Site Characterization Report
Sludge Bed - Wilcox Dock IRM

Cumberland Bay
Work Assignment No. D002520-32

Prepared for:

SUPERFUND STANDBY PROGRAM
New York State
Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233

Prepared by:

Rust Environment & Infrastructure
12 Metro Park Road
Albany, New York 12205

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State Superfund Standby Program
New York State
Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-7010

Submitted By:

Rust Environment & Infrastructure
12 Metro Park Road
Albany, New York 12205

November 1995

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EXECUTIVE SUMMARY

The purpose of this Site Characterization report is to summarize the information gathered from the technical data review, site reconnaissance, and summarize the findings during the sludge bed and geotechnical boring sampling and investigation program performed at the Site.

The Cumberland Bay Sludge Bed - Wilcox Dock Site (Site) is located in the northwest corner of Cumberland Bay in Lake Champlain, east of the City of Plattsburgh, Clinton County, New York. The Site is bordered to the south by Wilcox Dock and to the west by the shoreline. The Site extends to the north to the approximate location of the Chamber of Commerce Building and to the east approximately 750 feet offshore. The present site definition includes all underwater areas within and along the northwestern portion of Cumberland Bay in Lake Champlain that contain accumulations of contaminated sludge. The area of the sludge bed calculated based on core stratigraphy and manually probing during the investigation is estimated to be approximately 34 acres.

A number of previous investigations were performed at the Site by various agencies and private firms. The investigations included testing of the sludge bed in 1974 by the State University of New York College (SUNY) at Plattsburgh, analysis of fish within the bay for polychlorinated biphenyls (PCB) between 1979 and the present by the New York State Department of Environmental Conservation (NYSDEC), and a study of the sludge bed properties in 1979 by Frederic R. Harris Engineers, Inc. In addition, the NYSDEC Division of Water performed sludge, sediment and wood chip analysis for PCBs in 1993 and in 1994 analyzed the sludge for PCBs as well as other chemical and physical parameters. The New York State Department of Health (NYSDOH) performed PCB analysis of lake water, sediment, sludge, and wood chips in 1994 within the sludge bed and at adjacent locations. Finally, the NYSDEC Division of Hazardous Waste Remediation collected sludge and sediment samples in 1994 for PCB and dioxin analysis as well as other chemical parameters.

Aerial photographs of the Site were obtained from Eastern Topographics. Using the aerial photos and surveying performed at designated locations, a base map of the Site was generated. Core locations were surveyed and marked within the sludge bed and surrounding locations based on a pre-planned 200 by 200 foot grid map.

The Site is located in the northern Champlain Valley and eastern section of the St. Lawrence-Champlain Lowlands, which are of low relief and were developed on glacial lake and marine sediments. The lowland rests on eroded and beveled Cambrian and Ordovician-age sandstones, dolostones, and limestones. The geology of the Site consists of highly organic paper sludge with wood chips underlaid by unconsolidated deposits of glacial origin deposited by the Laurentide ice sheet, which consist of medium to coarse sand interlayered with silt with varying amounts of gravel and clay. Beneath the glacial deposits is middle Ordovician limestone and/or shale bedrock. Depth to bedrock beneath the surface at the Site is not specifically known. No bedrock outcrops can be observed at the Site.

A total of 56 cores were collected from the sludge bed and surrounding locations and physically logged. Cores were collected from a pontoon boat and a flat-bottomed jon boat using a push corer and drive hammer as well as manually driving core liners through the sediment. Cores were also

collected from 10 beach locations from the Plattsburgh Chamber of Commerce Building northeast to the Dead Creek. Select cores were analyzed for PCBs using immunoassay field test kits at intervals within and below the estimated sludge and sediment boundary. A total of 30 cores collected within and adjacent to the sludge bed were analyzed by PCB field screening kits and all 10 beach cores were field screened for PCBs. Four cores (A-6, C-7, D-6, and G-8) and one sludge bed composite were sent to the NYSDEC laboratory for PCB confirmation analysis. Four sludge bed cores (C-6, F-7, G-6, and G-8) and five beach cores (SL-3, SL-6, SL-7, SL-8 and SL-9) were sent to ITS/Aquatec Laboratory for PCB analysis. Two sludge bed cores (A-6 and G-8) were sent to Pace Environmental Laboratory for dioxin analysis.

Field immunoassay test kits of the sludge bed and surrounding locations revealed that PCB concentrations which exceed 2 parts per million (ppm) are generally limited to the upper 12 inches of the sludge bed, however, 10 cores exhibited sludge thicknesses ranging from 14 to more than 22 inches below the surface. Beach samples analyzed with the test kits indicated that concentrations which exceeded 2 ppm were generally limited to the upper 12 to 18 inches, however, cores located adjacent to the sludge bed exhibited sludge thicknesses as thick as 35 inches below the surface. Commercial laboratory PCB analyses indicated that PCB concentrations within the sludge ranged from approximately 1 ppm to 270 ppm of total PCBs. A composite sample collected from the sludge bed was analyzed by the NYSDEC laboratory and exhibited approximately 21 ppm of total PCB. The beach sample intervals ranged from below laboratory detection to 14 ppm of total PCBs. Total adjusted dioxin data (toxicity equivalent factor adjustment) ranged from 0.06 parts per trillion (ppt) to 161.9 ppt in core intervals from 30 to 36 inches and 6 to 12 inches, respectively.

Physical logging and stratification of cores within the sludge bed indicate that the sludge bed consists of a layer of white to grey fibrous organic pulp with coarse wood chips interlayered with silt and sand at some locations ranging in depths of 3 inches to greater than 10 feet. Underlying the sludge is typically a fine grey-brown sand with varying percentages of silt sometimes interlayered with wood chips. Geotechnical borings performed during this investigation revealed that underlying the sludge is a fine brown sand interlayered with silt and varying amounts of gravel and clay. This underlying till is very dense and was difficult to penetrate during boring activities.

The lateral extent of sludge was calculated during this investigation using the core information as well as manually probing. The sludge volume is estimated to range from approximately 90,000 to 95,000 cubic yards. The portion of the sludge bed which exhibited the greatest sludge thickness was located north and northeast, along Wilcox Dock where thicknesses exceeded approximately 10 feet.

1.0 INTRODUCTION

The characterization of the Cumberland Bay - Wilcox Dock Sludge Bed ("sludge bed") is being performed under Work Assignment D002520-32 of the State Superfund Contract between the NYSDEC and Rust Environment & Infrastructure (Rust) and it's subconsultant, TAMS Consultants, Inc. (TAMS). The Work Assignment includes the performance of an Interim Remedial Measure (IRM) which involves: a site characterization to determine the nature and extent of contamination in the sludge bed and surrounding areas; identification and evaluation of remedial measures; and design of the selected remedy. This Site Characterization (SC) represents Task 2 of a series of five tasks[1] associated with the implementation of the IRM. The study area (or "Site") encompasses a much larger area than the sludge bed, it extends beyond the sludge bed into deeper waters of Cumberland Bay.

1.1 GENERAL

The purpose of the document is to describe the investigation performed and to summarize the findings of the investigation. The objective of the investigation was to define and characterize the extent of contamination in the sludge bed adjacent to Wilcox Dock for the purpose of identifying, and evaluating IRM alternatives. Section 1.0 of this report contains background information about the Site and surrounding area, including a brief summary of the scope of the SC and a section defining PCBs, the main constituent of concern at the Site. Section 2.0 identifies the individual components of the field investigation, and describes the studies and work conducted and the specific data collected in order to evaluate remedial technologies and alternatives. The regional and site geology is described in Section 3.0. In Section 4.0, pertinent SC findings including the physical systems, nature and extent of contamination, and analytical laboratory results are presented.

1.2 SITE DESCRIPTION

1.2.1 Description of the Cumberland Bay Site

The Cumberland Bay Sludge Bed - Wilcox Dock Site is located in the northwest corner of Cumberland Bay in Lake Champlain, east of the City of Plattsburgh, Clinton County, New York. The Site is bordered to the south by Wilcox Dock (also referred to as the New York State Department of Transportation Barge Canal Terminal) and to the west by the shoreline. The Site extends to the north to the approximate location of a navigational marker and to the east approximately 1500 feet offshore. The present Site definition includes all underwater and near shore areas within and along the northwestern portion of Cumberland Bay in Lake Champlain that contain accumulations of contaminated sludge and sediment deposits. A Site location map is included as

[1]Task 1 of the Work Assignment is preparation of a Work Plan, a site-specific Health and Safety Plan (HASP), and a Sampling and Analysis Plan (SAP). Task 2 is the performance of a Site Characterization to determine the extent of the sludge bed and the nature and extent of any contaminants within the bed. Tasks 3 and 4 are the development, screening and evaluation of IRM alternatives for the remediation of the sludge bed. The preparation of detailed design documents for the sludge bed IRM is Task 5.

Figure 1. The Site area is estimated to encompass approximately 64 acres. The sludge bed encompasses an area of approximately 34 acres within the Site boundary. This area was determined from the SC data collected from cores where the sludge was 3 inches or greater within the sludge bed.

The sludge bed is composed of wood pulp, wood chip debris, fine organic matter, and other processing wastes that were discharged from local wood product industries (sawmills, wood chip producing industries, and paper manufacturing and processing industries).

