11	mg/kg/day	1.3E+05	1/mg/kg/day	5.4E-06	4.8E-10	mg/kg/day	7.0E-10	mg/kg/day	6.9E-01
				Total Non-dioxin like PCB congeners	1.4E-01	mg/kg	5.3E-06	mg/kg/day	2.0E+00	1/mg/kg/day	1.1E-05	6.2E-05	mg/kg/day	2.0E-05	mg/kg/day	3.1E+00
				Total PCB congeners	1.4E-01	mg/kg	5.4E-06	mg/kg/day	N/A	N/A	N/A	6.2E-05	mg/kg/day	N/A	N/A	N/A
			Exp. Route Total								1.6E-05					3.8E+00
		Exposure Point Total									1.6E-05					3.8E+00
	Exposure Medium Total										1.6E-05					3.8E+00
Henderson Pond Fish Tissue Total											1.6E-05					3.8E+00
Surface Water/ Sediment	Fish Tissue	Hickory Pond	Ingestion	Total Non-dioxin like PCB congeners	3.3E-03	mg/kg	1.2E-07	mg/kg/day	N/A	N/A	N/A	1.4E-06	mg/kg/day	N/A	N/A	N/A
				Total PCB congeners	3.3E-03	mg/kg	1.2E-07	mg/kg/day	2.0E+00	mg/kg/day	2.5E-07	1.4E-06	mg/kg/day	2.0E-05	mg/kg/day	7.2E-02
				Chromium	1.0E-01	mg/kg	5.5E-06	mg/kg/day	5.0E-01	mg/kg/day	2.7E-06	6.4E-05	mg/kg/day	3.0E-03	mg/kg/day	2.1E-02
				Mercury	6.3E-01	mg/kg	3.3E-05	mg/kg/day	N/A	N/A	N/A	3.9E-04	mg/kg/day	1.0E-04	mg/kg/day	3.9E+00
				Selenium	1.7E+00	mg/kg	9.2E-05	mg/kg/day	N/A	N/A	N/A	1.1E-03	mg/kg/day	5.0E-03	mg/kg/day	2.2E-01
			Exp. Route Total								3.0E-06					4.2E+00
		Exposure Point Total									3.0E-06					4.2E+00
	Exposure Medium Total										3.0E-06					4.2E+00
Hickory Pond Fish Tissue Total											3.0E-06					4.2E+00

N/A = Not available/not applicable

Note - For Henderson Pond, since dioxin-like PCBs were identified as a COPC, risks and hazards associated with PCBs were calculated for the dioxin-like PCBs using 2,3,7,8-TCDD toxicity factors and for the non-dioxin like PCBs using Aroclor-1254 (for non-cancer) and PCB (for cancer) toxicity factors. They were not calculated using the total PCB congeners concentration. For Hickory Pond, since dioxin-like PCBs were not identified as a COPC, risks and hazards associated with PCBs were calculated using the total PCB concentration using Aroclor-1254 (for non-cancer) and PCB (for cancer) toxicity factors .

TABLE 7.1.CTE

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY EXPOSURE

Henderson Pond and Hickory Pond Recreational Area

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe: Current/Future
Receptor Population: Angler
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water/ Sediment	Fish Tissue	Henderson Pond	Ingestion	4,4'-DDT	7.9E-03	mg/kg	1.1E-07	mg/kg/day	3.4E-01	1/mg/kg/day	3.8E-08	8.7E-07	mg/kg/day	5.0E-04	mg/kg/day	1.7E-03
				Dioxin-like PCB TEQ	3.3E-07	mg/kg	3.3E-12	mg/kg/day	1.3E+05	1/mg/kg/day	4.3E-07	2.5E-11	mg/kg/day	7.0E-10	mg/kg/day	3.6E-02
				Total Non-dioxin like PCB congeners	7.4E-02	mg/kg	7.3E-07	mg/kg/day	1.0E+00	1/mg/kg/day	7.3E-07	5.6E-06	mg/kg/day	2.0E-05	mg/kg/day	2.8E-01
				Total PCB congeners	7.5E-02	mg/kg	3.2E-07	mg/kg/day	N/A	N/A	N/A	5.7E-06	mg/kg/day	N/A	N/A	N/A
			Exp. Route Total								1.2E-06					3.2E-01
		Total									1.2E-06					3.2E-01
	Exposure Medium Total										1.2E-06					3.2E-01
Henderson Pond Fish Tissue Total											1.2E-06					3.2E-01
Surface Water/ Sediment	Fish Tissue	Hickory Pond	Ingestion	Total Non-dioxin like PCB congeners	1.5E-03	mg/kg	1.5E-08	mg/kg/day	N/A	N/A	N/A	1.1E-07	mg/kg/day	N/A	N/A	N/A
				Total PCB congeners	1.5E-03	mg/kg	1.5E-08	mg/kg/day	1.0E+00	mg/kg/day	1.5E-08	1.2E-07	mg/kg/day	2.0E-05	mg/kg/day	5.9E-03
				Chromium	8.8E-02	mg/kg	1.2E-06	mg/kg/day	5.0E-01	mg/kg/day	6.2E-07	9.6E-06	mg/kg/day	3.0E-03	mg/kg/day	3.2E-03
				Mercury	2.6E-01	mg/kg	3.6E-06	mg/kg/day	N/A	N/A	N/A	2.8E-05	mg/kg/day	1.0E-04	mg/kg/day	2.8E-01
				Selenium	1.4E+00	mg/kg	2.0E-05	mg/kg/day	N/A	N/A	N/A	1.5E-04	mg/kg/day	5.0E-03	mg/kg/day	3.0E-02
			Exp. Route Total								6.3E-07					3.2E-01
		Total									6.3E-07					3.2E-01
	Exposure Medium Total										6.3E-07					3.2E-01
Hickory Pond Fish Tissue Total											6.3E-07					3.2E-01

N/A = Not available/not applicable

Note - For Henderson Pond, since dioxin-like PCBs were identified as a COPC, risks and hazards associated with PCBs were calculated for the dioxin-like PCBs using 2,3,7,8-TCDD toxicity factors and for the non-dioxin like PCBs using Aroclor-1254 (for non-cancer) and PCB (for cancer) toxicity factors. They were not calculated using the total PCB congeners concentration. For Hickory Pond, since dioxin-like PCBs were not identified as a COPC, risks and hazards associated with PCBs were calculated using the total PCB concentration using Aroclor-1254 (for non-cancer) and PCB (for cancer) toxicity factors .

TABLE 7.2.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURE
Henderson Pond and Hickory Pond Recreational Area
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe: Current/Future
Receptor Population: Angler
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Water/ Sediment	Fish Tissue	Henderson Pond	Ingestion	4,4'-DDT	7.9E-03	mg/kg	7.7E-08	mg/kg/day	3.4E-01	1/mg/kg/day	2.6E-08	9.0E-07	mg/kg/day	5.0E-04	mg/kg/day	1.8E-03
				Dioxin-like PCB TEQ	3.3E-07	mg/kg	2.3E-12	mg/kg/day	1.3E+05	1/mg/kg/day	2.9E-07	2.6E-11	mg/kg/day	7.0E-10	mg/kg/day	3.8E-02
				Total Non-dioxin like PCB congeners	7.4E-02	mg/kg	5.0E-07	mg/kg/day	1.0E+00	1/mg/kg/day	5.0E-07	5.8E-06	mg/kg/day	2.0E-05	mg/kg/day	2.9E-01
				Total PCB congeners	7.5E-02	mg/kg	5.1E-07	mg/kg/day	N/A	N/A	N/A	5.9E-06	mg/kg/day	N/A	N/A	N/A
			Exp. Route Total								8.2E-07					3.3E-01
		Total									8.2E-07					3.3E-01
	Exposure Medium Total										8.2E-07					3.3E-01
Henderson Pond Fish Tissue Total											8.2E-07					3.3E-01
Surface Water/ Sediment	Fish Tissue	Hickory Pond	Ingestion	Total Non-dioxin like PCB congeners	1.5E-03	mg/kg	1.0E-08	mg/kg/day	N/A	N/A	N/A	1.2E-07	mg/kg/day	N/A	N/A	N/A
				Total PCB congeners	1.5E-03	mg/kg	1.0E-08	mg/kg/day	1.0E+00	mg/kg/day	1.0E-08	1.2E-07	mg/kg/day	2.0E-05	mg/kg/day	6.1E-03
				Chromium	8.8E-02	mg/kg	8.6E-07	mg/kg/day	5.0E-01	mg/kg/day	4.3E-07	1.0E-05	mg/kg/day	3.0E-03	mg/kg/day	3.3E-03
				Mercury	2.6E-01	mg/kg	2.5E-06	mg/kg/day	N/A	N/A	N/A	2.9E-05	mg/kg/day	1.0E-04	mg/kg/day	2.9E-01
				Selenium	1.4E+00	mg/kg	1.4E-05	mg/kg/day	N/A	N/A	N/A	1.6E-04	mg/kg/day	5.0E-03	mg/kg/day	3.2E-02
			Exp. Route Total								4.4E-07					3.3E-01
		Total									4.4E-07					3.3E-01
	Exposure Medium Total										4.4E-07					3.3E-01
Hickory Pond Fish Tissue Total											4.4E-07					3.3E-01

N/A = Not available/not applicable

Note - For Henderson Pond, since dioxin-like PCBs were identified as a COPC, risks and hazards associated with PCBs were calculated for the dioxin-like PCBs using 2,3,7,8-TCDD toxicity factors and for the non-dioxin like PCBs using Aroclor-1254 (for non-cancer) and PCB (for cancer) toxicity factors. They were not calculated using the total PCB congeners concentration. For Hickory Pond, since dioxin-like PCBs were not identified as a COPC, risks and hazards associated with PCBs were calculated using the total PCB concentration using Aroclor-1254 (for non-cancer) and PCB (for cancer) toxicity factors .

TABLE 9.1.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Henderson Pond and Hickory Pond Recreational Area

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe: Current/Future
Receptor Population: Angler
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Water/ Sediment	Fish Tissue	Henderson Pond	4,4'-DDT	4E-07	N/A	N/A	4E-07	Liver	7E-03	N/A	N/A	7E-03
			Dioxin-like PCB TEQ	1E-05	N/A	N/A	1E-05	Sperm	4E-01	N/A	N/A	4E-01
			Total Non-dioxin like PCB congeners	2E-05	N/A	N/A	2E-05	Ocular, Finger and Toe Nail	2E+00	N/A	N/A	2E+00
			Total PCB congeners	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Chemical Total	4E-05	N/A	N/A	4E-05		2E+00	N/A	N/A	2E+00
		Exposure Point Total					4E-05					2E+00
	Exposure Medium Total						4E-05					2E+00
Henderson Pond Fish Tissue							4E-05					2E+00
Surface Water/ Sediment	Fish Tissue	Hickory Pond	Total Non-dioxin like PCB congeners	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Total PCB congeners	5E-07	N/A	N/A	5E-07	Ocular, Finger and Toe Nail	4E-02	N/A	N/A	4E-02
			Chromium	6E-06	N/A	N/A	6E-06	None Observed	1E-02	N/A	N/A	1E-02
			Mercury	N/A	N/A	N/A	N/A	Developmental neuropsychological impairment	2E+00	N/A	N/A	2E+00
			Selenium	N/A	N/A	N/A	N/A	Selenosis (gastrointestinal, hair loss, nails,neurological, liver)	1E-01	N/A	N/A	1E-01
			Chemical Total	7E-06	N/A	N/A	7E-06		2E+00	N/A	N/A	2E+00
		Exposure Point Total					7E-06					2E+00
	Exposure Medium Total						7E-06					2E+00
Hickory Pond Fish Tissue							7E-06					2E+00

HI = Hazard Index

N/A = Not available/not applicable

Henderson Pond HI by target organ

Total Liver HI =	7E-03
Total Sperm HI =	4E-01
Total Ocular HI =	2E+00
Total Finger and Toe Nail HI =	2E+00

Hickory Pond HI by target organ

Total Ocular HI =	4E-02
Total Finger and Toe Nail HI =	2E-01
Developmental neuropsychological impairment HI =	2E+00
Total Gastrointestinal HI =	1E-01
Total Hair HI =	1E-01
Total Neurological HI =	1E-01
Total Liver HI =	1E-01

TABLE 9.2.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Henderson Pond and Hickory Pond Recreational Area

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe: Current/Future
Receptor Population: Angler
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Water/ Sediment	Fish Tissue	Henderson Pond										
			4,4'-DDT	2E-07	N/A	N/A	2E-07	Liver	1E-02	N/A	N/A	1E-02
			Dioxin-like PCB TEQ	5E-06	N/A	N/A	5E-06	Sperm	7E-01	N/A	N/A	7E-01
			Total Non-dioxin like PCB congeners	1E-05	N/A	N/A	1E-05	Ocular, Finger and Toe Nail	3E+00	N/A	N/A	3E+00
			Total PCB congeners	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Chemical Total	2E-05	N/A	N/A	2E-05		4E+00	N/A	N/A	4E+00
		Exposure Point Total					2E-05					4E+00
	Exposure Medium Total						2E-05					4E+00
Henderson Pond Fish Tissue							2E-05					4E+00
Surface Water/ Sediment	Fish Tissue	Hickory Pond										
			Total Non-dioxin like PCB congeners	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Total PCB congeners	2E-07	N/A	N/A	2E-07	Ocular, Finger and Toe Nail	7E-02	N/A	N/A	7E-02
			Chromium	3E-06	N/A	N/A	3E-06	None Observed	2E-02	N/A	N/A	2E-02
			Mercury	N/A	N/A	N/A	N/A	Developmental neuropsychological impairment	4E+00	N/A	N/A	4E+00
			Selenium	N/A	N/A	N/A	N/A	Selenosis (gastrointestinal, hair loss, nails,neurological, liver)	2E-01	N/A	N/A	2E-01
			Chemical Total	3E-06	N/A	N/A	3E-06		4E+00	N/A	N/A	4E+00
		Exposure Point Total					3E-06					4E+00
	Exposure Medium Total						3E-06					4E+00
Hickory Pond Fish Tissue							3E-06					4E+00

HI = Hazard Index

N/A = Not available/not applicable

Henderson Pond HI by target organ

Total Liver HI =	1E-02
Total Sperm HI =	7E-01
Total Ocular HI =	3E+00
Total Finger and Toe Nail HI =	3E+00

Hickory Pond HI by target organ

Total Ocular HI =	7E-02
Total Finger and Toe Nail HI =	3E-01
Developmental neuropsychological impairment HI =	4E+00
Total Gastrointestinal HI =	2E-01
Total Hair HI =	2E-01
Total Neurological HI =	2E-01
Total Liver HI =	2E-01

TABLE 9.3.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

Henderson Pond and Hickory Pond Recreational Area

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe: Current/Future
Receptor Population: Angler
Receptor Age: Adult/Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Water/ Sediment	Fish Tissue	Henderson Pond										
			4,4'-DDT	6E-07	N/A	N/A	6E-07	N/A	N/A	N/A	N/A	N/A
			Dioxin-like PCB TEQ	2E-05	N/A	N/A	2E-05	N/A	N/A	N/A	N/A	N/A
			Total Non-dioxin like PCB congeners	3E-05	N/A	N/A	3E-05	N/A	N/A	N/A	N/A	N/A
			Total PCB congeners	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Chemical Total	5E-05	N/A	N/A	5E-05		N/A	N/A	N/A	N/A
		Exposure Point Total					5E-05					N/A
	Exposure Medium Total						5E-05					N/A
Henderson Pond Fish Tissue							5E-05					N/A
Surface Water/ Sediment	Fish Tissue	Hickory Pond										
			Total Non-dioxin like PCB congeners	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Total PCB congeners	8E-07	N/A	N/A	8E-07	N/A	N/A	N/A	N/A	N/A
			Chromium	9E-06	N/A	N/A	9E-06	N/A	N/A	N/A	N/A	N/A
			Mercury	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Selenium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Chemical Total	1E-05	N/A	N/A	1E-05		N/A	N/A	N/A	N/A
		Exposure Point Total					1E-05					N/A
	Exposure Medium Total						1E-05					N/A
Hickory Pond Fish Tissue							1E-05					N/A

N/A = Not available/not applicable

TABLE 9.1.CTE

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY EXPOSURE

Henderson Pond and Hickory Pond Recreational Area

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe: Current/Future
Receptor Population: Angler
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Water/ Sediment	Fish Tissue	Henderson Pond										
			4,4'-DDT	4E-08	N/A	N/A	4E-08	Liver	2E-03	N/A	N/A	2E-03
			Dioxin-like PCB TEQ	4E-07	N/A	N/A	4E-07	Sperm	4E-02	N/A	N/A	4E-02
			Total Non-dioxin like PCB congeners	7E-07	N/A	N/A	7E-07	Ocular, Finger and Toe Nail	3E-01	N/A	N/A	3E-01
			Total PCB congeners	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Chemical Total	1E-06	N/A	N/A	1E-06		3E-01	N/A	N/A	3E-01
		Exposure Point Total					1E-06					3E-01
	Exposure Medium Total						1E-06					3E-01
Henderson Pond Fish Tissue							1E-06					3E-01
Surface Water/ Sediment	Fish Tissue	Hickory Pond										
			Total Non-dioxin like PCB congeners	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Total PCB congeners	2E-08	N/A	N/A	2E-08	Ocular, Finger and Toe Nail	6E-03	N/A	N/A	6E-03
			Chromium	6E-07	N/A	N/A	6E-07	None Observed	3E-03	N/A	N/A	3E-03
			Mercury	N/A	N/A	N/A	N/A	Developmental neuropsychological impairment	3E-01	N/A	N/A	3E-01
			Selenium	N/A	N/A	N/A	N/A	Selenosis (gastrointestinal, hair loss, nails,neurological, liver)	3E-02	N/A	N/A	3E-02
			Chemical Total	6E-07	N/A	N/A	6E-07		3E-01	N/A	N/A	3E-01
		Exposure Point Total					6E-07					3E-01
	Exposure Medium Total						6E-07					3E-01
Hickory Pond Fish Tissue							6E-07					3E-01

HI = Hazard Index

N/A = Not available/not applicable

Henderson Pond HI by target organ

Total Liver HI =	2E-03
Total Sperm HI =	4E-02
Total Ocular HI =	3E-01
Total Finger and Toe Nail HI =	3E-01

Hickory Pond HI by target organ

Total Ocular HI =	6E-03
Total Finger and Toe Nail HI =	4E-02
Developmental neuropsychological impairment HI =	3E-01
Total Gastrointestinal HI =	3E-02
Total Hair HI =	3E-02
Total Neurological HI =	3E-02
Total Liver HI =	3E-02

TABLE 9.2.CTE

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY EXPOSURE

Henderson Pond and Hickory Pond Recreational Area

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe: Current/Future
Receptor Population: Angler
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Water/ Sediment	Fish Tissue	Henderson Pond										
			4,4'-DDT	3E-08	N/A	N/A	3E-08	Liver	2E-03	N/A	N/A	2E-03
			Dioxin-like PCB TEQ	3E-07	N/A	N/A	3E-07	Sperm	4E-02	N/A	N/A	4E-02
			Total Non-dioxin like PCB congeners	5E-07	N/A	N/A	5E-07	Ocular, Finger and Toe Nail	3E-01	N/A	N/A	3E-01
			Total PCB congeners	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Chemical Total	8E-07	N/A	N/A	8E-07		3E-01	N/A	N/A	3E-01
		Exposure Point Total					8E-07					3E-01
	Exposure Medium Total						8E-07					3E-01
Henderson Pond Fish Tissue							8E-07					3E-01
Surface Water/ Sediment	Fish Tissue	Hickory Pond										
			Total Non-dioxin like PCB congeners	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Total PCB congeners	1E-08	N/A	N/A	1E-08	Ocular, Finger and Toe Nail	6E-03	N/A	N/A	6E-03
			Chromium	4E-07	N/A	N/A	4E-07	None Observed	3E-03	N/A	N/A	3E-03
			Mercury	N/A	N/A	N/A	N/A	Developmental neuropsychological impairment	3E-01	N/A	N/A	3E-01
			Selenium	N/A	N/A	N/A	N/A	Selenosis (gastrointestinal, hair loss, nails,neurological, liver)	3E-02	N/A	N/A	3E-02
			Chemical Total	4E-07	N/A	N/A	4E-07		3E-01	N/A	N/A	3E-01
		Exposure Point Total					4E-07					3E-01
	Exposure Medium Total						4E-07					3E-01
Hickory Pond Fish Tissue							4E-07					3E-01

HI = Hazard Index

N/A = Not available/not applicable

Henderson Pond HI by target organ

Total Liver HI =	2E-03
Total Sperm HI =	4E-02
Total Ocular HI =	3E-01
Total Finger and Toe Nail HI =	3E-01

Hickory Pond HI by target organ

Total Ocular HI =	6E-03
Total Finger and Toe Nail HI =	4E-02
Developmental neuropsychological impairment HI =	3E-01
Total Gastrointestinal HI =	3E-02
Total Hair HI =	3E-02
Total Neurological HI =	3E-02
Total Liver HI =	3E-02

TABLE 9.3.CTE

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY EXPOSURE

Henderson Pond and Hickory Pond Recreational Area

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe: Current/Future
Receptor Population: Angler
Receptor Age: Adult/Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Water/ Sediment	Fish Tissue	Henderson Pond										
			4,4'-DDT	6E-08	N/A	N/A	6E-08	N/A	N/A	N/A	N/A	N/A
			Dioxin-like PCB TEQ	7E-07	N/A	N/A	7E-07	N/A	N/A	N/A	N/A	N/A
			Total Non-dioxin like PCB congeners	1E-06	N/A	N/A	1E-06	N/A	N/A	N/A	N/A	N/A
			Total PCB congeners	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Chemical Total	2E-06	N/A	N/A	2E-06		N/A	N/A	N/A	N/A
		Exposure Point Total					2E-06					N/A
	Exposure Medium Total						2E-06					N/A
Henderson Pond Fish Tissue							2E-06					N/A

TABLE 9.3.CTE

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY EXPOSURE

Henderson Pond and Hickory Pond Recreational Area

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe: Current/Future
Receptor Population: Angler
Receptor Age: Adult/Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Water/ Sediment	Fish Tissue	Hickory Pond										
			Total Non-dioxin like PCB congeners	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Total PCB congeners	3E-08	N/A	N/A	3E-08	N/A	N/A	N/A	N/A	N/A
			Chromium	1E-06	N/A	N/A	1E-06	N/A	N/A	N/A	N/A	N/A
			Mercury	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Selenium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Chemical Total	1E-06	N/A	N/A	1E-06		N/A	N/A	N/A	N/A
		Exposure Point Total					1E-06					N/A
	Exposure Medium Total						1E-06					N/A
Hickory Pond Fish Tissue							1E-06					N/A

N/A = Not available/not applicable

TABLE 10.1.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

RISK SUMMARY

Henderson Pond and Hickory Pond Recreational Area

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe: Current/Future
Receptor Population: Angler
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Water/ Sediment	Fish Tissue	Henderson Pond	Dioxin-like PCB TEQ	1E-05	N/A	N/A	1E-05	Sperm	4E-01	N/A	N/A	4E-01
			Total Non-dioxin like PCB congeners	2E-05	N/A	N/A	2E-05	Ocular, Finger and Toe Nail	2E+00	N/A	N/A	2E+00
			Chemical Total	4E-05	N/A	N/A	4E-05		2E+00	N/A	N/A	2E+00
		Exposure Point Total					4E-05					2E+00
	Exposure Medium Total						4E-05					2E+00
Henderson Pond Fish Tissue							4E-05					2E+00
Surface Water/ Sediment	Fish Tissue	Hickory Pond	Mercury	N/A	N/A	N/A	N/A	Developmental neuropsychological impairment	2E+00	N/A	N/A	2E+00
			Selenium	N/A	N/A	N/A	N/A	Selenosis (gastrointestinal, hair loss, nails,neurological, liver)	1E-01	N/A	N/A	1E-01
			Chemical Total	N/A	N/A	N/A	N/A		2E+00	N/A	N/A	2E+00
		Exposure Point Total					N/A					2E+00
	Exposure Medium Total						N/A					2E+00
Hickory Pond Fish Tissue							N/A					2E+00

HI = Hazard Index

N/A = Not available/not applicable

Henderson Pond HI by target organ

Total Sperm HI =	4E-01
Total Ocular HI =	2E+00
Total Finger and Toe Nail HI =	2E+00

Hickory Pond HI by target organ

Total Finger and Toe Nail HI =	1E-01
Developmental neuropsychological impairment HI =	2E+00
Total Gastrointestinal HI =	1E-01
Total Hair HI =	1E-01
Total Neurological HI =	1E-01
Total Liver HI =	1E-01

TABLE 10.2.RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

RISK SUMMARY

Henderson Pond and Hickory Pond Recreational Area

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scenario Timeframe: Current/Future
Receptor Population: Angler
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Water/ Sediment	Fish Tissue	Henderson Pond	Dioxin-like PCB TEQ	5E-06	N/A	N/A	5E-06	Sperm	7E-01	N/A	N/A	7E-01
			Total Non-dioxin like PCB congeners	1E-05	N/A	N/A	1E-05	Ocular, Finger and Toe Nail	3E+00	N/A	N/A	3E+00
			Chemical Total	2E-05	N/A	N/A	2E-05		4E+00	N/A	N/A	4E+00
		Exposure Point Total					2E-05					4E+00
	Exposure Medium Total						2E-05					4E+00
Henderson Pond Fish Tissue							2E-05					4E+00
Surface Water/ Sediment	Fish Tissue	Hickory Pond	Mercury	N/A	N/A	N/A	N/A	Developmental neuropsychological impairment	4E+00	N/A	N/A	4E+00
			Selenium	N/A	N/A	N/A	N/A	Selenosis (gastrointestinal, hair loss, nails,neurological, liver)	2E-01	N/A	N/A	2E-01
			Chemical Total	N/A	N/A	N/A	N/A		4E+00	N/A	N/A	4E+00
		Exposure Point Total					N/A					4E+00
	Exposure Medium Total						N/A					4E+00
Hickory Pond Fish Tissue							N/A					4E+00

HI = Hazard Index

N/A = Not available/not applicable

Henderson Pond HI by target organ

Total Sperm HI =	7E-01
Total Ocular HI =	3E+00
Total Finger and Toe Nail HI =	3E+00

Hickory Pond HI by target organ

Total Finger and Toe Nail HI =	2E-01
Total Developmental neuropsychological impairment effects HI =	4E+00
Total Gastrointestinal HI =	2E-01
Total Hair HI =	2E-01
Total Neurological HI =	2E-01
Total Liver HI =	2E-01

Appendix D
Ecological Risk Assessment Tables

APPENDIX D
TABLE 1
Threatened and Endangered Species List for Onslow County, North Carolina
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Scientific Name	Common Name	Federal Status
Vertebrates		
Chelonia mydas	Green sea turtle	T
Caretta caretta	Loggerhead sea turtle	T
Dermochelys coriacea	Leatherback sea turtle	E
Trichechus manatus	West Indian manatee	E
Charadrius melodus	Piping plover	T
Haliaetus leucocephalus	Bald eagle	T
Puma concolor couguar	Eastern cougar	E
Picoides borealis	Red-cockaded woodpecker	E
Vascular Plants		
Thalictrum cooleyi	Cooley's meadowrue	E
Carex lutea	Golden sedge	E
Lindera melissifolia	Pondberry	E
Lysimachia asperulaefolia	Rough-leaved loosestrife	E
Amaranthus pumilus	Seabeach amaranth	T

Notes:
E - Endangered - A taxon in danger of extinction throughout all or a significant portion of its range.
T - Threatened - A taxon likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

T(S/A) - Threatened due to similarity of appearance: a species that is threatened due to similarity of appearance with other rare species and is listed for its protection. These species are not biologically endangered or threatened.

APPENDIX D

TABLE 2

Sample Locations Used in the Ecological Risk Assessment (ERA) for Henderson Pond/Hickory Pond

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Sample ID	Sample Depth (ft bgs)	Date
Surface Soils		
HENP-SS01-0-1-12B	0-1	4/23/2012
HENP-SS02-0-1-12B	0-1	5/3/2012
HENP-SS03-0-1-12B	0-1	5/3/2012
HENP-SS04-0-1-12B	0-1	5/3/2012
HENP-SS05-0-1-12B	0-1	5/3/2012
HENP-SS05D-0-1-12B	0-1	5/3/2012
HENP-SS06-0-1-12B	0-1	5/2/2012
HENP-SS07-0-1-12B	0-1	5/2/2012
HENP-SS08-0-1-12B	0-1	5/3/2012
HENP-SS09-0-1-12B	0-1	5/2/2012
HENP-SS10-0-1-12B	0-1	5/3/2012
Subsurface Soils		
HENP-SB01-1-4-12B	1 - 4	4/23/2012
HENP-SB02-1-4-12B	1 - 4	5/3/2012
HENP-SB03-1-4-12B	1 - 4	5/3/2012
HENP-SB04-1-4-12B	1 - 4	5/3/2012
HENP-SB05-1-4-12B	1 - 4	5/3/2012
HENP-SB06-1-4-12B	1 - 4	5/2/2012
HENP-SB07-1-4-12B	1 - 4	5/2/2012
HENP-SB08-1-4-12B	1 - 4	5/3/2012
HENP-SB09-1-4-12B	1 - 4	5/2/2012
HENP-SB10-1-4-12B	1 - 4	5/3/2012
Henderson Pond Surface Water		
IR74-HP-SW01-0-0_5-11D	NA	11/16/2011
IR74-HP-SW02-0-0_5-11D	NA	11/16/2011
IR74-HP-SW03-0-0_5-11D	NA	11/16/2011
IR74-HP-SW04-0-0_5-11D	NA	11/16/2011
IR74-HP-SW04D-0-0_5-11D	NA	11/16/2011
IR74-HP-SW05-0-0_5-11D	NA	11/16/2011
IR74-HP-SW05D-0-0_5-11D	NA	11/16/2011
Henderson Pond Sediment		
HENP-SD01-0-0_5-12B	NA	4/30/2012
HENP-SD01D-0-0_5-12B	NA	4/30/2012
HENP-SD02-0-0_5-12B	NA	4/30/2012
HENP-SD03-0-0_5-12B	NA	4/30/2012
HENP-SD04-0-0_5-12B	NA	4/30/2012
HENP-SD05-0-0_5-12B	NA	4/30/2012
HENP-SD06-0-0_5-12B	NA	4/30/2012
HENP-SD07-0-0_5-12B	NA	4/30/2012
HENP-SD08-0-0_5-12B	NA	4/30/2012
HENP-SD09-0-0_5-12B	NA	4/30/2012
HENP-SD10-0-0_5-12B	NA	4/30/2012
IR74-HP-SD01-0-0_5-11D	NA	11/16/2011
IR74-HP-SD02-0-0_5-11D	NA	11/16/2011
IR74-HP-SD03-0-0_5-11D	NA	11/16/2011
IR74-HP-SD04-0-0_5-11D	NA	11/16/2011
IR74-HP-SD05-0-0_5-11D	NA	11/16/2011
IR74-HP-SD05D-0-0_5-11D	NA	11/16/2011

APPENDIX D

TABLE 2

Sample Locations Used in the Ecological Risk Assessment (ERA) for Henderson Pond/Hickory Pond

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Sample ID	Sample Depth (ft bgs)	Date
Henderson Pond Fish Samples		
HENP-FS-CP01-F-12B	NA	4/27/2012
HENP-FS-CP01-O-12B	NA	4/27/2012
HENP-FS-B03-F-12B	NA	4/27/2012
HENP-FS-B03-O-12B	NA	4/27/2012
HENP-FS-C02-F-12B	NA	4/27/2012
HENP-FS-C02-O-12B	NA	4/27/2012
HENP-FS-S01-F-12B	NA	4/27/2012
HENP-FS-S01-O-12B	NA	4/27/2012
HENP-FS-C06D-F-12B	NA	4/24/2012
HENP-FS-C06D-O-12B	NA	4/24/2012
HENP-FS-C06-F-12B	NA	4/24/2012
HENP-FS-C06-O-12B	NA	4/24/2012
HENP-FS-B05-F-12B	NA	4/27/2012
HENP-FS-B05-O-12B	NA	4/27/2012
Hickory Pond Surface Water		
HICP-SW01-0-1-12B	NA	5/1/2012
HICP-SW02-0-1-12B	NA	5/1/2012
HICP-SW03-0-1-12B	NA	5/1/2012
HICP-SW03D-0-1-12B	NA	5/1/2012
HICP-SW04-0-1-12B	NA	5/1/2012
HICP-SW05-0-1-12B	NA	5/1/2012
Hickory Pond Sediment		
HICP-SD01-0-0_5-12B	NA	5/1/2012
HICP-SD02-0-0_5-12B	NA	5/1/2012
HICP-SD03-0-0_5-12B	NA	5/2/2012
HICP-SD04-0-0_5-12B	NA	5/1/2012
HICP-SD05-0-0_5-12B	NA	5/1/2012
HICP-SD05D-0-0_5-12B	NA	5/1/2012
Hickory Pond Fish Samples		
HICP-FS-B01-F-12B	NA	4/27/2012
HICP-FS-B01-O-12B	NA	4/27/2012
HICP-FS-CP01-F-12B	NA	4/27/2012
HICP-FS-CP01-O-12B	NA	4/27/2012
HICP-FS-S01-F-12B	NA	4/27/2012
HICP-FS-S01-O-12B	NA	4/27/2012

Notes:

ft bgs - feet below ground surface

NA - not applicable

APPENDIX D
TABLE 3
Surface Soil Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Semivolatile Organic Compounds (UG/KG)									
Acenaphthene	26.0 - 33.0	0 / 10	--	--	NSV	-- / --	NSV	No	See Low Molecular Weight PAHs
Anthracene	26.0 - 33.0	0 / 10	--	--	NSV	-- / --	NSV	No	See Low Molecular Weight PAHs
Benzo(a)anthracene	26.0 - 29.0	2 / 10	21.0	HENP-SS02-0-1-12B	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Benzo(a)pyrene	26.0 - 33.0	1 / 10	8.30	HENP-SS03-0-1-12B	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Benzo(b)fluoranthene	26.0 - 33.0	0 / 10	--	--	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Benzo(g,h,i)perylene	26.0 - 33.0	0 / 10	--	--	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Benzo(k)fluoranthene	26.0 - 33.0	0 / 10	--	--	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Chrysene	26.0 - 33.0	1 / 10	13.0	HENP-SS03-0-1-12B	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Dibenz(a,h)anthracene	26.0 - 33.0	0 / 10	--	--	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Fluoranthene	26.0 - 33.0	0 / 10	--	--	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Fluorene	26.0 - 33.0	0 / 10	--	--	NSV	-- / --	NSV	No	See Low Molecular Weight PAHs
Indeno(1,2,3-cd)pyrene	26.0 - 33.0	0 / 10	--	--	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Naphthalene	26.0 - 33.0	0 / 10	--	--	NSV	-- / --	NSV	No	See Low Molecular Weight PAHs
Phenanthrene	26.0 - 33.0	0 / 10	--	--	NSV	-- / --	NSV	No	See Low Molecular Weight PAHs
Pyrene	26.0 - 33.0	0 / 10	--	--	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Low Molecular Weight PAHs	26.0 - 33.0	0 / 10	--	--	29,000	-- / --	0.001	No	HQ less than one, not detected
High Molecular Weight PAHs	26.0 - 33.0	-- / --	40.3	HENP-SS03-0-1-12B	1,100	-- / --	0.04	No	HQ less than one, detected
Pesticide/Polychlorinated Biphenyls (UG/KG)									
4,4'-DDD	1.00 - 21.0	0 / 10	--	--	NSV	-- / --	NSV	No	See DDT and Metabolites
4,4'-DDE	1.00 - 21.0	0 / 10	--	--	NSV	-- / --	NSV	No	See DDT and Metabolites
4,4'-DDT	1.00 - 21.0	0 / 10	--	--	NSV	-- / --	NSV	No	See DDT and Metabolites
DDT and Metabolites	1.00 - 21.0	0 / 10	--	--	21	-- / --	1.00	No	HQ equal to one, not detected
Aldrin	1.00 - 21.0	0 / 10	--	--	2.50	-- / --	8.40	Yes	(2) Not detected, HQ above one
alpha-Chlordane	1.00 - 21.0	0 / 10	--	--	100	-- / --	0.21	No	HQ less than one, not detected
Aroclor-1260	10.0 - 13.0	1 / 10	1,300	HENP-SS08-0-1-12B	NSV	-- / --	NSV	No	See Total PCBs
Total PCBs	10.0 - 13.0	-- / --	1,300	HENP-SS08-0-1-12B	20	-- / --	65	Yes	(1) HQ above one, detected
Dieldrin	1.00 - 21.0	0 / 10	--	--	4.90	-- / --	4.29	Yes	(2) Not detected, HQ above one
gamma-Chlordane	1.00 - 21.0	0 / 10	--	--	100	-- / --	0.21	No	HQ less than one, not detected
Heptachlor	1.00 - 21.0	0 / 10	--	--	100	-- / --	0.21	No	HQ less than one, not detected
Inorganics (MG/KG)									
Aluminum	-- - --	10 / 10	9,580	HENP-SS08-0-1-12B	50.0	10 / 10	192	Yes	(1) HQ above one, detected
Antimony	1.26 - 1.90	2 / 10	0.40	HENP-SS04-0-1-12B	0.27	2 / 10	1.49	Yes	(1) HQ above one, detected
Arsenic	1.48 - 1.90	8 / 10	2.17	HENP-SS08-0-1-12B	18.0	0 / 10	0.12	No	HQ less than one, detected
Barium	-- - --	10 / 10	14.0	HENP-SS02-0-1-12B	330	0 / 10	0.042	No	HQ less than one, detected
Beryllium	0.037 - 0.048	8 / 10	0.075	HENP-SS08-0-1-12B	21.0	0 / 10	0.0036	No	HQ less than one, detected
Cadmium	0.063 - 0.095	2 / 10	0.057	HENP-SS02-0-1-12B	0.36	0 / 10	0.16	No	HQ less than one, detected
Calcium [3]	27.8 - 115	3 / 10	1,560	HENP-SS09-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Chromium (hexavalent)	0.21 - 0.27	1 / 10	0.82	HENP-SS04-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Chromium	-- - --	10 / 10	10.7	HENP-SS08-0-1-12B	26.0	0 / 10	0.41	No	HQ less than one, detected
Cobalt	0.32 - 0.48	0 / 10	--	--	13.0	-- / --	0.037	No	HQ less than one, not detected
Copper	-- - --	10 / 10	2.29	HENP-SS08-0-1-12B	28.0	0 / 10	0.082	No	HQ less than one, detected
Iron	-- - --	10 / 10	10,500	HENP-SS08-0-1-12B	200	10 / 10	52.5	Yes	(1) HQ above one, detected

APPENDIX D
TABLE 3
Surface Soil Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Lead	-- - --	10 / 10	12.2	HENP-SS02-0-1-12B	11.0	1 / 10	1.11	Yes	(1) HQ above one, detected
Magnesium [3]	-- - --	10 / 10	149	HENP-SS08-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Manganese	-- - --	10 / 10	11.4	HENP-SS09-0-1-12B	220	0 / 10	0.052	No	HQ less than one, detected
Mercury	0.0061 - 0.0061	8 / 10	0.054	HENP-SS02-0-1-12B	0.10	0 / 10	0.54	No	HQ less than one, detected
Nickel	-- - --	10 / 10	1.27	HENP-SS08-0-1-12B	38.0	0 / 10	0.033	No	HQ less than one, detected
Potassium [3]	23.8 - 23.8	9 / 10	132	HENP-SS08-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Vanadium	-- - --	10 / 10	17.9	HENP-SS08-0-1-12B	7.80	1 / 10	2.29	Yes	(1) HQ above one, detected
Zinc	-- - --	10 / 10	18.6	HENP-SS02-0-1-12B	46.0	0 / 10	0.40	No	HQ less than one, detected

NOTES
1 - Count of detected samples exceeding or equaling Screening Value
2 - Categories are assigned to those analytes retained as Step 2 COPCs and are as follows:
Category 1 – Contaminants with a maximum detection exceeding the ESV
Category 2– Undetected contaminants with a laboratory sample quantitation limit (SQL) exceeding the ESV
Category 3 – Detected contaminants with no ESV
Category 4 – Undetected contaminants with no ESV
3 - Macronutrient - Not considered to be a COPC
COPC - chemical of potential concern
HQ - Hazard Quotient
µg/kg - micrograms per kilogram
mg/kg - Milligrams per kilogram
NSV - No Screening Value