1.2.2 Description of Cumberland Bay and Wilcox Dock

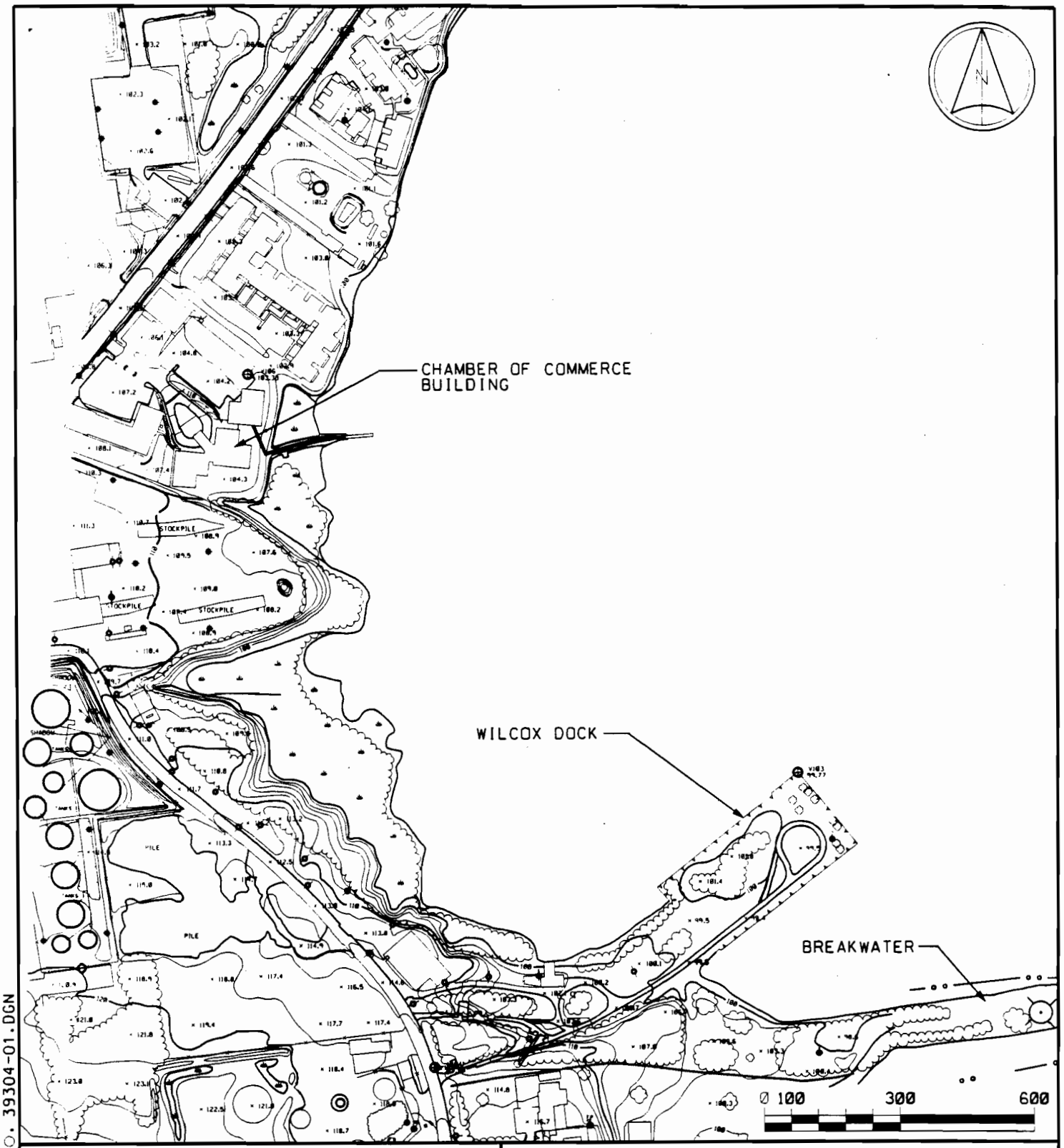
Cumberland Bay is a small, somewhat rectangular part of the west side of Lake Champlain. Compared to other parts of Lake Champlain, it is relatively shallow, with water depths exceeding 50 feet. Water depths at the Site do not exceed 17 feet and were generally less than 10 feet. The City of Plattsburgh is located on the west side of the bay. The Saranac River flows into the bay south of the Site and the Dead Creek flows into the bay from the opposite side, north and east of the Site. The north shoreline of Cumberland Bay is occupied by the Plattsburgh Chamber of Commerce Building, the Plattsburgh Municipal Beach, a campground operated by the Office of Parks and Recreation, and numerous motels and restaurants. On the east side, Cumberland Head, a large peninsula, extends into the Bay. Wilcox Dock located on the northwest shoreline of the bay, extends out into the Bay approximately 400 feet. A breakwater, owned and operated by the New York State Thruway Authority (NYSTA), just south of the dock, creates a calm inlet area, used by the public for mooring and launching of small water craft and marks the south side of the Site for the purposes of the investigation.

Wilcox Dock, is an engineered structure, approximately 200 feet wide by 400 feet long, presently controlled by the New York State Canal Corporation under the jurisdiction of the NYSTA. In the mid-1960's, as a result of a rehabilitation project conducted to preserve the dock as a Barge Canal Terminal at Plattsburgh, the south and east sides of the dock and a short portion of the north side of the dock were reinforced with sheet piling. The NYS Canal Corporation currently issues permits for the mooring of small water craft around the dock and limits access to the dock. The Georgia Pacific Corporation also controls access to a second entry to the dock area where it maintains a pump house for plant operations.

1.3 SITE HISTORY

Historically, land deeded to Willard G. Wilcox by the State of New York in the late 1800's was reappropriated back to the State of New York Department of Public Works in 1914, during which time a barge canal terminal was envisioned, planned, designed and constructed. Completion of construction occurred circa 1920 with the beginning of commercial traffic to the dock facility.

Industries in the area at the turn of the century and early 1900's included the Lozier Automobile Company, Saranac Pulp and Paper Company, Standard Pulp and Products Company, and Borst-Forest-Dixfiel. Several oil companies, including Colonial Beacon, Standard, Shell and Sucony Vacuum Oil Company maintained pipe lines from Wilcox Dock to storage facilities inland from the



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RUST ENVIRONMENT & INFRASTRUCTURE

SITE PLAN

SLUDGE BED - WILCOX DOCK IRM
CUMBERLAND BAY SITE
NYSDEC SITE No. 510017

CUMBERLAND BAY — CLINTON COUNTY, NY

PROJECT No. 39304	DATE 10/2/95	DWG. No. 39304-01	SCALE 1"=300'	FIGURE No. 1

bay. In 1935 and in 1951, the NYS Division of Canals and Waterways dredged the canal access along the dock to accommodate larger fuel bearing vessels. The Diamond Match Company (1944), Vanity Fair (1955), and ultimately, the Georgia Pacific Company (1963-present) occupied property adjacent to the Site.

Records indicate that for several decades wastes from some local industries were discharged to local streams which ultimately discharge into Cumberland Bay or were directly discharged into the bay. Sawmills on the Saranac River discharged wastes into Cumberland Bay, where prevailing winds and currents in the summer dispersed the solids against the beach areas at the north end of the bay. Also, pulp and paper mills on the shore of the bay near Dead Creek disposed of solids and organic materials (Frederic R. Harris, Inc., 1979). Untreated waste disposal ended in the early 1970's when the Plattsburgh Sewage Treatment Plant began treating wastes from the local industries. Over the years, wave action and water currents eroded the sludge bed and transported wood chips and organic debris along the shorelines and beaches to the north as well as to other areas within Cumberland Bay. For several years, the Site was considered a public nuisance, emitting unpleasant odors and hampering boating and swimming activities in the area. Environmental sampling from 1992 through 1994 confirmed the presence of PCBs, and to a lesser extent polychlorinated dibenzodioxins (dioxins) and dibenzofurans (furans) within the sludge and along the shoreline and beach areas.

At the present time, there is a health advisory in effect for several species of fish within Lake Champlain and Cumberland Bay due to elevated PCB levels in the fish; the advisory specifies, "eat no more than one meal per month". In addition, the commercial sale of yellow perch from Cumberland Bay is prohibited due to PCB concentrations in the fish, which exceed the US Food and Drug Administration (FDA) marketplace standard of 2 ppm.

1.4 PREVIOUS INVESTIGATIONS

A number of relevant investigations, including physical and analytical sampling studies, have been conducted at the Site. A brief summary of pertinent investigations is provided below.

- G.E. Myer and K. W. Loach of the SUNY at Plattsburgh prepared a report entitled *Preliminary Report of the Physical Parameters of the Plattsburgh, New York Sludge Bed*, dated March 1974. This report summarizes preliminary testing of the sludge bed depth, thickness and percent solids. It indicates that the sludge has a high water content, averaging 91.7 percent of the total mass.

- The NYSDEC has performed PCB analysis of the fish in Lake Champlain since 1979 to the present.

- A report entitled, *Final Report Mudflats Removal Feasibility Study, Plattsburgh, New York* was prepared by Frederic R. Harris, Inc. Consulting Engineers in July, 1979 under contract with the Economic Development Administration. The report summarizes "mudflat deposits" or sludge bed properties. Properties include: composition (wet, dry, and percent organic); chemical oxygen demand (COD); fecal coliform; volume estimates; filtration and leaching trials; and decomposition estimates. This report referenced a second report entitled *Physical and Chemical*

Parameters of the Plattsburgh, New York Sludge Bed: A Second Report. This report estimated the total volume of sludge to be 380,000 cubic meters, of which 47% is under water, and 53% is exposed during the summer months.

- The NYSDEC Division of Water collected 14 sludge, sediment, and wood debris samples from the sludge bed and adjacent locations near Wilcox Dock for PCB analysis in the summer of 1993. In addition, six (6) core samples were collected on March 17, 1994 from the sludge bed and analyzed for PCBs, percent solids, organic content, and volume of solids. Core depths ranged from approximately 20.5 to 45.5 centimeters (8.1 to 17.9 inches) below the sludge surface. Concentrations ranged from below laboratory detection limits to 1,850 ppm.

- The NYSDOH collected a total of 29 water, sediment, sludge and wood debris samples from the beach/shoreline north of the sludge bed and the bay water during August, November, and December, 1994. Samples were analyzed for PCBs. Lake water samples ranged from below laboratory detection limits to 310 ppt for PCBs. Sediment and wood chip analytical sample concentrations ranged from below laboratory detection limits to 210 ppm.

- The NYSDEC Division of Hazardous Waste Remediation collected sludge and sediment samples from the sludge bed and bay areas south of Wilcox Dock and east across the bay on Cumberland Head shoreline on August 9 and 10, 1994. Samples were analyzed for PCB, pesticides, metals and cyanide, dioxin, and furans. Total core recovery depths ranged from 14 to 136 cm (5.5 to 53.5 inches) below the top of the sludge/sediment surface. Concentrations of PCBs ranged from below the laboratory detection limits to 550 ppm. Dioxins ranged from below the laboratory detection limit to 330 ppt of octachlorodibenzodioxin (OCDD).

1.5 PROJECT OBJECTIVES

The purpose of the SC is to assess the nature and extent of sludge bed contamination, characterize the Site, and gather the data necessary to support the evaluation and selection of remedial alternatives for the Cumberland Bay Sludge Bed IRM. The investigation included a review of available technical data generated during previous investigations, preparation of an accurate base map of the Site from existing aerial photogrammetry, evaluation of hydraulic and environmental conditions, determination of the extent of the sludge bed, sampling and analysis of sludge and sediment (physical, chemical, and geotechnical), delineation of the contaminated area, and estimation of volume of sludge at the Site. The scope of the investigation is detailed in the Work Plan for Cumberland Bay IRM (Rust, October 1995).

1.6 SCOPE OF WORK

The scope of work developed to fulfill the project objectives outlined in Section 1.5 and as documented in the Work plan (Rust, October 1995) is summarized below:

- **Site Reconnaissance** - A visual inspection was conducted of the Site and adjacent areas with respect to physical features, boundaries and limitations that would affect the logistics of the field investigation. Information gathered was used to develop the core collection procedures and sediment sampling program. The bay area was inspected for ecological factors and the extent of human activities in the area that would be a concern in developing remedial alternatives

- **Technical Data Review** - A detailed technical data review was conducted of available reports generated during previous investigations (see Section 1.4). Information reviewed included sediment coring logs, analytical data, field notes, and historical aerial photographs. Historical plans and design drawings of the Wilcox Dock were obtained from the NYS Canal Corporation containing geotechnical boring data as well as pertinent information concerning the dock's construction. Local hydraulic, meteorologic and geologic information was gathered from previous reports and local papers.

- **Aerial Photography and Base Map Generation** - A detailed topographic base map of the Site and surrounding area was constructed from an existing aerial photograph and site survey. The photo was taken in May, 1991 by Eastern Topographics of Wolfeboro, New Hampshire. All pertinent site features including property lines, roadways, buildings, etc. are identified on the base map. The NYSDEC established two benchmarks on the Site which were used as horizontal and vertical control points. From those benchmarks, Rust performed a survey of additional points which were used to develop the base map from the existing photographs.

- **Sludge and Sediment Sampling** - A grid with nodes spaced every 200 feet was developed, surveyed and marked with buoys to delineate the sludge bed area of the bay and to identify sampling locations for collection of sludge/sediment samples. A total of 56 sediment cores were collected from the sludge bed and surrounding area of the bay and a total of ten shoreline/beach sediment cores were collected along the north shore between the Chamber of Commerce Building and Dead Creek. Collection and analysis of the core deposits were used to delineate the extent of the sludge bed and estimate the volume of contaminated sludge/sediment. Additionally, five (5) deep borings were completed to characterize subsurface geologic conditions in the areas of the bay where installation of cutoff walls will be evaluated as a potential means of containing sediment during removal operations.

- **Waste Handling and Generation** - Sediment and sludge waste collected during sampling activities was containerized in on-site roll-offs provided by NYSDEC for the management of beach cleaning activities.

1.7 DEFINITION OF POLYCHLORINATED BIPHENYLS

The high levels of PCBs in the sludge and fine wood debris found in the shallows of the bay and adjacent to Wilcox Dock is the major concern at the Site. Previous sampling within the sludge bed

indicates that total PCB concentrations range from below laboratory detection to 1,850 ppm. NYSDOH sampling in 1994 detected PCB concentrations in the wood chip debris washing up on shore and nearby bathing beaches range from below laboratory detection to 210 ppm.

PCBs are non-polar chlorinated bi-phenyls. PCBs consist of a complex mixture of isomers typically referred to as "congeners". PCBs are man-made, chemically stable and flame-resistant oily fluids or resins that have been used in capacitors, transformers, heat exchangers, plasticized resins, carbonless duplicating paper, hydraulic fluids and lubricants. PCBs were commercially produced beginning in 1929 and production was terminated in 1971. The Monsanto Company was the primary producer of PCBs in the U.S. and marketed PCBs under the trade name Aroclor with corresponding suffix numbers. The last two digits of the four digit suffix are used to define the average weight percentage of chlorine in the particular Aroclor.

As defined in the Federal Code of Regulations (40 CFR-Section 761.3) and 6 NYCRR Part 371, "PCBs are any chemical substance that is limited to the bi-phenyl molecule that has been chlorinated to varying degrees or any combination of substances which contain such substance". Materials containing PCB concentrations greater than 50 ppm are defined as a hazardous waste and are regulated by 40 CFR under the Toxic Substance Control Act (TSCA).

2.0 FIELD INVESTIGATION

2.1 FIELD RECONNAISSANCE

A field reconnaissance was performed prior to development of the core collection procedures and analytical sampling program. On June 26, 1995, Rust and NYSDEC personnel performed a field reconnaissance for the purpose of estimating the horizontal and vertical extent of sludge contamination within Cumberland Bay. The sludge bed was probed to determine its approximate boundary within the bay. In addition, a 5-gallon bucket sample was collected for visual evaluation from the estimated center of the sludge bed. The physical properties of the sludge sample were visually evaluated and used to determine the most appropriate method of sediment core sampling.

2.2 TECHNICAL DATA REVIEW

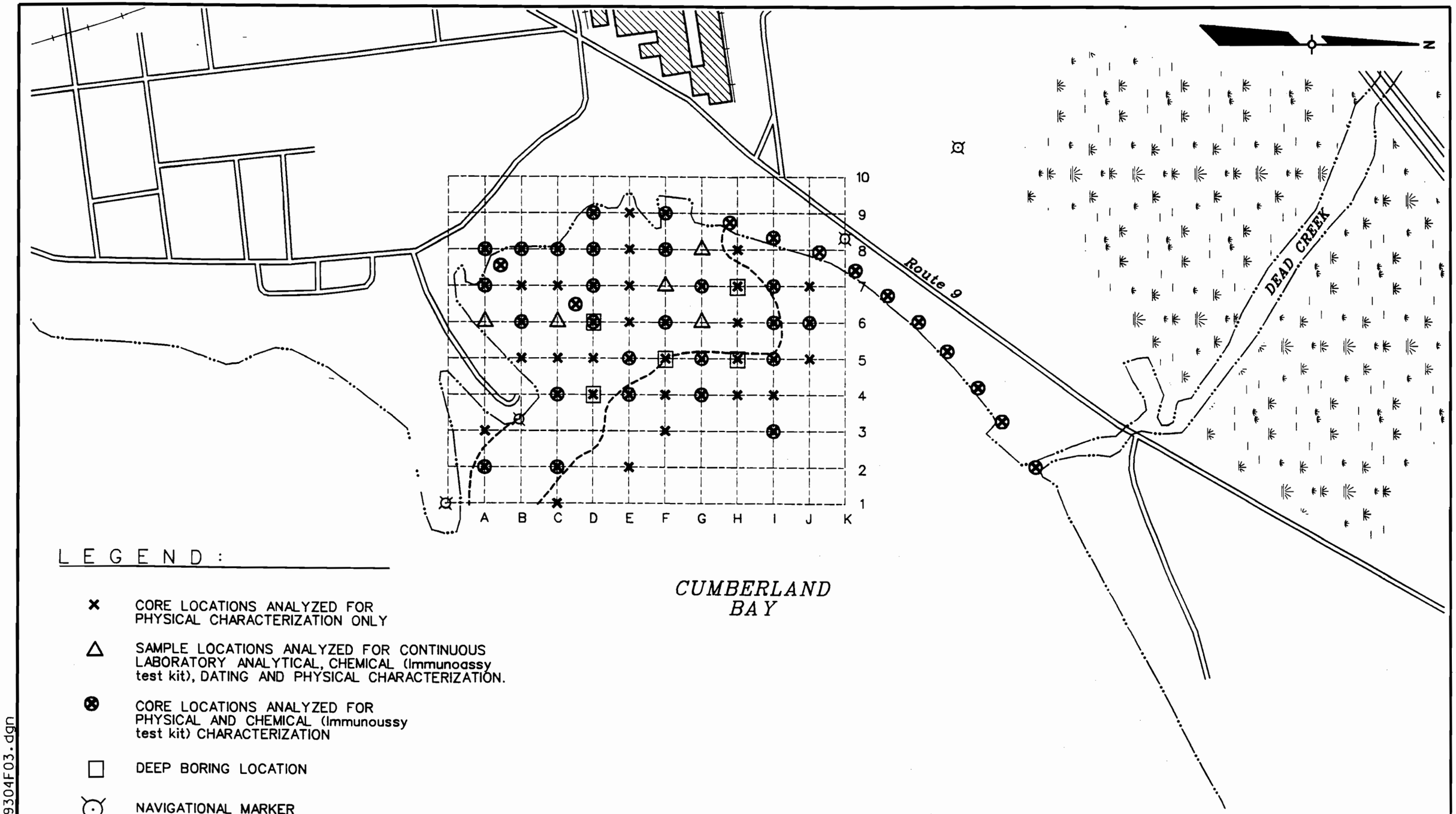
Prior to final development of the core sampling and sludge analytical program, all available analytical data, previous investigative research reports, site maps, and historical information was gathered and reviewed. Analytical data and summary information on sludge, sediment, and water samples collected within the sludge bed and adjacent bay areas were used to develop locations for core sampling and analytical protocols within the sludge bed and outlying areas.