APPENDIX D
TABLE 4
Subsurface Soil Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Semivolatile Organic Compounds (UG/KG)									
Acenaphthene	26.0 - 28.0	0 / 10	--	--	NSV	-- / --	NSV	No	See Low Molecular Weight PAHs
Anthracene	26.0 - 28.0	0 / 10	--	--	NSV	-- / --	NSV	No	See Low Molecular Weight PAHs
Benzo(a)anthracene	26.0 - 28.0	0 / 10	--	--	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Benzo(a)pyrene	26.0 - 28.0	0 / 10	--	--	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Benzo(b)fluoranthene	26.0 - 28.0	0 / 10	--	--	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Benzo(g,h,i)perylene	26.0 - 28.0	0 / 10	--	--	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Benzo(k)fluoranthene	26.0 - 28.0	0 / 10	--	--	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Chrysene	26.0 - 28.0	0 / 10	--	--	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Dibenz(a,h)anthracene	26.0 - 28.0	0 / 10	--	--	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Fluoranthene	26.0 - 28.0	0 / 10	--	--	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Fluorene	26.0 - 28.0	0 / 10	--	--	NSV	-- / --	NSV	No	See Low Molecular Weight PAHs
Indeno(1,2,3-cd)pyrene	26.0 - 28.0	0 / 10	--	--	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Naphthalene	26.0 - 28.0	0 / 10	--	--	NSV	-- / --	NSV	No	See Low Molecular Weight PAHs
Phenanthrene	26.0 - 28.0	0 / 10	--	--	NSV	-- / --	NSV	No	See Low Molecular Weight PAHs
Pyrene	26.0 - 28.0	0 / 10	--	--	NSV	-- / --	NSV	No	See High Molecular Weight PAHs
Low Molecular Weight PAHs	26.0 - 28.0	0 / 10	--	--	29,000	-- / --	0.001	No	HQ less than one, not detected
High Molecular Weight PAHs	26.0 - 28.0	0 / 10	--	--	1,100	-- / --	0.03	No	HQ less than one, not detected
Pesticide/Polychlorinated Biphenyls (UG/KG)									
4,4'-DDD	1.10 - 1.10	0 / 10	--	--	NSV	-- / --	NSV	No	See DDT and Metabolites
4,4'-DDE	1.10 - 1.10	0 / 10	--	--	NSV	-- / --	NSV	No	See DDT and Metabolites
4,4'-DDT	1.10 - 1.10	0 / 10	--	--	NSV	-- / --	NSV	No	See DDT and Metabolites
DDT and Metabolites	1.10 - 1.10	0 / 10	--	--	21	-- / --	0.05	No	HQ less than one, not detected
Aldrin	1.10 - 1.10	0 / 10	--	--	2.50	-- / --	0.44	No	HQ less than one, not detected
alpha-Chlordane	1.10 - 1.10	0 / 10	--	--	100	-- / --	0.011	No	HQ less than one, not detected
Aroclor-1260	11.0 - 11.0	0 / 10	--	--	NSV	-- / --	NSV	No	See Total PCBs
Total PCBs	11.0 - 11.0	0 / 10	--	--	20	-- / --	0.55	No	HQ less than one, not detected
Dieldrin	1.10 - 1.10	0 / 10	--	--	4.90	-- / --	0.22	No	HQ less than one, not detected
gamma-Chlordane	1.10 - 1.10	0 / 10	--	--	100	-- / --	0.011	No	HQ less than one, not detected
Heptachlor	1.10 - 1.10	0 / 10	--	--	100	-- / --	0.011	No	HQ less than one, not detected
Inorganics (MG/KG)									
Aluminum	-- - --	10 / 10	8,560	HENP-SB09-1-4-12B	50.0	10 / 10	171	Yes	(1) HQ above one, detected
Antimony	1.25 - 1.94	0 / 10	--	--	0.27	-- / --	7.19	Yes	(2) Not detected, HQ above one
Arsenic	1.71 - 1.71	9 / 10	4.40	HENP-SB08-1-4-12B	18.0	0 / 10	0.24	No	HQ less than one, detected
Barium	-- - --	10 / 10	12.1	HENP-SB01-1-4-12B	330	0 / 10	0.037	No	HQ less than one, detected
Beryllium	-- - --	10 / 10	0.072	HENP-SB08-1-4-12B	21.0	0 / 10	0.0034	No	HQ less than one, detected
Cadmium	0.063 - 0.097	1 / 10	0.032	HENP-SB08-1-4-12B	0.36	0 / 10	0.088	No	HQ less than one, detected
Calcium [3]	21.4 - 94.2	2 / 10	397	HENP-SB09-1-4-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Chromium (hexavalent)	0.22 - 0.22	9 / 10	1.90	HENP-SB06-1-4-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Chromium	-- - --	10 / 10	10.4	HENP-SB08-1-4-12B	26.0	0 / 10	0.40	No	HQ less than one, detected

APPENDIX D
TABLE 4
Subsurface Soil Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Cobalt	0.31 - 0.49	0 / 10	--	--	13.0	-- / --	0.037	No	HQ less than one, not detected
Copper	-- - --	10 / 10	2.64	HENP-SB06-1-4-12B	28.0	0 / 10	0.094	No	HQ less than one, detected
Iron	-- - --	10 / 10	12,200	HENP-SB09-1-4-12B	200	10 / 10	61.0	Yes	(1) HQ above one, detected
Lead	-- - --	10 / 10	5.29	HENP-SB08-1-4-12B	11.0	0 / 10	0.48	No	HQ less than one, detected
Magnesium [3]	-- - --	10 / 10	174	HENP-SB08-1-4-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Manganese	-- - --	10 / 10	7.14	HENP-SB10-1-4-12B	220	0 / 10	0.032	No	HQ less than one, detected
Mercury	-- - --	10 / 10	0.019	HENP-SB01-1-4-12B	0.10	0 / 10	0.19	No	HQ less than one, detected
Nickel	-- - --	10 / 10	1.31	HENP-SB02-1-4-12B	38.0	0 / 10	0.034	No	HQ less than one, detected
Potassium [3]	-- - --	10 / 10	204	HENP-SB08-1-4-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Vanadium	-- - --	10 / 10	18.2	HENP-SB09-1-4-12B	7.80	4 / 10	2.33	Yes	(1) HQ above one, detected
Zinc	-- - --	10 / 10	2.06	HENP-SB03-1-4-12B	46.0	0 / 10	0.045	No	HQ less than one, detected

NOTES
1 - Count of detected samples exceeding or equaling Screening Value
2 - Categories are assigned to those analytes retained as Step 2 COPCs and are as follows:
Category 1 – Contaminants with a maximum detection exceeding the ESV
Category 2– Undetected contaminants with a laboratory sample quantitation limit (SQL) exceeding the ESV
Category 3 – Detected contaminants with no ESV
Category 4 – Undetected contaminants with no ESV
3 - Macronutrient - Not considered to be a COPC
COPC - chemical of potential concern
HQ - Hazard Quotient
µg/kg - micrograms per kilogram
mg/kg - Milligrams per kilogram
NSV - No Screening Value

APPENDIX D
TABLE 5
Henderson Pond Surface Water Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Volatile Organic Compounds (UG/L)									
1,1,1-Trichloroethane	1.00 - 1.00	0 / 5	--	--	528	-- / --	0.0019	No	HQ less than one, not detected
1,1,2,2-Tetrachloroethane	1.00 - 1.00	0 / 5	--	--	240	-- / --	0.0042	No	HQ less than one, not detected
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,1,2-Trichloroethane	1.00 - 1.00	0 / 5	--	--	940	-- / --	0.0011	No	HQ less than one, not detected
1,1-Dichloroethane	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,1-Dichloroethene	1.00 - 1.00	0 / 5	--	--	303	-- / --	0.0033	No	HQ less than one, not detected
1,2,4-Trichlorobenzene	1.00 - 1.00	0 / 5	--	--	44.9	-- / --	0.022	No	HQ less than one, not detected
1,2-Dibromo-3-chloropropane	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,2-Dibromoethane	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,2-Dichlorobenzene	1.00 - 1.00	0 / 5	--	--	15.8	-- / --	0.063	No	HQ less than one, not detected
1,2-Dichloroethane	1.00 - 1.00	0 / 5	--	--	2,000	-- / --	5.00E-04	No	HQ less than one, not detected
1,2-Dichloropropane	1.00 - 1.00	0 / 5	--	--	525	-- / --	0.0019	No	HQ less than one, not detected
1,3-Dichlorobenzene	1.00 - 1.00	0 / 5	--	--	50.2	-- / --	0.020	No	HQ less than one, not detected
1,4-Dichlorobenzene	1.00 - 1.00	0 / 5	--	--	11.2	-- / --	0.089	No	HQ less than one, not detected
2-Hexanone	2.50 - 2.50	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Acetone	12.0 - 12.0	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Benzene	1.00 - 1.00	0 / 5	--	--	53.0	-- / --	0.019	No	HQ less than one, not detected
Bromodichloromethane	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Bromoform	1.00 - 1.00	0 / 5	--	--	293	-- / --	0.0034	No	HQ less than one, not detected
Bromomethane	1.00 - 1.00	0 / 5	--	--	110	-- / --	0.0091	No	HQ less than one, not detected
Carbon disulfide	5.00 - 5.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Carbon tetrachloride	1.00 - 1.00	0 / 5	--	--	352	-- / --	0.0028	No	HQ less than one, not detected
Chlorobenzene	1.00 - 1.00	0 / 5	--	--	195	-- / --	0.0051	No	HQ less than one, not detected
Chloroethane	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chloroform	1.00 - 1.00	0 / 5	--	--	289	-- / --	0.0035	No	HQ less than one, not detected
Chloromethane	1.00 - 1.00	0 / 5	--	--	5,500	-- / --	1.82E-04	No	HQ less than one, not detected
cis-1,2-Dichloroethene	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
cis-1,3-Dichloropropene	1.00 - 1.00	0 / 5	--	--	24.4	-- / --	0.041	No	HQ less than one, not detected
Cyclohexane	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dibromochloromethane	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dichlorodifluoromethane (Freon-12)	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Ethylbenzene	1.00 - 1.00	0 / 5	--	--	453	-- / --	0.0022	No	HQ less than one, not detected
Isopropylbenzene	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
m- and p-Xylene	2.00 - 2.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methyl acetate	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methylcyclohexane	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methylene chloride	5.00 - 5.00	0 / 5	--	--	1,930	-- / --	0.0026	No	HQ less than one, not detected
Methyl-tert-butyl ether (MTBE)	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
o-Xylene	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Styrene	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Tetrachloroethene	1.00 - 1.00	0 / 5	--	--	84.0	-- / --	0.012	No	HQ less than one, not detected
Toluene	1.00 - 1.00	0 / 5	--	--	175	-- / --	0.0057	No	HQ less than one, not detected
trans-1,2-Dichloroethene	1.00 - 1.00	0 / 5	--	--	1,350	-- / --	7.41E-04	No	HQ less than one, not detected
trans-1,3-Dichloropropene	1.00 - 1.00	0 / 5	--	--	24.4	-- / --	0.041	No	HQ less than one, not detected
Trichloroethene	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Trichlorofluoromethane (Freon-11)	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Vinyl chloride	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value

APPENDIX D
TABLE 5
Henderson Pond Surface Water Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Semivolatile Organic Compounds (UG/L)									
1,1-Biphenyl	9.00 - 10.0	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,4,5-Trichlorophenol	6.00 - 6.70	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,4,6-Trichlorophenol	6.00 - 6.70	0 / 5	--	--	3.20	-- / --	2.09	Yes	(2) Not detected, HQ above one
2,4-Dichlorophenol	6.00 - 6.70	0 / 5	--	--	36.5	-- / --	0.18	No	HQ less than one, not detected
2,4-Dimethylphenol	6.00 - 6.70	0 / 5	--	--	21.2	-- / --	0.32	No	HQ less than one, not detected
2,4-Dinitrophenol	6.00 - 6.70	0 / 5	--	--	6.20	-- / --	1.08	Yes	(2) Not detected, HQ above one
2,4-Dinitrotoluene	6.00 - 6.70	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,6-Dinitrotoluene	3.00 - 3.30	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Chloronaphthalene	3.00 - 3.30	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Chlorophenol	6.00 - 6.70	0 / 5	--	--	43.8	-- / --	0.15	No	HQ less than one, not detected
2-Methylnaphthalene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Methylphenol	3.00 - 3.30	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Nitroaniline	3.00 - 3.30	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Nitrophenol	6.00 - 6.70	0 / 5	--	--	3,500	-- / --	0.0019	No	HQ less than one, not detected
3- and 4-Methylphenol	6.00 - 6.70	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
3,3'-Dichlorobenzidine	6.00 - 6.70	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
3-Nitroaniline	3.00 - 3.30	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4,6-Dinitro-2-methylphenol	6.00 - 6.70	0 / 5	--	--	2.30	-- / --	2.91	Yes	(2) Not detected, HQ above one
4-Bromophenyl-phenylether	6.00 - 6.70	0 / 5	--	--	12.2	-- / --	0.55	No	HQ less than one, not detected
4-Chloro-3-methylphenol	6.00 - 6.70	0 / 5	--	--	0.30	-- / --	22.3	Yes	(2) Not detected, HQ above one
4-Chloroaniline	6.00 - 6.70	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Chlorophenyl-phenylether	6.00 - 6.70	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Nitroaniline	3.00 - 3.30	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Nitrophenol	3.00 - 3.30	0 / 5	--	--	82.8	-- / --	0.040	No	HQ less than one, not detected
Acenaphthene	0.080 - 0.080	0 / 5	--	--	17.0	-- / --	0.0047	No	HQ less than one, not detected
Acenaphthylene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Acetophenone	3.00 - 3.30	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Anthracene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Atrazine	3.00 - 3.30	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Benzaldehyde	6.00 - 6.70	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Benzo(a)anthracene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Benzo(a)pyrene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Benzo(b)fluoranthene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Benzo(g,h,i)perylene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Benzo(k)fluoranthene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
bis(2-Chloroethoxy)methane	6.00 - 6.70	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
bis(2-Chloroethyl)ether	6.00 - 6.70	0 / 5	--	--	2,380	-- / --	0.0028	No	HQ less than one, not detected
bis(2-Chloroisopropyl)ether	6.00 - 6.70	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
bis(2-Ethylhexyl)phthalate	6.00 - 6.70	0 / 5	--	--	0.30	-- / --	22.3	Yes	(2) Not detected, HQ above one
Butylbenzylphthalate	3.00 - 3.00	0 / 5	--	--	22.0	-- / --	0.14	No	HQ less than one, not detected
Caprolactam	3.00 - 3.30	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Carbazole	3.00 - 3.30	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chrysene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dibenz(a,h)anthracene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dibenzofuran	3.00 - 3.30	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Diethylphthalate	3.00 - 3.30	0 / 5	--	--	521	-- / --	0.0063	No	HQ less than one, not detected

APPENDIX D
TABLE 5
Henderson Pond Surface Water Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Dimethoate	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dimethyl phthalate	3.00 - 3.30	0 / 5	--	--	330	-- / --	0.010	No	HQ less than one, not detected
Di-n-butylphthalate	3.00 - 3.30	0 / 5	--	--	9.40	-- / --	0.35	No	HQ less than one, not detected
Di-n-octylphthalate	6.00 - 6.70	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Fluoranthene	0.080 - 0.080	0 / 5	--	--	39.8	-- / --	0.0020	No	HQ less than one, not detected
Fluorene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Hexachlorobenzene	3.00 - 3.30	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Hexachlorobutadiene	6.00 - 6.70	0 / 5	--	--	0.93	-- / --	7.20	Yes	(2) Not detected, HQ above one
Hexachlorocyclopentadiene	6.00 - 6.70	0 / 5	--	--	0.070	-- / --	95.7	Yes	(2) Not detected, HQ above one
Hexachloroethane	3.00 - 3.30	0 / 5	--	--	9.80	-- / --	0.34	No	HQ less than one, not detected
Indeno(1,2,3-cd)pyrene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Isophorone	3.00 - 3.30	0 / 5	--	--	1,170	-- / --	0.0028	No	HQ less than one, not detected
Naphthalene	0.080 - 0.080	0 / 5	--	--	62.0	-- / --	0.0013	No	HQ less than one, not detected
n-Nitroso-di-n-propylamine	6.00 - 6.70	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
n-Nitrosodiphenylamine	6.00 - 6.70	0 / 5	--	--	58.5	-- / --	0.11	No	HQ less than one, not detected
Nitrobenzene	6.00 - 6.70	0 / 5	--	--	270	-- / --	0.025	No	HQ less than one, not detected
Pentachlorophenol	9.00 - 10.0	0 / 5	--	--	15.0	-- / --	0.67	No	HQ less than one, not detected
Phenanthrene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Phenol	3.00 - 3.30	0 / 5	--	--	256	-- / --	0.013	No	HQ less than one, not detected
Phorate	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Pyrene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Pesticide/Polychlorinated Biphenyls (UG/L)									
4,4'-DDD	0.050 - 0.050	0 / 5	--	--	0.0064	-- / --	7.81	Yes	(2) Not detected, HQ above one
4,4'-DDE	0.050 - 0.050	0 / 5	--	--	10.5	-- / --	0.0048	No	HQ less than one, not detected
4,4'-DDT	0.050 - 0.050	0 / 5	--	--	0.0010	-- / --	50.0	Yes	(2) Not detected, HQ above one
Aldrin	0.050 - 0.050	0 / 5	--	--	0.30	-- / --	0.17	No	HQ less than one, not detected
alpha-BHC	0.050 - 0.050	0 / 5	--	--	500	-- / --	1.00E-04	No	HQ less than one, not detected
alpha-Chlordane	0.050 - 0.050	0 / 5	--	--	0.0043	-- / --	11.6	Yes	(2) Not detected, HQ above one
Aroclor-1016	0.34 - 0.34	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1221	0.50 - 0.50	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1232	0.50 - 0.50	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1242	0.50 - 0.50	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1248	0.50 - 0.50	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1254	0.50 - 0.50	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1260	0.50 - 0.50	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Total PCBs	0.34 - 0.50	0 / 5	--	--	0.014	-- / --	35.7	Yes	(2) Not detected, HQ above one
Azinphos methyl	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
beta-BHC	0.050 - 0.050	0 / 5	--	--	5,000	-- / --	1.00E-05	No	HQ less than one, not detected
Bolstar	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chlorpyrifos	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Coumaphos	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
delta-BHC	0.050 - 0.050	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Demeton	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Diazinon	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dichlorvos	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dieldrin	0.050 - 0.050	0 / 5	--	--	0.056	-- / --	0.89	No	HQ less than one, not detected
Disulfoton	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value

APPENDIX D
TABLE 5
Henderson Pond Surface Water Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Endosulfan I	0.050 - 0.050	0 / 5	--	--	0.056	-- / --	0.89	No	HQ less than one, not detected
Endosulfan II	0.050 - 0.050	0 / 5	--	--	0.056	-- / --	0.89	No	HQ less than one, not detected
Endosulfan sulfate	0.050 - 0.050	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Endrin	0.050 - 0.050	0 / 5	--	--	0.036	-- / --	1.39	Yes	(2) Not detected, HQ above one
Endrin aldehyde	0.050 - 0.050	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Endrin ketone	0.050 - 0.050	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Ethoprop	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Fensulfothion	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Ethyl p-nitrophenyl phenylphosphorothioate	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Fenthion	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
gamma-BHC (Lindane)	0.050 - 0.050	0 / 5	--	--	0.080	-- / --	0.63	No	HQ less than one, not detected
gamma-Chlordane	0.050 - 0.050	0 / 5	--	--	0.0043	-- / --	11.6	Yes	(2) Not detected, HQ above one
Heptachlor	0.050 - 0.050	0 / 5	--	--	0.038	-- / --	1.32	Yes	(2) Not detected, HQ above one
Heptachlor epoxide	0.050 - 0.050	0 / 5	--	--	0.0038	-- / --	13.2	Yes	(2) Not detected, HQ above one
Malathion	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Merphos	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methoxychlor	0.050 - 0.050	0 / 5	--	--	0.030	-- / --	1.67	Yes	(2) Not detected, HQ above one
Methyl parathion	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Mevinphos	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Monocrotophos	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Naled	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Parathion	0.40 - 0.40	0 / 5	--	--	0.013	-- / --	30.8	Yes	(2) Not detected, HQ above one
Ronnel	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Sulfotepp	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Tetraethyl pyrophosphate (TEPP)	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Tokuthion (Prothiophos)	0.40 - 0.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Toxaphene	0.64 - 0.64	0 / 5	--	--	0.0020	-- / --	320	Yes	(2) Not detected, HQ above one
Inorganics (UG/L)									
Aluminum	-- - --	5 / 5	173	IR74-HP-SW02-0-0_5-11D	87.0	5 / 5	1.99	Yes	(1) HQ above one, detected
Antimony	20.0 - 20.0	0 / 5	--	--	160	-- / --	0.13	No	HQ less than one, not detected
Arsenic	20.0 - 20.0	1 / 5	4.39	IR74-HP-SW04-0-0_5-11D	150	0 / 5	0.029	No	HQ less than one, detected
Barium	-- - --	5 / 5	5.59	IR74-HP-SW04-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Beryllium	0.50 - 0.50	0 / 5	--	--	0.53	-- / --	0.94	No	HQ less than one, not detected
Cadmium	1.00 - 1.00	0 / 5	--	--	0.25	-- / --	4.00	Yes	(2) Not detected, HQ above one
Calcium [3]	-- - --	5 / 5	13,500	IR74-HP-SW01-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Chromium (hexavalent) (MG/L)	0.015 - 0.015	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chromium	5.00 - 5.00	2 / 5	0.35	IR74-HP-SW02-0-0_5-11D	74.0	0 / 5	0.0048	No	HQ less than one, detected
Cobalt	5.00 - 5.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Copper	-- - --	5 / 5	50.3	IR74-HP-SW04-0-0_5-11D	9.00	1 / 5	5.59	Yes	(1) HQ above one, detected
Iron	-- - --	5 / 5	121	IR74-HP-SW02-0-0_5-11D	1,000	0 / 5	0.12	No	HQ less than one, detected
Lead	10.0 - 10.0	1 / 5	3.02	IR74-HP-SW04-0-0_5-11D	2.50	1 / 5	1.21	Yes	(1) HQ above one, detected
Magnesium [3]	-- - --	5 / 5	1,140	IR74-HP-SW04-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Manganese	10.0 - 10.0	4 / 5	5.94	IR74-HP-SW02-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Mercury	0.069 - 0.069	0 / 5	--	--	0.77	-- / --	0.090	No	HQ less than one, not detected
Nickel	5.00 - 5.00	0 / 5	--	--	52.0	-- / --	0.096	No	HQ less than one, not detected
Potassium [3]	-- - --	5 / 5	1,030	IR74-HP-SW04-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Selenium	20.0 - 20.0	0 / 5	--	--	5.00	-- / --	4.00	Yes	(2) Not detected, HQ above one

APPENDIX D
TABLE 5
Henderson Pond Surface Water Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Silver	5.00 - 5.00	0 / 5	--	--	0.012	-- / --	417	Yes	(2) Not detected, HQ above one
Sodium [3]	-- - --	5 / 5	4,930	IR74-HP-SW05-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Thallium	10.0 - 10.0	0 / 5	--	--	4.00	-- / --	2.50	Yes	(2) Not detected, HQ above one
Vanadium	-- - --	5 / 5	1.76	IR74-HP-SW04-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Zinc	5.00 - 5.00	1 / 5	32.6	IR74-HP-SW04-0-0_5-11D	120	0 / 5	0.27	No	HQ less than one, detected
Dissolved Inorganics (UG/L)									
Aluminum, Dissolved	-- - --	5 / 5	119	IR74-HP-SW03-0-0_5-11D	87.0	5 / 5	1.37	Yes	(1) HQ above one, detected
Antimony, Dissolved	20.0 - 20.0	1 / 5	4.38	IR74-HP-SW04-0-0_5-11D	160	0 / 5	0.027	No	HQ less than one, detected
Arsenic, Dissolved	20.0 - 20.0	1 / 5	5.22	IR74-HP-SW03-0-0_5-11D	150	0 / 5	0.035	No	HQ less than one, detected
Barium, Dissolved	-- - --	5 / 5	5.92	IR74-HP-SW04-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Beryllium, Dissolved	0.50 - 0.50	0 / 5	--	--	0.53	-- / --	0.94	No	HQ less than one, not detected
Cadmium, Dissolved	1.00 - 1.00	0 / 5	--	--	0.25	-- / --	4.00	Yes	(2) Not detected, HQ above one
Calcium, Dissolved [3]	-- - --	5 / 5	13,700	IR74-HP-SW04-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Chromium, Dissolved	5.00 - 5.00	3 / 5	0.50	IR74-HP-SW04-0-0_5-11D	117	0 / 5	0.0042	No	HQ less than one, detected
Cobalt, Dissolved	5.00 - 5.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Copper, Dissolved	-- - --	5 / 5	4.26	IR74-HP-SW03-0-0_5-11D	9.00	0 / 5	0.47	No	HQ less than one, detected
Iron, Dissolved	-- - --	5 / 5	88.6	IR74-HP-SW02-0-0_5-11D	1,000	0 / 5	0.089	No	HQ less than one, detected
Lead, Dissolved	10.0 - 10.0	0 / 5	--	--	2.50	-- / --	4.00	Yes	(2) Not detected, HQ above one
Magnesium, Dissolved [3]	-- - --	5 / 5	1,130	IR74-HP-SW04-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Manganese, Dissolved	-- - --	5 / 5	5.03	IR74-HP-SW02-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Mercury, Dissolved	0.069 - 0.069	0 / 5	--	--	0.77	-- / --	0.090	No	HQ less than one, not detected
Nickel, Dissolved	-- - --	5 / 5	1.22	IR74-HP-SW04-0-0_5-11D	52.0	0 / 5	0.023	No	HQ less than one, detected
Potassium, Dissolved [3]	-- - --	5 / 5	1,040	IR74-HP-SW04-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Selenium, Dissolved	20.0 - 20.0	0 / 5	--	--	5.00	-- / --	4.00	Yes	(2) Not detected, HQ above one
Silver, Dissolved	5.00 - 5.00	0 / 5	--	--	0.012	-- / --	417	Yes	(2) Not detected, HQ above one
Sodium, Dissolved [3]	-- - --	5 / 5	4,940	IR74-HP-SW05-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Thallium, Dissolved	10.0 - 10.0	0 / 5	--	--	4.00	-- / --	2.50	Yes	(2) Not detected, HQ above one
Vanadium, Dissolved	5.00 - 5.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Zinc, Dissolved	5.00 - 5.00	2 / 5	4.39	IR74-HP-SW01-0-0_5-11D	120	0 / 5	0.037	No	HQ less than one, detected

Notes:
1 - Count of detected samples exceeding or equaling Screening Value
2 - Categories are assigned to those analytes retained as Step 2 COPCs and are as follows:
Category 1 – Contaminants with a maximum detection exceeding the ESV
Category 2– Undetected contaminants with a laboratory sample quantitation limit (SQL) exceeding the ESV
Category 3 – Detected contaminants with no ESV
Category 4 – Undetected contaminants with no ESV
3 - Macronutrient - Not considered to be a COPC
A default hardness of 100 mg/L was assumed when calculating the screening value for all hardness dependent metals
COPC - chemical of potential concern
HQ - Hazard Quotient
µg/L - micrograms per liter
mg/L - Milligrams per liter
NSV - No Screening Value

APPENDIX D
TABLE 6
Hickory Pond Surface Water Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Volatile Organic Compounds (UG/L)									
1,1,1-Trichloroethane	1.00 - 1.00	0 / 5	--	--	528	-- / --	0.0019	No	HQ less than one, not detected
1,1,2,2-Tetrachloroethane	1.00 - 1.00	0 / 5	--	--	240	-- / --	0.0042	No	HQ less than one, not detected
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,1,2-Trichloroethane	1.00 - 1.00	0 / 5	--	--	940	-- / --	0.0011	No	HQ less than one, not detected
1,1-Dichloroethane	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,1-Dichloroethene	1.00 - 1.00	0 / 5	--	--	303	-- / --	0.0033	No	HQ less than one, not detected
1,2,4-Trichlorobenzene	1.00 - 1.00	0 / 5	--	--	44.9	-- / --	0.022	No	HQ less than one, not detected
1,2-Dibromo-3-chloropropane	5.00 - 5.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,2-Dibromoethane	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,2-Dichlorobenzene	1.00 - 1.00	0 / 5	--	--	15.8	-- / --	0.063	No	HQ less than one, not detected
1,2-Dichloroethane	1.00 - 1.00	0 / 5	--	--	2,000	-- / --	5.00E-04	No	HQ less than one, not detected
1,2-Dichloropropane	1.00 - 1.00	0 / 5	--	--	525	-- / --	0.0019	No	HQ less than one, not detected
1,3-Dichlorobenzene	1.00 - 1.00	0 / 5	--	--	50.2	-- / --	0.020	No	HQ less than one, not detected
1,4-Dichlorobenzene	1.00 - 1.00	0 / 5	--	--	11.2	-- / --	0.089	No	HQ less than one, not detected
2-Hexanone	2.50 - 2.50	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Acetone	-- - --	5 / 5	19.0	HICP-SW03-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Benzene	1.00 - 1.00	0 / 5	--	--	53.0	-- / --	0.019	No	HQ less than one, not detected
Bromodichloromethane	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Bromoform	1.00 - 1.00	0 / 5	--	--	293	-- / --	0.0034	No	HQ less than one, not detected
Bromomethane	1.00 - 1.00	0 / 5	--	--	110	-- / --	0.0091	No	HQ less than one, not detected
Carbon disulfide	5.00 - 5.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Carbon tetrachloride	1.00 - 1.00	0 / 5	--	--	352	-- / --	0.0028	No	HQ less than one, not detected
Chlorobenzene	1.00 - 1.00	0 / 5	--	--	195	-- / --	0.0051	No	HQ less than one, not detected
Chloroethane	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chloroform	1.00 - 1.00	0 / 5	--	--	289	-- / --	0.0035	No	HQ less than one, not detected
Chloromethane	1.00 - 1.00	0 / 5	--	--	5,500	-- / --	1.82E-04	No	HQ less than one, not detected
cis-1,2-Dichloroethene	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
cis-1,3-Dichloropropene	1.00 - 1.00	0 / 5	--	--	24.4	-- / --	0.041	No	HQ less than one, not detected
Cyclohexane	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dibromochloromethane	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dichlorodifluoromethane (Freon-12)	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Ethylbenzene	1.00 - 1.00	0 / 5	--	--	453	-- / --	0.0022	No	HQ less than one, not detected
Isopropylbenzene	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
m- and p-Xylene	2.00 - 2.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methyl acetate	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methylcyclohexane	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methylene chloride	5.00 - 5.00	0 / 5	--	--	1,930	-- / --	0.0026	No	HQ less than one, not detected
Methyl-tert-butyl ether (MTBE)	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
o-Xylene	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Styrene	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Tetrachloroethene	1.00 - 1.00	0 / 5	--	--	84.0	-- / --	0.012	No	HQ less than one, not detected
Toluene	1.00 - 1.00	0 / 5	--	--	175	-- / --	0.0057	No	HQ less than one, not detected
trans-1,2-Dichloroethene	1.00 - 1.00	0 / 5	--	--	1,350	-- / --	7.41E-04	No	HQ less than one, not detected
trans-1,3-Dichloropropene	1.00 - 1.00	0 / 5	--	--	24.4	-- / --	0.041	No	HQ less than one, not detected

APPENDIX D
TABLE 6
Hickory Pond Surface Water Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Trichloroethene	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Trichlorofluoromethane (Freon-11)	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Vinyl chloride	1.00 - 1.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Semivolatile Organic Compounds (UG/L)									
1,1-Biphenyl	9.00 - 9.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,4,5-Trichlorophenol	6.00 - 6.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,4,6-Trichlorophenol	6.00 - 6.00	0 / 4	--	--	3.20	-- / --	1.88	No	HQ less than one, not detected
2,4-Dichlorophenol	6.00 - 6.00	0 / 4	--	--	36.5	-- / --	0.16	No	HQ less than one, not detected
2,4-Dimethylphenol	6.00 - 6.00	0 / 4	--	--	21.2	-- / --	0.28	No	HQ less than one, not detected
2,4-Dinitrophenol	6.00 - 6.00	0 / 4	--	--	6.20	-- / --	0.97	No	HQ less than one, not detected
2,4-Dinitrotoluene	6.00 - 6.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,6-Dinitrotoluene	3.00 - 3.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Chloronaphthalene	3.00 - 3.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Chlorophenol	6.00 - 6.00	0 / 4	--	--	43.8	-- / --	0.14	No	HQ less than one, not detected
2-Methylnaphthalene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Methylphenol	3.00 - 3.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Nitroaniline	3.00 - 3.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Nitrophenol	6.00 - 6.00	0 / 4	--	--	3,500	-- / --	0.0017	No	HQ less than one, not detected
3- and 4-Methylphenol	6.00 - 6.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
3,3'-Dichlorobenzidine	6.00 - 6.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
3-Nitroaniline	3.00 - 3.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4,6-Dinitro-2-methylphenol	6.00 - 6.00	0 / 4	--	--	2.30	-- / --	2.61	Yes	(2) Not detected, HQ above one
4-Bromophenyl-phenylether	6.00 - 6.00	0 / 4	--	--	12.2	-- / --	0.49	No	HQ less than one, not detected
4-Chloro-3-methylphenol	6.00 - 6.00	0 / 4	--	--	0.30	-- / --	20.0	Yes	(2) Not detected, HQ above one
4-Chloroaniline	6.00 - 6.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Chlorophenyl-phenylether	6.00 - 6.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Nitroaniline	3.00 - 3.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Nitrophenol	3.00 - 3.00	0 / 4	--	--	82.8	-- / --	0.036	No	HQ less than one, not detected
Acenaphthene	0.080 - 0.080	0 / 5	--	--	17.0	-- / --	0.0047	No	HQ less than one, not detected
Acenaphthylene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Acetophenone	3.00 - 3.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Anthracene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Atrazine	3.00 - 3.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Benzaldehyde	6.00 - 6.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Benzo(a)anthracene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Benzo(a)pyrene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Benzo(b)fluoranthene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Benzo(g,h,i)perylene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Benzo(k)fluoranthene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
bis(2-Chloroethoxy)methane	6.00 - 6.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
bis(2-Chloroethyl)ether	6.00 - 6.00	0 / 4	--	--	2,380	-- / --	0.0025	No	HQ less than one, not detected
bis(2-Chloroisopropyl)ether	6.00 - 6.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
bis(2-Ethylhexyl)phthalate	6.00 - 6.00	0 / 4	--	--	0.30	-- / --	20.0	Yes	(2) Not detected, HQ above one
Butylbenzylphthalate	3.00 - 3.00	0 / 4	--	--	22.0	-- / --	0.14	No	HQ less than one, not detected
Caprolactam	3.00 - 3.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Carbazole	3.00 - 3.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chrysene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dibenz(a,h)anthracene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dibenzofuran	3.00 - 3.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Diethylphthalate	3.00 - 3.00	0 / 4	--	--	521	-- / --	0.0058	No	HQ less than one, not detected

APPENDIX D
TABLE 6
Hickory Pond Surface Water Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Dimethoate	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dimethyl phthalate	3.00 - 3.00	0 / 4	--	--	330	-- / --	0.0091	No	HQ less than one, not detected
Di-n-butylphthalate	3.00 - 3.00	0 / 4	--	--	9.40	-- / --	0.32	No	HQ less than one, not detected
Di-n-octylphthalate	6.00 - 6.00	1 / 5	3.50	HICP-SW05-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Fluoranthene	0.080 - 0.080	0 / 5	--	--	39.8	-- / --	0.0020	No	HQ less than one, not detected
Fluorene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Hexachlorobenzene	3.00 - 3.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Hexachlorobutadiene	6.00 - 6.00	0 / 4	--	--	0.93	-- / --	6.45	Yes	(2) Not detected, HQ above one
Hexachlorocyclopentadiene	6.00 - 6.00	0 / 4	--	--	0.070	-- / --	85.7	Yes	(2) Not detected, HQ above one
Hexachloroethane	3.00 - 3.00	0 / 4	--	--	9.80	-- / --	0.31	No	HQ less than one, not detected
Indeno(1,2,3-cd)pyrene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Isophorone	3.00 - 3.00	0 / 4	--	--	1,170	-- / --	0.0026	No	HQ less than one, not detected
Naphthalene	0.080 - 0.080	0 / 5	--	--	62.0	-- / --	0.0013	No	HQ less than one, not detected
n-Nitroso-di-n-propylamine	6.00 - 6.00	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
n-Nitrosodiphenylamine	6.00 - 6.00	0 / 4	--	--	58.5	-- / --	0.10	No	HQ less than one, not detected
Nitrobenzene	6.00 - 6.00	0 / 4	--	--	270	-- / --	0.022	No	HQ less than one, not detected
Pentachlorophenol	9.00 - 9.00	0 / 4	--	--	15.0	-- / --	0.60	No	HQ less than one, not detected
Phenanthrene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Phenol	3.00 - 3.00	0 / 4	--	--	256	-- / --	0.012	No	HQ less than one, not detected
Phorate	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Pyrene	0.080 - 0.080	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Pesticide/Polychlorinated Biphenyls (UG/L)									
4,4'-DDD	0.050 - 0.050	0 / 5	--	--	0.0064	-- / --	7.81	Yes	(2) Not detected, HQ above one
4,4'-DDE	0.050 - 0.050	0 / 5	--	--	10.5	-- / --	0.0048	No	HQ less than one, not detected
4,4'-DDT	0.050 - 0.050	0 / 5	--	--	0.0010	-- / --	50.0	Yes	(2) Not detected, HQ above one
Aldrin	0.050 - 0.050	0 / 5	--	--	0.30	-- / --	0.17	No	HQ less than one, not detected
alpha-BHC	0.050 - 0.050	0 / 5	--	--	500	-- / --	1.00E-04	No	HQ less than one, not detected
alpha-Chlordane	0.050 - 0.050	0 / 5	--	--	0.0043	-- / --	11.6	Yes	(2) Not detected, HQ above one
Aroclor-1016	0.50 - 0.50	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1221	0.50 - 0.50	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1232	0.50 - 0.50	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1242	0.50 - 0.50	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1248	0.50 - 0.50	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1254	0.50 - 0.50	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1260	0.50 - 0.50	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Total PCBs	0.50 - 0.50	0 / 5	--	--	0.014	-- / --	35.7	Yes	(2) Not detected, HQ above one
Azinphos methyl	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
beta-BHC	0.050 - 0.050	0 / 5	--	--	5,000	-- / --	1.00E-05	No	HQ less than one, not detected
Bolstar	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chlorpyrifos	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Coumaphos	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
delta-BHC	0.050 - 0.050	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Demeton	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Diazinon	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dichlorvos	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dieldrin	0.050 - 0.050	0 / 5	--	--	0.056	-- / --	0.89	No	HQ less than one, not detected
Disulfoton	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Endosulfan I	0.050 - 0.050	0 / 5	--	--	0.056	-- / --	0.89	No	HQ less than one, not detected
Endosulfan II	0.050 - 0.050	0 / 5	--	--	0.056	-- / --	0.89	No	HQ less than one, not detected
Endosulfan sulfate	0.050 - 0.050	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value

APPENDIX D
TABLE 6
Hickory Pond Surface Water Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Endrin	0.050 - 0.050	0 / 5	--	--	0.036	-- / --	1.39	Yes	(2) Not detected, HQ above one
Endrin aldehyde	0.050 - 0.050	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Endrin ketone	0.050 - 0.050	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Ethoprop	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Fensulfothion	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Ethyl p-nitrophenyl phenylphosphorothioate	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Fenthion	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
gamma-BHC (Lindane)	0.050 - 0.050	0 / 5	--	--	0.080	-- / --	0.63	No	HQ less than one, not detected
gamma-Chlordane	0.050 - 0.050	0 / 5	--	--	0.0043	-- / --	11.6	Yes	(2) Not detected, HQ above one
Heptachlor	0.050 - 0.050	0 / 5	--	--	0.038	-- / --	1.32	Yes	(2) Not detected, HQ above one
Heptachlor epoxide	0.050 - 0.050	0 / 5	--	--	0.0038	-- / --	13.2	Yes	(2) Not detected, HQ above one
Malathion	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Merphos	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methoxychlor	0.050 - 0.050	0 / 5	--	--	0.030	-- / --	1.67	Yes	(2) Not detected, HQ above one
Methyl parathion	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Mevinphos	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Naled	9.50 - 9.50	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Parathion	3.00 - 3.00	0 / 5	--	--	0.013	-- / --	231	Yes	(2) Not detected, HQ above one
Ronnel	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Sulfotepp	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Tetraethyl pyrophosphate (TEPP)	4.50 - 4.50	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Tetrachlorovinphos	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Tokuthion (Prothiophos)	3.00 - 3.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Toxaphene	0.64 - 0.64	0 / 5	--	--	0.0020	-- / --	320	Yes	(2) Not detected, HQ above one
Inorganics (UG/L)									
Aluminum	-- - --	5 / 5	623	HICP-SW03-0-1-12B	87.0	5 / 5	7.16	Yes	(1) HQ above one, detected
Antimony	20.0 - 20.0	0 / 5	--	--	160	-- / --	0.13	No	HQ less than one, not detected
Arsenic	20.0 - 20.0	0 / 5	--	--	150	-- / --	0.13	No	HQ less than one, not detected
Barium	-- - --	5 / 5	31.8	HICP-SW03-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Beryllium	0.50 - 0.50	0 / 5	--	--	0.53	-- / --	0.94	No	HQ less than one, not detected
Cadmium	1.00 - 1.00	0 / 5	--	--	0.25	-- / --	4.00	Yes	(2) Not detected, HQ above one
Calcium [3]	-- - --	5 / 5	6,770	HICP-SW02-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Chromium (hexavalent)	15.0 - 15.0	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chromium	5.00 - 5.00	2 / 5	0.44	HICP-SW03-0-1-12B	74.0	0 / 5	0.0060	No	HQ less than one, detected
Cobalt	5.00 - 5.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Copper	5.00 - 5.00	2 / 5	1.88	HICP-SW01-0-1-12B	9.00	0 / 5	0.21	No	HQ less than one, detected
Iron	-- - --	5 / 5	662	HICP-SW03-0-1-12B	1,000	0 / 5	0.66	No	HQ less than one, detected
Lead	20.0 - 20.0	0 / 5	--	--	2.50	-- / --	8.00	Yes	(2) Not detected, HQ above one
Magnesium [3]	-- - --	5 / 5	1,630	HICP-SW04-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Manganese	-- - --	5 / 5	13.9	HICP-SW01-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Mercury	0.069 - 0.069	1 / 5	0.11	HICP-SW03-0-1-12B	0.77	0 / 5	0.14	No	HQ less than one, detected
Nickel	5.00 - 5.00	0 / 5	--	--	52.0	-- / --	0.096	No	HQ less than one, not detected
Potassium [3]	-- - --	5 / 5	877	HICP-SW01-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Selenium	20.0 - 20.0	0 / 5	--	--	5.00	-- / --	4.00	Yes	(2) Not detected, HQ above one
Silver	5.00 - 5.00	0 / 5	--	--	0.012	-- / --	417	Yes	(2) Not detected, HQ above one
Sodium [3]	-- - --	5 / 5	6,830	HICP-SW04-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Thallium	20.0 - 20.0	0 / 5	--	--	4.00	-- / --	5.00	Yes	(2) Not detected, HQ above one
Vanadium	-- - --	5 / 5	1.91	HICP-SW03-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Zinc	10.0 - 10.0	0 / 5	--	--	120	-- / --	0.083	No	HQ less than one, not detected
Dissolved Inorganics (UG/L)									