2.3 AERIAL PHOTOGRAPHY, BASE MAP, AND SURVEYING

Two black and white aerial photographs (scale 1 inch:666 feet, dated May 1, 1991) were obtained from Eastern Topographics, Wolfeboro, New Hampshire; these delineated the Cumberland Bay Site as well as adjacent areas. A second set of prints from the same flight were marked with ground control locations which were surveyed prior to production of a surveyed base map.

On August 2, 3, and 4, 1995, Rust personnel surveyed the proposed core sample locations based on the original core location map. North and east trending coordinates were obtained prior to installation of marker buoys within the bay. Using the north and east trending data points, each core location was marked. Where the water within the bay was deeper than approximately five feet, buoys were installed. The buoys consisted of fluorescent orange plastic jugs marked with the core location (refer to Figure 2, Coring, Boring and Sample Location Map) weighted with concrete blocks. Where water within the bay was less than approximately five feet, 1-inch diameter PVC pipe was driven into the sediment at the core location. The top of each stand pipe was painted fluorescent orange and marked with the core location number.

On August 18, 21, 22, and 23, 1995, Rust surveyors collected north and east trending coordinates as well as elevation data on the ground control points specified by Eastern Topographics. The data obtained was transmitted to Eastern Topographics for generation of a base map of the Site.



LEGEND:

- × CORE LOCATIONS ANALYZED FOR PHYSICAL CHARACTERIZATION ONLY
- △ SAMPLE LOCATIONS ANALYZED FOR CONTINUOUS LABORATORY ANALYTICAL, CHEMICAL (Immunoassy test kit), DATING AND PHYSICAL CHARACTERIZATION.
- ⊗ CORE LOCATIONS ANALYZED FOR PHYSICAL AND CHEMICAL (Immunoussy test kit) CHARACTERIZATION
- □ DEEP BORING LOCATION
- ⊙ NAVIGATIONAL MARKER
- ~ ESTIMATED SLUDGE BED BOUNDARY

SCALE 0' 250' 500' 1000'

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RUST ENVIRONMENT & INFRASTRUCTURE

CORING, BORING and SAMPLE LOCATION MAP

SLUDGE BED – WILCOX DOCK IRM
CUMBERLAND BAY
NYSDEC SITE No. 510017
CUMBERLAND BAY CLINTON COUNTY, NY

PROJECT No.39304	DATE 10/2/95	DWG. No. 39304f03	SCALE AS NOTED	FIGURE No. 2

2.4 SLUDGE AND SEDIMENT SAMPLING PROGRAM

Prior to sludge and sediment coring within the bay, a core location grid map was prepared based on the available data and findings of the field reconnaissance. The grid map, which is included as Figure 2, illustrates the locations for cores within the sludge bed, outside the bed and along the shoreline. The cores were analyzed by three methods: physical characterization, chemical characterization, and continuous analytical. A deep boring program was performed in order to collect subsurface geotechnical information of the natural sediments beneath the sludge bed. Figure 2 depicts actual sample locations, however, the original sample location map was altered slightly based on the actual sludge bed location, water depth above the sludge, and sample recovery encountered during the SC. Sampling methods and handling procedures performed during this sampling program are summarized in the *Sampling and Analysis Plan* dated August 11, 1995 prepared by Rust.

2.4.1 Coring Procedures and Equipment

The sludge and sediment core collection program utilized different coring methods based on the thickness of the sludge bed and depth of water over the sludge bed. In deeper water, typically greater than 5 feet in depth, a pontoon boat, equipped with a vibracore, was used. In shallower areas, a flat-bottomed boat with a push corer was used.

The NAVCO BH 4 vibracorer used a compressor-operated, 105-pound piston vibrator attached to the top of the 3.38-inch I.D. steel casing. Polybutyrate (plastic) inner sample liners were inserted into the core casing to collect a sediment/sludge sample. The 3.13-inch I.D., 1/8-inch thick liners were inserted into the steel casing. A steel, tapered drive shoe was fastened to the end of the casing in order to allow the sediment to enter the casing undisturbed and to secure the inner liner. The total length of casing, with liner, was approximately 8.5 feet, including a steel extension which connected the steel casing to the drive shoe. The vibracorer was hoisted by a winch and tripod and lowered through a removable door located on the deck of the boat, centered beneath the tripod.

The push corer consisted of a check valve assembly, which fastened to the top of 2.5-inch, 1/4-inch thick butyrate (plastic) liners by two metal strip clips. The liner casings were 6 feet in length. The top of the push corer consisted of an aluminum drive casing which connected to the check valve assembly. The drive casing varied in length depending on the depth of water. The push corer was driven into the sediment/sludge using a post-drive hammer. The check valve assembly allowed water and air to pass out the side of the assembly as the unit was driven. Once the corer was raised, the valve closed retaining the sample within the liner casing.

The general procedure for core collection was to position the boat as close to the location marker as possible and prevent the boat from drifting by securing support rods within the rod holding shoes. The coring device was then advanced to the maximum depth of the casing (approximately 8.5 feet for the vibracorer apparatus and 6 feet for the push corer unit). In the event of difficult advancement conditions, the corer was to be driven a minimum of 2.5 to 3 feet into natural sediments. Casing liners were removed from the corer apparatus, capped, and delivered to Wilcox Dock where a geologist logged the core.

The geologist logging the cores first drained off the standing water in the core. The core liner was then cut in half using a 4-inch circular saw and divided into two symmetrical sections. The cores were visually logged in a dedicated field note book using the United Soil Classification System (USCS) and photographed for future reference. The cores were then prepared for PCB field screening and commercial laboratory analysis, if applicable.

2.4.2 Sludge and Sediment Sample Collection

On August 7, 1995, Rust, TAMS, and NYSDEC mobilized core sampling equipment and personnel to Wilcox Dock. The core logging area and on-site field analysis laboratory was stationed near the northeast corner of the dock. An exclusion zone was delineated within the work zone located at the northeast corner of Wilcox Dock using snow-fence and caution tape.

2.4.2.1 Sludge Bed Sampling

Core samples were collected from the sludge bed and surrounding locations at the Site to determine the horizontal and vertical extent of contamination as well as to characterize the nature and degree of contamination at those locations. Core collection from the sludge bed and surrounding areas was initiated on August 8, 1995 and was completed on August 17, 1995. A total of 56 cores were collected from the sludge bed and surrounding bay locations.

On August 8, 1995, the pontoon boat, utilizing the vibracorer apparatus, mobilized to a few locations for core collection. However, due to the lack of sample recovery and difficulties encountered using this equipment, alternate core collection methods were sought.

Approximately 100 feet east of core location C-7 (designated as C-7 East), a 10-foot section of new 3.13-inch diameter liner was manually pushed through the sludge bed until the first resistive layer was encountered. Prior to pulling the liner out, water was added to the top of the sample until it could be observed, the top of the liner was capped, and the cap taped on with vinyl electrical tape. The purpose of adding water was to create a suction so that the sample would not flow out the bottom of the liner while being removed from the water. The addition of water also provided the sample crew with a visual indication that the sample within the core was not lost during extraction. Once the bottom of the sample was within reach, a cap was placed on the bottom to contain the sample and taped. Each core sample was labeled (on the liner using a permanent marker) with the core location, depth of water over the sludge, and the length of liner driven below the sludge surface. Field notes were logged by the core collection crew summarizing the above information including the depth to resistance during manual driving of the core liner.

Sample recovery by manually pushing the 3.13-inch diameter liners within the sludge material was adequate, however, no underlying natural sediment was recovered due to poor penetration below the sludge. To improve recovery and to penetrate the underlying natural sediments, the post-driving hammer was used to drive the liner to the required depth.