APPENDIX D
TABLE 6
Hickory Pond Surface Water Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Aluminum, Dissolved	-- - --	5 / 5	102	HICP-SW03-0-1-12B	87.0	2 / 5	1.17	Yes	(1) HQ above one, detected
Antimony, Dissolved	20.0 - 20.0	0 / 5	--	--	160	-- / --	0.13	No	HQ less than one, not detected
Arsenic, Dissolved	20.0 - 20.0	4 / 5	5.74	HICP-SW03-0-1-12B	150	0 / 5	0.038	No	HQ less than one, detected
Barium, Dissolved	25.2 - 26.3	1 / 5	27.5	HICP-SW01-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Beryllium, Dissolved	0.50 - 0.50	0 / 5	--	--	0.53	-- / --	0.94	No	HQ less than one, not detected
Cadmium, Dissolved	1.00 - 1.00	0 / 5	--	--	0.25	-- / --	4.00	Yes	(2) Not detected, HQ above one
Calcium, Dissolved[3]	-- - --	5 / 5	6,570	HICP-SW01-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Chromium, Dissolved	5.00 - 5.00	0 / 5	--	--	117	-- / --	0.043	No	HQ less than one, not detected
Cobalt, Dissolved	5.00 - 5.00	1 / 5	0.39	HICP-SW02-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Copper, Dissolved	5.00 - 5.00	0 / 5	--	--	9.00	-- / --	0.56	No	HQ less than one, not detected
Iron, Dissolved	-- - --	5 / 5	132	HICP-SW01-0-1-12B	1,000	0 / 5	0.13	No	HQ less than one, detected
Lead, Dissolved	20.0 - 20.0	0 / 5	--	--	2.50	-- / --	8.00	Yes	(2) Not detected, HQ above one
Magnesium, Dissolved[3]	-- - --	5 / 5	1,580	HICP-SW01-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Manganese, Dissolved	10.0 - 10.0	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Mercury, Dissolved	0.069 - 0.069	0 / 5	--	--	0.77	-- / --	0.090	No	HQ less than one, not detected
Nickel, Dissolved	5.00 - 5.00	0 / 5	--	--	52.0	-- / --	0.096	No	HQ less than one, not detected
Potassium, Dissolved[3]	-- - --	5 / 5	755	HICP-SW01-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Selenium, Dissolved	20.0 - 20.0	0 / 5	--	--	5.00	-- / --	4.00	Yes	(2) Not detected, HQ above one
Silver, Dissolved	5.00 - 5.00	0 / 5	--	--	0.012	-- / --	417	Yes	(2) Not detected, HQ above one
Sodium, Dissolved[3]	-- - --	5 / 5	6,930	HICP-SW01-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Thallium, Dissolved	20.0 - 20.0	0 / 5	--	--	4.00	-- / --	5.00	Yes	(2) Not detected, HQ above one
Vanadium, Dissolved	-- - --	5 / 5	0.93	HICP-SW03-0-1-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Zinc, Dissolved	10.0 - 10.0	0 / 5	--	--	120	-- / --	0.083	No	HQ less than one, not detected

NOTES
1 - Count of detected samples exceeding or equaling Screening Value
2 - Categories are assigned to those analytes retained as Step 2 COPCs and are as follows
Category 1 – Contaminants with a maximum detection exceeding the ESV
Category 2– Undetected contaminants with a laboratory sample quantitation limit (SQL) exceeding the ESV
Category 3 – Detected contaminants with no ESV
Category 4 – Undetected contaminants with no ESV
3 - Macronutrient - Not considered to be a COPC
COPC - chemical of potential concern
HQ - Hazard Quotient
mg/L - Milligrams per liter
NSV - No Screening Value
µg/L - micrograms per liter

APPENDIX D
TABLE 7
Henderson Pond Sediment Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Volatile Organic Compounds (UG/KG)									
1,1,1-Trichloroethane	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,1,2,2-Tetrachloroethane	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,1,2-Trichloroethane	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,1-Dichloroethane	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,1-Dichloroethene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,2,4-Trichlorobenzene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,2-Dibromo-3-chloropropane	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,2-Dibromoethane	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,2-Dichlorobenzene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,2-Dichloroethane	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,2-Dichloropropane	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,3-Dichlorobenzene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,4-Dichlorobenzene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Butanone	3.80 - 11.0	3 / 5	38.0	IR74-HP-SD03-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
2-Hexanone	3.80 - 15.0	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Acetone	19.0 - 19.0	4 / 5	150	IR74-HP-SD05-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Benzene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Bromodichloromethane	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Bromoform	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Bromomethane	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Carbon disulfide	7.50 - 29.0	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Carbon tetrachloride	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chlorobenzene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chloroethane	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chloroform	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chloromethane	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
cis-1,2-Dichloroethene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
cis-1,3-Dichloropropene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Cyclohexane	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dibromochloromethane	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dichlorodifluoromethane (Freon-12)	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Ethylbenzene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Isopropylbenzene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
m- and p-Xylene	3.00 - 12.0	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methyl acetate	7.50 - 29.0	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methylcyclohexane	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methylene chloride	7.50 - 29.0	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methyl-tert-butyl ether (MTBE)	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
o-Xylene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Styrene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Tetrachloroethene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value

APPENDIX D
TABLE 7
Henderson Pond Sediment Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Toluene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
trans-1,2-Dichloroethene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
trans-1,3-Dichloropropene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Trichloroethene	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Trichlorofluoromethane (Freon-11)	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Vinyl chloride	1.50 - 5.80	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Semivolatile Organic Compounds (UG/KG)									
1,1-Biphenyl	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,4,5-Trichlorophenol	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,4,6-Trichlorophenol	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,4-Dichlorophenol	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,4-Dimethylphenol	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,4-Dinitrophenol	970 - 2,300	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,4-Dinitrotoluene	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,6-Dinitrotoluene	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Chloronaphthalene	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Chlorophenol	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Methylnaphthalene	48.0 - 100	0 / 5	--	--	20.2	-- / --	4.94	Yes	(4) Not detected, no screening value
2-Methylphenol	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Nitroaniline	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Nitrophenol	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
3- and 4-Methylphenol	390 - 1,600	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
3,3'-Dichlorobenzidine	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
3-Nitroaniline	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4,6-Dinitro-2-methylphenol	580 - 2,300	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Bromophenyl-phenylether	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Chloro-3-methylphenol	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Chloroaniline	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Chlorophenyl-phenylether	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Nitroaniline	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Nitrophenol	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Acenaphthene	48.0 - 100	0 / 5	--	--	6.71	-- / --	14.9	Yes	(4) Not detected, no screening value
Acenaphthylene	48.0 - 100	0 / 5	--	--	5.87	-- / --	17.0	Yes	(4) Not detected, no screening value
Acetophenone	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Anthracene	48.0 - 100	0 / 5	--	--	46.9	-- / --	2.13	Yes	(4) Not detected, no screening value
Atrazine	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Benzaldehyde	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Benzo(a)anthracene	48.0 - 100	0 / 5	--	--	74.8	-- / --	1.34	Yes	(4) Not detected, no screening value
Benzo(a)pyrene	48.0 - 100	0 / 5	--	--	88.8	-- / --	1.13	Yes	(4) Not detected, no screening value
Benzo(b)fluoranthene	48.0 - 100	0 / 5	--	--	655	-- / --	0.15	Yes	(4) Not detected, no screening value
Benzo(g,h,i)perylene	48.0 - 100	0 / 5	--	--	655	-- / --	0.15	Yes	(4) Not detected, no screening value
Benzo(k)fluoranthene	48.0 - 100	0 / 5	--	--	655	-- / --	0.15	Yes	(4) Not detected, no screening value
bis(2-Chloroethoxy)methane	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value

APPENDIX D
TABLE 7
Henderson Pond Sediment Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
bis(2-Chloroethyl)ether	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
bis(2-Chloroisopropyl)ether	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
bis(2-Ethylhexyl)phthalate	190 - 780	1 / 5	550	IR74-HP-SD05-0-0_5-11D	182	-- / --	3.02	Yes	(1) HQ above one, detected
Butylbenzylphthalate	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Caprolactam	390 - 1,600	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Carbazole	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chrysene	48.0 - 100	0 / 5	--	--	108	-- / --	0.93	No	HQ less than one, not detected
Dibenz(a,h)anthracene	48.0 - 100	0 / 5	--	--	6.22	-- / --	16.1	Yes	(2) Not detected, HQ above one
Dibenzofuran	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Diethylphthalate	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dimethoate	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dimethyl phthalate	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Di-n-butylphthalate	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Di-n-octylphthalate	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Fluoranthene	48.0 - 100	0 / 5	--	--	113	-- / --	0.88	No	HQ less than one, not detected
Fluorene	48.0 - 100	0 / 5	--	--	21.2	-- / --	4.72	Yes	(2) Not detected, HQ above one
Hexachlorobenzene	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Hexachlorobutadiene	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Hexachlorocyclopentadiene	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Hexachloroethane	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Indeno(1,2,3-cd)pyrene	48.0 - 100	0 / 5	--	--	655	-- / --	0.15	No	HQ less than one, not detected
Isophorone	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Naphthalene	48.0 - 100	0 / 5	--	--	34.6	-- / --	2.89	Yes	(2) Not detected, HQ above one
n-Nitroso-di-n-propylamine	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
n-Nitrosodiphenylamine	390 - 1,600	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Nitrobenzene	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Pentachlorophenol	580 - 2,300	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Phenanthrene	48.0 - 100	0 / 5	--	--	86.7	-- / --	1.15	Yes	(2) Not detected, HQ above one
Phenol	190 - 780	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Phorate	78.0 - 370	1 / 5	190	IR74-HP-SD04-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Pyrene	48.0 - 100	0 / 5	--	--	153	-- / --	0.65	No	HQ less than one, not detected
Pesticide/Polychlorinated Biphenyls (UG/KG)									
4,4'-DDD	1.90 - 4.00	0 / 5	--	--	1.22	-- / --	3.28	Yes	(2) Not detected, HQ above one
4,4'-DDE	1.60 - 2.00	11 / 15	15.0	HENP-SD02-0-0_5-12B	2.07	11 / 15	7.25	Yes	(1) HQ above one, detected
4,4'-DDT	1.60 - 4.00	6 / 15	78.0	IR74-HP-SD04-0-0_5-11D	1.19	6 / 15	65.5	Yes	(1) HQ above one, detected
Aldrin	1.90 - 4.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
alpha-BHC	1.90 - 4.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
alpha-Chlordane	1.90 - 4.00	0 / 5	--	--	0.50	-- / --	8.00	Yes	(2) Not detected, HQ above one
Aroclor-1016	39.0 - 80.0	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1221	39.0 - 80.0	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1232	39.0 - 80.0	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1242	39.0 - 80.0	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1248	39.0 - 80.0	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs

APPENDIX D
TABLE 7
Henderson Pond Sediment Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Aroclor-1254	39.0 - 80.0	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1260	17.0 - 39.0	13 / 15	240	IR74-HP-SD01-0-0_5-11D	NSV	-- / --	NSV	No	See Total PCBs
Total PCBs	17.0 - 80.0	-- / --	240	IR74-HP-SD01-0-0_5-11D	21.6	11 / 15	11.11	Yes	(1) HQ above one, detected
Azinphos methyl	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
beta-BHC	1.90 - 4.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Bolstar	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chlorpyrifos	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Coumaphos	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
delta-BHC	1.90 - 4.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Demeton	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Diazinon	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dichlorvos	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dieldrin	1.90 - 4.00	0 / 5	--	--	0.020	-- / --	200	Yes	(2) Not detected, HQ above one
Disulfoton	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Endosulfan I	1.90 - 4.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Endosulfan II	1.90 - 4.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Endosulfan sulfate	1.90 - 4.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Endrin	1.90 - 4.00	0 / 5	--	--	0.020	-- / --	200	Yes	(2) Not detected, HQ above one
Endrin aldehyde	1.90 - 4.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Endrin ketone	1.90 - 4.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Ethoprop	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Fensulfothion	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Ethyl p-nitrophenyl phenylphosphorothioate	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Fenthion	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
gamma-BHC (Lindane)	1.90 - 4.00	0 / 5	--	--	0.32	-- / --	12.5	Yes	(2) Not detected, HQ above one
gamma-Chlordane	1.90 - 4.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Heptachlor	1.90 - 4.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Heptachlor epoxide	1.90 - 4.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Malathion	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Merphos	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methoxychlor	1.90 - 4.00	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methyl parathion	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Mevinphos	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Monocrotophos	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Naled	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Parathion	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Ronnel	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Sulfotepp	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Tetrachlorovinphos	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Tetraethyl pyrophosphate (TEPP)	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Tokuthion (Prothiophos)	78.0 - 370	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Toxaphene	39.0 - 80.0	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value

APPENDIX D
TABLE 7
Henderson Pond Sediment Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Inorganics (MG/KG)									
Aluminum	-- - --	5 / 5	16,300	IR74-HP-SD01-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Antimony	3.68 - 4.99	2 / 5	1.37	IR74-HP-SD03-0-0_5-11D	2.00	0 / 5	0.69	No	HQ less than one, detected
Arsenic	-- - --	15 / 15	4.24	HENP-SD08-0-0_5-12B	7.24	0 / 15	0.59	No	HQ less than one, detected
Barium	-- - --	15 / 15	85.7	HENP-SD08-0-0_5-12B	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Beryllium	-- - --	5 / 5	0.46	IR74-HP-SD01-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Cadmium	-- - --	5 / 5	0.41	IR74-HP-SD04-0-0_5-11D	0.68	0 / 5	0.61	No	HQ less than one, detected
Calcium [3]	-- - --	5 / 5	5,700	IR74-HP-SD02-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Chromium (hexavalent)	0.65 - 1.90	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chromium	-- - --	5 / 5	17.4	IR74-HP-SD01-0-0_5-11D	52.3	0 / 5	0.33	No	HQ less than one, detected
Cobalt	-- - --	5 / 5	2.65	IR74-HP-SD01-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Copper	-- - --	15 / 15	78.3	IR74-HP-SD02-0-0_5-11D	18.7	4 / 15	4.19	Yes	(1) HQ above one, detected
Iron	-- - --	5 / 5	7,580	IR74-HP-SD01-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Lead	-- - --	5 / 5	31.9	IR74-HP-SD01-0-0_5-11D	30.2	1 / 5	1.06	Yes	(1) HQ above one, detected
Magnesium [3]	-- - --	5 / 5	1,870	IR74-HP-SD04-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Manganese	-- - --	5 / 5	23.6	IR74-HP-SD03-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Mercury	-- - --	5 / 5	0.072	IR74-HP-SD02-0-0_5-11D	0.13	0 / 5	0.55	No	HQ less than one, detected
Nickel	-- - --	5 / 5	8.38	IR74-HP-SD01-0-0_5-11D	15.9	0 / 5	0.53	No	HQ less than one, detected
Potassium [3]	-- - --	5 / 5	533	IR74-HP-SD01-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Selenium	3.27 - 5.26	1 / 5	1.36	IR74-HP-SD01-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Silver	0.82 - 1.31	1 / 5	0.64	IR74-HP-SD01-0-0_5-11D	0.73	0 / 5	0.87	No	HQ less than one, detected
Sodium [3]	20.6 - 69.3	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Thallium	1.64 - 2.63	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Vanadium	-- - --	5 / 5	30.8	IR74-HP-SD01-0-0_5-11D	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Zinc	-- - --	5 / 5	95.3	IR74-HP-SD01-0-0_5-11D	124	0 / 5	0.77	No	HQ less than one, detected

NOTES
1 - Count of detected samples exceeding or equaling Screening Value
2 - Categories are assigned to those analytes retained as Step 2 COPCs and are as follows:
Category 1 – Contaminants with a maximum detection exceeding the ESV
Category 2– Undetected contaminants with a laboratory sample quantitation limit (SQL) exceeding the ESV
Category 3 – Detected contaminants with no ESV
Category 4 – Undetected contaminants with no ESV
3 - Macronutrient - Not considered to be a COPC
COPC - chemical of potential concern
HQ - Hazard Quotient
µg/kg - micrograms per kilogram
mg/kg - Milligrams per kilogram
NSV - No Screening Value

APPENDIX D
TABLE 8
Hickory Pond Sediment Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Volatile Organic Compounds (UG/KG)									
1,1,1-Trichloroethane	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,1,2,2-Tetrachloroethane	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,1,2-Trichloroethane	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,1-Dichloroethane	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,1-Dichloroethene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,2,4-Trichlorobenzene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,2-Dibromo-3-chloropropane	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,2-Dibromoethane	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,2-Dichlorobenzene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,2-Dichloroethane	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,2-Dichloropropane	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,3-Dichlorobenzene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
1,4-Dichlorobenzene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Butanone	-- - --	5 / 5	40.0	ICP-SD02-0-0_5-1	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
2-Hexanone	2.60 - 6.40	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Acetone	-- - --	5 / 5	180	ICP-SD02-0-0_5-1	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Benzene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Bromodichloromethane	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Bromoform	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Bromomethane	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Carbon disulfide	5.30 - 13.0	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Carbon tetrachloride	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chlorobenzene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chloroethane	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chloroform	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chloromethane	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
cis-1,2-Dichloroethene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
cis-1,3-Dichloropropene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Cyclohexane	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dibromochloromethane	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dichlorodifluoromethane (Freon-12)	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Ethylbenzene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Isopropylbenzene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
m- and p-Xylene	2.10 - 5.10	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methyl acetate	5.30 - 13.0	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methylcyclohexane	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methylene chloride	5.30 - 13.0	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methyl-tert-butyl ether (MTBE)	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
o-Xylene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Styrene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Tetrachloroethene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value

APPENDIX D
TABLE 8
Hickory Pond Sediment Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Toluene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
trans-1,2-Dichloroethene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
trans-1,3-Dichloropropene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Trichloroethene	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Trichlorofluoromethane (Freon-11)	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Vinyl chloride	1.10 - 2.60	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Semivolatile Organic Compounds (UG/KG)									
1,1-Biphenyl	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,4,5-Trichlorophenol	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,4,6-Trichlorophenol	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,4-Dichlorophenol	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,4-Dimethylphenol	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,4-Dinitrotoluene	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2,6-Dinitrotoluene	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Chloronaphthalene	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Chlorophenol	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Methylnaphthalene	32.0 - 51.0	0 / 5	--	--	20.2	-- / --	2.52	Yes	(2) Not detected, HQ above one
2-Methylphenol	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Nitroaniline	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
2-Nitrophenol	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
3- and 4-Methylphenol	250 - 410	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
3,3'-Dichlorobenzidine	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
3-Nitroaniline	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4,6-Dinitro-2-methylphenol	380 - 620	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Bromophenyl-phenylether	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Chloro-3-methylphenol	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Chloroaniline	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Chlorophenyl-phenylether	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Nitroaniline	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
4-Nitrophenol	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Acenaphthene	32.0 - 51.0	0 / 5	--	--	6.71	-- / --	7.60	Yes	(2) Not detected, HQ above one
Acenaphthylene	32.0 - 51.0	0 / 5	--	--	5.87	-- / --	8.69	Yes	(2) Not detected, HQ above one
Acetophenone	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Anthracene	32.0 - 51.0	0 / 5	--	--	46.9	-- / --	1.09	Yes	(2) Not detected, HQ above one
Atrazine	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Benzaldehyde	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Benzo(a)anthracene	32.0 - 50.0	1 / 5	20.0	CP-SD01-0-0_5-11	74.8	0 / 5	0.27	No	HQ less than one, detected
Benzo(a)pyrene	32.0 - 51.0	0 / 5	--	--	88.8	-- / --	0.57	No	HQ less than one, not detected
Benzo(b)fluoranthene	32.0 - 51.0	0 / 5	--	--	655	-- / --	0.078	No	HQ less than one, not detected
Benzo(g,h,i)perylene	32.0 - 51.0	0 / 5	--	--	655	-- / --	0.078	No	HQ less than one, not detected
Benzo(k)fluoranthene	32.0 - 51.0	0 / 5	--	--	655	-- / --	0.078	No	HQ less than one, not detected
bis(2-Chloroethoxy)methane	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
bis(2-Chloroethyl)ether	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value

APPENDIX D
TABLE 8
Hickory Pond Sediment Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
bis(2-Chloroisopropyl)ether	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
bis(2-Ethylhexyl)phthalate	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Butylbenzylphthalate	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Caprolactam	250 - 410	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Carbazole	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chrysene	32.0 - 51.0	0 / 5	--	--	108	-- / --	0.47	No	HQ less than one, not detected
Dibenz(a,h)anthracene	32.0 - 51.0	0 / 5	--	--	6.22	-- / --	8.20	Yes	(2) Not detected, HQ above one
Dibenzofuran	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Diethylphthalate	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dimethoate	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dimethyl phthalate	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Di-n-butylphthalate	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Di-n-octylphthalate	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Fluoranthene	32.0 - 51.0	0 / 5	--	--	113	-- / --	0.45	No	HQ less than one, not detected
Fluorene	32.0 - 51.0	0 / 5	--	--	21.2	-- / --	2.41	Yes	(2) Not detected, HQ above one
Hexachlorobenzene	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Hexachlorobutadiene	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Hexachlorocyclopentadiene	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Hexachloroethane	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Indeno(1,2,3-cd)pyrene	32.0 - 51.0	0 / 5	--	--	655	-- / --	0.078	No	HQ less than one, not detected
Isophorone	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Naphthalene	32.0 - 51.0	0 / 5	--	--	34.6	-- / --	1.47	Yes	(2) Not detected, HQ above one
n-Nitroso-di-n-propylamine	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
n-Nitrosodiphenylamine	250 - 410	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Nitrobenzene	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Pentachlorophenol	380 - 620	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Phenanthrene	32.0 - 51.0	0 / 5	--	--	86.7	-- / --	0.59	No	HQ less than one, not detected
Phenol	130 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Phorate	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Pyrene	32.0 - 51.0	0 / 5	--	--	153	-- / --	0.33	No	HQ less than one, not detected
Pesticide/Polychlorinated Biphenyls (UG/KG)									
4,4'-DDD	1.40 - 2.10	1 / 5	6.70	CP-SD05-0-0_5-1	1.22	1 / 5	5.49	Yes	(1) HQ above one, detected
4,4'-DDE	1.40 - 2.00	3 / 5	7.60	CP-SD05-0-0_5-1	2.07	1 / 5	3.67	Yes	(1) HQ above one, detected
4,4'-DDT	1.30 - 2.10	0 / 5	--	--	1.19	-- / --	1.76	Yes	(2) Not detected, HQ above one
Aldrin	1.30 - 2.10	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
alpha-BHC	1.30 - 2.10	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
alpha-Chlordane	1.30 - 2.10	0 / 5	--	--	0.50	-- / --	4.20	Yes	(2) Not detected, HQ above one
Aroclor-1016	41.0 - 41.0	0 / 1	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1221	25.0 - 41.0	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1232	25.0 - 41.0	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1242	25.0 - 41.0	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1248	25.0 - 41.0	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Aroclor-1254	25.0 - 41.0	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs

APPENDIX D
TABLE 8
Hickory Pond Sediment Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Aroclor-1260	13.0 - 21.0	0 / 5	--	--	NSV	-- / --	NSV	No	See Total PCBs
Total PCBs	13.0 - 41.0	0 / 5	--	--	21.6	-- / --	1.90	Yes	(2) Not detected, HQ above one
Azinphos methyl	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
beta-BHC	1.30 - 2.10	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Bolstar	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Chlorpyrifos	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Coumaphos	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
delta-BHC	1.30 - 2.10	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Demeton	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Diazinon	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dichlorvos	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Dieldrin	1.30 - 2.10	0 / 5	--	--	0.020	-- / --	105	Yes	(2) Not detected, HQ above one
Disulfoton	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Endosulfan I	1.30 - 2.10	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Endosulfan II	1.30 - 2.10	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Endosulfan sulfate	1.30 - 2.10	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Endrin	1.30 - 2.10	0 / 5	--	--	0.020	-- / --	105	Yes	(2) Not detected, HQ above one
Endrin aldehyde	1.30 - 2.10	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Endrin ketone	1.30 - 2.10	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Ethoprop	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Fensulfothion	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Ethyl p-nitrophenyl phenylphosphorothioate	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Fenthion	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
gamma-BHC (Lindane)	1.30 - 2.10	0 / 5	--	--	0.32	-- / --	6.56	Yes	(2) Not detected, HQ above one
gamma-Chlordane	1.30 - 2.10	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Heptachlor	1.30 - 2.10	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Heptachlor epoxide	1.30 - 2.10	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Malathion	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Merphos	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methoxychlor	1.30 - 2.10	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Methyl parathion	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Mevinphos	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Naled	210 - 340	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Parathion	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Ronnel	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Sulfotepp	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Tetraethyl pyrophosphate (TEPP)	420 - 680	0 / 4	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Tetrachlorvinphos	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Tokuthion (Prothiophos)	33.0 - 210	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Toxaphene	25.0 - 82.0	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value

APPENDIX D
TABLE 8
Hickory Pond Sediment Screen - Step 2
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Maximum Detected Concentration	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient	Step 2 COPC?	Rationale[2]
Inorganics (MG/KG)									
Aluminum	-- - --	5 / 5	6,120	CP-SD03-0-0_5-1	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Antimony	1.56 - 2.01	0 / 5	--	--	2.00	-- / --	1.01	Yes	(2) Not detected, HQ above one
Arsenic	1.56 - 1.56	4 / 5	1.37	CP-SD03-0-0_5-1	7.24	0 / 5	0.19	No	HQ less than one, detected
Barium	-- - --	5 / 5	37.3	CP-SD01-0-0_5-1	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Beryllium	-- - --	5 / 5	0.27	CP-SD02-0-0_5-1	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Cadmium	0.078 - 0.081	3 / 5	0.080	CP-SD01-0-0_5-1	0.68	0 / 5	0.12	No	HQ less than one, detected
Calcium [3]	-- - --	5 / 5	1,040	CP-SD02-0-0_5-1	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Chromium (hexavalent)	0.25 - 1.60	1 / 5	0.24	CP-SD01-0-0_5-1	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Chromium	-- - --	5 / 5	6.32	CP-SD04-0-0_5-1	52.3	0 / 5	0.12	No	HQ less than one, detected
Cobalt	0.39 - 0.39	4 / 5	0.65	CP-SD02-0-0_5-1	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Copper	-- - --	5 / 5	5.52	CP-SD02-0-0_5-1	18.7	0 / 5	0.30	No	HQ less than one, detected
Iron	-- - --	5 / 5	2,730	CP-SD03-0-0_5-1	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Lead	-- - --	5 / 5	11.8	CP-SD01-0-0_5-1	30.2	0 / 5	0.39	No	HQ less than one, detected
Magnesium [3]	-- - --	5 / 5	227	CP-SD04-0-0_5-1	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Manganese	-- - --	5 / 5	9.43	CP-SD03-0-0_5-1	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Mercury	0.0065 - 0.0065	4 / 5	0.035	CP-SD02-0-0_5-1	0.13	0 / 5	0.27	No	HQ less than one, detected
Nickel	0.60 - 1.83	0 / 5	--	--	15.9	-- / --	0.12	No	HQ less than one, not detected
Potassium [3]	-- - --	5 / 5	186	CP-SD04-0-0_5-1	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Selenium	1.56 - 1.56	4 / 5	0.81	CP-SD01-0-0_5-1	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Silver	0.39 - 0.50	0 / 5	--	--	0.73	-- / --	0.69	No	HQ less than one, not detected
Sodium [3]	19.5 - 29.6	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Thallium	1.56 - 2.01	0 / 5	--	--	NSV	-- / --	NSV	Yes	(4) Not detected, no screening value
Vanadium	-- - --	5 / 5	8.62	CP-SD01-0-0_5-1	NSV	-- / --	NSV	Yes	(3) Detected, no screening value
Zinc	-- - --	5 / 5	15.2	CP-SD02-0-0_5-1	124	0 / 5	0.12	No	HQ less than one, detected

Notes:
1 - Count of detected samples exceeding or equaling Screening Value
2 - Categories are assigned to those analytes retained as Step 2 COPCs and are as follows:
Category 1 – Contaminants with a maximum detection exceeding the ESV
Category 2– Undetected contaminants with a laboratory sample quantitation limit (SQL) exceeding the ESV
Category 3 – Detected contaminants with no ESV
Category 4 – Undetected contaminants with no ESV
3 - Macronutrient - Not considered to be a COPC
COPC - chemical of potential concern
HQ - Hazard Quotient
mg/kg - Milligrams per kilogram
NSV - No Screening Value
µg/kg - micrograms per kilogram

APPENDIX D
TABLE 9
Surface Soil Screen - Step 3
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Exposure Point Concentration (EPC)	EPC Basis[1]	Screening Value	Frequency of Exceedance[2]	EPC Hazard Quotient	Background Threshold Value[3]	Step 3 COPC?	Rationale
Pesticide/Polychlorinated Biphenyls (UG/KG)												
Aldrin	1.00 - 21.0	0 / 10	--	--	--	--	2.50	-- / --	8.40	1.83	No	Not detected
Total PCBs	10.0 - 13.0	1 / 10	1,300	HENP-SS08-0-1-12B	702	95% Chebyshev UCL	20.00	-- / --	35.10	--	No	See text for discussion
Dieldrin	1.00 - 21.0	0 / 10	--	--	--	--	4.90	-- / --	4.29	3.17	No	Not detected
Inorganics (MG/KG)												
Aluminum	-- - --	10 / 10	9,580	HENP-SS08-0-1-12B	5,400	95% Approximate Gamma UCL	50.0	10 / 10	108	12,800	No	Consistent with background
Antimony	1.26 - 1.90	2 / 10	0.40	HENP-SS04-0-1-12B	0.40	Maximum Concentration	0.27	2 / 10	1.48	1.87	No	Consistent with background
Calcium [4]	27.8 - 115	3 / 10	1,560	HENP-SS09-0-1-12B	--	--	NSV	-- / --	NSV	8,470	No	Macronutrient
Chromium (hexavalent)	0.21 - 0.27	1 / 10	0.82	HENP-SS04-0-1-12B	--	--	NSV	-- / --	NSV	2.73	No	Consistent with background
Iron	-- - --	10 / 10	10,500	HENP-SS08-0-1-12B	4200	95% Approximate Gamma UCL	200	10 / 10	21.0	7,210	No	See text for discussion
Lead	-- - --	10 / 10	12.2	HENP-SS02-0-1-12B	7.01	95% Student's-t UCL	11.0	1 / 10	1.11	27.50	No	Consistent with background
Magnesium [4]	-- - --	10 / 10	149	HENP-SS08-0-1-12B	--	--	NSV	-- / --	NSV	904	No	Macronutrient
Potassium [4]	23.8 - 23.8	9 / 10	132	HENP-SS08-0-1-12B	--	--	NSV	-- / --	NSV	359	No	Macronutrient
Vanadium	-- - --	10 / 10	17.9	HENP-SS08-0-1-12B	8.75	95% Approximate Gamma UCL	7.80	1 / 10	1.12	17.6	No	Low magnitude of exceedance

Notes:
1 - ProUCL Version 4 does not offer a calculated UCL when there are too few unique detected results (one or sometimes more than one).
In these instances, a 95% Chebyshev UCL using a proxy value of 1/2 the detection limit for NDs is calculated. The lower of the 95 UCL and the maximum concentration is selected.
2 - Count of detected samples exceeding or equaling Screening Value
3 - Combined soil types for surface soil in undeveloped areas
4 - Macronutrient - Not considered to be a COPC
COPC - chemical of potential concern
EPC - Exposure Point Concentration
HQ - Hazard Quotient
mg/kg - Milligrams per kilogram
NSV - No Screening Value
µg/kg - micrograms per kilogram

APPENDIX D
TABLE 10
Subsurface Soil Screen - Step 3
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Exposure Point Concentration (EPC)	EPC Basis[1]	Screening Value	Frequency of Exceedance[2]	EPC Hazard Quotient	Background Threshold Value[3]	Step 3 COPC?	Rationale
Inorganics (MG/KG)												
Aluminum	-- - --	10 / 10	8,560	HENP-SB09-1-4-12B	6560	95% Student's-t UCL	50.0	10 / 10	131	19000	No	Consistent with background
Antimony	1.25 - 1.94	0 / 10	--	--	--	--	0.27	-- / --	7.19	1.1	No	Not detected
Calcium [4]	21.4 - 94.2	2 / 10	397	HENP-SB09-1-4-12B	--	--	NSV	-- / --	NSV	1530	No	Macronutrient
Chromium (hexavalent)	0.22 - 0.22	9 / 10	1.90	HENP-SB06-1-4-12B	--	--	NSV	-- / --	NSV	3.74	No	Consistent with background
Iron	-- - --	10 / 10	12,200	HENP-SB09-1-4-12B	6120	95% Approximate Gamma UCL	200	10 / 10	30.6	12700	No	Consistent with background
Magnesium [4]	-- - --	10 / 10	174	HENP-SB08-1-4-12B	--	--	NSV	-- / --	NSV	776	No	Macronutrient
Potassium [4]	-- - --	10 / 10	204	HENP-SB08-1-4-12B	--	--	NSV	-- / --	NSV	620	No	Macronutrient
Vanadium	-- - --	10 / 10	18.2	HENP-SB09-1-4-12B	11.3	95% Student's-t UCL	7.80	4 / 10	1.45	35.6	No	Consistent with background

Notes:
1 - ProUCL Version 4 does not offer a calculated UCL when there are too few unique detected results (one or sometimes more than one).
In these instances, a 95% Chebyshev UCL using a proxy value of 1/2 the detection limit for NDs is calculated. The lower of the 95 UCL and the maximum concentration is selected
2 - Count of detected samples exceeding or equaling Screening Value
3 - Combined soil types for subsurface soil in undeveloped areas
4 - Macronutrient - Not considered to be a COPC
COPC - chemical of potential concern
EPC - Exposure Point Concentration
HQ - Hazard Quotient
mg/kg - Milligrams per kilogram
NSV - No Screening Value

APPENDIX D
TABLE 11
Henderson Pond Surface Water Screen - Step 3
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Exposure Point Concentration (EPC)	EPC Basis[1]	Screening Value	Supplemental Screening Value	Supplemental Screening Value Source	Frequency of Exceedance[2]	EPC Hazard Quotient	Step 3 COPC?	Rationale[2]
Volatile Organic Compounds (UG/L)													
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,1-Dichloroethane	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,2-Dibromo-3-chloropropane	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,2-Dibromoethane	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Hexanone	2.50 - 2.50	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Acetone	12.0 - 12.0	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Bromodichloromethane	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Carbon disulfide	5.00 - 5.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Chloroethane	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
cis-1,2-Dichloroethene	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Cyclohexane	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dibromochloromethane	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dichlorodifluoromethane (Freon-12)	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Isopropylbenzene	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
m- and p-Xylene	2.00 - 2.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methyl acetate	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methylcyclohexane	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methyl-tert-butyl ether (MTBE)	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
o-Xylene	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Styrene	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Trichloroethene	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Trichlorofluoromethane (Freon-11)	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Vinyl chloride	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Semivolatile Organic Compounds (UG/L)													
1,1-Biphenyl	9.00 - 10.0	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,4,5-Trichlorophenol	6.00 - 6.70	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,4,6-Trichlorophenol	6.00 - 6.70	0 / 5	--	--	--	--	3.20	--	--	-- / --	2.09	No	Not detected
2,4-Dinitrophenol	6.00 - 6.70	0 / 5	--	--	--	--	6.20	--	--	-- / --	1.08	No	Not detected
2,4-Dinitrotoluene	6.00 - 6.70	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,6-Dinitrotoluene	3.00 - 3.30	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Chloronaphthalene	3.00 - 3.30	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Methylnaphthalene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Methylphenol	3.00 - 3.30	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Nitroaniline	3.00 - 3.30	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
3- and 4-Methylphenol	6.00 - 6.70	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
3,3'-Dichlorobenzidine	6.00 - 6.70	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
3-Nitroaniline	3.00 - 3.30	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4,6-Dinitro-2-methylphenol	6.00 - 6.70	0 / 5	--	--	--	--	2.30	--	--	-- / --	2.91	No	Not detected
4-Chloro-3-methylphenol	6.00 - 6.70	0 / 5	--	--	--	--	0.30	--	--	-- / --	22.3	No	Not detected
4-Chloroaniline	6.00 - 6.70	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4-Chlorophenyl-phenylether	6.00 - 6.70	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4-Nitroaniline	3.00 - 3.30	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Acenaphthylene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Acetophenone	3.00 - 3.30	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Anthracene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Atrazine	3.00 - 3.30	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Benzaldehyde	6.00 - 6.70	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Benzo(a)anthracene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Benzo(a)pyrene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Benzo(b)fluoranthene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Benzo(g,h,i)perylene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Benzo(k)fluoranthene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
bis(2-Chloroethoxy)methane	6.00 - 6.70	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
bis(2-Chloroisopropyl)ether	6.00 - 6.70	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
bis(2-Ethylhexyl)phthalate	6.00 - 6.70	0 / 5	--	--	--	--	0.30	--	--	-- / --	22.3	No	Not detected
Caprolactam	3.00 - 3.30	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Carbazole	3.00 - 3.30	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Chrysene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dibenz(a,h)anthracene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dibenzofuran	3.00 - 3.30	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected

APPENDIX D
TABLE 11
Henderson Pond Surface Water Screen - Step 3
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Exposure Point Concentration (EPC)	EPC Basis[1]	Screening Value	Supplemental Screening Value	Supplemental Screening Value Source	Frequency of Exceedance[2]	EPC Hazard Quotient	Step 3 COPC?	Rationale[2]
Dimethoate	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Di-n-octylphthalate	6.00 - 6.70	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Fluorene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Hexachlorobenzene	3.00 - 3.30	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Hexachlorobutadiene	6.00 - 6.70	0 / 5	--	--	--	--	0.93	--	--	-- / --	7.20	No	Not detected
Hexachlorocyclopentadiene	6.00 - 6.70	0 / 5	--	--	--	--	0.070	--	--	-- / --	95.7	No	Not detected
Indeno(1,2,3-cd)pyrene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
n-Nitroso-di-n-propylamine	6.00 - 6.70	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Phenanthrene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Phorate	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Pyrene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Pesticide/Polychlorinated Biphenyls (UG/L)					--	--							
4,4'-DDD	0.050 - 0.050	0 / 5	--	--	--	--	0.0064	--	--	-- / --	7.81	No	Not detected
4,4'-DDT	0.050 - 0.050	0 / 5	--	--	--	--	0.0010	--	--	-- / --	50.0	No	Not detected
alpha-Chlordane	0.050 - 0.050	0 / 5	--	--	--	--	0.0043	--	--	-- / --	11.6	No	Not detected
Total PCBs	0.34 - 0.50	0 / 5	--	--	--	--	0.014	--	--	-- / --	35.7	No	Not detected
Azinphos methyl	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Bolstar	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Chlorpyrifos	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Coumaphos	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
delta-BHC	0.050 - 0.050	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Demeton	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Diazinon	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dichlorvos	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Disulfoton	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Endosulfan sulfate	0.050 - 0.050	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Endrin	0.050 - 0.050	0 / 5	--	--	--	--	0.036	--	--	-- / --	1.39	No	Not detected
Endrin aldehyde	0.050 - 0.050	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Endrin ketone	0.050 - 0.050	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Ethoprop	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Fensulfothion	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Ethyl p-nitrophenyl phenylphosphorothioate	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Fenthion	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
gamma-Chlordane	0.050 - 0.050	0 / 5	--	--	--	--	0.0043	--	--	-- / --	11.6	No	Not detected
Heptachlor	0.050 - 0.050	0 / 5	--	--	--	--	0.038	--	--	-- / --	1.32	No	Not detected
Heptachlor epoxide	0.050 - 0.050	0 / 5	--	--	--	--	0.0038	--	--	-- / --	13.2	No	Not detected
Malathion	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Merphos	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methoxychlor	0.050 - 0.050	0 / 5	--	--	--	--	0.030	--	--	-- / --	1.67	No	Not detected
Methyl parathion	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Mevinphos	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Monocrotophos	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Naled	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Parathion	0.40 - 0.40	0 / 5	--	--	--	--	0.013	--	--	-- / --	30.8	No	Not detected
Ronnel	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Sulfotepp	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Tetraethyl pyrophosphate (TEPP)	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Tokuthion (Prothiophos)	0.40 - 0.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Toxaphene	0.64 - 0.64	0 / 5	--	--	--	--	0.0020	--	--	-- / --	320	No	Not detected
Inorganics (UG/L)													
Aluminum	-- - --	5 / 5	173	IR74-HP-SW02-0-0_5-11D	173	Maximum Concentration	87.0	--	--	5 / 5	1.99	No	Low magnitude of exceedance
Barium	-- - --	5 / 5	5.59	IR74-HP-SW04-0-0_5-11D	5.31	95% Student's-t UCL	NSV	16,000	TCEQ, 2006	-- / --	3.32E-04	No	Supplemental HQ less than one
Cadmium	1.00 - 1.00	0 / 5	--	--	--	--	0.25	--	--	-- / --	4.00	No	Not detected
Calcium [3]	-- - --	5 / 5	13,500	IR74-HP-SW01-0-0_5-11D	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Chromium (hexavalent) (MG/L)	0.015 - 0.015	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Cobalt	5.00 - 5.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Copper	-- - --	5 / 5	50.3	IR74-HP-SW04-0-0_5-11D	50.3	Maximum Concentration	9.00	--	--	1 / 5	5.59	No	HQ less than one in filtered sample
Lead	10.0 - 10.0	1 / 5	3.02	IR74-HP-SW04-0-0_5-11D	--	--	2.50	--	--	1 / 5	1.21	No	Not detected in filtered sample
Magnesium [3]	-- - --	5 / 5	1,140	IR74-HP-SW04-0-0_5-11D	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Manganese	10.0 - 10.0	4 / 5	5.94	IR74-HP-SW02-0-0_5-11D	5.45	95% KM (t) UCL	NSV	120	TCEQ, 2006	-- / --	0.05	No	Supplemental HQ less than one
Potassium [3]	-- - --	5 / 5	1,030	IR74-HP-SW04-0-0_5-11D	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient

APPENDIX D
TABLE 11
Henderson Pond Surface Water Screen - Step 3
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Exposure Point Concentration (EPC)	EPC Basis[1]	Screening Value	Supplemental Screening Value	Supplemental Screening Value Source	Frequency of Exceedance[2]	EPC Hazard Quotient	Step 3 COPC?	Rationale[2]
Selenium	20.0 - 20.0	0 / 5	--	--	--	--	5.00	--	--	-- / --	4.00	No	Not detected
Silver	5.00 - 5.00	0 / 5	--	--	--	--	0.012	--	--	-- / --	417	No	Not detected
Sodium [3]	-- - --	5 / 5	4,930	IR74-HP-SW05-0-0_5-11D	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Thallium	10.0 - 10.0	0 / 5	--	--	--	--	4.00	--	--	-- / --	2.50	No	Not detected
Vanadium	-- - --	5 / 5	1.76	IR74-HP-SW04-0-0_5-11D	1.75	95% Student's-t UCL	NSV	--	--	-- / --	NSV	No	Not detected in filtered sample
Dissolved Inorganics (UG/L)													
Aluminum, Dissolved	-- - --	5 / 5	119	IR74-HP-SW03-0-0_5-11D	119	Maximum Concentration	87.0	--	--	5 / 5	1.37	No	Low magnitude of exceedance
Barium, Dissolved	-- - --	5 / 5	5.92	IR74-HP-SW04-0-0_5-11D	5.92	Maximum Concentration	NSV	16,000	TCEQ, 2006	-- / --	3.70E-04	No	Supplemental HQ less than one
Cadmium, Dissolved	1.00 - 1.00	0 / 5	--	--	--	--	0.25	--	--	-- / --	4.00	No	Not detected
Calcium, Dissolved [3]	-- - --	5 / 5	13,700	IR74-HP-SW04-0-0_5-11D	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Cobalt, Dissolved	5.00 - 5.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Lead, Dissolved	10.0 - 10.0	0 / 5	--	--	--	--	2.50	--	--	-- / --	4.00	No	Not detected
Magnesium, Dissolved [3]	-- - --	5 / 5	1,130	IR74-HP-SW04-0-0_5-11D	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Manganese, Dissolved	-- - --	5 / 5	5.03	IR74-HP-SW02-0-0_5-11D	4.11	95% Student's-t UCL	NSV	120	TCEQ, 2006	-- / --	0.03	No	Supplemental HQ less than one
Potassium, Dissolved [3]	-- - --	5 / 5	1,040	IR74-HP-SW04-0-0_5-11D	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Selenium, Dissolved	20.0 - 20.0	0 / 5	--	--	--	--	5.00	--	--	-- / --	4.00	No	Not detected
Silver, Dissolved	5.00 - 5.00	0 / 5	--	--	--	--	0.012	--	--	-- / --	417	No	Not detected
Sodium, Dissolved [3]	-- - --	5 / 5	4,940	IR74-HP-SW05-0-0_5-11D	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Thallium, Dissolved	10.0 - 10.0	0 / 5	--	--	--	--	4.00	--	--	-- / --	2.50	No	Not detected
Vanadium, Dissolved	5.00 - 5.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected

Notes:
1 - ProUCL Version 4 does not offer a calculated UCL when there are too few unique detected results (one or sometimes more than one).
In these instances, a 95% Chebyshev UCL using a proxy value of 1/2 the detection limit for NDs is calculated. The lower of the 95 UCL and the maximum concentration is selected.
2 - Count of detected samples exceeding or equaling Screening Value
3 - Macronutrient - Not considered to be a COPC
COPC - chemical of potential concern
EPC - Exposure Point Concentration
HQ - Hazard Quotient
mg/L - Milligrams per liter
NSV - No Screening Value
µg/L - micrograms per liter

APPENDIX D
TABLE 12
Hickory Pond Surface Water Screen - Step 3
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Exposure Point Concentration (EPC)	EPC Basis[1]	Screening Value	Supplemental Screening Value	Supplemental Screening Value Source	Frequency of Exceedance[2]	EPC Hazard Quotient	Step 3 COPC?	Rationale
Volatile Organic Compounds (UG/L)													
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,1-Dichloroethane	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,2-Dibromo-3-chloropropane	5.00 - 5.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,2-Dibromoethane	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Hexanone	2.50 - 2.50	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Acetone	-- - --	5 / 5	19.0	HICP-SW03-0-1-12B	--	--	NSV	--	--	-- / --	NSV	No	Common laboratory contaminant
Bromodichloromethane	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Carbon disulfide	5.00 - 5.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Chloroethane	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
cis-1,2-Dichloroethene	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Cyclohexane	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dibromochloromethane	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dichlorodifluoromethane (Freon-12)	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Isopropylbenzene	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
m- and p-Xylene	2.00 - 2.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methyl acetate	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methylcyclohexane	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methyl-tert-butyl ether (MTBE)	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
o-Xylene	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Styrene	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Trichloroethene	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Trichlorofluoromethane (Freon-11)	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Vinyl chloride	1.00 - 1.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Semivolatile Organic Compounds (UG/L)													
1,1-Biphenyl	9.00 - 9.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,4,5-Trichlorophenol	6.00 - 6.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,4-Dinitrotoluene	6.00 - 6.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,6-Dinitrotoluene	3.00 - 3.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Chloronaphthalene	3.00 - 3.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Methylnaphthalene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Methylphenol	3.00 - 3.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Nitroaniline	3.00 - 3.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
3- and 4-Methylphenol	6.00 - 6.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
3,3'-Dichlorobenzidine	6.00 - 6.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
3-Nitroaniline	3.00 - 3.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4,6-Dinitro-2-methylphenol	6.00 - 6.00	0 / 4	--	--	--	--	2.30	--	--	-- / --	2.61	No	Not detected
4-Chloro-3-methylphenol	6.00 - 6.00	0 / 4	--	--	--	--	0.30	--	--	-- / --	20.0	No	Not detected
4-Chloroaniline	6.00 - 6.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4-Chlorophenyl-phenylether	6.00 - 6.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4-Nitroaniline	3.00 - 3.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Acenaphthylene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Acetophenone	3.00 - 3.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Anthracene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Atrazine	3.00 - 3.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Benzaldehyde	6.00 - 6.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Benzo(a)anthracene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Benzo(a)pyrene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Benzo(b)fluoranthene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Benzo(g,h,i)perylene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Benzo(k)fluoranthene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
bis(2-Chloroethoxy)methane	6.00 - 6.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
bis(2-Chloroisopropyl)ether	6.00 - 6.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
bis(2-Ethylhexyl)phthalate	6.00 - 6.00	0 / 4	--	--	--	--	0.30	--	--	-- / --	20.0	No	Not detected
Caprolactam	3.00 - 3.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Carbazole	3.00 - 3.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Chrysene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dibenz(a,h)anthracene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dibenzofuran	3.00 - 3.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dimethoate	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Di-n-octylphthalate	6.00 - 6.00	1 / 5	3.50	HICP-SW05-0-1-12B	--	--	NSV	--	--	-- / --	NSV	No	Common laboratory contaminant
Fluorene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected

APPENDIX D
TABLE 12
Hickory Pond Surface Water Screen - Step 3
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Exposure Point Concentration (EPC)	EPC Basis[1]	Screening Value	Supplemental Screening Value	Supplemental Screening Value Source	Frequency of Exceedance[2]	EPC Hazard Quotient	Step 3 COPC?	Rationale
Hexachlorobenzene	3.00 - 3.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Hexachlorobutadiene	6.00 - 6.00	0 / 4	--	--	--	--	0.93	--	--	-- / --	6.45	No	Not detected
Hexachlorocyclopentadiene	6.00 - 6.00	0 / 4	--	--	--	--	0.070	--	--	-- / --	85.7	No	Not detected
Indeno(1,2,3-cd)pyrene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
n-Nitroso-di-n-propylamine	6.00 - 6.00	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Phenanthrene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Phorate	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Pyrene	0.080 - 0.080	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Pesticide/Polychlorinated Biphenyls (UG/L)													
4,4'-DDD	0.050 - 0.050	0 / 5	--	--	--	--	0.0064	--	--	-- / --	7.81	No	Not detected
4,4'-DDT	0.050 - 0.050	0 / 5	--	--	--	--	0.0010	--	--	-- / --	50.0	No	Not detected
alpha-Chlordane	0.050 - 0.050	0 / 5	--	--	--	--	0.0043	--	--	-- / --	11.6	No	Not detected
Total PCBs	0.50 - 0.50	0 / 5	--	--	--	--	0.014	--	--	-- / --	35.7	No	Not detected
Azinphos methyl	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Bolstar	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Chlorpyrifos	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Coumaphos	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
delta-BHC	0.050 - 0.050	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Demeton	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Diazinon	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dichlorvos	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Disulfoton	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Endosulfan sulfate	0.050 - 0.050	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Endrin	0.050 - 0.050	0 / 5	--	--	--	--	0.036	--	--	-- / --	1.39	No	Not detected
Endrin aldehyde	0.050 - 0.050	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Endrin ketone	0.050 - 0.050	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Ethoprop	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Fensulfothion	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Ethyl p-nitrophenyl phenylphosphorothioate	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Fenthion	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
gamma-Chlordane	0.050 - 0.050	0 / 5	--	--	--	--	0.0043	--	--	-- / --	11.6	No	Not detected
Heptachlor	0.050 - 0.050	0 / 5	--	--	--	--	0.038	--	--	-- / --	1.32	No	Not detected
Heptachlor epoxide	0.050 - 0.050	0 / 5	--	--	--	--	0.0038	--	--	-- / --	13.2	No	Not detected
Malathion	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Merphos	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methoxychlor	0.050 - 0.050	0 / 5	--	--	--	--	0.030	--	--	-- / --	1.67	No	Not detected
Methyl parathion	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Mevinphos	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Naled	9.50 - 9.50	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Parathion	3.00 - 3.00	0 / 5	--	--	--	--	0.013	--	--	-- / --	231	No	Not detected
Ronnel	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Sulfotepp	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Tetraethyl pyrophosphate (TEPP)	4.50 - 4.50	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Tetrachlorovinphos	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Tokuthion (Prothiophos)	3.00 - 3.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Toxaphene	0.64 - 0.64	0 / 5	--	--	--	--	0.0020	--	--	-- / --	320	No	Not detected
Inorganics (UG/L)													
Aluminum	-- - --	5 / 5	623	HICP-SW03-0-1-12B	488	95% Student's-t UCL	87.0	--	--	5 / 5	5.61	No	Low magnitude of exceedance based on dissolved.
Barium	-- - --	5 / 5	31.8	HICP-SW03-0-1-12B	31.2	95% Student's-t UCL	NSV	16,000	TCEQ, 2006	-- / --	0.002	No	Supplemental HQ less than one
Cadmium	1.00 - 1.00	0 / 5	--	--	--	--	0.25	--	--	-- / --	4.00	No	Not detected
Calcium [3]	-- - --	5 / 5	6,770	HICP-SW02-0-1-12B	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Chromium (hexavalent)	15.0 - 15.0	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Cobalt	5.00 - 5.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Lead	20.0 - 20.0	0 / 5	--	--	--	--	2.50	--	--	-- / --	8.00	No	Not detected
Magnesium [3]	-- - --	5 / 5	1,630	HICP-SW04-0-1-12B	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Manganese	-- - --	5 / 5	13.9	HICP-SW01-0-1-12B	13.6	95% Student's-t UCL	NSV	120	TCEQ, 2006	-- / --	0.11	No	Supplemental HQ less than one; Not detected in filtered sample
Potassium [3]	-- - --	5 / 5	877	HICP-SW01-0-1-12B	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Selenium	20.0 - 20.0	0 / 5	--	--	--	--	5.00	--	--	-- / --	4.00	No	Not detected
Silver	5.00 - 5.00	0 / 5	--	--	--	--	0.012	--	--	-- / --	417	No	Not detected

APPENDIX D
TABLE 12
Hickory Pond Surface Water Screen - Step 3
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Exposure Point Concentration (EPC)	EPC Basis[1]	Screening Value	Supplemental Screening Value	Supplemental Screening Value Source	Frequency of Exceedance[2]	EPC Hazard Quotient	Step 3 COPC?	Rationale
Sodium [3]	-- - --	5 / 5	6,830	HICP-SW04-0-1-12B	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Thallium	20.0 - 20.0	0 / 5	--	--	--	--	4.00	--	--	-- / --	5.00	No	Not detected
Vanadium	-- - --	5 / 5	1.91	HICP-SW03-0-1-12B	1.76	95% Student's-t UCL	NSV	20	TCEQ, 2006	-- / --	0.09	No	Supplemental HQ less than one
Dissolved Metals (UG/L)													
Aluminum, Dissolved	-- - --	5 / 5	102	HICP-SW03-0-1-12B	98.2	95% Student's-t UCL	87.0	--	--	2 / 5	1.13	No	Low magnitude of exceedance
Barium, Dissolved	25.2 - 26.3	1 / 5	27.5	HICP-SW01-0-1-12B	27.5	Maximum Concentration	NSV	16,000	TCEQ, 2006	-- / --	0.002	No	Supplemental HQ less than one
Cadmium, Dissolved	1.00 - 1.00	0 / 5	--	--	--	--	0.25	--	--	-- / --	4.00	No	Not detected
Calcium, Dissolved [3]	-- - --	5 / 5	6,570	HICP-SW01-0-1-12B	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Cobalt, Dissolved	5.00 - 5.00	1 / 5	0.39	HICP-SW02-0-1-12B	0.386	Maximum Concentration	NSV	1,500	TCEQ, 2006	-- / --	2.57E-04	No	Supplemental HQ less than one
Lead, Dissolved	20.0 - 20.0	0 / 5	--	--	--	--	2.50	--	--	-- / --	8.00	No	Not detected
Magnesium, Dissolved [3]	-- - --	5 / 5	1,580	HICP-SW01-0-1-12B	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Manganese, Dissolved	10.0 - 10.0	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Potassium, Dissolved [3]	-- - --	5 / 5	755	HICP-SW01-0-1-12B	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Selenium, Dissolved	20.0 - 20.0	0 / 5	--	--	--	--	5.00	--	--	-- / --	4.00	No	Not detected
Silver, Dissolved	5.00 - 5.00	0 / 5	--	--	--	--	0.012	--	--	-- / --	417	No	Not detected
Sodium, Dissolved [3]	-- - --	5 / 5	6,930	HICP-SW01-0-1-12B	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Thallium, Dissolved	20.0 - 20.0	0 / 5	--	--	--	--	4.00	--	--	-- / --	5.00	No	Not detected
Vanadium, Dissolved	-- - --	5 / 5	0.93	HICP-SW03-0-1-12B	0.831	95% Student's-t UCL	NSV	20	TCEQ, 2006	-- / --	0.04	No	Supplemental HQ less than one

NOTES
1 - ProUCL Version 4 does not offer a calculated UCL when there are too few unique detected results (one or sometimes more than one).
In these instances, a 95% Chebyshev UCL using a proxy value of 1/2 the detection limit for NDs is calculated. The lower of the 95 UCL and the maximum concentration is selected.
2 - Count of detected samples exceeding or equaling Screening Value
3 - Macronutrient - Not considered to be a COPC
COPC - chemical of potential concern
EPC - Exposure Point Concentration
HQ - Hazard Quotient
mg/L - Milligrams per liter
NSV - No Screening Value
µg/L - micrograms per liter

APPENDIX D
TABLE 13
Henderson Pond Sediment Screen - Step 3
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Exposure Point Concentration (EPC)	EPC Basis[1]	Screening Value	Supplemental Screening Value	Supplemental Screening Value Source	Frequency of Exceedance[2]	EPC Hazard Quotient	Step 3 COPC?	Rationale
Volatile Organic Compounds (UG/KG)													
1,1,1-Trichloroethane	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,1,2,2-Tetrachloroethane	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,1,2-Trichloroethane	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,1-Dichloroethane	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,1-Dichloroethene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,2,4-Trichlorobenzene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,2-Dibromo-3-chloropropane	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,2-Dibromoethane	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,2-Dichlorobenzene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,2-Dichloroethane	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,2-Dichloropropane	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,3-Dichlorobenzene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,4-Dichlorobenzene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Butanone	3.80 - 11.0	3 / 5	38.0	IR74-HP-SD03-0-0_5-11D	--	--	NSV	--	--	-- / --	NSV	No	Common laboratory contaminant
2-Hexanone	3.80 - 15.0	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Acetone	19.0 - 19.0	4 / 5	150	IR74-HP-SD05-0-0_5-11D	--	--	NSV	--	--	-- / --	NSV	No	Common laboratory contaminant
Benzene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Bromodichloromethane	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Bromoform	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Bromomethane	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Carbon disulfide	7.50 - 29.0	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Carbon tetrachloride	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Chlorobenzene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Chloroethane	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Chloroform	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Chloromethane	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
cis-1,2-Dichloroethene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
cis-1,3-Dichloropropene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Cyclohexane	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dibromochloromethane	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dichlorodifluoromethane (Freon-12)	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Ethylbenzene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Isopropylbenzene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
m- and p-Xylene	3.00 - 12.0	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methyl acetate	7.50 - 29.0	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methylcyclohexane	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methylene chloride	7.50 - 29.0	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methyl-tert-butyl ether (MTBE)	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
o-Xylene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Styrene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Tetrachloroethene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Toluene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
trans-1,2-Dichloroethene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
trans-1,3-Dichloropropene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Trichloroethene	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Trichlorofluoromethane (Freon-11)	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Vinyl chloride	1.50 - 5.80	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected

APPENDIX D
TABLE 13
Henderson Pond Sediment Screen - Step 3
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Exposure Point Concentration (EPC)	EPC Basis[1]	Screening Value	Supplemental Screening Value	Supplemental Screening Value Source	Frequency of Exceedance[2]	EPC Hazard Quotient	Step 3 COPC?	Rationale
Semivolatile Organic Compounds (UG/KG)													
1,1-Biphenyl	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,4,5-Trichlorophenol	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,4,6-Trichlorophenol	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,4-Dichlorophenol	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,4-Dimethylphenol	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,4-Dinitrophenol	970 - 2,300	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,4-Dinitrotoluene	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,6-Dinitrotoluene	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Chloronaphthalene	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Chlorophenol	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Methylnaphthalene	48.0 - 100	0 / 5	--	--	--	--	20.2	--	--	-- / --	4.94	No	Not detected
2-Methylphenol	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Nitroaniline	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Nitrophenol	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
3- and 4-Methylphenol	390 - 1,600	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
3,3'-Dichlorobenzidine	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
3-Nitroaniline	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4,6-Dinitro-2-methylphenol	580 - 2,300	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4-Bromophenyl-phenylether	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4-Chloro-3-methylphenol	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4-Chloroaniline	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4-Chlorophenyl-phenylether	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4-Nitroaniline	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4-Nitrophenol	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Acenaphthene	48.0 - 100	0 / 5	--	--	--	--	6.71	--	--	-- / --	14.9	No	Not detected
Acenaphthylene	48.0 - 100	0 / 5	--	--	--	--	5.87	--	--	-- / --	17.0	No	Not detected
Acetophenone	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Anthracene	48.0 - 100	0 / 5	--	--	--	--	46.9	--	--	-- / --	2.13	No	Not detected
Atrazine	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Benzaldehyde	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Benzo(a)anthracene	48.0 - 100	0 / 5	--	--	--	--	74.8	--	--	-- / --	1.34	No	Not detected
Benzo(a)pyrene	48.0 - 100	0 / 5	--	--	--	--	88.8	--	--	-- / --	1.13	No	Not detected
Benzo(b)fluoranthene	48.0 - 100	0 / 5	--	--	--	--	655	--	--	-- / --	0.15	No	Not detected
Benzo(g,h,i)perylene	48.0 - 100	0 / 5	--	--	--	--	655	--	--	-- / --	0.15	No	Not detected
Benzo(k)fluoranthene	48.0 - 100	0 / 5	--	--	--	--	655	--	--	-- / --	0.15	No	Not detected
bis(2-Chloroethoxy)methane	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
bis(2-Chloroethyl)ether	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
bis(2-Chloroisopropyl)ether	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
bis(2-Ethylhexyl)phthalate	190 - 780	1 / 5	550	IR74-HP-SD05-0-0_5-11D	--	--	NSV	--	--	-- / --	NSV	No	Common laboratory contaminant
Butylbenzylphthalate	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Caprolactam	390 - 1,600	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Carbazole	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dibenz(a,h)anthracene	48.0 - 100	0 / 5	--	--	--	--	6.22	--	--	-- / --	16.1	No	Not detected
Dibenzofuran	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Diethylphthalate	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dimethoate	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dimethyl phthalate	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Di-n-butylphthalate	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Di-n-octylphthalate	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Fluorene	48.0 - 100	0 / 5	--	--	--	--	21.2	--	--	-- / --	4.72	No	Not detected
Hexachlorobenzene	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Hexachlorobutadiene	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Hexachlorocyclopentadiene	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Hexachloroethane	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Isophorone	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Naphthalene	48.0 - 100	0 / 5	--	--	--	--	34.6	--	--	-- / --	2.89	No	Not detected
n-Nitroso-di-n-propylamine	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
n-Nitrosodiphenylamine	390 - 1,600	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Nitrobenzene	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Pentachlorophenol	580 - 2,300	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Phenanthrene	48.0 - 100	0 / 5	--	--	--	--	86.7	--	--	-- / --	1.15	No	Not detected

APPENDIX D
TABLE 13
Henderson Pond Sediment Screen - Step 3
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Exposure Point Concentration (EPC)	EPC Basis[1]	Screening Value	Supplemental Screening Value	Supplemental Screening Value Source	Frequency of Exceedance[2]	EPC Hazard Quotient	Step 3 COPC?	Rationale
Phenol	190 - 780	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Phorate	78.0 - 370	1 / 5	190	IR74-HP-SD04-0-0_5-11D	190	Maximum Concentration	NSV	201	EPA, 2006	-- / --	0.95	No	Supplemental HQ less than one
Pesticide/Polychlorinated Biphenyls (UG/KG)													
4,4'-DDD	1.90 - 4.00	0 / 5	--	--	--	--	1.22	--	--	-- / --	3.28	No	Not detected
4,4'-DDE	1.60 - 2.00	11 / 15	15.0	HENP-SD02-0-0_5-12B	8.39	95% KM (t) UCL	2.07	--	--	11 / 15	4.05	No	See text for discussion.
4,4'-DDT	1.60 - 4.00	6 / 15	78.0	IR74-HP-SD04-0-0_5-11D	25.3	95% KM (t) UCL	1.19	--	--	6 / 15	21.26	No	See text for discussion.
Aldrin	1.90 - 4.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
alpha-BHC	1.90 - 4.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
alpha-Chlordane	1.90 - 4.00	0 / 5	--	--	--	--	0.50	--	--	-- / --	8.00	No	Not detected
Total PCBs	17.0 - 80.0	-- / --	240	IR74-HP-SD01-0-0_5-11D	117	95% KM (t) UCL	21.6	--	--	-- / --	5.42	No	See text for discussion.
Azinphos methyl	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
beta-BHC	1.90 - 4.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Bolstar	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Chlorpyrifos	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Coumaphos	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
delta-BHC	1.90 - 4.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Demeton	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Diazinon	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dichlorvos	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dieldrin	1.90 - 4.00	0 / 5	--	--	--	--	0.020	--	--	-- / --	200	No	Not detected
Disulfoton	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Endosulfan I	1.90 - 4.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Endosulfan II	1.90 - 4.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Endosulfan sulfate	1.90 - 4.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Endrin	1.90 - 4.00	0 / 5	--	--	--	--	0.020	--	--	-- / --	200	No	Not detected
Endrin aldehyde	1.90 - 4.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Endrin ketone	1.90 - 4.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Ethoprop	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Fensulfothion	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Ethyl p-nitrophenyl phenylphosphorothioate	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Fenthion	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
gamma-BHC (Lindane)	1.90 - 4.00	0 / 5	--	--	--	--	0.32	--	--	-- / --	12.5	No	Not detected
gamma-Chlordane	1.90 - 4.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Heptachlor	1.90 - 4.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Heptachlor epoxide	1.90 - 4.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Malathion	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Merphos	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methoxychlor	1.90 - 4.00	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methyl parathion	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Mevinphos	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Monocrotophos	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Naled	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Parathion	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Ronnel	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Sulfotepp	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Tetrachlorovinphos	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Tetraethyl pyrophosphate (TEPP)	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Tokuthion (Prothiophos)	78.0 - 370	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Toxaphene	39.0 - 80.0	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Inorganics (MG/KG)													
Aluminum	-- - --	5 / 5	16,300	IR74-HP-SD01-0-0_5-11D	15100	95% Student's-t UCL	NSV	25,500	Ingersoll et al., 1996	-- / --	0.59	No	Supplemental HQ less than one
Barium	-- - --	15 / 15	85.7	HENP-SD08-0-0_5-12B	49.6	95% Student's-t UCL	NSV	189	TNRCC, 1996	-- / --	0.26	No	Supplemental HQ less than one
Beryllium	-- - --	5 / 5	0.46	IR74-HP-SD01-0-0_5-11D	0.433	95% Student's-t UCL	NSV	--	--	-- / --	NSV	No	Uncertainty, no screening value
Calcium [3]	-- - --	5 / 5	5,700	IR74-HP-SD02-0-0_5-11D	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Chromium (hexavalent)	0.65 - 1.90	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Cobalt	-- - --	5 / 5	2.65	IR74-HP-SD01-0-0_5-11D	2.23	95% Student's-t UCL	NSV	50,000	TCEQ, 2006	-- / --	4.46E-05	No	Supplemental HQ less than one
Copper	-- - --	15 / 15	78.3	IR74-HP-SD02-0-0_5-11D	35	95% Approximate Gamma UCL	18.7	--	--	4 / 15	1.87	No	Low magnitude of exceedance
Iron	-- - --	5 / 5	7,580	IR74-HP-SD01-0-0_5-11D	7320	95% Student's-t UCL	NSV	20,000	Persaud et al., 1993	-- / --	0.37	No	Supplemental HQ less than one
Lead	-- - --	5 / 5	31.9	IR74-HP-SD01-0-0_5-11D	30.8	95% Student's-t UCL	30.2	--	--	1 / 5	1.02	No	Low magnitude of exceedance
Magnesium [3]	-- - --	5 / 5	1,870	IR74-HP-SD04-0-0_5-11D	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Manganese	-- - --	5 / 5	23.6	IR74-HP-SD03-0-0_5-11D	23.5	95% Student's-t UCL	NSV	460	RMUS, 2009	-- / --	0.05	No	Supplemental HQ less than one

APPENDIX D
TABLE 13
Henderson Pond Sediment Screen - Step 3
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Exposure Point Concentration (EPC)	EPC Basis[1]	Screening Value	Supplemental Screening Value	Supplemental Screening Value Source	Frequency of Exceedance[2]	EPC Hazard Quotient	Step 3 COPC?	Rationale
Potassium [3]	-- - --	5 / 5	533	IR74-HP-SD01-0-0_5-11D	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Selenium	3.27 - 5.26	1 / 5	1.36	IR74-HP-SD01-0-0_5-11D	1.36	Maximum Concentration	NSV	2	USEPA, 2006	-- / --	0.68	No	Supplemental HQ less than one
Sodium [3]	20.6 - 69.3	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Thallium	1.64 - 2.63	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Vanadium	-- - --	5 / 5	30.8	IR74-HP-SD01-0-0_5-11D	28	95% Student's-t UCL	NSV	50	RMUS, 2009	-- / --	0.56	No	Supplemental HQ less than one

Notes:
1 - ProUCL Version 4 does not offer a calculated UCL when there are too few unique detected results (one or sometimes more than one).
In these instances, a 95% Chebyshev UCL using a proxy value of 1/2 the detection limit for NDs is calculated. The lower of the 95 UCL and the maximum concentration is selected.
2 - Count of detected samples exceeding or equaling Screening Value
3 - Macronutrient - Not considered to be a COPC
COPC - chemical of potential concern
EPC - Exposure Point Concentration
HQ - Hazard Quotient
mg/kg - Milligrams per kilogram
NSV - No Screening Value
µg/kg - micrograms per kilogram

APPENDIX D
TABLE 14
Hickory Pond Sediment Screen - Step 3
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Exposure Point Concentration (EPC)	EPC Basis[1]	Screening Value	Supplemental Screening Value	Supplemental Screening Value Source	Frequency of Exceedance[2]	EPC Hazard Quotient	Step 3 COPC?	Rationale
Volatile Organic Compounds (UG/KG)													
1,1,1-Trichloroethane	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,1,2,2-Tetrachloroethane	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,1,2-Trichloroethane	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,1-Dichloroethane	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,1-Dichloroethene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,2,4-Trichlorobenzene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,2-Dibromo-3-chloropropane	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,2-Dibromoethane	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,2-Dichlorobenzene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,2-Dichloroethane	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,2-Dichloropropane	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,3-Dichlorobenzene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
1,4-Dichlorobenzene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Butanone	-- - --	5 / 5	40.0	HICP-SD02-0-0_5-12B	--	--	NSV	--	--	-- / --	NSV	No	Common laboratory contaminant
2-Hexanone	2.60 - 6.40	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Acetone	-- - --	5 / 5	180	HICP-SD02-0-0_5-12B	--	--	NSV	--	--	-- / --	NSV	No	Common laboratory contaminant
Benzene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Bromodichloromethane	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Bromoform	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Bromomethane	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Carbon disulfide	5.30 - 13.0	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Carbon tetrachloride	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Chlorobenzene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Chloroethane	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Chloroform	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Chloromethane	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
cis-1,2-Dichloroethene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
cis-1,3-Dichloropropene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Cyclohexane	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dibromochloromethane	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dichlorodifluoromethane (Freon-12)	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Ethylbenzene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Isopropylbenzene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
m- and p-Xylene	2.10 - 5.10	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methyl acetate	5.30 - 13.0	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methylcyclohexane	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methylene chloride	5.30 - 13.0	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methyl-tert-butyl ether (MTBE)	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
o-Xylene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Styrene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Tetrachloroethene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Toluene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
trans-1,2-Dichloroethene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
trans-1,3-Dichloropropene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Trichloroethene	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Trichlorofluoromethane (Freon-11)	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Vinyl chloride	1.10 - 2.60	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Semivolatile Organic Compounds (UG/KG)													
1,1-Biphenyl	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,4,5-Trichlorophenol	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,4,6-Trichlorophenol	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,4-Dichlorophenol	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,4-Dimethylphenol	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,4-Dinitrotoluene	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2,6-Dinitrotoluene	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Chloronaphthalene	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Chlorophenol	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Methylnaphthalene	32.0 - 51.0	0 / 5	--	--	--	--	20.2	--	--	-- / --	2.52	No	Not detected
2-Methylphenol	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
2-Nitroaniline	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected

APPENDIX D
TABLE 14
Hickory Pond Sediment Screen - Step 3
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Exposure Point Concentration (EPC)	EPC Basis[1]	Screening Value	Supplemental Screening Value	Supplemental Screening Value Source	Frequency of Exceedance[2]	EPC Hazard Quotient	Step 3 COPC?	Rationale
2-Nitrophenol	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
3- and 4-Methylphenol	250 - 410	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
3,3'-Dichlorobenzidine	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
3-Nitroaniline	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4,6-Dinitro-2-methylphenol	380 - 620	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4-Bromophenyl-phenylether	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4-Chloro-3-methylphenol	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4-Chloroaniline	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4-Chlorophenyl-phenylether	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4-Nitroaniline	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
4-Nitrophenol	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Acenaphthene	32.0 - 51.0	0 / 5	--	--	--	--	6.71	--	--	-- / --	7.60	No	Not detected
Acenaphthylene	32.0 - 51.0	0 / 5	--	--	--	--	5.87	--	--	-- / --	8.69	No	Not detected
Acetophenone	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Anthracene	32.0 - 51.0	0 / 5	--	--	--	--	46.9	--	--	-- / --	1.09	No	Not detected
Atrazine	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Benzaldehyde	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
bis(2-Chloroethoxy)methane	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
bis(2-Chloroethyl)ether	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
bis(2-Chloroisopropyl)ether	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
bis(2-Ethylhexyl)phthalate	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Butylbenzylphthalate	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Caprolactam	250 - 410	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Carbazole	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dibenz(a,h)anthracene	32.0 - 51.0	0 / 5	--	--	--	--	6.22	--	--	-- / --	8.20	No	Not detected
Dibenzofuran	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Diethylphthalate	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dimethoate	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dimethyl phthalate	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Di-n-butylphthalate	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Di-n-octylphthalate	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Fluorene	32.0 - 51.0	0 / 5	--	--	--	--	21.2	--	--	-- / --	2.41	No	Not detected
Hexachlorobenzene	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Hexachlorobutadiene	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Hexachlorocyclopentadiene	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Hexachloroethane	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Isophorone	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Naphthalene	32.0 - 51.0	0 / 5	--	--	--	--	34.6	--	--	-- / --	1.47	No	Not detected
n-Nitroso-di-n-propylamine	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
n-Nitrosodiphenylamine	250 - 410	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Nitrobenzene	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Pentachlorophenol	380 - 620	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Phenol	130 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Phorate	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Pesticide/Polychlorinated Biphenyls (UG/KG)													
4,4'-DDD	1.40 - 2.10	1 / 5	6.70	HICP-SD05-0-0_5-12B	6.70	Maximum Concentration	1.22	--	--	1 / 5	5.49	No	See text for discussion
4,4'-DDE	1.40 - 2.00	3 / 5	7.60	HICP-SD05-0-0_5-12B	5.61	95% KM (t) UCL	2.07	--	--	1 / 5	2.71	No	See text for discussion
4,4'-DDT	1.30 - 2.10	0 / 5	--	--	--	--	1.19	--	--	-- / --	1.76	No	Not detected
Aldrin	1.30 - 2.10	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
alpha-BHC	1.30 - 2.10	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
alpha-Chlordane	1.30 - 2.10	0 / 5	--	--	--	--	0.50	--	--	-- / --	4.20	No	Not detected
Total PCBs	13.0 - 41.0	0 / 5	--	--	--	--	21.6	--	--	-- / --	1.90	No	Not detected
Azinphos methyl	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
beta-BHC	1.30 - 2.10	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Bolstar	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Chlorpyrifos	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Coumaphos	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
delta-BHC	1.30 - 2.10	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Demeton	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Diazinon	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dichlorvos	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Dieldrin	1.30 - 2.10	0 / 5	--	--	--	--	0.020	--	--	-- / --	105	No	Not detected

APPENDIX D
TABLE 14
Hickory Pond Sediment Screen - Step 3
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Exposure Point Concentration (EPC)	EPC Basis[1]	Screening Value	Supplemental Screening Value	Supplemental Screening Value Source	Frequency of Exceedance[2]	EPC Hazard Quotient	Step 3 COPC?	Rationale
Disulfoton	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Endosulfan I	1.30 - 2.10	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Endosulfan II	1.30 - 2.10	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Endosulfan sulfate	1.30 - 2.10	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Endrin	1.30 - 2.10	0 / 5	--	--	--	--	0.020	--	--	-- / --	105	No	Not detected
Endrin aldehyde	1.30 - 2.10	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Endrin ketone	1.30 - 2.10	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Ethoprop	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Fensulfothion	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Ethyl p-nitrophenyl phenylphosphorothioate	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Fenthion	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
gamma-BHC (Lindane)	1.30 - 2.10	0 / 5	--	--	--	--	0.32	--	--	-- / --	6.56	No	Not detected
gamma-Chlordane	1.30 - 2.10	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Heptachlor	1.30 - 2.10	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Heptachlor epoxide	1.30 - 2.10	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Malathion	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Merphos	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methoxychlor	1.30 - 2.10	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Methyl parathion	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Mevinphos	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Naled	210 - 340	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Parathion	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Ronnel	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Sulfotepp	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Tetraethyl pyrophosphate (TEPP)	420 - 680	0 / 4	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Tetrachlorvinphos	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Tokuthion (Prothiophos)	33.0 - 210	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Toxaphene	25.0 - 82.0	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Inorganics (MG/KG)													
Aluminum	-- - --	5 / 5	6,120	HICP-SD03-0-0_5-12B	5920	95% Student's-t UCL	NSV	25,500	Ingersoll et al., 1996	-- / --	0.23	No	Supplemental HQ less than one
Antimony	1.56 - 2.01	0 / 5	--	--	--	--	2.00	--	--	-- / --	1.01	No	Not detected
Barium	-- - --	5 / 5	37.3	HICP-SD01-0-0_5-12B	34.1	95% Student's-t UCL	NSV	189	TNRCC, 1996	-- / --	0.18	No	Low magnitude of exceedance
Beryllium	-- - --	5 / 5	0.27	HICP-SD02-0-0_5-12B	0.246	95% Student's-t UCL	NSV	--	--	-- / --	NSV	No	Uncertainty, no screening value
Calcium [3]	-- - --	5 / 5	1,040	HICP-SD02-0-0_5-12B	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Chromium (hexavalent)	0.25 - 1.60	1 / 5	0.24	HICP-SD01-0-0_5-12B	0.24	Maximum Concentration	NSV	--	--	-- / --	NSV	No	Uncertainty, no screening value
Cobalt	0.39 - 0.39	4 / 5	0.65	HICP-SD02-0-0_5-12B	0.623	95% KM (t) UCL	NSV	50,000	TCEQ, 2006	-- / --	1.25E-05	No	Supplemental HQ less than one
Iron	-- - --	5 / 5	2,730	HICP-SD03-0-0_5-12B	2730	Maximum Concentration	NSV	20,000	Persaud et al., 1993	-- / --	0.14	No	Supplemental HQ less than one
Magnesium [3]	-- - --	5 / 5	227	HICP-SD04-0-0_5-12B	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Manganese	-- - --	5 / 5	9.43	HICP-SD03-0-0_5-12B	8.46	95% Student's-t UCL	NSV	460	RMUS, 2009	-- / --	0.02	No	Supplemental HQ less than one
Potassium [3]	-- - --	5 / 5	186	HICP-SD04-0-0_5-12B	--	--	NSV	--	--	-- / --	NSV	No	Macronutrient
Selenium	1.56 - 1.56	4 / 5	0.81	HICP-SD01-0-0_5-12B	0.797	95% KM (t) UCL	NSV	2	USEPA, 2006	-- / --	0.40	No	Supplemental HQ less than one
Sodium [3]	19.5 - 29.6	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Thallium	1.56 - 2.01	0 / 5	--	--	--	--	NSV	--	--	-- / --	NSV	No	Not detected
Vanadium	-- - --	5 / 5	8.62	HICP-SD01-0-0_5-12B	8.62	Maximum Concentration	NSV	50	RMUS, 2009	-- / --	0.17	No	Supplemental HQ less than one

Notes:
1 - ProUCL Version 4 does not offer a calculated UCL when there are too few unique detected results (one or sometimes more than one).
In these instances, a 95% Chebyshev UCL using a proxy value of 1/2 the detection limit for NDs is calculated. The lower of the 95 UCL and the maximum concentration is selected.
2 - Count of detected samples exceeding or equaling Screening Value
3 - Macronutrient - Not considered to be a COPC
COPC - chemical of potential concern
EPC - Exposure Point Concentration
HQ - Hazard Quotient
mg/kg - Milligrams per kilogram
NSV - No Screening Value
µg/kg - micrograms per kilogram

APPENDIX D
TABLE 15
Whole Body Concentrations - Henderson Pond
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)
Species -->		**Carp**				**Bass**				**Sunfish**				**Catfish**			
Location/Area -->		**HENP-TI01/Henderson Pond Area 1 and HENP-TI03/ Henderson Pond Area 2**				**HENP-TI02/Henderson Pond Area 1**				**HENP-TI02/Henderson Pond Area 1**				**HENP-TI02/Henderson Pond Area 1**			
Moisture Content -->	**%**				**77.95**				**75.95**				**75.85**				**79.8**
Sample -->		**HENP-FS-CP01-F-12B**	**HENP-FS-CP01-O-12B**	**Calculated**	**Calculated**	**HENP-FS-B03-F-12B**	**HENP-FS-B03-O-12B**	**Calculated**	**Calculated**	**HENP-FS-S01-F-12B**	**HENP-FS-S01-O-12B**	**Calculated**	**Calculated**	**HENP-FS-C02-F-12B**	**HENP-FS-C02-O-12B**	**Calculated**	**Calculated**
4,4'-DDE	ug/kg	1.1	14.0	9.4	42.8	0.8	7.2	5.0	20.7	0.0	7.2	4.7	19.4	4.9	38.0	26.4	130.8
4,4'-DDT	ug/kg	0.0	21.0	13.6	61.5	6.7	18.0	14.0	58.4	0.0	15.0	9.8	40.4	13.0	65.0	46.8	231.7
Polychlorinated biphenyls (PCBs)	ug/kg	13.2	606.0	395.9	1795.4	69.7	677.0	464.4	1931.2	8.6	220.0	146.0	604.6	236.0	1010.0	739.1	3658.9
2,2',3-Trichlorobiphenyl (16)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',4-Trichlorobiphenyl (17)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,4'-Trichlorobiphenyl (22)	pg/g	1.8	0.0	0.7	3.0	4.0	0.0	1.4	5.9	1.8	0.0	0.6	2.6	0.0	0.0	0.0	0.0
2,3',4-Trichlorobiphenyl (25)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3',6-Trichlorobiphenyl (27)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,4',5-Trichlorobiphenyl (31)	pg/g	3.1	0.0	1.1	5.0	6.7	0.0	2.3	9.7	3.0	0.0	1.1	4.4	0.0	0.0	0.0	0.0
2,4',6-Trichlorobiphenyl (32)	pg/g	0.0	0.0	0.0	0.0	0.7	0.0	0.2	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3,4,4'-Trichlorobiphenyl (37)	pg/g	0.0	0.0	0.0	0.0	8.0	0.0	2.8	11.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,4-Tetrachlorobiphenyl (41)	pg/g	0.0	0.0	0.0	0.0	1.5	0.0	0.5	2.2	0.7	0.0	0.3	1.1	0.0	0.0	0.0	0.0
2,2',3,4'-Tetrachlorobiphenyl (42)	pg/g	1.0	0.0	0.3	1.6	1.9	0.0	0.7	2.8	1.2	0.0	0.4	1.7	0.0	0.0	0.0	0.0
2,2',3,5-Tetrachlorobiphenyl (43)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,6'-Tetrachlorobiphenyl (46)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',4,5-Tetrachlorobiphenyl (48)	pg/g	0.7	0.0	0.2	1.1	1.8	0.0	0.6	2.6	1.0	0.0	0.3	1.4	0.0	0.0	0.0	0.0
2,2',5,5'-Tetrachlorobiphenyl (52)	pg/g	0.0	0.0	0.0	0.0	8.6	0.0	3.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,3',4-Tetrachlorobiphenyl (55)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,3',4'-Tetrachlorobiphenyl (56)	pg/g	2.8	0.0	1.0	4.4	5.9	0.0	2.1	8.5	3.7	13.1	9.8	40.7	0.0	0.0	0.0	0.0
2,3,3',5-Tetrachlorobiphenyl (57)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,3',5'-Tetrachlorobiphenyl (58)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,4,4'-Tetrachlorobiphenyl (60)	pg/g	1.6	0.0	0.6	2.5	3.6	0.0	1.3	5.3	2.0	0.0	0.7	2.9	0.0	0.0	0.0	0.0
2,3,4',5-Tetrachlorobiphenyl (63)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,4',6-Tetrachlorobiphenyl (64)	pg/g	1.7	0.0	0.6	2.7	3.2	0.0	1.1	4.6	1.6	0.0	0.6	2.3	6.6	0.0	2.3	11.5
2,3',4,4'-Tetrachlorobiphenyl (66)	pg/g	0.0	0.0	0.0	0.0	17.9	0.0	6.3	26.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3',4,5-Tetrachlorobiphenyl (67)	pg/g	0.0	0.0	0.0	0.0	0.8	0.0	0.3	1.1	0.7	0.0	0.2	1.0	0.0	0.0	0.0	0.0
2,3',4,5'-Tetrachlorobiphenyl (68)	pg/g	0.0	0.0	0.0	0.0	1.2	0.0	0.4	1.7	0.6	7.2	4.9	20.4	0.0	0.0	0.0	0.0
2,3',5,5'-Tetrachlorobiphenyl (72)	pg/g	0.0	0.0	0.0	0.0	1.4	0.0	0.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3,3',4,4'-Tetrachlorobiphenyl (77)	pg/g	0.9	0.0	0.3	1.4	1.5	0.0	0.5	2.2	1.0	8.6	5.9	24.6	0.0	0.0	0.0	0.0
3,3',4,5'-Tetrachlorobiphenyl (79)	pg/g	0.0	0.0	0.0	0.0	1.3	0.0	0.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,3',4-Pentachlorobiphenyl (82)	pg/g	1.5	0.0	0.5	2.4	2.9	0.0	1.0	4.2	1.0	8.5	5.9	24.2	0.0	0.0	0.0	0.0
2,2',3,3',5-Pentachlorobiphenyl (83)	pg/g	1.9	126.0	82.0	372.0	5.0	61.2	41.5	172.7	0.9	25.8	17.1	70.7	0.0	0.0	0.0	0.0
2,2',3,3',6-Pentachlorobiphenyl (84)	pg/g	2.6	0.0	0.9	4.2	2.5	0.0	0.9	3.6	1.8	14.1	9.8	40.5	0.0	0.0	0.0	0.0
2,2',3,4,6'-Pentachlorobiphenyl (89)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,5,5'-Pentachlorobiphenyl (92)	pg/g	33.0	1710.0	1115.6	5059.5	142.0	1170.0	810.2	3368.8	29.6	739.0	490.7	2031.9	375.0	1640.0	1197.3	5927.0
2,2',3,5,6'-Pentachlorobiphenyl (94)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,5',6-Pentachlorobiphenyl (95)	pg/g	20.7	1150.0	749.7	3400.2	38.3	0.0	13.4	55.7	20.0	270.0	182.5	755.7	0.0	0.0	0.0	0.0
2,2',3,6,6'-Pentachlorobiphenyl (96)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',4,4',5-Pentachlorobiphenyl (99)	pg/g	71.2	3170.0	2071.7	9395.4	357.0	2980.0	2062.0	8573.6	60.4	1550.0	1028.6	4259.4	1260.0	5160.0	3795.0	18787.1
2,2',4,5',6-Pentachlorobiphenyl (103)	pg/g	3.1	0.0	1.1	4.9	10.6	102.0	70.0	291.1	2.4	67.6	44.8	185.5	17.5	83.6	60.5	299.3
2,3,3',4,4'-Pentachlorobiphenyl (105)	pg/g	5.1	193.0	126.4	573.3	31.1	241.0	167.5	696.6	6.1	110.0	73.6	304.8	104.0	455.0	332.2	1644.3
2,3,3',4',5-Pentachlorobiphenyl (107)	pg/g	13.5	550.0	359.8	1632.0	93.5	746.0	517.6	2152.3	12.2	309.0	205.1	849.4	245.0	946.0	700.7	3468.6
2,3,3',5,5'-Pentachlorobiphenyl (111)	pg/g	1.3	54.0	35.3	160.2	8.2	63.6	44.2	183.9	1.0	26.5	17.6	72.8	0.0	0.0	0.0	0.0
2,3,4,4',5-Pentachlorobiphenyl (114)	pg/g	0.0	54.1	34.9	158.4	6.0	0.0	2.1	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3',4,4',5-Pentachlorobiphenyl (118)	pg/g	31.4	1300.0	850.4	3856.6	188.0	1610.0	1112.3	4624.9	35.1	684.0	456.9	1891.9	671.0	2820.0	2067.9	10236.9
2,3',4,5,5'-Pentachlorobiphenyl (120)	pg/g	4.9	213.0	139.2	631.4	36.6	285.0	198.1	823.5	4.6	120.0	79.6	329.6	95.8	0.0	33.5	166.0
2,3',4,5',6-Pentachlorobiphenyl (121)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,3',4',5'-Pentachlorobiphenyl (122)	pg/g	0.0	0.0	0.0	0.0	1.7	0.0	0.6	2.4	0.0	6.2	4.0	16.7	0.0	0.0	0.0	0.0
2,3',4,4',5'-Pentachlorobiphenyl (123)	pg/g	0.8	0.0	0.3	1.3	5.0	60.8	41.3	171.7	1.0	36.3	23.9	99.1	16.8	109.0	76.7	379.9
3,3',4,4',5-Pentachlorobiphenyl (126)	pg/g	1.1	0.0	0.4	1.8	0.0	0.0	0.0	0.0	1.4	20.0	13.5	55.9	0.0	0.0	0.0	0.0
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	pg/g	82.0	3700.0	2417.7	10964.5	337.0	3110.0	2139.5	8895.8	54.4	1470.0	974.5	4035.4	1430.0	5520.0	4088.5	20240.1
2,2',3,3',4,6-Hexachlorobiphenyl (131)	pg/g	1.3	0.0	0.5	2.1	5.4	48.1	33.2	137.9	0.7	13.5	9.0	37.4	0.0	0.0	0.0	0.0
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	pg/g	145.0	6670.0	4357.3	19761.2	208.0	1910.0	1314.3	5464.9	60.7	1320.0	879.2	3640.8	681.0	2940.0	2149.4	10640.3
2,2',3,3',5,5'-Hexachlorobiphenyl (133)	pg/g	31.1	1430.0	934.2	4236.7	183.0	1670.0	1149.6	4779.8	24.2	661.0	438.1	1814.2	592.0	2390.0	1760.7	8716.3
2,2',3,3',5,6-Hexachlorobiphenyl (134)	pg/g	16.2	0.0	5.7	26.0	29.9	236.0	163.9	681.4	8.5	181.0	120.6	499.5	98.2	158.0	137.1	678.6

APPENDIX D
TABLE 15
Whole Body Concentrations - Henderson Pond
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)
Species -->		**Carp**				**Bass**				**Sunfish**				**Catfish**			
Location/Area -->		**HENP-TI01/Henderson Pond Area 1 and HENP-TI03/ Henderson Pond Area 2**				**HENP-TI02/Henderson Pond Area 1**				**HENP-TI02/Henderson Pond Area 1**				**HENP-TI02/Henderson Pond Area 1**			
Moisture Content -->	**%**				**77.95**				**75.95**				**75.85**				**79.8**
Sample -->		**HENP-FS-CP01-F-12B**	**HENP-FS-CP01-O-12B**	**Calculated**	**Calculated**	**HENP-FS-B03-F-12B**	**HENP-FS-B03-O-12B**	**Calculated**	**Calculated**	**HENP-FS-S01-F-12B**	**HENP-FS-S01-O-12B**	**Calculated**	**Calculated**	**HENP-FS-C02-F-12B**	**HENP-FS-C02-O-12B**	**Calculated**	**Calculated**
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	pg/g	34.1	1750.0	1141.8	5178.4	20.8	236.0	160.7	668.1	17.4	366.0	244.0	1010.3	26.8	174.0	122.5	606.3
2,2',3,4,4',5-Hexachlorobiphenyl (137)	pg/g	6.1	0.0	2.2	9.8	38.5	406.0	277.4	1153.3	4.9	112.0	74.5	308.5	126.0	602.0	435.4	2155.4
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	pg/g	213.0	10000.0	6531.2	29619.9	1200.0	11100.0	7635.0	31746.4	156.0	4000.0	2654.6	10992.1	3910.0	15700.0	11573.5	57294.6
2,2',3,4,5',6-Hexachlorobiphenyl (144)	pg/g	25.8	1160.0	758.0	3437.7	114.0	1030.0	709.4	2949.7	16.7	404.0	268.4	1111.6	167.0	733.0	534.9	2648.0
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	pg/g	437.0	21200.0	13841.0	62770.8	3160.0	30500.0	20931.0	87031.2	350.0	9560.0	6336.5	26238.1	10400.0	42500.0	31265.0	154777.2
2,2',3,4',5,6'-Hexachlorobiphenyl (148)	pg/g	2.3	104.0	67.9	308.1	15.6	153.0	104.9	436.2	1.9	54.9	36.3	150.5	48.4	213.0	155.4	769.3
2,2',3,4',6,6'-Hexachlorobiphenyl (150)	pg/g	1.2	60.4	39.4	178.8	2.6	33.4	22.6	94.0	0.7	16.1	10.7	44.4	0.0	0.0	0.0	0.0
2,2',4,4',5,6'-Hexachlorobiphenyl (154)	pg/g	26.8	1260.0	822.9	3732.0	216.0	2100.0	1440.6	5990.0	24.9	713.0	472.2	1955.1	646.0	2640.0	1942.1	9614.4
2,2',4,4',6,6'-Hexachlorobiphenyl (155)	pg/g	0.0	0.0	0.0	0.0	0.7	0.0	0.2	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,3',4,4',6-Hexachlorobiphenyl (158)	pg/g	73.5	3240.0	2117.7	9604.1	513.0	4600.0	3169.6	13179.0	61.2	1500.0	996.4	4126.0	1720.0	6780.0	5009.0	24797.0
2,3,3',4,5,5'-Hexachlorobiphenyl (159)	pg/g	18.4	906.0	591.4	2682.1	37.6	60.4	52.4	218.0	8.4	209.0	138.8	574.7	145.0	616.0	451.2	2233.4
2,3,3',4',5,5'-Hexachlorobiphenyl (162)	pg/g	24.0	1150.0	750.9	3405.5	107.0	468.0	341.7	1420.6	15.1	402.0	266.6	1103.9	428.0	1620.0	1202.8	5954.5
2,3,3',4',5',6-Hexachlorobiphenyl (164)	pg/g	95.6	4600.0	3003.5	13621.3	393.0	3360.0	2321.6	9653.0	59.6	1440.0	956.9	3962.2	1190.0	4670.0	3452.0	17089.1
2,3,3',5,5',6-Hexachlorobiphenyl (165)	pg/g	0.0	0.0	0.0	0.0	7.3	78.7	53.7	223.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	pg/g	39.9	1790.0	1169.7	5304.8	321.0	3070.0	2107.9	8764.4	34.5	931.0	617.2	2555.8	1080.0	4400.0	3238.0	16029.7
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	pg/g	551.0	24100.0	15753.5	71444.5	3540.0	34300.0	23534.0	97854.5	359.0	9120.0	6053.7	25066.9	11500.0	51100.0	37240.0	184356.4
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	pg/g	168.0	7020.0	4591.4	20822.9	912.0	8390.0	5772.7	24002.9	92.8	2360.0	1566.5	6486.5	3200.0	13400.0	9830.0	48663.4
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	pg/g	707.0	33000.0	21554.4	97752.3	1180.0	10900.0	7498.0	31176.7	308.0	7380.0	4904.8	20309.7	5030.0	19900.0	14695.5	72750.0
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	pg/g	25.6	1170.0	764.4	3466.6	160.0	1450.0	998.5	4151.8	17.1	425.0	282.2	1168.7	518.0	2010.0	1487.8	7365.3
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	pg/g	49.0	2200.0	1437.6	6519.8	46.6	503.0	343.3	1427.3	17.6	434.0	288.3	1193.6	111.0	481.0	351.5	1740.1
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	pg/g	438.0	20400.0	13324.9	60430.2	1080.0	10400.0	7138.0	29679.8	241.0	5980.0	3971.4	16444.5	6280.0	23800.0	17668.0	87465.3
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	pg/g	188.0	8560.0	5592.7	25363.8	741.0	7460.0	5108.4	21240.5	128.0	3350.0	2222.3	9202.1	2960.0	11700.0	8641.0	42777.2
2,2',3,3',5,6,6'-Heptachlorobiphenyl (179)	pg/g	174.0	8070.0	5271.4	23906.7	103.0	1260.0	855.1	3555.3	75.7	2010.0	1333.0	5519.6	542.0	2390.0	1743.2	8629.7
2,2',3,4,4',5,6-Heptachlorobiphenyl (181)	pg/g	0.0	0.0	0.0	0.0	10.1	90.1	62.1	258.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	pg/g	4.1	290.0	188.7	855.7	29.7	464.0	312.0	1297.3	0.0	138.0	89.7	371.4	83.9	471.0	335.5	1661.0
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	pg/g	0.0	0.0	0.0	0.0	4.6	50.0	34.1	141.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	pg/g	1100.0	51500.0	33636.7	152547.4	7600.0	75000.0	51410.0	213763.0	835.0	21900.0	14527.3	60154.2	25700.0	104000.0	76595.0	379183.2
2,2',3,4',5,6,6'-Heptachlorobiphenyl (188)	pg/g	0.0	75.5	48.7	221.0	11.1	97.8	67.5	280.5	1.2	0.0	0.4	1.7	0.0	122.0	79.3	392.6
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	pg/g	24.9	1170.0	764.1	3465.5	144.0	1540.0	1051.4	4371.7	15.4	415.0	275.1	1139.3	528.0	2300.0	1679.8	8315.8
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	pg/g	117.0	4860.0	3178.9	14416.9	768.0	7460.0	5117.8	21279.8	79.9	2040.0	1354.0	5606.5	2510.0	11300.0	8223.5	40710.4
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	pg/g	19.2	822.0	537.5	2437.5	119.0	1090.0	750.2	3119.1	11.7	279.0	185.4	767.9	390.0	1640.0	1202.5	5953.0
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	pg/g	337.0	17000.0	11094.1	50313.5	1590.0	18700.0	12711.5	52854.5	157.0	4550.0	3012.5	12473.9	6210.0	32300.0	23168.5	114695.5
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	pg/g	128.0	6090.0	3976.9	18035.8	697.0	7370.0	5034.5	20933.3	73.2	1850.0	1228.1	5085.4	2420.0	12200.0	8777.0	43450.5
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	pg/g	165.0	7210.0	4713.0	21374.3	757.0	8130.0	5549.5	23074.6	75.0	1890.0	1254.8	5195.7	2550.0	13300.0	9537.5	47215.3
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	pg/g	44.5	1960.0	1281.1	5809.9	169.0	1530.0	1053.7	4381.1	22.6	511.0	340.1	1408.1	595.0	2770.0	2008.8	9944.3
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)	pg/g	82.7	3940.0	2572.9	11668.3	241.0	2640.0	1800.4	7485.9	48.3	1230.0	816.4	3380.6	1030.0	4840.0	3506.5	17358.9
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	pg/g	276.0	12300.0	8038.3	36455.0	1290.0	14600.0	9941.5	41336.8	135.0	3450.0	2289.8	9481.4	4500.0	24100.0	17240.0	85346.5
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	pg/g	18.1	864.0	564.2	2558.7	89.2	940.0	642.2	2670.4	8.6	228.0	151.2	626.2	309.0	1550.0	1115.7	5523.0
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)	pg/g	206.0	10700.0	6980.6	31658.1	593.0	6840.0	4653.6	19349.5	71.9	2080.0	1377.2	5702.5	2330.0	13600.0	9655.5	47799.5
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)	pg/g	18.1	869.0	567.4	2573.3	56.4	593.0	405.2	1684.8	6.8	161.0	107.0	443.2	180.0	1030.0	732.5	3626.2
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)	pg/g	60.3	3010.0	1964.5	8909.5	89.2	1040.0	707.2	2940.6	21.1	555.0	368.1	1524.4	510.0	2910.0	2070.0	10247.5
Decachlorobiphenyl (209)	pg/g	28.3	1350.0	881.5	3998.0	44.2	507.0	345.0	1434.6	10.7	186.0	124.6	516.1	173.0	1150.0	808.1	4000.2
Congeners (21/33)	pg/g	2.4	0.0	0.9	3.9	6.6	0.0	2.3	9.6	2.7	0.0	1.0	4.0	0.0	0.0	0.0	0.0
Congeners (26/29)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Congeners (28/20)	pg/g	0.0	0.0	0.0	0.0	10.7	0.0	3.7	15.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Congeners (30/18)	pg/g	0.0	0.0	0.0	0.0	1.3	0.0	0.4	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Congeners (40/71)	pg/g	2.1	0.0	0.7	3.4	4.4	0.0	1.6	6.4	2.0	0.0	0.7	3.0	0.0	0.0	0.0	0.0
Congeners (44/47/65)	pg/g	5.7	125.0	82.7	375.1	11.2	0.0	3.9	16.3	6.9	46.6	32.7	135.4	30.1	0.0	10.5	52.2
Congeners (45/51)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Congeners (50/53)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX D

TABLE 15

Whole Body Concentrations - Henderson Pond

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)
Species -->		**Carp**				**Bass**				**Sunfish**				**Catfish**			
Location/Area -->		**HENP-TI01/Henderson Pond Area 1 and HENP-TI03/ Henderson Pond Area 2**				**HENP-TI02/Henderson Pond Area 1**				**HENP-TI02/Henderson Pond Area 1**				**HENP-TI02/Henderson Pond Area 1**			
Moisture Content -->	**%**				**77.95**				**75.95**				**75.85**				**79.8**
Sample -->		**HENP-FS-CP01-F-12B**	**HENP-FS-CP01-O-12B**	**Calculated**	**Calculated**	**HENP-FS-B03-F-12B**	**HENP-FS-B03-O-12B**	**Calculated**	**Calculated**	**HENP-FS-S01-F-12B**	**HENP-FS-S01-O-12B**	**Calculated**	**Calculated**	**HENP-FS-C02-F-12B**	**HENP-FS-C02-O-12B**	**Calculated**	**Calculated**
Congeners (59/62/75)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Congeners (61/70/74/76)	pg/g	0.0	0.0	0.0	0.0	24.7	0.0	8.6	35.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Congeners (69/49)	pg/g	3.1	98.6	64.7	293.6	6.2	0.0	2.2	9.0	3.0	32.5	22.2	91.8	15.4	0.0	5.4	26.7
Congeners (86/87/97/109/119/125)	pg/g	27.0	1220.0	797.2	3615.3	107.0	845.0	586.7	2439.5	23.5	456.0	304.6	1261.4	263.0	1160.0	846.1	4188.4
Congeners (88/91)	pg/g	8.8	419.0	273.6	1240.9	15.6	144.0	99.1	411.9	4.5	97.8	65.2	269.8	44.3	207.0	150.1	742.8
Congeners (93/100)	pg/g	1.2	0.0	0.4	1.9	7.4	62.6	43.3	180.0	0.0	33.7	21.9	90.7	0.0	0.0	0.0	0.0
Congeners (98/102)	pg/g	1.5	75.5	49.3	223.5	5.4	0.0	1.9	7.8	0.0	14.9	9.7	40.1	0.0	0.0	0.0	0.0
Congeners (108/124)	pg/g	2.8	120.0	78.5	355.9	15.2	131.0	90.5	376.2	2.7	61.2	40.7	168.6	14.9	0.0	5.2	25.8
Congeners (110/115)	pg/g	95.1	4100.0	2680.5	12156.7	213.0	1700.0	1179.6	4904.6	42.5	815.0	544.6	2255.2	557.0	2360.0	1729.0	8559.2
Congeners (113/90/101)	pg/g	100.0	4960.0	3237.5	14682.4	428.0	3550.0	2457.3	10217.5	89.0	1900.0	1266.2	5242.9	674.0	2900.0	2120.9	10499.5
Congeners (117/116/85)	pg/g	6.0	0.0	2.1	9.6	28.1	232.0	160.6	667.9	5.6	120.0	79.9	331.0	104.0	0.0	36.4	180.2
Congeners (128/166)	pg/g	53.9	2300.0	1503.9	6820.5	361.0	3110.0	2147.9	8930.8	46.3	1100.0	731.2	3027.8	1220.0	4700.0	3482.0	17237.6
Congeners (138/163/129)	pg/g	1080.0	50500.0	32984.1	149587.5	7690.0	72100.0	49556.5	206056.1	921.0	24000.0	15922.4	65931.1	25600.0	104000.0	76560.0	379009.9
Congeners (139/140)	pg/g	7.8	371.0	242.3	1098.7	61.3	526.0	363.4	1510.8	7.3	185.0	122.8	508.6	173.0	697.0	513.6	2542.6
Congeners (147/149)	pg/g	741.0	35400.0	23115.8	104833.5	2360.0	21700.0	14931.0	62083.2	423.0	10500.0	6973.1	28873.9	4650.0	19700.0	14432.5	71448.0
Congeners (151/135)	pg/g	290.0	13500.0	8818.0	39990.8	980.0	9960.0	6817.0	28345.1	204.0	5420.0	3594.4	14883.6	2270.0	10600.0	7684.5	38042.1
Congeners (153/168)	pg/g	1340.0	64400.0	42049.6	190701.2	10000.0	99500.0	68175.0	283471.9	1090.0	30300.0	20076.5	83132.5	34700.0	143000.0	105095.0	520272.3
Congeners (156/157)	pg/g	35.9	1580.0	1032.7	4683.6	282.0	2570.0	1769.2	7356.3	36.6	793.0	528.3	2187.4	917.0	3800.0	2791.0	13816.6
Congeners (171/173)	pg/g	185.0	7900.0	5165.6	23426.6	1170.0	10400.0	7169.5	29810.8	125.0	3120.0	2071.8	8578.7	3760.0	14300.0	10611.0	52529.7
Congeners (180/193)	pg/g	1830.0	78400.0	51261.3	232477.4	11100.0	108000.0	74085.0	308045.7	1070.0	27700.0	18379.5	76105.6	38800.0	168000.0	122780.0	607821.8
Congeners (183/185)	pg/g	411.0	18900.0	12346.9	55995.2	2820.0	25900.0	17822.0	74104.0	286.0	7140.0	4741.1	19631.9	8830.0	34300.0	25385.5	125670.8
Congeners (197/200)	pg/g	49.7	2070.0	1353.9	6140.3	83.2	817.0	560.2	2329.2	16.1	364.0	242.2	1003.0	297.0	1510.0	1085.5	5373.5
Congeners (198/199)	pg/g	514.0	23000.0	15030.3	68164.5	1870.0	20700.0	14109.5	58667.4	237.0	5950.0	3950.5	16358.0	7490.0	40900.0	29206.5	144586.6
Total Non-Dioxin-Like Congeners	pg/g	13100.0	600000.0	391984.8	1777708.9	68700.0	668000.0	458245.0	1905384.6	8450.0	217000.0	144007.5	596304.3	233000.0	996000.0	728950.0	3608663.4

Notes:

Nondetects are presented as zero in this table.

Chemicals presented in this table are detected in atleast one sample.

Whole Body Concentration = [(Fillet concentration for constituent x Fillet weight)+(Offal concentration for constituent x Offal weight)]/Total weight

Dry Weight = (100/(100 - % moisture))*Wet Weight

Total weight of fish samples:

Location/Area	Fish	Sample Name	Fillet Weight (kg)	Offal Weight (kg)	Total Weight (kg)
HENP-TI01/ Henderson Pond Area 1 and HENP-TI03/ Henderson Pond Area 2	Carp	HEND-FS-CP01-F-12B, HEND-FS-CP01-O-12B	2.8	5.1	7.9
HENP-TI02/Henderson Pond Area 1	Bass	HENP-FS-B03-F-12B, HENP-FS-B03-O-12B	0.4375	0.8125	1.25
	Sunfish	HENP-FS-S01-F-12B, HENP-FS-S01-O-12B	0.5495	1.0205	1.57
	Catfish	HENP-FS-C02-F-12B, HENP-FS-C02-O-12B	1.8025	3.3475	5.15
HENP-TI03/Henderson Pond Area 2	Bass	HENP-FS-B05-F-12B, HENP-FS-B05-O-12B	0.455	0.845	1.3
	Catfish	HENP-FS-C06D-F-12B, HENP-FS-C06D-O-12B, HENP-FS-C06-F-12B, HENP-FS-C06-O-12B	2.7825	5.1675	7.95

APPENDIX D
TABLE 15
Whole Body Concentrations - Henderson Pond
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)
Species -->		**Bass**				**Catfish**				**Catfish**			
Location/Area -->		**HENP-TI03/Henderson Pond Area 2**				**HENP-TI03/Henderson Pond Area 2**				**HENP-TI03/Henderson Pond Area 2**			
Moisture Content -->	**%**				**75.45**				**81.4**				**78.3**
Sample -->		**HENP-FS-B05-F-12B**	**HENP-FS-B05-O-12B**	**Calculated**	**Calculated**	**HENP-FS-C06D-F-12B**	**HENP-FS-C06D-O-12B**	**Calculated**	**Calculated**	**HENP-FS-C06-F-12B**	**HENP-FS-C06-O-12B**	**Calculated**	**Calculated**
4,4'-DDE	ug/kg	0.0	11.0	45.8	186.4	1.8	13.0	9.1	48.8	0.9	11.0	17.7	81.3
4,4'-DDT	ug/kg	0.0	30.0	81.1	330.3	7.8	24.0	18.3	98.5	0.0	19.0	34.5	158.9
Polychlorinated biphenyls (PCBs)	ug/kg	35.6	522.0	1303.8	5310.6	84.8	498.0	353.4	1899.9	67.1	286.0	708.6	3265.3
2,2',3-Trichlorobiphenyl (16)	pg/g	1.5	0.0	1.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',4-Trichlorobiphenyl (17)	pg/g	5.6	0.0	3.6	14.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,4'-Trichlorobiphenyl (22)	pg/g	7.0	0.0	4.6	18.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3',4-Trichlorobiphenyl (25)	pg/g	2.4	0.0	1.6	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3',6-Trichlorobiphenyl (27)	pg/g	0.9	0.0	0.6	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,4',5-Trichlorobiphenyl (31)	pg/g	18.4	0.0	12.0	48.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,4',6-Trichlorobiphenyl (32)	pg/g	3.7	0.0	2.4	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3,4,4'-Trichlorobiphenyl (37)	pg/g	8.1	0.0	5.3	21.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,4-Tetrachlorobiphenyl (41)	pg/g	2.5	0.0	1.6	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,4'-Tetrachlorobiphenyl (42)	pg/g	14.5	50.7	9.4	38.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,5-Tetrachlorobiphenyl (43)	pg/g	4.0	0.0	2.6	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,6'-Tetrachlorobiphenyl (46)	pg/g	1.8	0.0	1.2	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',4,5-Tetrachlorobiphenyl (48)	pg/g	9.5	30.7	6.1	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',5,5'-Tetrachlorobiphenyl (52)	pg/g	99.3	0.0	64.5	262.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,3',4-Tetrachlorobiphenyl (55)	pg/g	3.3	0.0	2.1	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,3',4'-Tetrachlorobiphenyl (56)	pg/g	24.0	77.8	15.6	63.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,3',5-Tetrachlorobiphenyl (57)	pg/g	0.8	0.0	0.5	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,3',5'-Tetrachlorobiphenyl (58)	pg/g	1.0	0.0	0.6	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,4,4'-Tetrachlorobiphenyl (60)	pg/g	11.0	0.0	7.2	29.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,4',5-Tetrachlorobiphenyl (63)	pg/g	4.1	0.0	2.7	10.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,4',6-Tetrachlorobiphenyl (64)	pg/g	23.4	81.9	19.2	78.3	0.0	0.0	0.0	0.0	5.4	20.8	3.5	16.3
2,3',4,4'-Tetrachlorobiphenyl (66)	pg/g	87.5	0.0	56.9	231.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3',4,5-Tetrachlorobiphenyl (67)	pg/g	3.2	0.0	2.1	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3',4,5'-Tetrachlorobiphenyl (68)	pg/g	4.0	0.0	2.6	10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3',5,5'-Tetrachlorobiphenyl (72)	pg/g	4.2	0.0	2.7	11.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3,3',4,4'-Tetrachlorobiphenyl (77)	pg/g	6.0	30.7	3.9	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3,3',4,5'-Tetrachlorobiphenyl (79)	pg/g	4.7	0.0	3.1	12.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,3',4-Pentachlorobiphenyl (82)	pg/g	11.2	53.4	7.3	29.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,3',5-Pentachlorobiphenyl (83)	pg/g	11.2	61.8	7.3	29.7	0.0	32.0	20.8	111.8	7.8	31.8	44.2	203.7
2,2',3,3',6-Pentachlorobiphenyl (84)	pg/g	33.3	117.0	21.6	88.2	0.0	0.0	0.0	0.0	7.7	33.0	5.0	23.0
2,2',3,4,6'-Pentachlorobiphenyl (89)	pg/g	0.9	0.0	0.6	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,5,5'-Pentachlorobiphenyl (92)	pg/g	145.0	1240.0	2168.7	8833.8	220.0	1220.0	870.0	4677.4	176.0	824.0	1751.5	8071.4
2,2',3,5,6'-Pentachlorobiphenyl (94)	pg/g	1.3	0.0	0.9	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,5',6-Pentachlorobiphenyl (95)	pg/g	160.0	803.0	104.0	423.6	0.0	210.0	136.5	733.9	59.1	381.0	295.3	1360.7
2,2',3,6,6'-Pentachlorobiphenyl (96)	pg/g	0.6	0.0	0.4	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',4,4',5-Pentachlorobiphenyl (99)	pg/g	404.0	3240.0	6838.1	27853.7	549.0	3030.0	2161.7	11621.8	440.0	1860.0	4353.6	20062.8
2,2',4,5',6-Pentachlorobiphenyl (103)	pg/g	14.6	115.0	114.3	465.4	15.8	87.1	62.1	334.1	9.4	0.0	123.0	566.9
2,3,3',4,4'-Pentachlorobiphenyl (105)	pg/g	56.2	337.0	612.0	2493.0	42.1	230.0	164.2	883.0	36.5	162.0	332.8	1533.5
2,3,3',4',5-Pentachlorobiphenyl (107)	pg/g	81.0	615.0	1266.6	5159.5	53.0	292.0	208.4	1120.2	78.5	316.0	443.1	2041.9
2,3,3',5,5'-Pentachlorobiphenyl (111)	pg/g	5.1	50.7	3.3	13.4	10.6	43.9	32.2	173.4	6.5	27.4	64.9	299.0
2,3,4,4',5-Pentachlorobiphenyl (114)	pg/g	2.4	0.0	1.6	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3',4,4',5-Pentachlorobiphenyl (118)	pg/g	247.0	1750.0	3743.5	15248.3	262.0	1410.0	1008.2	5420.4	216.0	964.0	2037.6	9389.6
2,3',4,5,5'-Pentachlorobiphenyl (120)	pg/g	22.1	249.0	72.5	295.2	40.9	226.0	161.2	866.7	30.8	119.0	323.4	1490.2
2,3',4,5',6-Pentachlorobiphenyl (121)	pg/g	0.7	0.0	0.5	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,3',4',5'-Pentachlorobiphenyl (122)	pg/g	2.1	0.0	1.3	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3',4,4',5'-Pentachlorobiphenyl (123)	pg/g	5.3	0.0	136.4	555.4	9.6	37.3	27.6	148.4	6.2	25.5	56.0	257.9
3,3',4,4',5-Pentachlorobiphenyl (126)	pg/g	3.3	0.0	2.1	8.6	11.4	0.0	4.0	21.5	5.7	29.5	11.2	51.6
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	pg/g	209.0	2510.0	7219.9	29408.9	158.0	1070.0	750.8	4036.6	390.0	1640.0	1666.3	7678.8
2,2',3,3',4,6-Hexachlorobiphenyl (131)	pg/g	4.6	42.4	3.0	12.1	0.0	0.0	0.0	0.0	0.0	13.3	0.0	0.0
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	pg/g	218.0	1920.0	3865.8	15746.7	133.0	917.0	642.6	3454.8	378.0	1730.0	1454.9	6704.6
2,2',3,3',5,5'-Hexachlorobiphenyl (133)	pg/g	103.0	1310.0	3117.7	12699.3	221.0	1260.0	896.4	4819.1	161.0	668.0	1791.3	8255.0
2,2',3,3',5,6-Hexachlorobiphenyl (134)	pg/g	33.9	257.0	259.5	1057.2	23.7	110.0	79.8	429.0	42.5	185.0	177.8	819.2

APPENDIX D
TABLE 15
Whole Body Concentrations - Henderson Pond
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)
Species -->		**Bass**				**Catfish**				**Catfish**			
Location/Area -->		**HENP-TI03/Henderson Pond Area 2**				**HENP-TI03/Henderson Pond Area 2**				**HENP-TI03/Henderson Pond Area 2**			
Moisture Content -->	**%**				**75.45**				**81.4**				**78.3**
Sample -->		**HENP-FS-B05-F-12B**	**HENP-FS-B05-O-12B**	**Calculated**	**Calculated**	**HENP-FS-C06D-F-12B**	**HENP-FS-C06D-O-12B**	**Calculated**	**Calculated**	**HENP-FS-C06-F-12B**	**HENP-FS-C06-O-12B**	**Calculated**	**Calculated**
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	pg/g	53.0	358.0	246.7	1004.8	30.5	180.0	127.7	686.4	40.0	312.0	266.2	1227.0
2,2',3,4,4',5-Hexachlorobiphenyl (137)	pg/g	25.4	287.0	770.9	3140.2	47.9	346.0	241.7	1299.3	33.7	169.0	476.7	2196.5
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	pg/g	610.0	8220.0	20449.6	83297.7	1390.0	8050.0	5719.0	30747.3	1080.0	4810.0	11463.6	52827.5
2,2',3,4,5',6-Hexachlorobiphenyl (144)	pg/g	62.8	820.0	967.6	3941.5	83.5	461.0	328.9	1768.1	71.7	319.0	665.5	3066.6
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	pg/g	1500.0	21500.0	55147.0	224631.5	3630.0	21200.0	15050.5	80916.7	2740.0	11200.0	30101.8	138718.1
2,2',3,4',5,6'-Hexachlorobiphenyl (148)	pg/g	11.2	119.0	276.5	1126.4	16.8	103.0	72.8	391.6	13.5	60.5	145.8	672.0
2,2',3,4',6,6'-Hexachlorobiphenyl (150)	pg/g	4.9	39.0	3.2	13.0	0.0	0.0	0.0	0.0	3.3	14.5	2.2	9.9
2,2',4,4',5,6'-Hexachlorobiphenyl (154)	pg/g	127.0	1610.0	3447.6	14043.1	231.0	1360.0	964.9	5187.4	176.0	729.0	1930.0	8893.9
2,2',4,4',6,6'-Hexachlorobiphenyl (155)	pg/g	2.1	0.0	1.3	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3,3',4,4',6-Hexachlorobiphenyl (158)	pg/g	244.0	3220.0	8837.6	35998.2	585.0	3340.0	2375.8	12772.8	432.0	1790.0	4751.3	21895.4
2,3,3',4,5,5'-Hexachlorobiphenyl (159)	pg/g	24.5	308.0	797.6	3249.0	75.5	424.0	302.0	1623.8	62.7	280.0	609.1	2806.8
2,3,3',4',5,5'-Hexachlorobiphenyl (162)	pg/g	57.0	740.0	2121.1	8640.0	97.0	551.0	392.1	2108.1	112.0	453.0	810.6	3735.6
2,3,3',4',5',6-Hexachlorobiphenyl (164)	pg/g	230.0	2680.0	6130.7	24972.3	430.0	2340.0	1671.5	8986.6	409.0	1780.0	3411.1	15719.6
2,3,3',5,5',6-Hexachlorobiphenyl (165)	pg/g	4.9	0.0	3.2	13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	pg/g	146.0	2120.0	5705.3	23239.5	378.0	2240.0	1588.3	8539.2	303.0	1250.0	3185.7	14680.6
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	pg/g	2.6	0.0	1.7	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	pg/g	1440.0	24700.0	65460.8	266642.6	4310.0	25700.0	18213.5	97922.0	3100.0	14100.0	36287.7	167224.5
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	pg/g	381.0	6270.0	17279.8	70386.3	1100.0	6150.0	4382.5	23561.8	837.0	3410.0	8790.7	40510.1
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	pg/g	805.0	9070.0	25985.8	105848.3	2470.0	14000.0	9964.5	53572.6	2270.0	10000.0	20225.9	93206.9
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	pg/g	69.3	1020.0	2622.9	10684.0	177.0	972.0	693.8	3729.8	133.0	558.0	1391.9	6414.3
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	pg/g	43.3	450.0	637.2	2595.4	76.7	439.0	312.2	1678.5	82.5	358.0	641.1	2954.3
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	pg/g	703.0	8620.0	31069.8	126557.3	825.0	5190.0	3662.3	19689.5	1840.0	7480.0	8087.3	37268.8
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	pg/g	428.0	5930.0	15250.2	62119.1	1180.0	6850.0	4865.5	26158.6	842.0	3670.0	9702.8	44713.4
2,2',3,3',5,6,6'-Heptachlorobiphenyl (179)	pg/g	156.0	1340.0	3121.8	12716.1	366.0	2230.0	1577.6	8481.7	288.0	1690.0	3155.8	14542.9
2,2',3,4,4',5,6-Heptachlorobiphenyl (181)	pg/g	4.8	0.0	3.1	12.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	pg/g	13.8	239.0	590.3	2404.5	62.4	217.0	162.9	875.8	35.4	144.0	329.5	1518.5
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	pg/g	2.8	39.1	1.8	7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	pg/g	3410.0	53000.0	134930.6	549615.5	9050.0	52900.0	37552.5	201895.2	6570.0	27700.0	74933.8	345317.1
2,2',3,4',5,6,6'-Heptachlorobiphenyl (188)	pg/g	8.8	94.7	143.1	582.9	0.0	83.6	54.3	292.2	0.0	0.0	102.3	471.2
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	pg/g	59.9	1160.0	2949.5	12014.2	191.0	1140.0	807.9	4343.3	139.0	593.0	1610.5	7421.6
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	pg/g	326.0	5450.0	14460.5	58902.4	956.0	5700.0	4039.6	21718.3	703.0	2970.0	8058.3	37135.2
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	pg/g	47.1	780.0	2114.2	8611.6	138.0	783.0	557.3	2996.0	100.0	400.0	1113.6	5131.7
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	pg/g	661.0	16200.0	40573.1	165267.2	2450.0	14900.0	10542.5	56680.1	1670.0	7460.0	20923.5	96421.8
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	pg/g	293.0	6130.0	15398.1	62721.5	907.0	5420.0	3840.5	20647.6	627.0	2920.0	7634.2	35180.7
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	pg/g	319.0	6760.0	16732.7	68157.7	1040.0	6380.0	4511.0	24252.7	657.0	3020.0	8915.5	41085.2
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	pg/g	87.7	1340.0	3537.5	14409.4	209.0	1140.0	814.2	4377.2	143.0	631.0	1625.0	7488.3
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)	pg/g	163.0	2540.0	6181.6	25179.5	507.0	2930.0	2082.0	11193.3	318.0	1500.0	4124.3	19006.2
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	pg/g	570.0	12900.0	30241.8	123184.5	1990.0	12300.0	8691.5	46728.5	1340.0	6190.0	17226.0	79382.4
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	pg/g	36.7	785.0	1956.9	7971.1	127.0	727.0	517.0	2779.6	91.2	395.0	1032.1	4756.4
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)	pg/g	331.0	7500.0	16945.0	69022.3	1470.0	8610.0	6111.0	32854.8	879.0	4010.0	12070.5	55624.6
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)	pg/g	33.6	644.0	1291.0	5258.8	88.6	518.0	367.7	1976.9	48.8	216.0	723.6	3334.8
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)	pg/g	80.6	1330.0	3639.0	14822.9	361.0	2040.0	1452.4	7808.3	209.0	950.0	2868.8	13220.1
Decachlorobiphenyl (209)	pg/g	58.1	812.0	1437.9	5856.8	168.0	983.0	697.8	3751.3	109.0	484.0	1383.8	6377.1
Congeners (21/33)	pg/g	10.8	0.0	7.0	28.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Congeners (26/29)	pg/g	5.5	0.0	3.6	14.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Congeners (28/20)	pg/g	34.1	0.0	22.2	90.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Congeners (30/18)	pg/g	5.5	0.0	3.6	14.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Congeners (40/71)	pg/g	28.7	102.0	18.7	76.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Congeners (44/47/65)	pg/g	82.4	326.0	71.8	292.5	20.1	0.0	7.0	37.8	23.1	84.2	28.3	130.2
Congeners (45/51)	pg/g	7.0	0.0	4.6	18.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Congeners (50/53)	pg/g	5.6	0.0	3.6	14.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX D