The push corer was utilized at the core location C-7 East. Push corer recovery was comparable to the 3.13-inch diameter liner, however, the push corer used the 2.25-inch diameter casing and,

therefore, recovered lower volumes of sediment. The push corer was driven into the sediment using the post-driving hammer.

The 3.13-inch diameter liners were generally used at core locations where a larger sample volume was required, such as where PCB field analysis, commercial laboratory analysis, and cesium and lead sediment dating was performed. The 3.13-inch diameter liners were precut to 8 to 10-foot lengths, and were therefore useful at core locations where the sludge bed was thicker, but water depth was less than 2.5 feet. For example, at core locations C-5, C-6, C-7, D-7, F-7, G-7, D-8, and G-8, the 3.13-inch liners were used for sample collection. Sludge bed thickness at these locations were generally greater than 2 feet. For core locations where water depth was less than approximately 2.5 feet, the flat-bottomed boat was used. The draft of the pontoon boat would not allow access to core locations where there was less than 2 feet of water. Refer to Table 1, Core Sampling Summary, for core sampling information.

Core locations A/B-7/8, A-8, and B-8, were added to the original core location map to characterize and locate the outer edge of the sludge bed. These locations represent the junction between the tree line and the bay water line. Due to the wetland vegetation and tree growth, no cores were collected east of the shoreline illustrated on Figure 2.

Three core locations, E-1, I-1, and J-2, were not sampled since the buoys were moved off their locations by wave action during a storm event. No attempts were made to relocate or resurvey these core markers since they were well out of the sludge bed area.

2.4.2.2 Beach Sampling

Beach cores were collected to characterize the vertical and horizontal extent of PCB contamination north and east of the sludge bed, where the public access is greatest. Beach sampling was initiated on August 8, 1995 with SL-7, 8, 9, and 10 adjacent to the Plattsburgh Chamber of Commerce Building. Refer to Figure 2 for beach core locations. A total of ten beach cores were collected. Beach cores were collected approximately 15 feet from the water line and spaced approximately 200 feet apart between the Chamber of Commerce Building and the Dead Creek. Table 1 summarizes the beach coring information.

The general method of beach core collection utilized the 2.25-inch diameter core liners (push corer liners) at the pre-surveyed locations. The original sampling plan proposed that the beach cores would be driven at least 3 feet below grade. However, due to the difficulty encountered in removing the casing from the first two cores (SL-9 and SL-10), the cores were driven to a maximum of 3 feet. Each core liner was pre-drilled to allow a 3/8-inch metal rod to be used to torque the casing during core extraction. Once the core was extracted it was capped, labeled, sealed with tape, and delivered to the sample preparation area on Wilcox Dock for logging.

2.4.2.3 Geotechnical Sampling

Deep borings were advanced to define and characterize the subsurface sediments beneath the sludge bed. On September 11, 1995, Green Mountain Boring, East Barre, Vermont, mobilized a skid-mount drill rig to Wilcox Dock and secured it to a 10-foot by 12-foot flat-bottomed barge.

TABLE 1

CORE SAMPLING SUMMARY

SLUDGE BED - WILCOX DOCK IRM

CUMBERLAND BAY
PLATTSBURGH, NEW YORK

Sample Date	Core Location	Method of Collection	Sample Method	Sample Interval (in)
8/8/95	C-7 East	3.13" PC	TK,P, NYSDEC	0 - 4
				4 - 10
				10 - 16
				16 - 22
				22 - 28
	D-6	3.13" PC	TK,P, NYSDEC	0 - 6
				6 - 12
				12 - 18
	E-7	3.13" PC	P	
	E-6	3.13" PC	P	
	SL-6	2.25" PC	TK,P	0 - 6
				6 - 12
				12 - 24
				24 - 38
	SL-7	2.25" PC	TK,P	0 - 6
				6 - 12
				12 - 24
				24 - 36
				36 - 42
	SL-8	2.25" PC	TK,P	0 - 6
				6 - 12
				12 - 24
				24 - 32
	SL-9	2.25" PC	TK,P	0 - 7
				7 - 14
				14 - 21
				21 - 29
	SL-10	2.25" PC	TK,P	0 - 12
				12 - 24
				24 - 35

TABLE 1

CORE SAMPLING SUMMARY

SLUDGE BED - WILCOX DOCK IRM

CUMBERLAND BAY
PLATTSBURGH, NEW YORK

Sample Date	Core Location	Method of Collection	Sample Method	Sample Interval (in)
8/9/95	F-7	3.13" PC	CA,P	
	G-7	3.13" PC	TK,P	0 - 7 7 - 15 15 - 20
	H-7	3.13" PC	P	
	I-7	3.13" PC	TK,P	0 - 7 7 - 13 13 - 19
8/10/95	C-5	3.13" PC	P	
	C-6	3.13" PC	CA,TK,P	0 - 6 6 - 12 12 - 18 18 - 24 24 - 32
	F-6	3.13" PC	TK,P	0 - 6 6 - 12 12 - 18
	G-6	3.13" PC	CA,TK,P	0 - 6 6 - 12 12 - 18 18 - 30
	H-6	3.13" PC	P	
	I-6	3.13" PC	TK,P	0 - 7 7 - 12 12 - 23
	J-6	3.13" PC	P	
	SL-4	3.13" PC	TK,P	0 - 6 6 - 13 13 - 24 24 - 28

TABLE 1

CORE SAMPLING SUMMARY

SLUDGE BED - WILCOX DOCK IRM

CUMBERLAND BAY
PLATTSBURGH, NEW YORK

Sample Date	Core Location	Method of Collection	Sample Method	Sample Interval (in)
8/10/95 (cont)	SL-5	3.13" PC	TK,P	0 - 6 6 - 12 12 - 18 18 - 38
8/11/95	D-5	3.13" PC	P	
	E-5	3.13" PC	TK,P	0 - 9 9 - 18 18 - 27
8/14/95	B-7	3.13" PC	P	
	C-7	3.13" PC	P	
	D-7	3.13" PC	TK,P	0 - 10 10 - 14 14 - 23 23 - 30
	SL-1	2.25" PC	TK,P	0 - 6 6 - 12 12 - 20 20 - 30
	SL-2	2.25" PC	TK,P	0 - 7 7 - 14 14 - 23 23 - 30 30 - 34
	SL-3	2.25" PC	TK,P	0 - 7 7 - 14 14 - 22 22 - 30 30 - 34

TABLE 1

CORE SAMPLING SUMMARY

SLUDGE BED - WILCOX DOCK IRM

CUMBERLAND BAY
PLATTSBURGH, NEW YORK

Sample Date	Core Location	Method of Collection	Sample Method	Sample Interval (in)
8/15/95	F-5	2.25" PC	P	
	G-5	2.25" PC	TK,P	0 - 6 6 - 12 12 - 18
	H-5	2.25" PC	P	
	C-4	2.25" PC	TK,P	0 - 9 9 - 16 16 - 22
	D-9	2.25" PC	TK,P	0 - 10 10 - 18 18 - 25
	E-8	2.25" PC	P	
	F-8	2.25" PC	TK,P	0 - 7 7 - 14 14 - 22 22 - 25
	H-8	2.25" PC	P	
	A-8	2.25" PC	TK,P	6 - 13 13 - 18
	B-8	2.25" PC	TK,P	0 - 8 8 - 16
	C-8	2.25" PC	TK,P	0 - 8 8 - 16 16 - 25
	A-7	2.25" PC	TK,P	0 - 8 8 - 16
	E-9	2.25" PC	TK, P	0 - 10 10-19
	F-9	2.25" PC	TK,P	0 - 6 6 - 12 12 - 21

TABLE 1

CORE SAMPLING SUMMARY

SLUDGE BED - WILCOX DOCK IRM

CUMBERLAND BAY
PLATTSBURGH, NEW YORK

Sample Date	Core Location	Method of Collection	Sample Method	Sample Interval (in)
8/16/95	D-4	2.25" PC	P	
	E-4	2.25" PC	TK,P	0 - 6 6 - 12 12 - 18
	F-4	2.25" PC	P	
	G-4	2.25" PC	TK,P	0 - 6 6 - 12
	H-4	2.25" PC	P	
	G-8	2.25" PC	CA,TK,P*, NYSDEC	0 - 6 6 - 12 12 - 18 18 - 24 24 - 37
	G-8 dup	3.13" PC	CA,TK,P**	
	D-8	3.13" PC	TK,P	0 - 6 6 - 12 12 - 19 19 - 34
	A-6	3.13" PC	CA,TK,P, NYSDEC	0 - 6 6 - 12 12 - 18 18 - 24 24 - 30 30 - 36 36 - 42 42 - 48
	J-7	2.25" PC	P	
	I-5	2.25" PC	TK,P	0 - 7 7 - 14 14 - 30

TABLE 1

CORE SAMPLING SUMMARY

SLUDGE BED - WILCOX DOCK IRM

CUMBERLAND BAY
PLATTSBURGH, NEW YORK

Sample Date	Core Location	Method of Collection	Sample Method	Sample Interval (in)
8/16/95	J-5	2.25" PC	P	
(cont)	I-3	2.25" PC	TK,P	0 - 8
				8 - 14
	I-4	2.25" PC	P	
	F-3	2.25" PC	P	
8/17/95	A-2	2.25" PC	TK,P	0 - 6
				6 - 12
				12 - 21
	A-3	2.25" PC	P	
	C-1	2.25" PC	P	
	C-2	2.25" PC	TK,P	0 - 6
				6 - 12
				12 - 21
	E-2	2.25" PC	TK,P	0 - 6
	B-5	3.13" PC	P	
	B-6	3.13" PC	TK,P	0 - 11
				11 - 21
				21 - 23
	A/B-7/8	2.25" PC	TK,P	3 - 12
				12 - 18

Notes:

PC - Core was advanced using a push corer.