TABLE 15

Whole Body Concentrations - Henderson Pond

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)
Species -->		**Bass**				**Catfish**				**Catfish**			
Location/Area -->		**HENP-TI03/Henderson Pond Area 2**				**HENP-TI03/Henderson Pond Area 2**				**HENP-TI03/Henderson Pond Area 2**			
Moisture Content -->	**%**				**75.45**				**81.4**				**78.3**
Sample -->		**HENP-FS-B05-F-12B**	**HENP-FS-B05-O-12B**	**Calculated**	**Calculated**	**HENP-FS-C06D-F-12B**	**HENP-FS-C06D-O-12B**	**Calculated**	**Calculated**	**HENP-FS-C06-F-12B**	**HENP-FS-C06-O-12B**	**Calculated**	**Calculated**
Congeners (59/62/75)	pg/g	7.1	0.0	4.6	18.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Congeners (61/70/74/76)	pg/g	131.0	0.0	85.2	346.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Congeners (69/49)	pg/g	69.1	267.0	54.3	221.0	13.4	0.0	4.7	25.2	14.4	54.7	18.2	83.8
Congeners (86/87/97/109/119/125)	pg/g	167.0	1100.0	1574.5	6413.4	111.0	625.0	445.1	2393.0	118.0	504.0	914.3	4213.2
Congeners (88/91)	pg/g	57.1	285.0	297.1	1210.2	32.8	166.0	119.4	641.8	34.8	149.0	247.3	1139.4
Congeners (93/100)	pg/g	13.9	75.2	9.0	36.8	12.8	65.9	47.3	254.4	7.7	28.2	94.1	433.4
Congeners (98/102)	pg/g	10.5	0.0	6.8	27.8	0.0	0.0	0.0	0.0	0.0	26.5	0.0	0.0
Congeners (108/124)	pg/g	14.0	111.0	18.1	73.9	0.0	0.0	0.0	0.0	6.6	0.0	4.3	19.8
Congeners (110/115)	pg/g	335.0	2270.0	3213.5	13089.4	0.0	698.0	453.7	2439.2	294.0	1320.0	1044.8	4814.9
Congeners (113/90/101)	pg/g	512.0	4110.0	4007.6	16324.3	427.0	2250.0	1612.0	8666.4	374.0	1600.0	3276.3	15098.3
Congeners (117/116/85)	pg/g	50.8	321.0	96.1	391.4	43.5	245.0	174.5	938.0	36.0	158.0	351.7	1620.8
Congeners (128/166)	pg/g	208.0	2310.0	6168.4	25125.7	414.0	2380.0	1691.9	9096.2	326.0	1350.0	3395.6	15647.8
Congeners (138/163/129)	pg/g	3760.0	52500.0	135097.5	550295.2	7400.0	43600.0	30930.0	166290.3	6580.0	28300.0	62478.6	287919.9
Congeners (139/140)	pg/g	35.7	413.0	913.1	3719.4	64.8	361.0	257.3	1383.5	46.8	196.0	514.6	2371.6
Congeners (147/149)	pg/g	1690.0	18700.0	26105.3	106335.3	2030.0	11500.0	8185.5	44008.1	2170.0	9450.0	16813.3	77480.7
Congeners (151/135)	pg/g	734.0	8900.0	13791.8	56178.5	1380.0	8320.0	5891.0	31672.0	980.0	5630.0	11722.2	54019.4
Congeners (153/168)	pg/g	4680.0	70700.0	185137.3	754123.4	11900.0	70400.0	49925.0	268414.0	9150.0	37100.0	99892.4	460333.6
Congeners (156/157)	pg/g	144.0	1900.0	4929.4	20079.0	338.0	1940.0	1379.3	7415.6	248.0	1080.0	2756.7	12703.5
Congeners (171/173)	pg/g	497.0	7080.0	18708.4	76205.5	1280.0	7110.0	5069.5	27255.4	983.0	3980.0	10178.3	46904.8
Congeners (180/193)	pg/g	4440.0	79300.0	215623.6	878304.0	13700.0	80400.0	57055.0	306747.3	10400.0	42200.0	114121.6	525905.8
Congeners (183/185)	pg/g	1160.0	17700.0	44738.8	182235.3	3150.0	17500.0	12477.5	67083.3	2320.0	9530.0	24987.2	115148.2
Congeners (197/200)	pg/g	45.9	734.0	1910.6	7782.3	137.0	771.0	549.1	2952.2	104.0	464.0	1100.9	5073.1
Congeners (198/199)	pg/g	923.0	19200.0	51205.3	208575.4	3250.0	20200.0	14267.5	76707.0	2180.0	9800.0	28264.4	130250.9
Total Non-Dioxin-Like Congeners	pg/g	35000.0	514000.0	1285782.2	5237401.9	83600.0	491000.0	348410.0	1873172.0	66100.0	282000.0	698575.2	3219240.6

Notes:

Nondetects are presented as zero in this table.

Chemicals presented in this table are detected in atleast o

Whole Body Concentration = [(Fillet concentration for con

Dry Weight = (100/(100 - % moisture))*Wet Weight

Total weight of fish samples:

Location/Area	Fish
HENP-TI01/ Henderson Pond Area 1 and HENP-TI03/ Henderson Pond Area 2	Carp
HENP-TI02/Henderson Pond Area 1	Bass
	Sunfish
	Catfish
HENP-TI03/Henderson Pond Area 2	Bass
	Catfish

APPENDIX D
TABLE 16
Whole Body Concentrations - Hickory Pond
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)
Species -->		**Bass**				**Sunfish**				**Carp**			
Location/Area-->		**HICP-TI01/ Hickory Pond Area 1**				**HICP-TI01/ Hickory Pond Area 1**				**HICP-TI01/ Hickory Pond Area 1**			
Moisture Content -->	%				**76.0**				**75.5**				**83**
Sample -->		**HICP-FS-B01-F-12B**	**HICP-FS-B01-O-12B**	**Calculated**	**Calculated**	**HICP-FS-S01-F-12B**	**HICP-FS-S01-O-12B**	**Calculated**	**Calculated**	**HICP-FS-CP01-F-12B**	**HICP-FS-CP01-O-12B**	**Calculated**	**Calculated**
4,4'-DDE	ug/kg	0.0	19.0	12.4	51.4	0.0	52.0	33.8	137.7	4.5	50.0	52.4	308.5
Polychlorinated biphenyls (PCBs)	ug/kg	0.8	7.7	5.3	22.0	3.4	105.0	69.4	282.8	0.6	22.4	102.2	601.1
4-Chlorobiphenyl (3)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
2,3'-Dichlorobiphenyl (6)	pg/g	0.0	0.9	0.6	2.3	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
2,4'-Dichlorobiphenyl (8)	pg/g	6.7	6.7	6.7	27.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3,3'-Dichlorobiphenyl (11)	pg/g	16.1	0.0	5.6	23.4	0.0	0.0	0.0	0.0	0.0	24.1	0.0	0.0
2,2',3-Trichlorobiphenyl (16)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0
2,2',4-Trichlorobiphenyl (17)	pg/g	1.5	1.5	1.5	6.2	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0
2,3,4'-Trichlorobiphenyl (22)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.2	0.0	0.0
2,3',4-Trichlorobiphenyl (25)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0
2,4',5-Trichlorobiphenyl (31)	pg/g	3.4	3.6	3.6	14.8	3.3	0.0	1.2	4.7	0.0	32.4	1.7	10.0
2,4',6-Trichlorobiphenyl (32)	pg/g	0.0	0.7	0.4	1.8	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0
3,4,4'-Trichlorobiphenyl (37)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.3	0.0	0.0
2,2',3,4'-Tetrachlorobiphenyl (42)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.6	0.0	0.0
2,2',4,5-Tetrachlorobiphenyl (48)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0
2,2',5,5'-Tetrachlorobiphenyl (52)	pg/g	0.0	0.0	0.0	0.0	0.0	39.1	25.4	103.5	0.0	68.1	37.3	219.2
2,3,3',4-Tetrachlorobiphenyl (55)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0
2,3,3',4'-Tetrachlorobiphenyl (56)	pg/g	1.3	2.3	2.0	8.1	1.5	10.0	7.0	28.6	1.8	21.1	11.4	67.3
2,3,4,4'-Tetrachlorobiphenyl (60)	pg/g	0.0	1.8	1.1	4.7	0.0	0.0	0.0	0.0	0.0	13.1	0.0	0.0
2,3,4',5-Tetrachlorobiphenyl (63)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0
2,3,4',6-Tetrachlorobiphenyl (64)	pg/g	0.8	1.4	1.1	4.8	0.0	3.6	2.3	9.4	0.9	19.3	4.0	23.3
2,3',4,4'-Tetrachlorobiphenyl (66)	pg/g	0.0	0.0	0.0	0.0	0.0	49.2	32.0	130.3	0.0	66.2	46.9	275.9
2,3',4,5-Tetrachlorobiphenyl (67)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0
2,3',4,5'-Tetrachlorobiphenyl (68)	pg/g	0.0	0.0	0.0	0.0	0.0	5.0	3.2	13.1	0.0	2.8	4.7	27.8
2,3',5,5'-Tetrachlorobiphenyl (72)	pg/g	0.0	0.0	0.0	0.0	0.0	6.3	4.1	16.7	0.0	2.9	6.0	35.3
3,3',4,4'-Tetrachlorobiphenyl (77)	pg/g	0.0	1.0	0.6	2.6	0.0	5.9	3.8	15.5	0.7	11.5	6.0	35.3
3,3',4,5'-Tetrachlorobiphenyl (79)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
2,2',3,3',4-Pentachlorobiphenyl (82)	pg/g	0.0	1.2	0.8	3.3	0.0	6.0	3.9	15.9	0.0	11.9	5.7	33.6
2,2',3,3',5-Pentachlorobiphenyl (83)	pg/g	0.0	1.0	0.7	2.7	0.0	12.6	8.2	33.4	0.0	7.6	12.0	70.6
2,2',3,3',6-Pentachlorobiphenyl (84)	pg/g	0.7	1.3	1.1	4.5	0.0	8.9	5.8	23.6	1.0	21.5	9.1	53.8
2,2',3,5,5'-Pentachlorobiphenyl (92)	pg/g	2.1	13.8	9.7	40.4	11.0	361.0	238.5	971.5	2.0	53.7	351.0	2064.8
2,2',3,5',6-Pentachlorobiphenyl (95)	pg/g	0.0	0.0	0.0	0.0	0.0	150.0	97.5	397.1	0.0	87.5	143.0	841.0
2,2',4,4',5-Pentachlorobiphenyl (99)	pg/g	4.8	43.1	29.7	123.5	24.3	816.0	538.9	2195.1	5.2	208.0	793.6	4668.1
2,2',4,5',6-Pentachlorobiphenyl (103)	pg/g	0.0	0.0	0.0	0.0	1.0	33.0	21.8	88.8	0.0	2.2	32.0	188.1
2,3,3',4,4'-Pentachlorobiphenyl (105)	pg/g	2.5	18.0	12.6	52.3	3.9	83.2	55.4	225.8	2.7	90.2	83.0	488.4
2,3,3',4',5-Pentachlorobiphenyl (107)	pg/g	1.6	13.3	9.2	38.3	5.9	166.0	110.0	447.9	1.5	57.3	162.2	954.3
2,3,3',5,5'-Pentachlorobiphenyl (111)	pg/g	0.0	1.1	0.7	2.9	0.0	13.1	8.5	34.7	0.0	3.3	12.5	73.4
2,3,4,4',5-Pentachlorobiphenyl (114)	pg/g	0.0	1.4	0.9	3.6	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0
2,3',4,4',5-Pentachlorobiphenyl (118)	pg/g	8.3	73.5	50.7	210.7	14.6	437.0	289.2	1177.8	9.2	294.0	429.9	2529.0
2,3',4,5,5'-Pentachlorobiphenyl (120)	pg/g	0.0	3.2	2.1	8.6	1.9	56.7	37.5	152.8	0.0	10.3	55.0	323.6
2,3,3',4',5'-Pentachlorobiphenyl (122)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0
2,3',4,4',5'-Pentachlorobiphenyl (123)	pg/g	0.0	1.9	1.2	5.0	0.0	19.0	12.4	50.3	0.0	7.2	18.1	106.5
3,3',4,4',5-Pentachlorobiphenyl (126)	pg/g	0.0	1.6	1.0	4.2	0.0	9.1	5.9	24.0	0.0	3.7	8.6	50.8
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	pg/g	2.5	26.2	17.9	74.5	22.1	672.0	444.5	1810.7	3.2	122.0	653.9	3846.4
2,2',3,3',4,6-Hexachlorobiphenyl (131)	pg/g	0.0	0.0	0.0	0.0	0.0	9.4	6.1	24.9	0.0	4.6	9.0	52.8
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	pg/g	0.0	18.9	12.3	51.1	22.6	622.0	412.2	1679.1	0.0	212.0	604.5	3555.7
2,2',3,3',5,5'-Hexachlorobiphenyl (133)	pg/g	1.7	15.7	10.8	44.9	9.7	293.0	193.8	789.5	1.6	50.5	285.3	1678.1
2,2',3,3',5,6-Hexachlorobiphenyl (134)	pg/g	0.0	2.3	1.5	6.2	2.9	81.0	53.7	218.6	0.0	25.0	78.7	463.0
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	pg/g	0.0	2.5	1.6	6.8	5.9	182.0	120.4	490.3	1.4	37.5	177.4	1043.6
2,2',3,4,4',5-Hexachlorobiphenyl (137)	pg/g	0.9	9.6	6.5	27.2	2.0	47.7	31.7	129.2	1.1	25.2	47.2	277.6

APPENDIX D
TABLE 16
Whole Body Concentrations - Hickory Pond
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)
Species -->		**Bass**				**Sunfish**				**Carp**			
Location/Area-->		**HICP-TI01/ Hickory Pond Area 1**				**HICP-TI01/ Hickory Pond Area 1**				**HICP-TI01/ Hickory Pond Area 1**			
Moisture Content -->	%				**76.0**				**75.5**				**83**
Sample -->		**HICP-FS-B01-F-12B**	**HICP-FS-B01-O-12B**	**Calculated**	**Calculated**	**HICP-FS-S01-F-12B**	**HICP-FS-S01-O-12B**	**Calculated**	**Calculated**	**HICP-FS-CP01-F-12B**	**HICP-FS-CP01-O-12B**	**Calculated**	**Calculated**
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	pg/g	10.7	89.2	61.7	256.7	58.0	1680.0	1112.3	4530.8	10.2	354.0	1637.6	9632.9
2,2',3,4,5',6-Hexachlorobiphenyl (144)	pg/g	1.1	8.0	5.6	23.3	6.1	197.0	130.2	530.3	1.2	37.7	191.7	1127.7
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	pg/g	22.2	245.0	167.0	694.5	131.0	4210.0	2782.4	11333.4	17.4	677.0	4091.2	24065.6
2,2',3,4',5,6'-Hexachlorobiphenyl (148)	pg/g	0.0	0.9	0.6	2.4	0.0	24.2	15.7	64.1	0.0	2.6	23.1	135.7
2,2',3,4',6,6'-Hexachlorobiphenyl (150)	pg/g	0.0	0.0	0.0	0.0	0.0	8.1	5.3	21.5	0.0	1.3	7.7	45.5
2,2',4,4',5,6'-Hexachlorobiphenyl (154)	pg/g	1.2	10.8	7.5	31.0	9.2	309.0	204.1	831.3	0.0	28.6	299.3	1760.4
2,2',4,4',6,6'-Hexachlorobiphenyl (155)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
2,3,3',4,4',6-Hexachlorobiphenyl (158)	pg/g	5.0	46.5	32.0	132.9	22.1	662.0	438.0	1784.3	4.7	151.0	645.3	3795.9
2,3,3',4,5,5'-Hexachlorobiphenyl (159)	pg/g	0.0	1.9	1.2	5.1	3.1	96.9	64.1	260.9	0.0	20.4	93.9	552.6
2,3,3',4',5,5'-Hexachlorobiphenyl (162)	pg/g	1.3	11.5	7.9	33.0	6.7	181.0	120.0	488.7	0.0	34.8	175.9	1034.9
2,3,3',4',5',6-Hexachlorobiphenyl (164)	pg/g	3.0	26.4	18.2	75.7	22.2	653.0	432.2	1760.6	3.9	131.0	636.3	3742.9
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	pg/g	5.1	53.7	36.7	152.5	13.7	440.0	290.8	1184.5	3.0	101.0	428.4	2519.7
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	pg/g	35.6	410.0	279.0	1159.9	148.0	4440.0	2937.8	11966.6	23.4	880.0	4323.0	25429.1
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	pg/g	9.2	101.0	68.9	286.4	37.3	1140.0	754.1	3071.5	7.0	264.0	1110.2	6530.5
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	pg/g	10.8	92.9	64.2	266.8	129.0	3740.0	2476.2	10086.2	20.7	768.0	3644.3	21436.8
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	pg/g	1.4	10.4	7.2	30.1	5.8	186.0	122.9	500.7	0.0	31.2	180.3	1060.4
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	pg/g	0.0	3.6	2.4	9.8	7.1	226.0	149.4	608.4	1.2	46.8	219.8	1293.0
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	pg/g	7.1	74.5	50.9	211.6	97.7	2990.0	1977.7	8055.8	12.3	499.0	2908.0	17105.6
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	pg/g	5.9	60.0	41.1	170.8	46.7	1580.0	1043.3	4249.9	5.6	240.0	1533.5	9020.7
2,2',3,3',5,6,6'-Heptachlorobiphenyl (179)	pg/g	1.3	9.7	6.7	27.9	29.6	1010.0	666.9	2716.3	3.7	151.0	980.2	5766.1
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	pg/g	0.0	0.0	0.0	0.0	0.0	40.0	26.0	105.9	0.0	6.6	38.1	224.3
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	pg/g	0.0	1.2	0.8	3.2	0.0	7.1	4.6	18.8	0.0	3.3	6.8	39.8
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	pg/g	59.9	627.0	428.5	1781.8	307.0	9960.0	6581.5	26808.4	33.3	1470.0	9672.3	56896.0
2,2',3,4',5,6,6'-Heptachlorobiphenyl (188)	pg/g	0.0	1.2	0.8	3.3	0.0	14.9	9.7	39.5	0.0	3.0	14.2	83.5
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	pg/g	2.8	27.7	19.0	79.0	6.7	215.0	142.1	578.7	1.5	46.6	209.3	1231.1
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	pg/g	9.3	103.0	70.2	291.9	33.2	1070.0	707.1	2880.3	5.0	165.0	1040.1	6118.5
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	pg/g	1.5	13.5	9.3	38.6	4.5	130.0	86.1	350.6	0.0	29.7	126.2	742.3
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	pg/g	28.2	322.0	219.2	911.3	66.8	2370.0	1563.9	6370.2	13.4	474.0	2301.8	13540.2
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	pg/g	7.2	79.1	53.9	224.3	29.8	982.0	648.7	2642.5	4.3	186.0	954.1	5612.2
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	pg/g	8.8	97.8	66.6	277.1	28.5	960.0	634.0	2582.4	5.7	271.0	933.3	5489.8
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	pg/g	1.6	15.4	10.6	44.0	7.8	233.0	154.2	628.0	1.2	63.9	226.8	1334.3
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)	pg/g	3.4	34.1	23.4	97.1	19.4	628.0	415.0	1690.4	3.6	137.0	610.9	3593.3
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	pg/g	18.6	212.0	144.3	600.0	54.7	1900.0	1254.1	5108.5	10.2	484.0	1845.6	10856.5
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	pg/g	1.8	18.5	12.6	52.6	3.7	129.0	85.2	346.9	1.0	31.0	125.5	738.4
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)	pg/g	13.8	128.0	88.0	366.0	30.6	1100.0	725.7	2956.0	8.7	353.0	1069.7	6292.4
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)	pg/g	1.6	12.1	8.4	35.0	2.5	76.0	50.3	204.8	1.0	41.5	74.4	437.6
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)	pg/g	2.3	22.0	15.1	62.9	8.8	301.0	198.7	809.5	3.6	147.0	293.7	1727.7
Decachlorobiphenyl (209)	pg/g	4.0	28.1	19.7	81.8	4.6	146.0	96.5	393.1	3.9	129.0	144.0	847.1
Congeners (21/33)	pg/g	2.6	0.0	0.9	3.8	0.0	0.0	0.0	0.0	0.0	7.8	0.0	0.0
Congeners (26/29)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.0	0.0
Congeners (28/20)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.6	0.0	0.0
Congeners (30/18)	pg/g	1.8	2.1	2.0	8.3	1.4	0.0	0.5	2.1	1.5	9.4	1.7	10.1
Congeners (40/71)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.6	0.0	0.0
Congeners (44/47/65)	pg/g	0.0	0.0	0.0	0.0	0.0	34.8	22.6	92.1	0.0	51.8	33.2	195.1
Congeners (45/51)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0
Congeners (59/62/75)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0
Congeners (61/70/74/76)	pg/g	0.0	0.0	0.0	0.0	0.0	67.8	44.1	179.5	0.0	126.0	64.6	380.1
Congeners (69/49)	pg/g	0.0	2.6	1.7	7.0	1.5	24.0	16.1	65.7	1.4	33.1	24.5	144.2
Congeners (86/87/97/109/119/125)	pg/g	7.8	24.2	18.4	76.7	11.2	256.0	170.3	693.8	9.4	162.0	255.8	1504.5
Congeners (88/91)	pg/g	0.0	2.0	1.3	5.4	1.7	52.5	34.7	141.4	0.0	20.3	50.9	299.5

APPENDIX D
TABLE 16
Whole Body Concentrations - Hickory Pond
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)	Fillet Concentration	Offal Concentration	Whole Body Concentration (Wet Weight)	Whole Body Concentration (Dry Weight)
Species -->		**Bass**				**Sunfish**				**Carp**			
Location/Area-->		**HICP-TI01/ Hickory Pond Area 1**				**HICP-TI01/ Hickory Pond Area 1**				**HICP-TI01/ Hickory Pond Area 1**			
Moisture Content -->	%				**76.0**				**75.5**				**83**
Sample -->		**HICP-FS-B01-F-12B**	**HICP-FS-B01-O-12B**	**Calculated**	**Calculated**	**HICP-FS-S01-F-12B**	**HICP-FS-S01-O-12B**	**Calculated**	**Calculated**	**HICP-FS-CP01-F-12B**	**HICP-FS-CP01-O-12B**	**Calculated**	**Calculated**
Congeners (93/100)	pg/g	0.0	0.0	0.0	0.0	0.0	13.1	8.5	34.7	0.0	1.5	12.5	73.4
Congeners (98/102)	pg/g	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0
Congeners (108/124)	pg/g	0.0	2.8	1.8	7.4	0.0	35.1	22.8	92.9	0.0	15.6	33.5	196.8
Congeners (110/115)	pg/g	0.0	29.0	18.9	78.4	14.5	362.0	240.4	979.1	0.0	273.0	352.5	2073.4
Congeners (113/90/101)	pg/g	0.0	67.9	44.1	183.5	34.3	1000.0	662.0	2696.6	0.0	423.0	970.8	5710.4
Congeners (117/116/85)	pg/g	0.0	9.7	6.3	26.2	2.0	75.2	49.6	201.9	0.0	46.1	72.7	427.6
Congeners (128/166)	pg/g	3.4	35.5	24.3	100.9	17.3	493.0	326.5	1330.0	3.0	120.0	480.7	2827.5
Congeners (138/163/129)	pg/g	62.9	649.0	443.9	1845.6	353.0	10500.0	6948.6	28303.7	55.8	1930.0	10225.0	60147.2
Congeners (139/140)	pg/g	0.0	4.9	3.2	13.3	2.3	85.0	56.0	228.3	0.0	16.0	82.2	483.5
Congeners (147/149)	pg/g	0.0	159.0	103.4	429.7	169.0	5020.0	3322.2	13532.2	29.1	1040.0	4890.2	28765.9
Congeners (151/135)	pg/g	0.0	57.3	37.2	154.9	73.6	2470.0	1631.3	6644.6	0.0	304.0	2392.1	14071.0
Congeners (153/168)	pg/g	102.0	1110.0	757.2	3148.4	419.0	13700.0	9051.7	36870.3	72.8	2710.0	13319.9	78352.3
Congeners (156/157)	pg/g	6.1	57.8	39.7	165.1	13.0	416.0	275.0	1120.0	4.1	130.0	405.8	2387.1
Congeners (171/173)	pg/g	8.1	84.5	57.8	240.2	43.8	1340.0	886.3	3610.3	6.4	237.0	1303.8	7669.5
Congeners (180/193)	pg/g	133.0	1560.0	1060.6	4409.8	454.0	13900.0	9193.9	37449.7	77.1	2990.0	13531.2	79595.5
Congeners (183/185)	pg/g	21.3	240.0	163.5	679.6	104.0	3230.0	2135.9	8700.2	15.4	609.0	3141.9	18481.9
Congeners (197/200)	pg/g	0.0	9.4	6.1	25.3	6.0	181.0	119.8	487.8	1.5	67.0	176.6	1038.8
Congeners (198/199)	pg/g	27.4	304.0	207.2	861.5	97.8	3350.0	2211.7	9009.1	17.8	915.0	3254.7	19145.1
Total Non-Dioxin-Like Congeners	pg/g	760.0	7490.0	5134.5	21349.3	3300.0	10300.0	7850.0	31975.6	578.0	21800.0	11881.1	69889.0
Aluminum	mg/kg	0.0	4.4	2.8	11.8	0.0	48.2	31.3	127.6	0.0	3.1	45.9	270.2
Barium	mg/kg	0.0	4.3	2.8	11.6	0.1	2.1	1.4	5.7	0.1	0.1	2.1	12.2
Calcium	mg/kg	173.0	94700.0	61615.6	256197.7	454.0	14000.0	9258.9	37714.5	256.0	278.0	13741.0	80829.7
Chromium	mg/kg	0.1	1.8	1.2	5.0	0.1	1.1	0.8	3.1	0.1	0.1	1.2	6.9
Cobalt	mg/kg	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Iron	mg/kg	0.0	16.9	11.0	45.7	0.0	58.5	38.0	154.9	5.1	58.5	59.0	347.0
Magnesium	mg/kg	313.0	1760.0	1253.6	5212.3	333.0	417.0	387.6	1578.8	247.0	112.0	726.5	4273.3
Manganese	mg/kg	0.1	1.7	1.1	4.6	0.1	1.3	0.9	3.6	0.1	0.0	1.3	7.8
Mercury	mg/kg	0.6	0.4	0.5	2.0	0.1	0.0	0.1	0.3	0.0	0.0	0.1	0.7
Potassium	mg/kg	3890.0	2760.0	3155.5	13120.6	4160.0	2470.0	3061.5	12470.5	3790.0	1850.0	6915.0	40676.3
Selenium	mg/kg	1.3	1.9	1.7	7.0	1.7	1.1	1.3	5.3	1.1	0.7	2.6	15.5
Sodium	mg/kg	732.0	2890.0	2134.7	8876.1	620.0	1240.0	1023.0	4167.0	428.0	1220.0	1774.0	10435.5
Zinc	mg/kg	4.4	37.1	25.6	106.6	6.4	22.6	16.9	69.0	3.1	5.4	26.8	157.8

Notes:
Nondetects are presented as zero in this table.
Chemicals presented in this table are detected in atleast one sample.
Whole Body Concentration = [(Fillet concentration for constituent x Fillet weight)+(Offal concentration for constituent x Offal weight)]/Total weight
Dry Weight = (100/(100 - % moisture))*Wet Weight
Total weight of fish samples:

Location/Area	Fish	Sample Name	Fillet Weight (kg)	Offal Weight (kg)	Total Weight (kg)
HICP-TI01Hickory Pond Area1	Bass	HICP-FS-B01-F-12B, HICP-FS-B01-O-12B	0.132125	0.245375	0.3775
	Sunfish	HICP-FS-S01-F-12B, HICP-FS-S01-O-12B	0.2478	0.4602	0.708
	Carp	HICP-FS-CP01-F-12B, HICP-FS-CP01-O-12B	2.43	4.32	6.75

APPENDIX D

TABLE 17

Bird Toxic Equivalents (TEQs) for Dioxin-like Polychlorinated Biphenyls (PCBs) - Henderson Pond

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	TEF*	Whole Body Concentration (dry weight)							TEQs (dry weight)						
Species -->			Carp	Bass	Sunfish	Catfish	Bass	Catfish	Catfish	Carp	Bass	Sunfish	Catfish	Bass	Catfish	Catfish
Location/Area-->			HENP-TI01/ Henderson Pond Area 1 and HENP-TI03/ Henderson Pond Area 2	HENP-TI02/Henderson Pond Area 1			HENP-TI03/Henderson Pond Area 2			HENP-TI01/ Henderson Pond Area 1	HENP-TI02/Henderson Pond Area 1			HENP-TI03/Henderson Pond Area 2		
Sample -->			HEND-FS-CP01-F-12B, HEND-FS-CP01-O-12B	HENP-FS-B03-F-12B, HENP-FS-B03-O-12B	HENP-FS-S01-F-12B, HENP-FS-S01-O-12B	HENP-FS-C02-F-12B, HENP-FS-C02-O-12B	HENP-FS-B05-F-12B, HENP-FS-B05-O-12B	HENP-FS-C06D-F-12B, HENP-FS-C06D-O-12B	HENP-FS-C06-F-12B, HENP-FS-C06-O-12B	HEND-FS-CP01-F-12B, HEND-FS-CP01-O-12B	HENP-FS-B03-F-12B, HENP-FS-B03-O-12B	HENP-FS-S01-F-12B, HENP-FS-S01-O-12B	HENP-FS-C02-F-12B, HENP-FS-C02-O-12B	HENP-FS-B05-F-12B, HENP-FS-B05-O-12B	HENP-FS-C06D-F-12B, HENP-FS-C06D-O-12B	HENP-FS-C06-F-12B, HENP-FS-C06-O-12B
Moisture content-->	%															
Polychlorinated biphenyls (PCBs)	ug/kg	NA	1795.4	2815.0	35.5	2992.9	3010.6	2806.5	390.8	NA	NA	NA	NA	NA	NA	NA
2,2',3-Trichlorobiphenyl (16)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',4-Trichlorobiphenyl (17)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,4'-Trichlorobiphenyl (22)	pg/g	NA	3.0	0.0	7.3	12.7	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3',4-Trichlorobiphenyl (25)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3',6-Trichlorobiphenyl (27)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,4',5-Trichlorobiphenyl (31)	pg/g	NA	5.0	0.0	12.5	21.7	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,4',6-Trichlorobiphenyl (32)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
3,4,4'-Trichlorobiphenyl (37)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,4-Tetrachlorobiphenyl (41)	pg/g	NA	0.0	0.0	3.1	5.4	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,4'-Tetrachlorobiphenyl (42)	pg/g	NA	1.6	0.0	4.8	8.4	0.0	272.6	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,5-Tetrachlorobiphenyl (43)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,6'-Tetrachlorobiphenyl (46)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',4,5-Tetrachlorobiphenyl (48)	pg/g	NA	1.1	0.0	4.1	7.1	0.0	165.1	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',5,5'-Tetrachlorobiphenyl (52)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,3',4-Tetrachlorobiphenyl (55)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,3',4'-Tetrachlorobiphenyl (56)	pg/g	NA	4.4	0.0	15.4	201.3	0.0	418.3	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,3',5-Tetrachlorobiphenyl (57)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,3',5'-Tetrachlorobiphenyl (58)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,4,4'-Tetrachlorobiphenyl (60)	pg/g	NA	2.5	0.0	8.4	14.5	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,4',5-Tetrachlorobiphenyl (63)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,4',6-Tetrachlorobiphenyl (64)	pg/g	NA	2.7	0.0	6.6	11.5	9.4	440.3	0.0	NA	NA	NA	NA	NA	NA	NA
2,3',4,4'-Tetrachlorobiphenyl (66)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3',4,5-Tetrachlorobiphenyl (67)	pg/g	NA	0.0	0.0	2.8	4.8	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3',4,5'-Tetrachlorobiphenyl (68)	pg/g	NA	0.0	0.0	2.5	100.9	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3',5,5'-Tetrachlorobiphenyl (72)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
3,3',4,4'-Tetrachlorobiphenyl (77)	pg/g	0.05	1.4	0.0	4.0	121.9	0.0	165.1	0.0	7.2E-02	0.0E+00	2.0E-01	6.1E+00	0.0E+00	8.3E+00	0.0E+00
3,3',4,5'-Tetrachlorobiphenyl (79)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4-Pentachlorobiphenyl (82)	pg/g	NA	2.4	0.0	4.1	120.0	0.0	287.1	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',5-Pentachlorobiphenyl (83)	pg/g	NA	372.0	254.5	3.7	350.1	0.0	332.3	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',6-Pentachlorobiphenyl (84)	pg/g	NA	4.2	0.0	7.2	200.4	0.0	629.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,4,6'-Pentachlorobiphenyl (89)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,5,5'-Pentachlorobiphenyl (92)	pg/g	NA	5059.5	4864.9	122.6	10059.0	4876.8	6666.7	1013.8	NA	NA	NA	NA	NA	NA	NA
2,2',3,5,6'-Pentachlorobiphenyl (94)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,5',6-Pentachlorobiphenyl (95)	pg/g	NA	3400.2	0.0	82.8	3741.1	0.0	4317.2	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,6,6'-Pentachlorobiphenyl (96)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',4,4',5-Pentachlorobiphenyl (99)	pg/g	NA	9395.4	12390.9	250.1	21086.0	15458.2	17419.4	2530.0	NA	NA	NA	NA	NA	NA	NA
2,2',4,5',6-Pentachlorobiphenyl (103)	pg/g	NA	4.9	424.1	10.1	918.2	246.3	618.3	72.8	NA	NA	NA	NA	NA	NA	NA
2,3,3',4,4'-Pentachlorobiphenyl (105)	pg/g	0.0001	573.3	1002.1	25.1	1509.1	1353.0	1811.8	194.0	5.7E-02	1.0E-01	2.5E-03	1.5E-01	1.4E-01	1.8E-01	1.9E-02
2,3,3',4',5-Pentachlorobiphenyl (107)	pg/g	NA	1632.0	3101.9	50.5	4204.7	2854.0	3306.5	244.2	NA	NA	NA	NA	NA	NA	NA
2,3,3',5,5'-Pentachlorobiphenyl (111)	pg/g	NA	160.2	264.4	4.1	360.3	0.0	272.6	48.8	NA	NA	NA	NA	NA	NA	NA
2,3,4,4',5-Pentachlorobiphenyl (114)	pg/g	0.0001	158.4	0.0	0.0	0.0	0.0	0.0	0.0	1.6E-02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
2,3',4,4',5-Pentachlorobiphenyl (118)	pg/g	0.00001	3856.6	6694.4	145.3	9365.7	8423.0	9408.6	1207.4	3.9E-02	6.7E-02	1.5E-03	9.4E-02	8.4E-02	9.4E-02	1.2E-02
2,3',4,5,5'-Pentachlorobiphenyl (120)	pg/g	NA	631.4	1185.0	18.8	1631.6	136.6	1338.7	188.5	NA	NA	NA	NA	NA	NA	NA
2,3',4,5',6-Pentachlorobiphenyl (121)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,3',4',5'-Pentachlorobiphenyl (122)	pg/g	NA	0.0	0.0	0.0	82.9	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3',4,4',5'-Pentachlorobiphenyl (123)	pg/g	0.00001	1.3	252.8	4.0	490.6	312.5	0.0	44.3	1.3E-05	2.5E-03	4.0E-05	4.9E-03	3.1E-03	0.0E+00	4.4E-04
3,3',4,4',5-Pentachlorobiphenyl (126)	pg/g	0.1	1.8	0.0	6.0	276.8	0.0	0.0	52.5	1.8E-01	0.0E+00	6.0E-01	2.8E+01	0.0E+00	0.0E+00	5.3E+00
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	pg/g	NA	10964.5	12931.4	225.3	19977.0	16653.8	13494.6	728.1	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,6-Hexachlorobiphenyl (131)	pg/g	NA	2.1	200.0	2.9	184.9	0.0	228.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	pg/g	NA	19761.2	7941.8	251.3	18023.6	8755.0	10322.6	612.9	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',5,5'-Hexachlorobiphenyl (133)	pg/g	NA	4236.7	6943.9	100.2	8981.0	7171.9	7043.0	1018.4	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',5,6-Hexachlorobiphenyl (134)	pg/g	NA	26.0	981.3	35.2	2472.8	558.3	1381.7	109.2	NA	NA	NA	NA	NA	NA	NA

APPENDIX D

TABLE 17

Bird Toxic Equivalents (TEQs) for Dioxin-like Polychlorinated Biphenyls (PCBs) - Henderson Pond

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	TEF*	Whole Body Concentration (dry weight)							TEQs (dry weight)						
Species -->			Carp	Bass	Sunfish	Catfish	Bass	Catfish	Catfish	Carp	Bass	Sunfish	Catfish	Bass	Catfish	Catfish
Location/Area-->			HENP-TI01/ Henderson Pond Area 1 and HENP-TI03/ Henderson Pond Area 2	HENP-TI02/Henderson Pond Area 1			HENP-TI03/Henderson Pond Area 2			HENP-TI01/ Henderson Pond Area 1	HENP-TI02/Henderson Pond Area 1			HENP-TI03/Henderson Pond Area 2		
Sample -->			HEND-FS-CP01-F-12B, HEND-FS-CP01-O-12B	HENP-FS-B03-F-12B, HENP-FS-B03-O-12B	HENP-FS-S01-F-12B, HENP-FS-S01-O-12B	HENP-FS-C02-F-12B, HENP-FS-C02-O-12B	HENP-FS-B05-F-12B, HENP-FS-B05-O-12B	HENP-FS-C06D-F-12B, HENP-FS-C06D-O-12B	HENP-FS-C06-F-12B, HENP-FS-C06-O-12B	HEND-FS-CP01-F-12B, HEND-FS-CP01-O-12B	HENP-FS-B03-F-12B, HENP-FS-B03-O-12B	HENP-FS-S01-F-12B, HENP-FS-S01-O-12B	HENP-FS-C02-F-12B, HENP-FS-C02-O-12B	HENP-FS-B05-F-12B, HENP-FS-B05-O-12B	HENP-FS-C06D-F-12B, HENP-FS-C06D-O-12B	HENP-FS-C06-F-12B, HENP-FS-C06-O-12B
Moisture content-->	%															
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	pg/g	NA	5178.4	981.3	72.0	5001.5	498.9	1924.7	140.6	NA	NA	NA	NA	NA	NA	NA
2,2',3,4,4',5-Hexachlorobiphenyl (137)	pg/g	NA	9.8	1688.1	20.2	1527.4	1773.5	1543.0	220.7	NA	NA	NA	NA	NA	NA	NA
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	pg/g	NA	29619.9	46153.8	646.0	54416.5	47142.6	44193.5	6405.5	NA	NA	NA	NA	NA	NA	NA
2,2',3,4,5',6-Hexachlorobiphenyl (144)	pg/g	NA	3437.7	4282.7	69.2	5502.8	2178.8	4408.6	384.8	NA	NA	NA	NA	NA	NA	NA
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	pg/g	NA	62770.8	126819.1	1449.3	129891.6	127352.3	115591.4	16728.1	NA	NA	NA	NA	NA	NA	NA
2,2',3,4',5,6'-Hexachlorobiphenyl (148)	pg/g	NA	308.1	636.2	7.8	745.1	633.0	639.8	77.4	NA	NA	NA	NA	NA	NA	NA
2,2',3,4',6,6'-Hexachlorobiphenyl (150)	pg/g	NA	178.8	138.9	3.0	219.8	0.0	209.7	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',4,4',5,6'-Hexachlorobiphenyl (154)	pg/g	NA	3732.0	8731.8	103.1	9678.9	7910.8	8655.9	1064.5	NA	NA	NA	NA	NA	NA	NA
2,2',4,4',6,6'-Hexachlorobiphenyl (155)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,3',4,4',6-Hexachlorobiphenyl (158)	pg/g	NA	9604.1	19126.8	253.4	20425.6	20403.3	17311.8	2695.9	NA	NA	NA	NA	NA	NA	NA
2,3,3',4,5,5'-Hexachlorobiphenyl (159)	pg/g	NA	2682.1	251.1	34.7	2844.9	1837.7	1655.9	347.9	NA	NA	NA	NA	NA	NA	NA
2,3,3',4',5,5'-Hexachlorobiphenyl (162)	pg/g	NA	3405.5	1945.9	62.5	5464.7	4899.4	3978.5	447.0	NA	NA	NA	NA	NA	NA	NA
2,3,3',4',5',6-Hexachlorobiphenyl (164)	pg/g	NA	13621.3	13970.9	246.8	19614.6	14061.1	14408.6	1981.6	NA	NA	NA	NA	NA	NA	NA
2,3,3',5,5',6-Hexachlorobiphenyl (165)	pg/g	NA	0.0	327.2	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	pg/g	0.00001	5304.8	12765.1	142.9	12652.5	13189.4	11397.8	1741.9	5.3E-02	1.3E-01	1.4E-03	1.3E-01	1.3E-01	1.1E-01	1.7E-02
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	pg/g	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	pg/g	NA	71444.5	142619.5	1486.5	124093.4	151690.4	132795.7	19861.8	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	pg/g	NA	20822.9	34885.7	384.3	32111.2	40040.7	33709.7	5069.1	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	pg/g	NA	97752.3	45322.2	1275.4	100543.2	59859.5	48763.4	11382.5	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	pg/g	NA	3466.6	6029.1	70.8	5785.5	6060.3	5483.9	815.7	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	pg/g	NA	6519.8	2091.5	72.9	5909.0	1431.8	2419.4	353.5	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	pg/g	NA	60430.2	43243.2	997.9	81408.5	71967.4	46344.1	3801.8	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	pg/g	NA	25363.8	31018.7	530.0	45554.8	35197.6	31881.7	5437.8	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',5,6,6'-Heptachlorobiphenyl (179)	pg/g	NA	23906.7	5239.1	313.5	27325.0	7100.6	7204.3	1686.6	NA	NA	NA	NA	NA	NA	NA
2,2',3,4,4',5,6-Heptachlorobiphenyl (181)	pg/g	NA	0.0	374.6	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	pg/g	NA	855.7	1929.3	0.0	1838.8	1366.7	1284.9	287.6	NA	NA	NA	NA	NA	NA	NA
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	pg/g	NA	0.0	207.9	0.0	0.0	0.0	210.2	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	pg/g	NA	152547.4	311850.3	3457.6	297793.3	311995.9	284946.2	41705.1	NA	NA	NA	NA	NA	NA	NA
2,2',3,4',5,6,6'-Heptachlorobiphenyl (188)	pg/g	NA	221.0	406.7	4.8	8.3	323.0	509.1	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	pg/g	0.00001	3465.5	6403.3	63.8	5640.1	6842.4	6236.6	880.2	3.5E-02	6.4E-02	6.4E-04	5.6E-02	6.8E-02	6.2E-02	8.8E-03
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	pg/g	NA	14416.9	31018.7	330.8	27754.9	33496.9	29301.1	4405.5	NA	NA	NA	NA	NA	NA	NA
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	pg/g	NA	2437.5	4532.2	48.4	3801.4	4898.2	4193.5	635.9	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	pg/g	NA	50313.5	77754.7	650.1	61752.0	94372.7	87096.8	11290.3	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	pg/g	NA	18035.8	30644.5	303.1	25175.2	35751.5	32957.0	4179.7	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	pg/g	NA	21374.3	33804.6	310.6	25721.1	38849.3	36344.1	4792.6	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	pg/g	NA	5809.9	6361.7	93.6	6970.9	8182.3	7204.3	963.1	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)	pg/g	NA	11668.3	10977.1	200.0	16735.4	14283.1	13655.9	2336.4	NA	NA	NA	NA	NA	NA	NA
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	pg/g	NA	36455.0	60706.9	559.0	46937.5	70224.0	69354.8	9170.5	NA	NA	NA	NA	NA	NA	NA
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	pg/g	NA	2558.7	3908.5	35.8	3099.9	4544.4	4220.4	585.3	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)	pg/g	NA	31658.1	28440.7	297.7	28230.4	39329.9	40322.6	6774.2	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)	pg/g	NA	2573.3	2465.7	28.1	2193.9	2983.7	3462.4	408.3	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)	pg/g	NA	8909.5	4324.3	87.4	7546.4	8431.8	7150.5	1663.6	NA	NA	NA	NA	NA	NA	NA
Decachlorobiphenyl (209)	pg/g	NA	3998.0	2108.1	44.3	2555.1	3291.4	4365.6	774.2	NA	NA	NA	NA	NA	NA	NA
Congeners (21/33)	pg/g	NA	3.9	0.0	11.3	19.6	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (26/29)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (28/20)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (30/18)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (40/71)	pg/g	NA	3.4	0.0	8.4	14.6	0.0	548.4	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (44/47/65)	pg/g	NA	375.1	0.0	28.6	670.4	42.9	1752.7	92.6	NA	NA	NA	NA	NA	NA	NA
Congeners (45/51)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (50/53)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (59/62/75)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (61/70/74/76)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA

APPENDIX D

TABLE 17

Bird Toxic Equivalents (TEQs) for Dioxin-like Polychlorinated Biphenyls (PCBs) - Henderson Pond

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	TEF*	Whole Body Concentration (dry weight)							TEQs (dry weight)						
Species -->			**Carp**	**Bass**	**Sunfish**	**Catfish**	**Bass**	**Catfish**	**Catfish**	**Carp**	**Bass**	**Sunfish**	**Catfish**	**Bass**	**Catfish**	**Catfish**
Location/Area-->			**HENP-TI01/ Henderson Pond Area 1 and HENP-TI03/ Henderson Pond Area 2**	**HENP-TI02/Henderson Pond Area 1**			**HENP-TI03/Henderson Pond Area 2**			**HENP-TI01/ Henderson Pond Area 1**	**HENP-TI02/Henderson Pond Area 1**			**HENP-TI03/Henderson Pond Area 2**		
Sample -->			HEND-FS-CP01-F-12B, HEND-FS-CP01-O-12B	HENP-FS-B03-F-12B, HENP-FS-B03-O-12B	HENP-FS-S01-F-12B, HENP-FS-S01-O-12B	HENP-FS-C02-F-12B, HENP-FS-C02-O-12B	HENP-FS-B05-F-12B, HENP-FS-B05-O-12B	HENP-FS-C06D-F-12B, HENP-FS-C06D-O-12B	HENP-FS-C06-F-12B, HENP-FS-C06-O-12B	HEND-FS-CP01-F-12B, HEND-FS-CP01-O-12B	HENP-FS-B03-F-12B, HENP-FS-B03-O-12B	HENP-FS-S01-F-12B, HENP-FS-S01-O-12B	HENP-FS-C02-F-12B, HENP-FS-C02-O-12B	HENP-FS-B05-F-12B, HENP-FS-B05-O-12B	HENP-FS-C06D-F-12B, HENP-FS-C06D-O-12B	HENP-FS-C06-F-12B, HENP-FS-C06-O-12B
Moisture content-->	%															
Congeners (69/49)	pg/g	NA	293.6	0.0	12.3	454.3	22.0	1435.5	61.8	NA	NA	NA	NA	NA	NA	NA
Congeners (86/87/97/109/119/125)	pg/g	NA	3615.3	3513.5	97.3	6244.5	3446.2	5914.0	511.5	NA	NA	NA	NA	NA	NA	NA
Congeners (88/91)	pg/g	NA	1240.9	598.8	18.7	1335.5	611.2	1532.3	151.2	NA	NA	NA	NA	NA	NA	NA
Congeners (93/100)	pg/g	NA	1.9	260.3	0.0	449.0	0.0	404.3	59.0	NA	NA	NA	NA	NA	NA	NA
Congeners (98/102)	pg/g	NA	223.5	0.0	0.0	198.5	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (108/124)	pg/g	NA	355.9	544.7	11.2	834.8	21.2	596.8	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (110/115)	pg/g	NA	12156.7	7068.6	176.0	11164.2	7042.6	12204.3	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (113/90/101)	pg/g	NA	14682.4	14760.9	368.5	25954.7	8639.1	22096.8	1967.7	NA	NA	NA	NA	NA	NA	NA
Congeners (117/116/85)	pg/g	NA	9.6	964.7	23.0	1638.8	148.3	1725.8	200.5	NA	NA	NA	NA	NA	NA	NA
Congeners (128/166)	pg/g	NA	6820.5	12931.4	191.7	14988.9	14183.3	12419.4	1907.8	NA	NA	NA	NA	NA	NA	NA
Congeners (138/163/129)	pg/g	NA	149587.5	299792.1	3813.7	326391.4	311853.4	282258.1	34101.4	NA	NA	NA	NA	NA	NA	NA
Congeners (139/140)	pg/g	NA	1098.7	2187.1	30.4	2517.7	2092.1	2220.4	298.6	NA	NA	NA	NA	NA	NA	NA
Congeners (147/149)	pg/g	NA	104833.5	90228.7	1751.6	142940.2	58788.2	100537.6	9354.8	NA	NA	NA	NA	NA	NA	NA
Congeners (151/135)	pg/g	NA	39990.8	41413.7	844.7	73681.4	31301.4	47849.5	6359.4	NA	NA	NA	NA	NA	NA	NA
Congeners (153/168)	pg/g	NA	190701.2	413721.4	4513.5	411547.1	428085.5	380107.5	54838.7	NA	NA	NA	NA	NA	NA	NA
Congeners (156/157)	pg/g	NA	4683.6	10686.1	151.6	10828.8	11368.4	10215.1	1557.6	NA	NA	NA	NA	NA	NA	NA
Congeners (171/173)	pg/g	NA	23426.6	43243.2	517.6	42468.7	43222.0	38064.5	5898.6	NA	NA	NA	NA	NA	NA	NA
Congeners (180/193)	pg/g	NA	232477.4	449064.4	4430.6	376760.3	500122.2	426344.1	63133.6	NA	NA	NA	NA	NA	NA	NA
Congeners (183/185)	pg/g	NA	55995.2	107692.3	1184.3	97187.5	103403.3	95161.3	14516.1	NA	NA	NA	NA	NA	NA	NA
Congeners (197/200)	pg/g	NA	6140.3	3397.1	66.7	4965.6	4421.4	3946.2	631.3	NA	NA	NA	NA	NA	NA	NA
Congeners (198/199)	pg/g	NA	68164.5	86070.7	981.4	80980.1	118967.4	103225.8	14977.0	NA	NA	NA	NA	NA	NA	NA
Total Non-Dioxin-Like Congeners	pg/g	NA	1777708.9	2777546.8	34989.6	2952001.7	2969246.4	2763440.9	385253.5	NA	NA	NA	NA	NA	NA	NA
Total TEQ	**pg/g**									**4.5E-01**	**3.6E-01**	**8.0E-01**	**3.4E+01**	**4.2E-01**	**8.7E+00**	**5.3E+00**

Notes:

TEF = Toxic equivalent factor

TEQ = toixc equivalent

TEQ = PCB congener whole body concentration (dry weight) x TEF

NA = no TEF available

*Source for Bird TEFs: Van den Berg et al., 1998.

APPENDIX D
TABLE 18
Mammal Toxic Equivalents (TEQs) for Dioxin-like Polychlorinated Biphenyls (PCBs) - Henderson Pond
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	TEF*	Whole Body Concentration (dry weight)							TEQs (dry weight)						
Species -->			Carp	Bass	Sunfish	Catfish	Bass	Catfish	Catfish	Carp	Bass	Sunfish	Catfish	Bass	Catfish	Catfish
Location/Area-->			HENP-TI01/ Henderson Pond Area 1 and HENP-TI03/ Henderson Pond Area 2	HENP-TI02/Henderson Pond Area 1			HENP-TI03/Henderson Pond Area 2			HENP-TI01/ Henderson Pond Area 1	HENP-TI02/Henderson Pond Area 1			HENP-TI03/Henderson Pond Area 2		
Sample -->			HEND-FS-CP01-F-12B, HEND-FS-CP01-O-12B	HENP-FS-B03-F-12B, HENP-FS-B03-O-12B	HENP-FS-S01-F-12B, HENP-FS-S01-O-12B	HENP-FS-C02-F-12B, HENP-FS-C02-O-12B	HENP-FS-B05-F-12B, HENP-FS-B05-O-12B	HENP-FS-C06D-F-12B, HENP-FS-C06D-O-12B	HENP-FS-C06-F-12B, HENP-FS-C06-O-12B	HEND-FS-CP01-F-12B, HEND-FS-CP01-O-12B	HENP-FS-B03-F-12B, HENP-FS-B03-O-12B	HENP-FS-S01-F-12B, HENP-FS-S01-O-12B	HENP-FS-C02-F-12B, HENP-FS-C02-O-12B	HENP-FS-B05-F-12B, HENP-FS-B05-O-12B	HENP-FS-C06D-F-12B, HENP-FS-C06D-O-12B	HENP-FS-C06-F-12B, HENP-FS-C06-O-12B
Moisture content-->	%															
Polychlorinated biphenyls (PCBs)	ug/kg	NA	1795.4	2815.0	35.5	2992.9	3010.6	2806.5	390.8	NA	NA	NA	NA	NA	NA	NA
2,2',3-Trichlorobiphenyl (16)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',4-Trichlorobiphenyl (17)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,4'-Trichlorobiphenyl (22)	pg/g	NA	3.0	0.0	7.3	12.7	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3',4-Trichlorobiphenyl (25)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3',6-Trichlorobiphenyl (27)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,4',5-Trichlorobiphenyl (31)	pg/g	NA	5.0	0.0	12.5	21.7	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,4',6-Trichlorobiphenyl (32)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
3,4,4'-Trichlorobiphenyl (37)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,4-Tetrachlorobiphenyl (41)	pg/g	NA	0.0	0.0	3.1	5.4	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,4'-Tetrachlorobiphenyl (42)	pg/g	NA	1.6	0.0	4.8	8.4	0.0	272.6	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,5-Tetrachlorobiphenyl (43)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,6'-Tetrachlorobiphenyl (46)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',4,5-Tetrachlorobiphenyl (48)	pg/g	NA	1.1	0.0	4.1	7.1	0.0	165.1	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',5,5'-Tetrachlorobiphenyl (52)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,3',4-Tetrachlorobiphenyl (55)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,3',4'-Tetrachlorobiphenyl (56)	pg/g	NA	4.4	0.0	15.4	201.3	0.0	418.3	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,3',5-Tetrachlorobiphenyl (57)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,3',5'-Tetrachlorobiphenyl (58)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,4,4'-Tetrachlorobiphenyl (60)	pg/g	NA	2.5	0.0	8.4	14.5	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,4',5-Tetrachlorobiphenyl (63)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,4',6-Tetrachlorobiphenyl (64)	pg/g	NA	2.7	0.0	6.6	11.5	9.4	440.3	0.0	NA	NA	NA	NA	NA	NA	NA
2,3',4,4'-Tetrachlorobiphenyl (66)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3',4,5-Tetrachlorobiphenyl (67)	pg/g	NA	0.0	0.0	2.8	4.8	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3',4,5'-Tetrachlorobiphenyl (68)	pg/g	NA	0.0	0.0	2.5	100.9	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3',5,5'-Tetrachlorobiphenyl (72)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
3,3',4,4'-Tetrachlorobiphenyl (77)	pg/g	0.0001	1.4	0.0	4.0	121.9	0.0	165.1	0.0	1.4E-04	0.0E+00	4.0E-04	1.2E-02	0.0E+00	1.7E-02	0.0E+00
3,3',4,5'-Tetrachlorobiphenyl (79)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4-Pentachlorobiphenyl (82)	pg/g	NA	2.4	0.0	4.1	120.0	0.0	287.1	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',5-Pentachlorobiphenyl (83)	pg/g	NA	372.0	254.5	3.7	350.1	0.0	332.3	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',6-Pentachlorobiphenyl (84)	pg/g	NA	4.2	0.0	7.2	200.4	0.0	629.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,4,6'-Pentachlorobiphenyl (89)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,5,5'-Pentachlorobiphenyl (92)	pg/g	NA	5059.5	4864.9	122.6	10059.0	4876.8	6666.7	1013.8	NA	NA	NA	NA	NA	NA	NA
2,2',3,5,6'-Pentachlorobiphenyl (94)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,5',6-Pentachlorobiphenyl (95)	pg/g	NA	3400.2	0.0	82.8	3741.1	0.0	4317.2	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,6,6'-Pentachlorobiphenyl (96)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',4,4',5-Pentachlorobiphenyl (99)	pg/g	NA	9395.4	12390.9	250.1	21086.0	15458.2	17419.4	2530.0	NA	NA	NA	NA	NA	NA	NA
2,2',4,5',6-Pentachlorobiphenyl (103)	pg/g	NA	4.9	424.1	10.1	918.2	246.3	618.3	72.8	NA	NA	NA	NA	NA	NA	NA
2,3,3',4,4'-Pentachlorobiphenyl (105)	pg/g	0.00003	573.3	1002.1	25.1	1509.1	1353.0	1811.8	194.0	1.7E-02	3.0E-02	7.5E-04	4.5E-02	4.1E-02	5.4E-02	5.8E-03
2,3,3',4',5-Pentachlorobiphenyl (107)	pg/g	NA	1632.0	3101.9	50.5	4204.7	2854.0	3306.5	244.2	NA	NA	NA	NA	NA	NA	NA
2,3,3',5,5'-Pentachlorobiphenyl (111)	pg/g	NA	160.2	264.4	4.1	360.3	0.0	272.6	48.8	NA	NA	NA	NA	NA	NA	NA
2,3,4,4',5-Pentachlorobiphenyl (114)	pg/g	0.00003	158.4	0.0	0.0	0.0	0.0	0.0	0.0	4.8E-03	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
2,3',4,4',5-Pentachlorobiphenyl (118)	pg/g	0.00003	3856.6	6694.4	145.3	9365.7	8423.0	9408.6	1207.4	1.2E-01	2.0E-01	4.4E-03	2.8E-01	2.5E-01	2.8E-01	3.6E-02
2,3',4,5,5'-Pentachlorobiphenyl (120)	pg/g	NA	631.4	1185.0	18.8	1631.6	136.6	1338.7	188.5	NA	NA	NA	NA	NA	NA	NA
2,3',4,5',6-Pentachlorobiphenyl (121)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,3',4',5'-Pentachlorobiphenyl (122)	pg/g	NA	0.0	0.0	0.0	82.9	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3',4,4',5'-Pentachlorobiphenyl (123)	pg/g	0.00003	1.3	252.8	4.0	490.6	312.5	0.0	44.3	3.8E-05	7.6E-03	1.2E-04	1.5E-02	9.4E-03	0.0E+00	1.3E-03
3,3',4,4',5-Pentachlorobiphenyl (126)	pg/g	0.1	1.8	0.0	6.0	276.8	0.0	0.0	52.5	1.8E-01	0.0E+00	6.0E-01	2.8E+01	0.0E+00	0.0E+00	5.3E+00
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	pg/g	NA	10964.5	12931.4	225.3	19977.0	16653.8	13494.6	728.1	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,6-Hexachlorobiphenyl (131)	pg/g	NA	2.1	200.0	2.9	184.9	0.0	228.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	pg/g	NA	19761.2	7941.8	251.3	18023.6	8755.0	10322.6	612.9	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',5,5'-Hexachlorobiphenyl (133)	pg/g	NA	4236.7	6943.9	100.2	8981.0	7171.9	7043.0	1018.4	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',5,6-Hexachlorobiphenyl (134)	pg/g	NA	26.0	981.3	35.2	2472.8	558.3	1381.7	109.2	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	pg/g	NA	5178.4	981.3	72.0	5001.5	498.9	1924.7	140.6	NA	NA	NA	NA	NA	NA	NA
2,2',3,4,4',5-Hexachlorobiphenyl (137)	pg/g	NA	9.8	1688.1	20.2	1527.4	1773.5	1543.0	220.7	NA	NA	NA	NA	NA	NA	NA

APPENDIX D
TABLE 18
Mammal Toxic Equivalents (TEQs) for Dioxin-like Polychlorinated Biphenyls (PCBs) - Henderson Pond
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	TEF*	Whole Body Concentration (dry weight)							TEQs (dry weight)						
Species -->			Carp	Bass	Sunfish	Catfish	Bass	Catfish	Catfish	Carp	Bass	Sunfish	Catfish	Bass	Catfish	Catfish
Location/Area-->			HENP-TI01/ Henderson Pond Area 1 and HENP-TI03/ Henderson Pond Area 2	HENP-TI02/Henderson Pond Area 1			HENP-TI03/Henderson Pond Area 2			HENP-TI01/ Henderson Pond Area 1	HENP-TI02/Henderson Pond Area 1			HENP-TI03/Henderson Pond Area 2		
Sample -->			HEND-FS-CP01-F-12B, HEND-FS-CP01-O-12B	HENP-FS-B03-F-12B, HENP-FS-B03-O-12B	HENP-FS-S01-F-12B, HENP-FS-S01-O-12B	HENP-FS-C02-F-12B, HENP-FS-C02-O-12B	HENP-FS-B05-F-12B, HENP-FS-B05-O-12B	HENP-FS-C06D-F-12B, HENP-FS-C06D-O-12B	HENP-FS-C06-F-12B, HENP-FS-C06-O-12B	HEND-FS-CP01-F-12B, HEND-FS-CP01-O-12B	HENP-FS-B03-F-12B, HENP-FS-B03-O-12B	HENP-FS-S01-F-12B, HENP-FS-S01-O-12B	HENP-FS-C02-F-12B, HENP-FS-C02-O-12B	HENP-FS-B05-F-12B, HENP-FS-B05-O-12B	HENP-FS-C06D-F-12B, HENP-FS-C06D-O-12B	HENP-FS-C06-F-12B, HENP-FS-C06-O-12B
Moisture content-->	%															
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	pg/g	NA	29619.9	46153.8	646.0	54416.5	47142.6	44193.5	6405.5	NA	NA	NA	NA	NA	NA	NA
2,2',3,4,5',6-Hexachlorobiphenyl (144)	pg/g	NA	3437.7	4282.7	69.2	5502.8	2178.8	4408.6	384.8	NA	NA	NA	NA	NA	NA	NA
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	pg/g	NA	62770.8	126819.1	1449.3	129891.6	127352.3	115591.4	16728.1	NA	NA	NA	NA	NA	NA	NA
2,2',3,4',5,6'-Hexachlorobiphenyl (148)	pg/g	NA	308.1	636.2	7.8	745.1	633.0	639.8	77.4	NA	NA	NA	NA	NA	NA	NA
2,2',3,4',6,6'-Hexachlorobiphenyl (150)	pg/g	NA	178.8	138.9	3.0	219.8	0.0	209.7	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',4,4',5,6'-Hexachlorobiphenyl (154)	pg/g	NA	3732.0	8731.8	103.1	9678.9	7910.8	8655.9	1064.5	NA	NA	NA	NA	NA	NA	NA
2,2',4,4',6,6'-Hexachlorobiphenyl (155)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,3',4,4',6-Hexachlorobiphenyl (158)	pg/g	NA	9604.1	19126.8	253.4	20425.6	20403.3	17311.8	2695.9	NA	NA	NA	NA	NA	NA	NA
2,3,3',4,5,5'-Hexachlorobiphenyl (159)	pg/g	NA	2682.1	251.1	34.7	2844.9	1837.7	1655.9	347.9	NA	NA	NA	NA	NA	NA	NA
2,3,3',4',5,5'-Hexachlorobiphenyl (162)	pg/g	NA	3405.5	1945.9	62.5	5464.7	4899.4	3978.5	447.0	NA	NA	NA	NA	NA	NA	NA
2,3,3',4',5',6-Hexachlorobiphenyl (164)	pg/g	NA	13621.3	13970.9	246.8	19614.6	14061.1	14408.6	1981.6	NA	NA	NA	NA	NA	NA	NA
2,3,3',5,5',6-Hexachlorobiphenyl (165)	pg/g	NA	0.0	327.2	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	pg/g	0.00003	5304.8	12765.1	142.9	12652.5	13189.4	11397.8	1741.9	1.6E-01	3.8E-01	4.3E-03	3.8E-01	4.0E-01	3.4E-01	5.2E-02
3,3',4,4',5,5'-Hexachlorobiphenyl (169)	pg/g	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	pg/g	NA	71444.5	142619.5	1486.5	124093.4	151690.4	132795.7	19861.8	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	pg/g	NA	20822.9	34885.7	384.3	32111.2	40040.7	33709.7	5069.1	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	pg/g	NA	97752.3	45322.2	1275.4	100543.2	59859.5	48763.4	11382.5	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	pg/g	NA	3466.6	6029.1	70.8	5785.5	6060.3	5483.9	815.7	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	pg/g	NA	6519.8	2091.5	72.9	5909.0	1431.8	2419.4	353.5	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	pg/g	NA	60430.2	43243.2	997.9	81408.5	71967.4	46344.1	3801.8	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	pg/g	NA	25363.8	31018.7	530.0	45554.8	35197.6	31881.7	5437.8	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',5,6,6'-Heptachlorobiphenyl (179)	pg/g	NA	23906.7	5239.1	313.5	27325.0	7100.6	7204.3	1686.6	NA	NA	NA	NA	NA	NA	NA
2,2',3,4,4',5,6-Heptachlorobiphenyl (181)	pg/g	NA	0.0	374.6	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	pg/g	NA	855.7	1929.3	0.0	1838.8	1366.7	1284.9	287.6	NA	NA	NA	NA	NA	NA	NA
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	pg/g	NA	0.0	207.9	0.0	0.0	0.0	210.2	0.0	NA	NA	NA	NA	NA	NA	NA
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	pg/g	NA	152547.4	311850.3	3457.6	297793.3	311995.9	284946.2	41705.1	NA	NA	NA	NA	NA	NA	NA
2,2',3,4',5,6,6'-Heptachlorobiphenyl (188)	pg/g	NA	221.0	406.7	4.8	8.3	323.0	509.1	0.0	NA	NA	NA	NA	NA	NA	NA
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	pg/g	0.00003	3465.5	6403.3	63.8	5640.1	6842.4	6236.6	880.2	1.0E-01	1.9E-01	1.9E-03	1.7E-01	2.1E-01	1.9E-01	2.6E-02
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	pg/g	NA	14416.9	31018.7	330.8	27754.9	33496.9	29301.1	4405.5	NA	NA	NA	NA	NA	NA	NA
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	pg/g	NA	2437.5	4532.2	48.4	3801.4	4898.2	4193.5	635.9	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	pg/g	NA	50313.5	77754.7	650.1	61752.0	94372.7	87096.8	11290.3	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	pg/g	NA	18035.8	30644.5	303.1	25175.2	35751.5	32957.0	4179.7	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	pg/g	NA	21374.3	33804.6	310.6	25721.1	38849.3	36344.1	4792.6	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	pg/g	NA	5809.9	6361.7	93.6	6970.9	8182.3	7204.3	963.1	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)	pg/g	NA	11668.3	10977.1	200.0	16735.4	14283.1	13655.9	2336.4	NA	NA	NA	NA	NA	NA	NA
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	pg/g	NA	36455.0	60706.9	559.0	46937.5	70224.0	69354.8	9170.5	NA	NA	NA	NA	NA	NA	NA
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	pg/g	NA	2558.7	3908.5	35.8	3099.9	4544.4	4220.4	585.3	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)	pg/g	NA	31658.1	28440.7	297.7	28230.4	39329.9	40322.6	6774.2	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)	pg/g	NA	2573.3	2465.7	28.1	2193.9	2983.7	3462.4	408.3	NA	NA	NA	NA	NA	NA	NA
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)	pg/g	NA	8909.5	4324.3	87.4	7546.4	8431.8	7150.5	1663.6	NA	NA	NA	NA	NA	NA	NA
Decachlorobiphenyl (209)	pg/g	NA	3998.0	2108.1	44.3	2555.1	3291.4	4365.6	774.2	NA	NA	NA	NA	NA	NA	NA
Congeners (21/33)	pg/g	NA	3.9	0.0	11.3	19.6	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (26/29)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (28/20)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (30/18)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (40/71)	pg/g	NA	3.4	0.0	8.4	14.6	0.0	548.4	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (44/47/65)	pg/g	NA	375.1	0.0	28.6	670.4	42.9	1752.7	92.6	NA	NA	NA	NA	NA	NA	NA
Congeners (45/51)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (50/53)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (59/62/75)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (61/70/74/76)	pg/g	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (69/49)	pg/g	NA	293.6	0.0	12.3	454.3	22.0	1435.5	61.8	NA	NA	NA	NA	NA	NA	NA
Congeners (86/87/97/109/119/125)	pg/g	NA	3615.3	3513.5	97.3	6244.5	3446.2	5914.0	511.5	NA	NA	NA	NA	NA	NA	NA
Congeners (88/91)	pg/g	NA	1240.9	598.8	18.7	1335.5	611.2	1532.3	151.2	NA	NA	NA	NA	NA	NA	NA

APPENDIX D

TABLE 18

Mammal Toxic Equivalents (TEQs) for Dioxin-like Polychlorinated Biphenyls (PCBs) - Henderson Pond

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	TEF*	Whole Body Concentration (dry weight)							TEQs (dry weight)						
Species -->			**Carp**	**Bass**	**Sunfish**	**Catfish**	**Bass**	**Catfish**	**Catfish**	**Carp**	**Bass**	**Sunfish**	**Catfish**	**Bass**	**Catfish**	**Catfish**
Location/Area-->			**HENP-TI01/ Henderson Pond Area 1 and HENP-TI03/ Henderson Pond Area 2**	**HENP-TI02/Henderson Pond Area 1**			**HENP-TI03/Henderson Pond Area 2**			**HENP-TI01/ Henderson Pond Area 1**	**HENP-TI02/Henderson Pond Area 1**			**HENP-TI03/Henderson Pond Area 2**		
Sample -->			HEND-FS-CP01-F-12B, HEND-FS-CP01-O-12B	HENP-FS-B03-F-12B, HENP-FS-B03-O-12B	HENP-FS-S01-F-12B, HENP-FS-S01-O-12B	HENP-FS-C02-F-12B, HENP-FS-C02-O-12B	HENP-FS-B05-F-12B, HENP-FS-B05-O-12B	HENP-FS-C06D-F-12B, HENP-FS-C06D-O-12B	HENP-FS-C06-F-12B, HENP-FS-C06-O-12B	HEND-FS-CP01-F-12B, HEND-FS-CP01-O-12B	HENP-FS-B03-F-12B, HENP-FS-B03-O-12B	HENP-FS-S01-F-12B, HENP-FS-S01-O-12B	HENP-FS-C02-F-12B, HENP-FS-C02-O-12B	HENP-FS-B05-F-12B, HENP-FS-B05-O-12B	HENP-FS-C06D-F-12B, HENP-FS-C06D-O-12B	HENP-FS-C06-F-12B, HENP-FS-C06-O-12B
Moisture content-->	%															
Congeners (93/100)	pg/g	NA	1.9	260.3	0.0	449.0	0.0	404.3	59.0	NA	NA	NA	NA	NA	NA	NA
Congeners (98/102)	pg/g	NA	223.5	0.0	0.0	198.5	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (108/124)	pg/g	NA	355.9	544.7	11.2	834.8	21.2	596.8	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (110/115)	pg/g	NA	12156.7	7068.6	176.0	11164.2	7042.6	12204.3	0.0	NA	NA	NA	NA	NA	NA	NA
Congeners (113/90/101)	pg/g	NA	14682.4	14760.9	368.5	25954.7	8639.1	22096.8	1967.7	NA	NA	NA	NA	NA	NA	NA
Congeners (117/116/85)	pg/g	NA	9.6	964.7	23.0	1638.8	148.3	1725.8	200.5	NA	NA	NA	NA	NA	NA	NA
Congeners (128/166)	pg/g	NA	6820.5	12931.4	191.7	14988.9	14183.3	12419.4	1907.8	NA	NA	NA	NA	NA	NA	NA
Congeners (138/163/129)	pg/g	NA	149587.5	299792.1	3813.7	326391.4	311853.4	282258.1	34101.4	NA	NA	NA	NA	NA	NA	NA
Congeners (139/140)	pg/g	NA	1098.7	2187.1	30.4	2517.7	2092.1	2220.4	298.6	NA	NA	NA	NA	NA	NA	NA
Congeners (147/149)	pg/g	NA	104833.5	90228.7	1751.6	142940.2	58788.2	100537.6	9354.8	NA	NA	NA	NA	NA	NA	NA
Congeners (151/135)	pg/g	NA	39990.8	41413.7	844.7	73681.4	31301.4	47849.5	6359.4	NA	NA	NA	NA	NA	NA	NA
Congeners (153/168)	pg/g	NA	190701.2	413721.4	4513.5	411547.1	428085.5	380107.5	54838.7	NA	NA	NA	NA	NA	NA	NA
Congeners (156/157)	pg/g	NA	4683.6	10686.1	151.6	10828.8	11368.4	10215.1	1557.6	NA	NA	NA	NA	NA	NA	NA
Congeners (171/173)	pg/g	NA	23426.6	43243.2	517.6	42468.7	43222.0	38064.5	5898.6	NA	NA	NA	NA	NA	NA	NA
Congeners (180/193)	pg/g	NA	232477.4	449064.4	4430.6	376760.3	500122.2	426344.1	63133.6	NA	NA	NA	NA	NA	NA	NA
Congeners (183/185)	pg/g	NA	55995.2	107692.3	1184.3	97187.5	103403.3	95161.3	14516.1	NA	NA	NA	NA	NA	NA	NA
Congeners (197/200)	pg/g	NA	6140.3	3397.1	66.7	4965.6	4421.4	3946.2	631.3	NA	NA	NA	NA	NA	NA	NA
Congeners (198/199)	pg/g	NA	68164.5	86070.7	981.4	80980.1	118967.4	103225.8	14977.0	NA	NA	NA	NA	NA	NA	NA
Total Non-Dioxin-Like Congeners	pg/g	NA	1777708.9	2777546.8	34989.6	2952001.7	2969246.4	2763440.9	385253.5	NA	NA	NA	NA	NA	NA	NA
Total TEQ	**pg/g**									**5.8E-01**	**8.1E-01**	**6.1E-01**	**2.9E+01**	**9.0E-01**	**8.8E-01**	**5.4E+00**

Notes:

TEF = Toxicity equivalent factor

TEQ = PCB congener whole body concentration (dry weight) x TEF

NA = no TEF available

*Source for Mammals TEFs: Van den Berg et al., 2006

APPENDIX D

TABLE 19

Bird Toxic Equivalents (TEQs) for Dioxin-like Polychlorinated Biphenyls (PCBs) - Hickory Pond

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	TEF*	Whole Body Concentration (dry weight)			TEQs - dry weight		
Species -->			**Bass**	**Sunfish**	**Carp**	**Bass**	**Sunfish**	**Carp**
Location/Area-->			**HICP-TI01/Hickory Pond Area 1**					
Sample -->			HICP-FS-B01-F-12B HICP-FS-B01-O-12B	HICP-FS-S01-F-12B HICP-FS-S01-O-12B	HICP-FS-CP01-F-12B HICP-FS-CP01-O-12B	HICP-FS-B01-F-12B HICP-FS-B01-O-12B	HICP-FS-S01-F-12B HICP-FS-S01-O-12B	HICP-FS-CP01-F-12B HICP-FS-CP01-O-12B
Moisture content-->	%							
Polychlorinated biphenyls (PCBs)	ug/kg	NA	22.0	427.7	3.5	NA	NA	NA
4-Chlorobiphenyl (3)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,3'-Dichlorobiphenyl (6)	pg/g	NA	2.3	0.0	0.0	NA	NA	NA
2,4'-Dichlorobiphenyl (8)	pg/g	NA	27.8	0.0	0.0	NA	NA	NA
3,3'-Dichlorobiphenyl (11)	pg/g	NA	23.4	0.0	0.0	NA	NA	NA
2,2',3-Trichlorobiphenyl (16)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,2',4-Trichlorobiphenyl (17)	pg/g	NA	6.2	0.0	0.0	NA	NA	NA
2,3,4'-Trichlorobiphenyl (22)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,3',4-Trichlorobiphenyl (25)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,4',5-Trichlorobiphenyl (31)	pg/g	NA	14.8	0.0	0.0	NA	NA	NA
2,4',6-Trichlorobiphenyl (32)	pg/g	NA	1.8	0.0	0.0	NA	NA	NA
3,4,4'-Trichlorobiphenyl (37)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,2',3,4'-Tetrachlorobiphenyl (42)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,2',4,5-Tetrachlorobiphenyl (48)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,2',5,5'-Tetrachlorobiphenyl (52)	pg/g	NA	0.0	159.3	0.0	NA	NA	NA
2,3,3',4-Tetrachlorobiphenyl (55)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,3,3',4'-Tetrachlorobiphenyl (56)	pg/g	NA	8.1	40.7	10.5	NA	NA	NA
2,3,4,4'-Tetrachlorobiphenyl (60)	pg/g	NA	4.7	0.0	0.0	NA	NA	NA
2,3,4',5-Tetrachlorobiphenyl (63)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,3,4',6-Tetrachlorobiphenyl (64)	pg/g	NA	4.8	14.5	5.2	NA	NA	NA
2,3',4,4'-Tetrachlorobiphenyl (66)	pg/g	NA	0.0	200.4	0.0	NA	NA	NA
2,3',4,5-Tetrachlorobiphenyl (67)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,3',4,5'-Tetrachlorobiphenyl (68)	pg/g	NA	0.0	20.2	0.0	NA	NA	NA
2,3',5,5'-Tetrachlorobiphenyl (72)	pg/g	NA	0.0	25.6	0.0	NA	NA	NA
3,3',4,4'-Tetrachlorobiphenyl (77)	pg/g	0.05	2.6	23.8	3.9	1.32E-01	1.19E+00	1.97E-01
3,3',4,5'-Tetrachlorobiphenyl (79)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,2',3,3',4-Pentachlorobiphenyl (82)	pg/g	NA	3.3	24.4	0.0	NA	NA	NA
2,2',3,3',5-Pentachlorobiphenyl (83)	pg/g	NA	2.7	51.3	0.0	NA	NA	NA
2,2',3,3',6-Pentachlorobiphenyl (84)	pg/g	NA	4.5	36.3	5.9	NA	NA	NA
2,2',3,5,5'-Pentachlorobiphenyl (92)	pg/g	NA	40.4	1470.5	11.8	NA	NA	NA
2,2',3,5',6-Pentachlorobiphenyl (95)	pg/g	NA	0.0	611.0	0.0	NA	NA	NA
2,2',4,4',5-Pentachlorobiphenyl (99)	pg/g	NA	123.5	3323.8	30.6	NA	NA	NA

APPENDIX D

TABLE 19

Bird Toxic Equivalents (TEQs) for Dioxin-like Polychlorinated Biphenyls (PCBs) - Hickory Pond