P - Core sample was physically logged only.

TK - Core was analyzed using PCB immunoassay field test kits.

SL - Core samples collected along shore and beach areas north and east of sludge bed.

CA - Sediment samples were continuously collected throughout core and analyzed by a commercial laboratory for PCB and dioxin. In addition, samples were collected for cesium and lead dating every 2 inches throughout core.

NYSDEC - Samples analyzed by the NYSDEC laboratory.

* - Core analyzed for PCB only.

** - Duplicate core analyzed for dioxin only.

Deep borings were advanced at core locations D-4, D-6, F-5, H-7, and H-5. A 4-inch diameter steel casing was driven utilizing a 300-pound hammer dropped from a height of 30 inches. Borings were advanced between 20 feet (H-7) to a maximum of 31 feet (H-5) below the water surface where refusal was encountered. Standard 1.37-inch I.D. split-spoon samplers were used to collect sediment samples. Split-spoons were driven using a 140-pound hammer dropped from a height of 24 inches and blow counts were noted every 6 inches during 2-foot advancement of the spoon.

2.4.3 Sample Analysis

The original core location grid map submitted to the NYSDEC depicted the locations for physical, chemical, and commercial laboratory analysis to be performed on sludge bed, beach and adjacent core samples. The various methods of analytical sampling as performed during this investigation are summarized on Figure 2. Only 17 core locations of the originally proposed 56 core locations were altered for analysis based on the original core location map. Cores which provided good recovery and which were visually considered most representative of the existing sludge bed and underlying natural sediments were generally sampled for commercial laboratory analysis. If these core locations were previously designated for physical characterization only, they were typically sampled for continuous analysis and adjacent core locations which demonstrated poor recovery or were unrepresentative of the sludge bed were collected for physical characterization only. The analytical program undertaken during this investigation was balanced to provide the best lateral coverage throughout the Site.

2.4.3.1 Physical Sampling

All 56 cores were visually inspected and logged by a TAMS geologist. As each labeled core was delivered to Wilcox Dock, it was split open and logged using the USCS method and stratigraphic information was documented in a field-dedicated note book. Core boring logs which summarize the findings are included in Appendix A. Before disposal, photographs were taken of each core; examples of which are included in Appendix B. Documented information included the depth of water over the sludge, the estimated sludge thickness, the presence of wood chips or other fibrous organic material, total recovery length, and other notable observations. Select cores were screened with a Hnu Model PI-101 photoionization detector to detect any possible presence of volatile organic compounds. These results are also presented on the core logs. Grain size analysis was performed on cores B-8, D-7, D-9, E-4, G-5, and G-6 using American Society of Testing Materials (ASTM) Method D-422. The intervals analyzed for grain size varied from 6 to 12 inches to 23 to 30 inches below the sludge surface. Gradation curves are included in Appendix C.

The five deep geotechnical borings were similarly logged by a TAMS geologist. Geotechnical boring logs are presented in Appendix D. One shelby tube sample was collected from core location H-5 at a depth of 11 to 13 feet below the water surface. The sample was analyzed for Atterberg Limits (plasticity and liquid limits) by ASTM Method D-423 and 424. Atterberg limit results for core H-5 are included in Appendix E. Samples were collected for visual inspection; no grain size analyses were performed.

2.4.3.2 Chemical Sampling

The field sampling and analysis plan called for the qualitative screening of approximately 30 core samples using PCB immunoassay field test kits, and the utilization of a portable Hnu Model 311D laboratory gas chromatograph (GC) for quantitative field analysis. Specifically, core samples would be analyzed beginning with the first 6 inches of natural sediment below the lower most sludge/sediments interface and analyzed for PCBs using the immunoassay test kits. If the test kit analytical results were below detection, the result would be verified using the field GC. However, if PCB concentrations were detectable, then the next 6 inch interval below the first would be analyzed. If the results were still above detection than the next composite sample would be collected 12 inches below the previous sample. Composite sampling would continue as described until results were below detection by the test kit method. The portable GC would then be used to confirm that PCBs were not detectable in the deepest sample. Of the 30 core samples analyzed, 20 samples were collected from the sludge bed and 10 from the beach.

The GC, which is capable of quantifying PCB concentrations, was not operating properly during the investigation due to a faulty electron-capture detector (ECD). After several repair attempts, it was necessary to ship the unit back to the manufacturer for ECD replacement. Consequently, the field analytical plan was modified to utilize the PCB immunoassay test kits for the majority of the field PCB analysis.

The field test kits used were supplied by ENSYS Environmental Products, Inc, Research Triangle Park, North Carolina Model PCB RIS^{e}® Soil Test System Part Number 70200. These PCB test kits are capable of a 2 ppm detection limit in soil for Aroclor 1242. Field immunoassay field test kit results are included in Table 2.

Select core sample intervals were sent to the NYSDEC laboratory in Saratoga Springs, New York for confirmation of the field analyses. The NYSDEC laboratory utilized a super critical fluid extraction (SFE) method and then analyzed the extraction using a GC. The core samples analyzed by the NYSDEC laboratory included cores A-6 (entire core), C-7 East (4-16 inches), D-6 (0-12 inches), G-8 (entire core), and one composite sample of a entire sludge mass. Table 1 summarizes the core sample intervals and analyses performed.

2.4.3.3 Commercial Laboratory Sampling

Four core samples were collected from the sludge bed and surrounding bay areas and six core samples were collected from the beach/shore area. These cores were forwarded to Inchcape Testing Services, Aquatec Laboratories, Colchester, Vermont and were analyzed for PCBs using NYSDEC ASP Method 91-3. Cores A-6, C-6, F-7, G-6, and G-8 were collected from the sludge bed and cores SL-3, SL-6, SL-7, SL-8, and SL-9 were collected from the beach between the Chamber of Commerce Building and Dead Creek. Sludge bed cores were analyzed throughout the entire core, generally at 6-inch intervals (continuous analytical sampling), to fully characterize the sludge bed at representative core locations. Again, Table 1 summarizes the various analytical methods which were employed for each core sample.

Two core locations, A-6 and G-8 Rep, were analyzed for dioxins by Pace Environmental Laboratory, Indianapolis, Indiana using USEPA Method SW-846 8290. Core A-6 was analyzed from the intervals 24 to 30 inches below the sludge bed surface and 30 to 36 inches below the sludge surface. Core G-8 Rep was analyzed from the intervals 6 to 12 inches below the sludge surface and 12 to 18 inches below the sludge surface. A second core was collected from sample location G-8 (and designated G-8 Rep) and analyzed for dioxins.

On August 18, 1995, a composite sludge sample was collected from approximately ten locations within the sludge bed. The locations were selected based on the results of the core characterization throughout the SC. The 3.13-inch diameter liners were used to collect sludge samples by manually driving the core until the first resistive layer (typically the first sand and silt layer) was encountered within the core. The sludge layer observed within each core was stored in seven 5-gallon containers. A composite was collected from these containers for PCB analysis and submitted to the NYSDEC laboratory. The seven sludge containers were forwarded under chain-of custody to Kiber Environmental Services, Inc., Atlanta, Georgia, for various treatability sampling. This information will be used for remedial alternatives analysis.

Sludge samples collected from cores A-6, C-6, F-7, G-6, and G-8 were submitted to the Rensselaer Polytechnic Institute (RPI) Laboratory for radionuclide dating utilizing Cesium 137 (Cs-137) and Lead 210 (Pb-210) analyses. Samples were continuously collected from these cores at 2-inch intervals. Subsamples of each section were segregated for Cs-137 analysis. (Any core section containing measurable Cs-137 activity contains a significant component of particles dispersed since the early 1950's when this isotope was first delivered in large amounts to natural water systems via global fallout from atmospheric testing of nuclear weapons). In general, two distinct time horizons can be identified within undisturbed core sample, the first is associated with the early 1950's and the second, with the maximum global fallout of 1963-64. This information will be used to approximate depositional layering in the bay and to approximate the time of contaminant inputs to the bay.

All analytical samples were collected using approved field sampling procedures and protocol described in the *Sampling And Analysis Plan*. All samples were shipped under chain-of-custody to the representative laboratory. Sample jars were appropriately labeled with the project name, number, core sample name, sample interval, sample date, time of collection, sampler's name, and the required analyses. Sample containers were shipped on ice, overnight and sealed with protective packing material and safety and tamper-proof seals.

2.5 WASTE GENERATION AND HANDLING

The site-derived wastes generated during this investigation included sludge and sediment samples collected from cores within the sludge bed, beach and surrounding bay areas and disposable personal protective equipment (PPE). Decontamination water was not generated during this investigation since all field sampling equipment was pre-cleaned.

Waste sludge and sediment from cores were stored in 5-gallon containers and labeled by material, location, and date of generation. Spent liner cores and sampling equipment were cut into small sections and stored in polyethylene sheeting. PPE generated throughout the investigation was stored in plastic trash bags and temporarily placed within the exclusion zone. Upon completion of the

investigation, all waste (PPE, sludge, sediment and equipment) was disposed in one of three 30 cubic yard, water-tight roll-offs located immediately southwest of Wilcox Dock near the entrance. These roll-offs contained wood chips and contaminated debris removed from the beaches and shorelines north and west of the Site as part of a NYSDEC beach clean-up program.

3.0 GEOLOGY

3.1 REGIONAL GEOLOGY

The Cumberland Bay Sludge Bed Site is located in the northern Champlain Valley and the eastern section of the St. Lawrence-Champlain Lowlands. The Champlain Valley lowland lies between the Adirondack Mountains of New York on the west and the Green Mountains of Vermont on the east.

The Lake Champlain Valley is a lowland of very little relief, developed on glacial lake and marine sediments, which rest on eroded and beveled Cambrian and Ordovician-age sandstones, dolostones and limestones. These formations are disturbed by numerous faults, often of considerable magnitude. This graben-like valley is wedged between the intensely metamorphosed Precambrian age Adirondack mountain mass (Adirondack Dome) on the west and the overthrust and compressed Cambrian strata of the Green Mountain Anticlinorium on the east. On the north, is a featureless plain underlain by the northeast-trending St. Lawrence Basin consisting of late Ordovician age and unmetamorphosed strata. On the south, is a progressively-narrowing Champlain Valley consisting of localized areas of high relief due to westward overthrusting blocks of Cambrian and Ordovician strata or extensions of the Precambrian Adirondack massif which actually extend to the lake shore.

The major surface water body in the region is Lake Champlain. This narrow, north-south trending lake occupies approximately 439 square miles and is 125 miles in length with a maximum depth and width of 400 feet and 11 miles, respectively. Lake Champlain drains to the north through the Richelieu River, ultimately connecting to the St. Lawrence River. The major New York tributaries to the lake are, from north to south, the Great Chazy, Saranac, Ausable, and Bouquet Rivers. Aside from Trembleu Mountain, there are few notable topographic features. Cumberland Head is a prominent peninsula projecting into Lake Champlain opposite Plattsburgh and north of the Site. Four lake islands lying within New York State limits display a north-south linear trend. They are: Crab, Valcour, Garden and Schuyler. The major topographic features such as the various peninsulas and lake islands are structurally controlled by several fault systems.

The Champlain Valley is occupied by numerous fault systems. Coincident with the doming of the Adirondack Mountains, a series of north-south to northeast-southwest trending high angle wrench faults ruptured the western margin of the Champlain Trough. The greater breaks of the region are caused by these longitudinal faults which are parallel to the strike of the Paleozoic rocks in the Champlain Valley. The large majority of these faults downthrow to the east and are parallel to one another forming a pattern referred to as "slicing". Several overthrust planes, commonly post-dating the normal faults, are also mapped in the region. The low-dipping thrust faults moved less competent or structurally loosened segments of rock westward varying distances, ultimately coming to rest on differing older strata. Structurally, the area is made more complex due to the presence of numerous branch faults and by the fact that many of the main faults are paralleled by multiple minor step faults. Its faults do not attain such length, parallelism, uniformity of spacing or regularity in direction of downthrow. Small bays or coves are noted when step faults have been observed to cut the shores of Lake Champlain. Most of the east-west transverse faults probably came into being as compensation for differential stresses exerted upon the underlying rocks (Fisher, 1968).

Eastern Clinton County has been greatly influenced by the various stages of glacial deposition in the Champlain Valley and the glacially-derived sediments vary in thickness and complexity throughout the study area. The bedrock of the Champlain Valley is mantled by glacial drift. These deposits consist of till, ice-contact stratified drift, outwash, and lacustrine and marine sediments. As the margin of the last glacier retreated northward through the Champlain Valley, proglacial lakes were impounded. When the ice retreated north of the St. Lawrence Valley marine waters invaded and the Champlain Sea came into existence. Lacustrine and marine deposits cannot be distinguished lithologically in the study area.

3.2 SITE GEOLOGY

Unconsolidated deposits of glacial origin generally overlie the bedrock throughout the Site and most of the regional study area. In the study area, the glacial deposits reach an observed thickness in excess of 36 feet. Glacial deposits underlying the Site and surrounding area were deposited by the Laurentide ice sheet which covered much of northern North America during the Late Wisconsinan glaciation.

The geology in the vicinity of the Site consists of varying thicknesses of glacial deposits overlying middle Ordovician limestone and /or shale bedrock. Based on previous investigations, the glacial deposits are at least 13 to 36 feet in thickness. Glacial deposits observed across the Site and surrounding area were deposited in conjunction with the Wisconsinan ice sheet. Recent deposits such as alluvium and swamp deposits were also mapped in the surrounding study area.

Based upon interpretation of subsurface information obtained during geotechnical borings performed during this Site Characterization, the underlying soil consists primarily of sand with varying amounts of silt, clay, and gravel. Maximum casing blow counts at each boring location varied from 47 to 158 blow to drive the casing 6 inches. Soil boring logs were obtained for borings generated by the State of New York Department of Public Works, Bureau of Soil Mechanics in July, 1962 for the construction of Wilcox Dock. These borings indicate that the underlying soil consist of a grey fine sand, some silt to clayey silt and trace to some gravel. In general, the soil beneath the sludge bed appeared to be more compact and hard with depth and are probably of glacial origin such as glacial till, ice-contact stratified drift and/or outwash. The subsurface information collected from borings performed during this SC are included in Appendix D and the initial Wilcox Dock borings from 1962 are provided in Appendix F. Due to the insufficient detail provided in both logs and available literature, it is not possible to identify the thickness, stratigraphic contacts or geotechnical properties of the Site soils.

The area west of the Site is mapped lacustrine silt and clay (Cadwell, 1991). The distribution of surficial deposits north of the Site at Cumberland Head consist primarily of glacial till, except for a thin veneer of lacustrine silt and clay along the knob of this peninsula and a thin sequence of swamp deposits (i.e., organic silt and sand) accumulated in the Dead Creek valley and Woodruff Pond area. Recent alluvium consisting of fine sand to gravel has been mapped within the floodplain of the Saranac River while undifferentiated marine and lacustrine deposits consisting of well sorted and stratified fine to medium sand has been mapped along the shoreline south of the Saranac River floodplain (Cadwell, 1991).

According to available surficial geologic mapping, areas of shallow and exposed bedrock are located along the shoreline east of Cumberland Bay and at Cumberland Head Peninsula. In addition, bedrock outcrops are mapped along the shoreline west and northeast of Treadwell Bay located approximately 3.5 to 5 miles northeast of the Site, as well as along the Saranac River approximately 4 miles southwest of the Site.

Although the underlying bedrock geology is unknown in various parts of the region and the Site, an overthrust block of Middle to Upper Ordovician age Cumberland Head argillite underlies the glacial till north of the Site at Cumberland Head. The underlying bedrock geology west of Cumberland Bay near the mouth of the easterly-flowing Saranac River and south of the Site along the easternmost shoreline to points north of Cliff Haven, including Crab Island, consist of Middle Ordovician age Trenton Group limestones and shales. Several lamprophyre dikes of Lower Cretaceous age penetrate the rocks of this region.

4.0 NATURE AND EXTENT OF CONTAMINATION

4.1 NATURE OF CONTAMINATION

The physical properties of the sludge bed, surrounding bay sediments, and beach sediments were studied and analyzed during this investigation to define the various stratigraphic layers encountered within the cores and to evaluate possible disposal alternatives of the contaminated material. Sludge bed thickness was estimated based on the stratigraphy information gathered from each core. The boundary of the sludge bed was estimated by probing outward laterally from core locations exhibiting sludge until a sludge layer generally less than three inches was encountered.

4.1.1 Sludge and Sediment Physical Characterization

All 56 cores taken from the sludge bed and surrounding bay areas were physically logged by a geologist using the USCS method. The core logs are included in Appendix A. The general stratigraphy within the sludge bed consisted of a top layer of dark (brown to black) fibrous pulp with highly organic material such as wood chips, root matter, and peat (supersaturated sludge) exhibiting a chemical-type odor. The thickness of this material ranged from essentially non-existent to a maximum of 17 inches. Directly below this initial sludge layer, a lighter-colored (grey) fibrous pulp layer was typically encountered; in some cores it exhibited a slight plastic property. This sludge, where present, ranged in thickness from 6 to 14 inches. Further north from the center of the sludge bed, the cores typically exhibited a sand with silt layer at the top with dark (black) organic sludge and wood chips directly beneath. The cores then graded to all sand with silt (and some wood chip layers). Generally beneath both light and dark organic sludge layers, a brown sand with silt layer existed with interlayed wood chips. This layer then typically graded to a grey and/or brown "native" sand containing silt and, in some cores, a layer of coarse wood chips.

Cores located outside of the sludge bed typically exhibited a thin layer of fibrous organic pulp, with coarse wood chips, between 0.1 to 3 inches thick. This layer may or may not have been interlayered with sand and silt. Underlying this layer or at the surface of other cores was a grey-brown fine "native" sand with varying silt percentages. This sand graded to a brown fine sand with little silt. The boundary between the sludge and the native material underlying was estimated using core information and immunoassay. Six representative sand samples beneath the sludge layer were analyzed for grain size distribution at the Rust soil laboratory, using ASTM Method D-422. Gradation curves for cores B-8, D-7, D-9, E-4, G-5, and G-6 are included in Appendix C. Core samples B-8 from 8 to 16 inches and E-4 from 6 to 12 inches were classified as SM or silty sand using the USCS classification method. These samples contained fine sand with silt percentages greater that 25 percent. Core samples D-7 from 23 to 30 inches and G-6 from 18 to 30 inches were classified as SP or poorly graded fine sands with silts less than 5 percent. Core samples D-9 from 10 to 18 inches and G-5 from 18 to 24 inches were classified as SP-SM or border line between silty sand and poorly graded sand with silt between 5 and 12 percent.