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	TEF*	Whole Body Concentration (dry weight)			TEQs - dry weight		
Species -->			**Bass**	**Sunfish**	**Carp**	**Bass**	**Sunfish**	**Carp**
Location/Area-->			**HICP-TI01/Hickory Pond Area 1**					
Sample -->			HICP-FS-B01-F-12B HICP-FS-B01-O-12B	HICP-FS-S01-F-12B HICP-FS-S01-O-12B	HICP-FS-CP01-F-12B HICP-FS-CP01-O-12B	HICP-FS-B01-F-12B HICP-FS-B01-O-12B	HICP-FS-S01-F-12B HICP-FS-S01-O-12B	HICP-FS-CP01-F-12B HICP-FS-CP01-O-12B
Moisture content-->	%							
2,2',4,5',6-Pentachlorobiphenyl (103)	pg/g	NA	0.0	134.4	0.0	NA	NA	NA
2,3,3',4,4'-Pentachlorobiphenyl (105)	pg/g	0.0001	52.3	338.9	15.9	5.23E-03	3.39E-02	1.59E-03
2,3,3',4',5-Pentachlorobiphenyl (107)	pg/g	NA	38.3	676.2	8.9	NA	NA	NA
2,3,3',5,5'-Pentachlorobiphenyl (111)	pg/g	NA	2.9	53.4	0.0	NA	NA	NA
2,3,4,4',5-Pentachlorobiphenyl (114)	pg/g	0.0001	3.6	0.0	0.0	3.65E-04	0.00E+00	0.00E+00
2,3',4,4',5-Pentachlorobiphenyl (118)	pg/g	0.00001	210.7	1780.0	54.4	2.11E-03	1.78E-02	5.44E-04
2,3',4,5,5'-Pentachlorobiphenyl (120)	pg/g	NA	8.6	231.0	0.0	NA	NA	NA
2,3,3',4',5'-Pentachlorobiphenyl (122)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,3',4,4',5'-Pentachlorobiphenyl (123)	pg/g	0.00001	5.0	77.4	0.0	5.03E-05	7.74E-04	0.00E+00
3,3',4,4',5-Pentachlorobiphenyl (126)	pg/g	0.1	4.2	36.9	0.0	4.22E-01	3.69E+00	0.00E+00
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	pg/g	NA	74.5	2737.3	18.6	NA	NA	NA
2,2',3,3',4,6-Hexachlorobiphenyl (131)	pg/g	NA	0.0	38.4	0.0	NA	NA	NA
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	pg/g	NA	51.1	2533.6	0.0	NA	NA	NA
2,2',3,3',5,5'-Hexachlorobiphenyl (133)	pg/g	NA	44.9	1193.5	9.6	NA	NA	NA
2,2',3,3',5,6-Hexachlorobiphenyl (134)	pg/g	NA	6.2	329.9	0.0	NA	NA	NA
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	pg/g	NA	6.8	741.3	8.2	NA	NA	NA
2,2',3,4,4',5-Hexachlorobiphenyl (137)	pg/g	NA	27.2	194.3	6.2	NA	NA	NA
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	pg/g	NA	256.7	6843.2	60.0	NA	NA	NA
2,2',3,4,5',6-Hexachlorobiphenyl (144)	pg/g	NA	23.3	802.4	7.3	NA	NA	NA
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	pg/g	NA	694.5	17148.7	102.4	NA	NA	NA
2,2',3,4',5,6'-Hexachlorobiphenyl (148)	pg/g	NA	2.4	98.6	0.0	NA	NA	NA
2,2',3,4',6,6'-Hexachlorobiphenyl (150)	pg/g	NA	0.0	33.1	0.0	NA	NA	NA
2,2',4,4',5,6'-Hexachlorobiphenyl (154)	pg/g	NA	31.0	1258.7	0.0	NA	NA	NA
2,2',4,4',6,6'-Hexachlorobiphenyl (155)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,3,3',4,4',6-Hexachlorobiphenyl (158)	pg/g	NA	132.9	2696.5	27.4	NA	NA	NA
2,3,3',4,5,5'-Hexachlorobiphenyl (159)	pg/g	NA	5.1	394.7	0.0	NA	NA	NA
2,3,3',4',5,5'-Hexachlorobiphenyl (162)	pg/g	NA	33.0	737.3	0.0	NA	NA	NA
2,3,3',4',5',6-Hexachlorobiphenyl (164)	pg/g	NA	75.7	2659.9	22.9	NA	NA	NA
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	pg/g	0.00001	152.5	1792.3	17.8	1.53E-03	1.79E-02	1.78E-04
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	pg/g	NA	1159.9	18085.5	137.6	NA	NA	NA
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	pg/g	NA	286.4	4643.6	40.9	NA	NA	NA
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	pg/g	NA	266.8	15234.2	121.8	NA	NA	NA

APPENDIX D

TABLE 19

Bird Toxic Equivalents (TEQs) for Dioxin-like Polychlorinated Biphenyls (PCBs) - Hickory Pond

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	TEF*	Whole Body Concentration (dry weight)			TEQs - dry weight		
Species -->			**Bass**	**Sunfish**	**Carp**	**Bass**	**Sunfish**	**Carp**
Location/Area-->			**HICP-TI01/Hickory Pond Area 1**					
Sample -->			HICP-FS-B01-F-12B HICP-FS-B01-O-12B	HICP-FS-S01-F-12B HICP-FS-S01-O-12B	HICP-FS-CP01-F-12B HICP-FS-CP01-O-12B	HICP-FS-B01-F-12B HICP-FS-B01-O-12B	HICP-FS-S01-F-12B HICP-FS-S01-O-12B	HICP-FS-CP01-F-12B HICP-FS-CP01-O-12B
Moisture content-->	%							
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	pg/g	NA	30.1	757.6	0.0	NA	NA	NA
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	pg/g	NA	9.8	920.6	7.1	NA	NA	NA
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	pg/g	NA	211.6	12179.2	72.4	NA	NA	NA
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	pg/g	NA	170.8	6435.8	32.8	NA	NA	NA
2,2',3,3',5,6,6'-Heptachlorobiphenyl (179)	pg/g	NA	27.9	4114.1	21.6	NA	NA	NA
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	pg/g	NA	0.0	162.9	0.0	NA	NA	NA
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	pg/g	NA	3.2	28.9	0.0	NA	NA	NA
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	pg/g	NA	1781.8	40570.3	195.9	NA	NA	NA
2,2',3,4',5,6,6'-Heptachlorobiphenyl (188)	pg/g	NA	3.3	60.7	0.0	NA	NA	NA
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	pg/g	0.00001	79.0	875.8	8.7	7.90E-04	8.76E-03	8.71E-05
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	pg/g	NA	291.9	4358.5	29.6	NA	NA	NA
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	pg/g	NA	38.6	529.5	0.0	NA	NA	NA
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	pg/g	NA	911.3	9653.8	78.8	NA	NA	NA
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	pg/g	NA	224.3	4000.0	25.5	NA	NA	NA
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	pg/g	NA	277.1	3910.4	33.2	NA	NA	NA
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	pg/g	NA	44.0	949.1	7.1	NA	NA	NA
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)	pg/g	NA	97.1	2558.0	21.4	NA	NA	NA
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	pg/g	NA	600.0	7739.3	60.0	NA	NA	NA
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	pg/g	NA	52.6	525.5	6.1	NA	NA	NA
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)	pg/g	NA	366.0	4480.7	50.9	NA	NA	NA
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)	pg/g	NA	35.0	309.6	5.9	NA	NA	NA
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)	pg/g	NA	62.9	1226.1	21.1	NA	NA	NA
Decachlorobiphenyl (209)	pg/g	NA	81.8	594.7	22.8	NA	NA	NA
Congeners (21/33)	pg/g	NA	3.8	0.0	0.0	NA	NA	NA
Congeners (26/29)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
Congeners (28/20)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
Congeners (30/18)	pg/g	NA	8.3	0.0	9.1	NA	NA	NA
Congeners (40/71)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
Congeners (44/47/65)	pg/g	NA	0.0	141.8	0.0	NA	NA	NA
Congeners (45/51)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
Congeners (59/62/75)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
Congeners (61/70/74/76)	pg/g	NA	0.0	276.2	0.0	NA	NA	NA

APPENDIX D

TABLE 19

Bird Toxic Equivalents (TEQs) for Dioxin-like Polychlorinated Biphenyls (PCBs) - Hickory Pond

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	TEF*	Whole Body Concentration (dry weight)			TEQs - dry weight		
Species -->			**Bass**	**Sunfish**	**Carp**	**Bass**	**Sunfish**	**Carp**
Location/Area-->			**HICP-TI01/Hickory Pond Area 1**					
Sample -->			HICP-FS-B01-F-12B HICP-FS-B01-O-12B	HICP-FS-S01-F-12B HICP-FS-S01-O-12B	HICP-FS-CP01-F-12B HICP-FS-CP01-O-12B	HICP-FS-B01-F-12B HICP-FS-B01-O-12B	HICP-FS-S01-F-12B HICP-FS-S01-O-12B	HICP-FS-CP01-F-12B HICP-FS-CP01-O-12B
Moisture content-->	%							
Congeners (69/49)	pg/g	NA	7.0	97.8	8.0	NA	NA	NA
Congeners (86/87/97/109/119/125)	pg/g	NA	76.7	1042.8	55.2	NA	NA	NA
Congeners (88/91)	pg/g	NA	5.4	213.8	0.0	NA	NA	NA
Congeners (93/100)	pg/g	NA	0.0	53.4	0.0	NA	NA	NA
Congeners (98/102)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
Congeners (108/124)	pg/g	NA	7.4	143.0	0.0	NA	NA	NA
Congeners (110/115)	pg/g	NA	78.4	1474.5	0.0	NA	NA	NA
Congeners (113/90/101)	pg/g	NA	183.5	4073.3	0.0	NA	NA	NA
Congeners (117/116/85)	pg/g	NA	26.2	306.3	0.0	NA	NA	NA
Congeners (128/166)	pg/g	NA	100.9	2008.1	17.4	NA	NA	NA
Congeners (138/163/129)	pg/g	NA	1845.6	42769.9	328.2	NA	NA	NA
Congeners (139/140)	pg/g	NA	13.3	346.2	0.0	NA	NA	NA
Congeners (147/149)	pg/g	NA	429.7	20448.1	171.2	NA	NA	NA
Congeners (151/135)	pg/g	NA	154.9	10061.1	0.0	NA	NA	NA
Congeners (153/168)	pg/g	NA	3148.4	55804.5	428.2	NA	NA	NA
Congeners (156/157)	pg/g	NA	165.1	1694.5	24.1	NA	NA	NA
Congeners (171/173)	pg/g	NA	240.2	5458.2	37.7	NA	NA	NA
Congeners (180/193)	pg/g	NA	4409.8	56619.1	453.5	NA	NA	NA
Congeners (183/185)	pg/g	NA	679.6	13156.8	90.6	NA	NA	NA
Congeners (197/200)	pg/g	NA	25.3	737.3	9.0	NA	NA	NA
Congeners (198/199)	pg/g	NA	861.5	13645.6	104.7	NA	NA	NA
Total Non-Dioxin-Like Congeners	pg/g	NA	21349.3	41955.2	3400.0	NA	NA	NA
Total TEQ	**pg/g**					**5.63E-01**	**4.96E+00**	**1.99E-01**

Notes:

TEF = Toxicity equivalent factor

TEQ = PCB congener whole body concentration (dry weight) x TEF

NA = no TEF available

*Source for Bird TEFs: Van den Berg et al., 1998.

APPENDIX D

TABLE 20

Mammal Toxic Equivalents (TEQs) for Dioxin-like Polychlorinated Biphenyls (PCBs) - Hickory Pond

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	TEF*	Whole Body Concentration (dry weight)			TEQs - dry weight		
Species -->			**Bass**	**Sunfish**	**Carp**	**Bass**	**Sunfish**	**Carp**
Location/Area-->			**HICP-TI01/Hickory Pond Area 1**					
Sample -->			HICP-FS-B01-F-12B HICP-FS-B01-O-12B	HICP-FS-S01-F-12B HICP-FS-S01-O-12B	HICP-FS-CP01-F-12B HICP-FS-CP01-O-12B	HICP-FS-B01-F-12B HICP-FS-B01-O-12B	HICP-FS-S01-F-12B HICP-FS-S01-O-12B	HICP-FS-CP01-F-12B HICP-FS-CP01-O-12B
Moisture content-->	%							
Polychlorinated biphenyls (PCBs)	ug/kg	NA	22.0	427.7	3.5	NA	NA	NA
4-Chlorobiphenyl (3)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,3'-Dichlorobiphenyl (6)	pg/g	NA	2.3	0.0	0.0	NA	NA	NA
2,4'-Dichlorobiphenyl (8)	pg/g	NA	27.8	0.0	0.0	NA	NA	NA
3,3'-Dichlorobiphenyl (11)	pg/g	NA	23.4	0.0	0.0	NA	NA	NA
2,2',3-Trichlorobiphenyl (16)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,2',4-Trichlorobiphenyl (17)	pg/g	NA	6.2	0.0	0.0	NA	NA	NA
2,3,4'-Trichlorobiphenyl (22)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,3',4-Trichlorobiphenyl (25)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,4',5-Trichlorobiphenyl (31)	pg/g	NA	14.8	0.0	0.0	NA	NA	NA
2,4',6-Trichlorobiphenyl (32)	pg/g	NA	1.8	0.0	0.0	NA	NA	NA
3,4,4'-Trichlorobiphenyl (37)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,2',3,4'-Tetrachlorobiphenyl (42)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,2',4,5-Tetrachlorobiphenyl (48)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,2',5,5'-Tetrachlorobiphenyl (52)	pg/g	NA	0.0	159.3	0.0	NA	NA	NA
2,3,3',4-Tetrachlorobiphenyl (55)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,3,3',4'-Tetrachlorobiphenyl (56)	pg/g	NA	8.1	40.7	10.5	NA	NA	NA
2,3,4,4'-Tetrachlorobiphenyl (60)	pg/g	NA	4.7	0.0	0.0	NA	NA	NA
2,3,4',5-Tetrachlorobiphenyl (63)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,3,4',6-Tetrachlorobiphenyl (64)	pg/g	NA	4.8	14.5	5.2	NA	NA	NA
2,3',4,4'-Tetrachlorobiphenyl (66)	pg/g	NA	0.0	200.4	0.0	NA	NA	NA
2,3',4,5-Tetrachlorobiphenyl (67)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,3',4,5'-Tetrachlorobiphenyl (68)	pg/g	NA	0.0	20.2	0.0	NA	NA	NA
2,3',5,5'-Tetrachlorobiphenyl (72)	pg/g	NA	0.0	25.6	0.0	NA	NA	NA
3,3',4,4'-Tetrachlorobiphenyl (77)	pg/g	0.0001	2.6	23.8	3.9	2.64E-04	2.38E-03	3.94E-04
3,3',4,5'-Tetrachlorobiphenyl (79)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,2',3,3',4-Pentachlorobiphenyl (82)	pg/g	NA	3.3	24.4	0.0	NA	NA	NA
2,2',3,3',5-Pentachlorobiphenyl (83)	pg/g	NA	2.7	51.3	0.0	NA	NA	NA
2,2',3,3',6-Pentachlorobiphenyl (84)	pg/g	NA	4.5	36.3	5.9	NA	NA	NA
2,2',3,5,5'-Pentachlorobiphenyl (92)	pg/g	NA	40.4	1470.5	11.8	NA	NA	NA
2,2',3,5',6-Pentachlorobiphenyl (95)	pg/g	NA	0.0	611.0	0.0	NA	NA	NA
2,2',4,4',5-Pentachlorobiphenyl (99)	pg/g	NA	123.5	3323.8	30.6	NA	NA	NA

APPENDIX D

TABLE 20

Mammal Toxic Equivalents (TEQs) for Dioxin-like Polychlorinated Biphenyls (PCBs) - Hickory Pond

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	TEF*	Whole Body Concentration (dry weight)			TEQs - dry weight		
Species -->			**Bass**	**Sunfish**	**Carp**	**Bass**	**Sunfish**	**Carp**
Location/Area-->			**HICP-TI01/Hickory Pond Area 1**					
Sample -->			HICP-FS-B01-F-12B HICP-FS-B01-O-12B	HICP-FS-S01-F-12B HICP-FS-S01-O-12B	HICP-FS-CP01-F-12B HICP-FS-CP01-O-12B	HICP-FS-B01-F-12B HICP-FS-B01-O-12B	HICP-FS-S01-F-12B HICP-FS-S01-O-12B	HICP-FS-CP01-F-12B HICP-FS-CP01-O-12B
Moisture content-->	%							
2,2',4,5',6-Pentachlorobiphenyl (103)	pg/g	NA	0.0	134.4	0.0	NA	NA	NA
2,3,3',4,4'-Pentachlorobiphenyl (105)	pg/g	0.00003	52.3	338.9	15.9	1.57E-03	1.02E-02	4.78E-04
2,3,3',4',5-Pentachlorobiphenyl (107)	pg/g	NA	38.3	676.2	8.9	NA	NA	NA
2,3,3',5,5'-Pentachlorobiphenyl (111)	pg/g	NA	2.9	53.4	0.0	NA	NA	NA
2,3,4,4',5-Pentachlorobiphenyl (114)	pg/g	0.00003	3.6	0.0	0.0	1.09E-04	0.00E+00	0.00E+00
2,3',4,4',5-Pentachlorobiphenyl (118)	pg/g	0.00003	210.7	1780.0	54.4	6.32E-03	5.34E-02	1.63E-03
2,3',4,5,5'-Pentachlorobiphenyl (120)	pg/g	NA	8.6	231.0	0.0	NA	NA	NA
2,3,3',4',5'-Pentachlorobiphenyl (122)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,3',4,4',5'-Pentachlorobiphenyl (123)	pg/g	0.00003	5.0	77.4	0.0	1.51E-04	2.32E-03	0.00E+00
3,3',4,4',5-Pentachlorobiphenyl (126)	pg/g	0.1	4.2	36.9	0.0	4.22E-01	3.69E+00	0.00E+00
2,2',3,3',4,5'-Hexachlorobiphenyl (130)	pg/g	NA	74.5	2737.3	18.6	NA	NA	NA
2,2',3,3',4,6-Hexachlorobiphenyl (131)	pg/g	NA	0.0	38.4	0.0	NA	NA	NA
2,2',3,3',4,6'-Hexachlorobiphenyl (132)	pg/g	NA	51.1	2533.6	0.0	NA	NA	NA
2,2',3,3',5,5'-Hexachlorobiphenyl (133)	pg/g	NA	44.9	1193.5	9.6	NA	NA	NA
2,2',3,3',5,6-Hexachlorobiphenyl (134)	pg/g	NA	6.2	329.9	0.0	NA	NA	NA
2,2',3,3',6,6'-Hexachlorobiphenyl (136)	pg/g	NA	6.8	741.3	8.2	NA	NA	NA
2,2',3,4,4',5-Hexachlorobiphenyl (137)	pg/g	NA	27.2	194.3	6.2	NA	NA	NA
2,2',3,4,5,5'-Hexachlorobiphenyl (141)	pg/g	NA	256.7	6843.2	60.0	NA	NA	NA
2,2',3,4,5',6-Hexachlorobiphenyl (144)	pg/g	NA	23.3	802.4	7.3	NA	NA	NA
2,2',3,4',5,5'-Hexachlorobiphenyl (146)	pg/g	NA	694.5	17148.7	102.4	NA	NA	NA
2,2',3,4',5,6'-Hexachlorobiphenyl (148)	pg/g	NA	2.4	98.6	0.0	NA	NA	NA
2,2',3,4',6,6'-Hexachlorobiphenyl (150)	pg/g	NA	0.0	33.1	0.0	NA	NA	NA
2,2',4,4',5,6'-Hexachlorobiphenyl (154)	pg/g	NA	31.0	1258.7	0.0	NA	NA	NA
2,2',4,4',6,6'-Hexachlorobiphenyl (155)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
2,3,3',4,4',6-Hexachlorobiphenyl (158)	pg/g	NA	132.9	2696.5	27.4	NA	NA	NA
2,3,3',4,5,5'-Hexachlorobiphenyl (159)	pg/g	NA	5.1	394.7	0.0	NA	NA	NA
2,3,3',4',5,5'-Hexachlorobiphenyl (162)	pg/g	NA	33.0	737.3	0.0	NA	NA	NA
2,3,3',4',5',6-Hexachlorobiphenyl (164)	pg/g	NA	75.7	2659.9	22.9	NA	NA	NA
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	pg/g	0.00003	152.5	1792.3	17.8	4.58E-03	5.38E-02	5.33E-04
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)	pg/g	NA	1159.9	18085.5	137.6	NA	NA	NA
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)	pg/g	NA	286.4	4643.6	40.9	NA	NA	NA
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)	pg/g	NA	266.8	15234.2	121.8	NA	NA	NA

APPENDIX D

TABLE 20

Mammal Toxic Equivalents (TEQs) for Dioxin-like Polychlorinated Biphenyls (PCBs) - Hickory Pond

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	TEF*	Whole Body Concentration (dry weight)			TEQs - dry weight		
Species -->			**Bass**	**Sunfish**	**Carp**	**Bass**	**Sunfish**	**Carp**
Location/Area-->			**HICP-TI01/Hickory Pond Area 1**					
Sample -->			HICP-FS-B01-F-12B HICP-FS-B01-O-12B	HICP-FS-S01-F-12B HICP-FS-S01-O-12B	HICP-FS-CP01-F-12B HICP-FS-CP01-O-12B	HICP-FS-B01-F-12B HICP-FS-B01-O-12B	HICP-FS-S01-F-12B HICP-FS-S01-O-12B	HICP-FS-CP01-F-12B HICP-FS-CP01-O-12B
Moisture content-->	%							
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)	pg/g	NA	30.1	757.6	0.0	NA	NA	NA
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)	pg/g	NA	9.8	920.6	7.1	NA	NA	NA
2,2',3,3',4,5',6'-Heptachlorobiphenyl (177)	pg/g	NA	211.6	12179.2	72.4	NA	NA	NA
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)	pg/g	NA	170.8	6435.8	32.8	NA	NA	NA
2,2',3,3',5,6,6'-Heptachlorobiphenyl (179)	pg/g	NA	27.9	4114.1	21.6	NA	NA	NA
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)	pg/g	NA	0.0	162.9	0.0	NA	NA	NA
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)	pg/g	NA	3.2	28.9	0.0	NA	NA	NA
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)	pg/g	NA	1781.8	40570.3	195.9	NA	NA	NA
2,2',3,4',5,6,6'-Heptachlorobiphenyl (188)	pg/g	NA	3.3	60.7	0.0	NA	NA	NA
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)	pg/g	0.00003	79.0	875.8	8.7	2.37E-03	2.63E-02	2.61E-04
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)	pg/g	NA	291.9	4358.5	29.6	NA	NA	NA
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)	pg/g	NA	38.6	529.5	0.0	NA	NA	NA
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)	pg/g	NA	911.3	9653.8	78.8	NA	NA	NA
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)	pg/g	NA	224.3	4000.0	25.5	NA	NA	NA
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)	pg/g	NA	277.1	3910.4	33.2	NA	NA	NA
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)	pg/g	NA	44.0	949.1	7.1	NA	NA	NA
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)	pg/g	NA	97.1	2558.0	21.4	NA	NA	NA
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)	pg/g	NA	600.0	7739.3	60.0	NA	NA	NA
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)	pg/g	NA	52.6	525.5	6.1	NA	NA	NA
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)	pg/g	NA	366.0	4480.7	50.9	NA	NA	NA
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)	pg/g	NA	35.0	309.6	5.9	NA	NA	NA
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)	pg/g	NA	62.9	1226.1	21.1	NA	NA	NA
Decachlorobiphenyl (209)	pg/g	NA	81.8	594.7	22.8	NA	NA	NA
Congeners (21/33)	pg/g	NA	3.8	0.0	0.0	NA	NA	NA
Congeners (26/29)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
Congeners (28/20)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
Congeners (30/18)	pg/g	NA	8.3	0.0	9.1	NA	NA	NA
Congeners (40/71)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
Congeners (44/47/65)	pg/g	NA	0.0	141.8	0.0	NA	NA	NA
Congeners (45/51)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
Congeners (59/62/75)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
Congeners (61/70/74/76)	pg/g	NA	0.0	276.2	0.0	NA	NA	NA

APPENDIX D

TABLE 20

Mammal Toxic Equivalents (TEQs) for Dioxin-like Polychlorinated Biphenyls (PCBs) - Hickory Pond

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Unit	TEF*	Whole Body Concentration (dry weight)			TEQs - dry weight		
Species -->			**Bass**	**Sunfish**	**Carp**	**Bass**	**Sunfish**	**Carp**
Location/Area-->			**HICP-TI01/Hickory Pond Area 1**					
Sample -->			HICP-FS-B01-F-12B HICP-FS-B01-O-12B	HICP-FS-S01-F-12B HICP-FS-S01-O-12B	HICP-FS-CP01-F-12B HICP-FS-CP01-O-12B	HICP-FS-B01-F-12B HICP-FS-B01-O-12B	HICP-FS-S01-F-12B HICP-FS-S01-O-12B	HICP-FS-CP01-F-12B HICP-FS-CP01-O-12B
Moisture content-->	%							
Congeners (69/49)	pg/g	NA	7.0	97.8	8.0	NA	NA	NA
Congeners (86/87/97/109/119/125)	pg/g	NA	76.7	1042.8	55.2	NA	NA	NA
Congeners (88/91)	pg/g	NA	5.4	213.8	0.0	NA	NA	NA
Congeners (93/100)	pg/g	NA	0.0	53.4	0.0	NA	NA	NA
Congeners (98/102)	pg/g	NA	0.0	0.0	0.0	NA	NA	NA
Congeners (108/124)	pg/g	NA	7.4	143.0	0.0	NA	NA	NA
Congeners (110/115)	pg/g	NA	78.4	1474.5	0.0	NA	NA	NA
Congeners (113/90/101)	pg/g	NA	183.5	4073.3	0.0	NA	NA	NA
Congeners (117/116/85)	pg/g	NA	26.2	306.3	0.0	NA	NA	NA
Congeners (128/166)	pg/g	NA	100.9	2008.1	17.4	NA	NA	NA
Congeners (138/163/129)	pg/g	NA	1845.6	42769.9	328.2	NA	NA	NA
Congeners (139/140)	pg/g	NA	13.3	346.2	0.0	NA	NA	NA
Congeners (147/149)	pg/g	NA	429.7	20448.1	171.2	NA	NA	NA
Congeners (151/135)	pg/g	NA	154.9	10061.1	0.0	NA	NA	NA
Congeners (153/168)	pg/g	NA	3148.4	55804.5	428.2	NA	NA	NA
Congeners (156/157)	pg/g	NA	165.1	1694.5	24.1	NA	NA	NA
Congeners (171/173)	pg/g	NA	240.2	5458.2	37.7	NA	NA	NA
Congeners (180/193)	pg/g	NA	4409.8	56619.1	453.5	NA	NA	NA
Congeners (183/185)	pg/g	NA	679.6	13156.8	90.6	NA	NA	NA
Congeners (197/200)	pg/g	NA	25.3	737.3	9.0	NA	NA	NA
Congeners (198/199)	pg/g	NA	861.5	13645.6	104.7	NA	NA	NA
Total Non-Dioxin-Like Congeners	pg/g	NA	21349.3	41955.2	3400.0	NA	NA	NA
Total TEQ	**pg/g**					**4.37E-01**	**3.84E+00**	**3.30E-03**

Notes:

TEF = Toxicity equivalent factor

TEQ = PCB congener whole body concentration (dry weight) x TEF

NA = no TEF available

*Source for Mammals TEFs: Van den Berg et al., 2006

APPENDIX D
TABLE 21
Bioaccumulation Factors for Plants, Invertebrates, and Small Mammals
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

	Soil-Biota BAF (dry weight)			**Regression[a]**		
	Value	*Basis*	*Reference*	*B0*	*B1*	*Reference*
Terrestrial Plants						
PCBs (total)	0.139	Calculated	USEPA 2007a	--	--	--
Soil Invertebrates						
PCBs (total)	--	--	--	1.410	1.361	Sample et al. 1998a
Small Mammal (insectivore-shrew)						
PCBs (total)	NA[b]	--	--	--	--	--
Small Mammal (omnivore-mouse)						
PCBs (total)	NA[b]	--	--	--	--	--
	Sediment-Biota BAF (dry weight)			**Regression[a]**		
	Value	*Basis*	*Reference*	*B0*	*B1*	*Reference*
Aquatic Plants						
Copper	--	--	--	0.669	0.394	Bechtel Jacobs 1998a
Lead	--	--	--	-1.328	0.561	Bechtel Jacobs 1998a
Selenium	--	--	--	-0.678	1.104	Bechtel Jacobs 1998a
4,4'-DDD	--	--	--	-2.512	0.752	USEPA 2007d
4,4'-DDE	--	--	--	-2.512	0.752	USEPA 2007d
4,4'-DDT	--	--	--	-2.512	0.752	USEPA 2007d
PCBs (total)	0.139	Calculated	USEPA 2007a	--	--	--
Sediment Invertebrates						
Copper	0.824	Geometric mean	Bechtel Jacobs 1998b	--	--	--
Lead	--	--	--	-0.515	0.653	Bechtel Jacobs 1998b
Selenium	1.000	Assumed	--	--	--	--
4,4'-DDD	10.759	Single value	USACOE 2010	--	--	--
4,4'-DDE	10.759	Single value	USACOE 2010	--	--	--
4,4'-DDT	1.419	Median	USACOE 2010	--	--	--
PCBs (total)	--	--	--	0.590	1.110	Bechtel Jacobs 1998b

Notes:
a - Using the regression, food item tissue concentration is calculated using the equation: $e^{(B0 + (B1 \times \ln(\text{abiotic medium concentration})))}$
b - No soil to small mammal BAFs were available. Therefore a diet to whole-body BAF was used as discussed in Section 6.3.3.1.
BAF - bioaccumulation factor

APPENDIX D
TABLE 22
Exposure Parameters for Upper Trophic Level Ecological Receptors
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Receptor	Body Weight (kg)		Water Ingestion Rate (L/day)		Food Ingestion Rate (kg/day - dry)		Dietary Composition (percent)								Soil/ Sediment Ingestion (percent)	
	Value	Reference	Value	Reference	Value	Reference	Terr Plants	Terr Inv	Mouse	Shrew	Aq Plants	Aq Inv	Fish	Reference	Value	Reference
Mammals																
Red fox	4.0600	Silva and Downing 1995	0.34939	allometric equation	0.12308	Sample and Suter 1994	7.0	2.8	43.8	43.7	0.0	0.0	0.0	USEPA 1993	2.8	Beyer et al. 1994
Short-tailed shrew	0.0169	USEPA 1993	0.00376	USEPA 1993	0.00149	USEPA 1993	4.7	82.3	0.0	0.0	0.0	0.0	0.0	USEPA 1993; Sample and Suter 1994	13.0	Sample and Suter 1994
White-footed mouse	0.0208	Silva and Downing 1995	0.00624	Sample and Suter 1994	0.00050	Sample and Suter 1994	51	47	0.0	0.0	0.0	0.0	0.0	Martin et al. 1951; Sample and Suter 1994	2.0	Beyer et al. 1994
White-tailed deer	52.9000	Silva and Downing 1995	3.52164	allometric equation	0.26100	Sample and Suter 1994	98	0.0	0.0	0.0	0.0	0.0	0.0	Sample and Suter 1994	2.0	Beyer et al. 1994
Mink	0.7770	Silva and Downing 1995	0.02176	USEPA 1993	0.02629	USEPA 1993	0.0	0.0	0.0	0.0	0.0	0.0	100.0	Assumed	0.0	Sample and Suter 1994
Birds																
American robin	0.0773	USEPA 1993	0.01062	allometric equation	0.03000	Requested by EPA	51.9	43.5	0.0	0.0	0.0	0.0	0.0	Martin et al. 1951	4.6	Sample and Suter 1994
Mourning dove	0.1265	Tomlinson et al. 1994	0.01477	allometric equation	0.01757	allometric equation	95	0.0	0.0	0.0	0.0	0.0	0.0	Tomlinson et al. 1994	5.0	Assumed based on diet
Red-tailed hawk	1.1260	Sample and Suter 1994	0.06388	allometric equation	0.03603	Sample and Suter 1994	0.0	0.0	50.5	49.5	0.0	0.0	0.0	USEPA 1993a; Sample and Suter 1994	0.0	Sample and Suter 1994
Great blue heron	2.2300	Quinney 1982	0.10098	allometric equation	0.12543	allometric equation	0.0	0.0	0.0	0.0	0.0	0.0	100.0	USEPA 1993a; Quinney and Smith 1980	1.0	Assumed (requested by EPA)

Notes:

kg - kilogram

L/day - liters per day

kg/day -dry - kilograms of food per day in dry weight

APPENDIX D

TABLE 23

Uncertainty Factors Used in Food Model

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Convert From	Convert To	Uncertainty Factor
Chronic NOAEL	Chronic NOAEL	1
Chronic LOAEL	Chronic NOAEL	5
Subchronic NOAEL	Chronic NOAEL	10
Subchronic LOAEL	Chronic NOAEL	20
Acute NOAEL	Chronic NOAEL	30
Acute LOAEL	Chronic NOAEL	50
LD50	Chronic NOAEL	100

Notes:

Uncertainty factors from Wentsel et al. (1996)

Durations are defined as follows (USEPA 1999b; Sample et al. 1996):

- Acute: <14 days
- Subchronic: 14 - 90 days
- Chronic: >90 days or during critical life stage

LOAEL - lowest observed adverse effect level

NOAEL - no observed adverse effect level

LD5- - lethal does to 50%

APPENDIX D
TABLE 24
Toxicity Reference Values for Mammals
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Chemical Form	Test Organism	Duration	Critical Life Stage?	Exposure Route	Effect/Endpoint	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Reference
Inorganics									
Aluminum	--	--	--	--	--	--	1.93	19.3	Sample et al. 1996
Barium		multiple	chronic	--	oral	--	5.1	19.8	Sample et al. 1996
Chromium	Cr+3	multiple	chronic	--	oral	--	2.4	12	USEPA 2008b
Copper		multiple	chronic	--	oral	--	5.6	6.8	Eco SSLs* (USEPA, 2007e)
Lead	--	rat	chronic	--	oral	--	4.70	5.00	Eco SSLs* (USEPA 2005b)
Manganese	--	multiple	chronic	--	oral	--	51.50	146.00	Eco SSLs* (USEPA 2007b)
Mercury	Methyl mercury chloride	mink	93 days	No	oral in diet	survival/weight loss/ataxia	0.15	0.25	Sample et al. 1996
Selenium		multiple	chronic	--	oral	--	0.143	0.157	Eco SSL* (USEPA, 2007f)
Zinc	--	--	--	--	--	--	20.80	104	Eco SSL* (USEPA, 2007c)
Pesticides/PCBs									
4,4'-DDD	--	rat	chronic	--	oral	--	0.147	0.735	Eco SSL (USEPA 2007d)
4,4'-DDE	--	rat	chronic	--	oral	--	0.147	0.735	Eco SSL (USEPA 2007d)
4,4'-DDT	--	rat	chronic	--	oral	--	0.147	0.274	Eco SSL (USEPA 2007d)
PCBs (total)[a]	--	oldfield mouse	12 months	Yes	oral in diet	reproduction	0.136	0.68	Sample et al. 1996
PCBs (total)[b]	--	mink	4.5 months	Yes	oral in diet	reproduction	0.137	0.685	Sample et al. 1996
PCBs (TEQ) - Mammal	--	rat	3 generations	Yes	oral in diet	reproduction	0.000001	0.00001	Sample et al. 1996

Notes:
[a] Used for the short-tailed shrew, white-footed mouse, and white-tailed deer only
[b] Used for the mink and red fox only
* These values were interpreted from the Eco SSL document data. LOAEL-based TRVs were obtained using a mean of the LOAELs in the data sets, which was reflective of how the NOAEL was chosen for that chemical. Other LOAEL TRVs were derived from taking the lowest bounded (paired NOAEL-LOAEL from the same study) LOAEL higher than the chosen NOAEL.
LOAEL - lowest observed adverse effect level
mg/kg/d - milligram per kilogram body weight per day
NOAEL - no observed adverse effect level

APPENDIX D
TABLE 25
Toxicity Reference Values for Birds
Henderson Pond/Hickory Pond Investigation
MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Chemical Form	Test Organism	Duration	Critical Life Stage?	Exposure Route	Effect/Endpoint	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Reference
Inorganics									
Aluminum	AL2(SO4)3	ringed dove	4 months	Yes	oral in diet	reproduction	109.7	549	Sample et al. 1996
Barium	Barium hydroxide	chicken (chicks)	4 weeks	No	oral in diet	survival	20.8	41.7	Sample et al. 1996
Chromium		multiple	chronic	--	oral		1.0	5.0	Eco SSL* (USEPA 2008b)
Copper	--	chicken	chronic	--	oral	--	4.05	4.7	Eco SSL* (USEPA 2007e)
Lead		multiple	chronic	--	oral		1.63	1.9	Eco SSL* (USEPA 2005)
Manganese	--	multiple	chronic	--	oral	--	179.0	377	Eco SSL* (USEPA 2007b)
Mercury	Methyl mercury	mallard	3 generations	Yes	oral in diet	reproduction	0.026	0.078	USEPA 1997b
Selenium	Selanomethionine	black-crowned night-heron	94 days	Yes	oral in diet	reproduction	1.80	9.00	Eco SSL* (USEPA, 2007f)
Zinc	--	--	--	--	--	--	14.50	131.00	Sample et al. 1996
Pesticides/PCBs									
4,4'-DDD	--	bald eagle	112 days	No	oral in diet	survival	0.30	3.00	USEPA 1995
4,4'-DDE	--	bald eagle	112 days	No	oral in diet	survival	0.30	3.00	USEPA 1995
4,4'-DDT	--	bald eagle	112 days	No	oral in diet	survival	0.23	0.28	USEPA 1995
PCBs (total)[a]	--	screech owl	2 generations	Yes	oral in diet	reproduction	0.41	2.05	Sample et al. 1996
PCBs (total)[b]	--	ring-necked pheasant	17 weeks	Yes	oral	reproduction	0.36	1.80	Sample et al. 1996
PCBs (total)[c]	--	mallard	1 month	Yes	oral in diet	reproduction	1.50	7.50	USEPA 1995
PCBs (TEQ) - Bird	--	ring-necked pheasant	10 weeks	Yes	injection	reproduction	0.000014	0.00014	Sample et al. 1996

Notes:

[a] Used for the American robin and red-tailed hawk only

[b] Used for the mourning dove only

[c] Used for the great blue heron only

* These values were interpreted from the Eco SSL document data. LOAEL-based TRVs were obtained using a mean of the LOAELs in the data sets, which was reflective of how the NOAEL was chosen for that chemical. Other LOAEL TRVs were derived from taking the lowest bounded (paired NOAEL-LOAEL from the same study) LOAEL higher than the chosen NOAEL.

LOAEL - lowest observed adverse effect level

mg/kg/d - milligram per kilogram body weight per day

NOAEL - no observed adverse effect level

APPENDIX D

TABLE 26

Henderson Pond Food Chain Transfer Hazard Quotients Based on Analytes in Soil and Sediment Using Maximum Concentrations - Step 3

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Hazard Quotients																	
	Red Fox		Short-tailed Shrew		White-footed Mouse		White-tailed Deer		Mink		American Robin		Mourning Dove		Red-tailed Hawk		Great Blue Heron	
	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL
Inorganics																		
Copper	NA	NA	NA	NA	NA	NA	NA	NA	0.02	0.02	NA	NA	NA	NA	NA	NA	0.11	0.036
Lead	NA	NA	NA	NA	NA	NA	NA	NA	0.02	0.01	NA	NA	NA	NA	NA	NA	0.03	0.01
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	0.23	0.14	NA	NA	NA	NA	NA	NA	0.04	0.01
Pesticides/PCBs																		
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	0.03	0.01	NA	NA	NA	NA	NA	NA	0.02	0.002
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	0.05	0.01	NA	NA	NA	NA	NA	NA	0.04	0.004
PCBs (total)	0.57	0.11	**3.25**	0.65	0.51	0.10	0.01	0.002	**1.31**	0.26	0.47	0.09	0.09	0.02	0.21	0.04	0.20	0.04
PCBs (TEQ) - mammal	NA	NA	NA	NA	NA	NA	NA	NA	0.98	0.10	NA	NA	NA	NA	NA	NA	NA	NA
PCBs (TEQ) - bird	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.14	0.014

Notes:

Hazard quotients in **bold** and shaded grey exceed one

NA - Not applicable

LOAEL - lowest observed adverse effect level

NOAEL - no observed adverse effect level

APPENDIX D

TABLE 27

Hickory Pond Food Chain Transfer Hazard Quotients Based on Analytes in Sediment Using Maximum Concentrations - Step 3

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Hazard Quotients			
	Mink		Great Blue Heron	
	NOAEL	LOAEL	NOAEL	LOAEL
Inorganics				
Aluminum	**9.83**	0.98	0.17	0.03
Barium	0.09	0.02	0.03	0.02
Chromium, hexavalent*	0.09	0.02	0.39	0.08
Manganese	0.01	0.00	0.00	0.00
Mercury	0.42	0.26	**4.33**	**1.44**
Selenium	**3.46**	**3.15**	0.48	0.10
Zinc	0.25	0.05	0.61	0.07
Pesticides/PCBs				
4,4'-DDD	0.03	0.01	0.02	0.002
4,4'-DDE	0.07	0.01	0.06	0.006
PCBs (total)	0.14	0.03	0.02	0.005
PCBs (TEQ) - mammal	0.12	0.01	NA	NA
PCBs (TEQ) - bird	NA	NA	0.02	0.002

Notes:

***** Because hexavalent chromium was detected in sediment from hickory pond, to be conservative, chromium in fish tissue was assumed to consist entirely of hexavalent chromium. TRVs for mink were based on hexavalent chromium. No TRVs for birds based on hexavalent chromium were available; therefore, TRVs for the heron were based on trivalent chromium.

Hazard quotients in **bold** and shaded grey exceed one

Food chain modeling results for terrestrial receptors exposed to total PCBs in soils near the ponds are presented in Table 26.

NA - Not applicable

LOAEL - lowest observed adverse effect level

NOAEL - no observed adverse effect level

APPENDIX D

TABLE 28

Hickory Pond Food Chain Transfer Hazard Quotients Using Exposure Point Sediment and Tissue Concentrations - Step 3

Henderson Pond/Hickory Pond Investigation

MCIEAST-MCB CAMLEJ, Jacksonville, North Carolina

Chemical	Hazard Quotients			
	Mink		Great Blue Heron	
	NOAEL	LOAEL	NOAEL	LOAEL
Inorganics				
Aluminum	**7.45**	0.75	0.09	0.02
Mercury	0.21	0.13	**2.16**	0.72
Selenium	**2.08**	**1.89**	0.29	0.06

Notes:

Hazard quotients in **bold** and shaded grey exceed one

NA - Not applicable

LOAEL - lowest observed adverse effect level

NOAEL - no observed adverse effect level