Cores collected at locations A-6, B-6, B-5, and C-5 contained an extensive layer of white paper sludge which appeared to exhibit medium to high plasticity properties. The cores were not handled due to the presence of high PCB concentrations within this sludge.

Water depths at each core location are illustrated on Figure 3. The deepest water locations were between Wilcox Dock and the breakwater located to the south. Core A-3 and A-2 had associated water depths of 16.8 and 11.7 feet, respectively. Water was deeper between the breakwater and Wilcox Dock as well as along the north and northeast sides of Wilcox Dock due to previous dredging activities performed by the NYSTA for the passage of barges. Water depths outside the sludge bed varied between approximately 5.7 and 10.4 feet. Within the sludge bed the water depths at core locations varied between 5.3 and 0.5 feet (adjacent to the shore line).

4.1.2 Geotechnical Boring Characterization

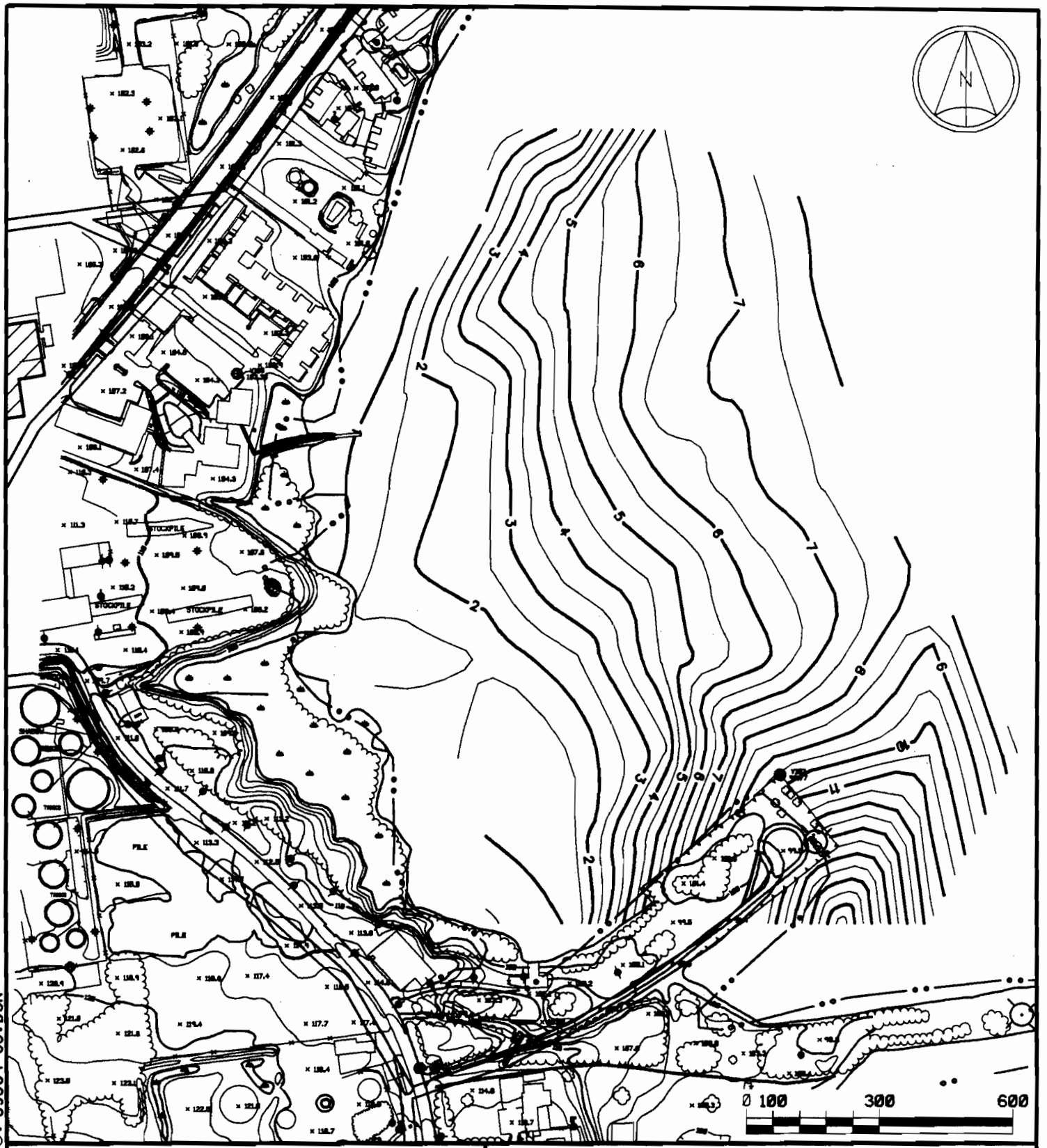
Deep sediment borings were performed at locations D-4, D-6, F-5, H-5, and H-7 to determine the geotechnical characteristics of the underlying sediments. Boring depths varied from approximately 20 to 31 feet below the water surface and all five borings ended at refusal on weathered till. No bedrock was encountered in any of the borings. The sediments below the sludge bed consisted of fine sand and silt with varying amounts of gravel and clay. Maximum blow counts to drive the 4-inch diameter casing ranged from 47 at boring H-5 (26 feet below the water surface) to 158 at boring H-7 (approximately 19 feet below the water surface). Split-spoon sampler blow counts were 100 (refusal) in borings D-6 at 20 feet, F-5 at 28 feet, and H-7 at 21 feet below the water surface. The boring logs for the geotechnical boring program are included in Appendix D.

Shelby tube sample collection was attempted from boring H-7 at 10 to 12 feet below the water surface, however no material was recovered. One shelby tube sample was recovered from boring H-5 between 11 and 13 feet below the water surface. The sample was analyzed for Atterberg limits (plastic limit and liquid limit) by ASTM D-423 and 424. Atterberg limit results for sample H-5 at 12 feet below the surface contained a liquid limit of 67, a plastic limit of 23 and a plasticity index of 43. The sample as classified by the USCS is a high plasticity or "fat" clay (CH). Atterberg limit results are summarized in Appendix E.

Eight borings were performed in July, 1962, prior to the installation of Wilcox Dock by the New York State Department of Public Works, Bureau of Soil Mechanics. Boring logs for these eight borings are included in Appendix F. Total depths of these borings ranged from 13 to 36 feet below the water surface. The maximum blow counts to drive the 2.3-inch I.D. sampler 6 inches ranged between 550 and 1330.

4.2 EXTENT OF SLUDGE BED

The vertical and horizontal extent of sludge within the sludge bed was determined by physically logging the cores as well as manually probing the sludge bed and surrounding locations. The lateral extent of the sludge bed is depicted on Figure 2. The dotted area on Figure 2, which delineates the estimated boundary of the sludge bed, was determined by probing radially outward from core locations which exhibited sludge greater than 3 inches, towards cores which contained three inches or less. Core locations A-2 and C-2 exhibited sludge thicknesses greater than 2 feet. The lateral extent of the sludge bed continues to the east of Wilcox Dock and beyond the Site boundary. Available NYSTA maps of the Wilcox Dock illustrate a deep channel which extends from Wilcox Dock south into Cumberland Bay. Apparently, sludge from the bay has dispersed into these deeper areas adjacent to the dock. No further investigation was performed outside the Site boundary.



DRAWING No. 39304-03.DGN

RUST ENVIRONMENT & INFRASTRUCTURE

WATER DEPTH CONTOUR MAP

SLUDGE BED - WILCOX DOCK IRM
CUMBERLAND BAY SITE
NYSDEC SITE No. 510017

CUMBERLAND BAY — CLINTON COUNTY, NY

PROJECT No. 39304	DATE 10/2/95	DWG. No. 39304-03	SCALE 1"=300'	FIGURE No. 3

A sludge thickness contour map is included as Figure 4. Sludge thicknesses within the sludge bed ranged from approximately 0.25 feet to greater than 10 feet (adjacent to Wilcox Dock). The area north of Wilcox Dock exhibited the greatest thickness of sludge. Core locations B-5, B-6, and C-6 recovered approximately 2 feet of a white paper sludge, however, the bottom of the sludge bed was not encountered within these cores. Probing near these core locations revealed that the actual thickness exceeded 10 feet (core C-4).

The volume of sludge was estimated based on the lateral extent and vertical sludge thicknesses collected from the cores during this investigation. At core locations were the sludge and natural sediment interface was not encountered, a probe bar was manually driven into the sludge until the first resistive layer was encountered. Based on core stratigraphy and probing, the approximately sludge volume contained within the Site boundary is estimated to range between 90,000 to 95,000 cubic yards. This volume may be conservative based on the lack of measurable sludge thicknesses adjacent to Wilcox Dock.

4.3 ANALYTICAL RESULTS OF SLUDGE AND SEDIMENT SAMPLING

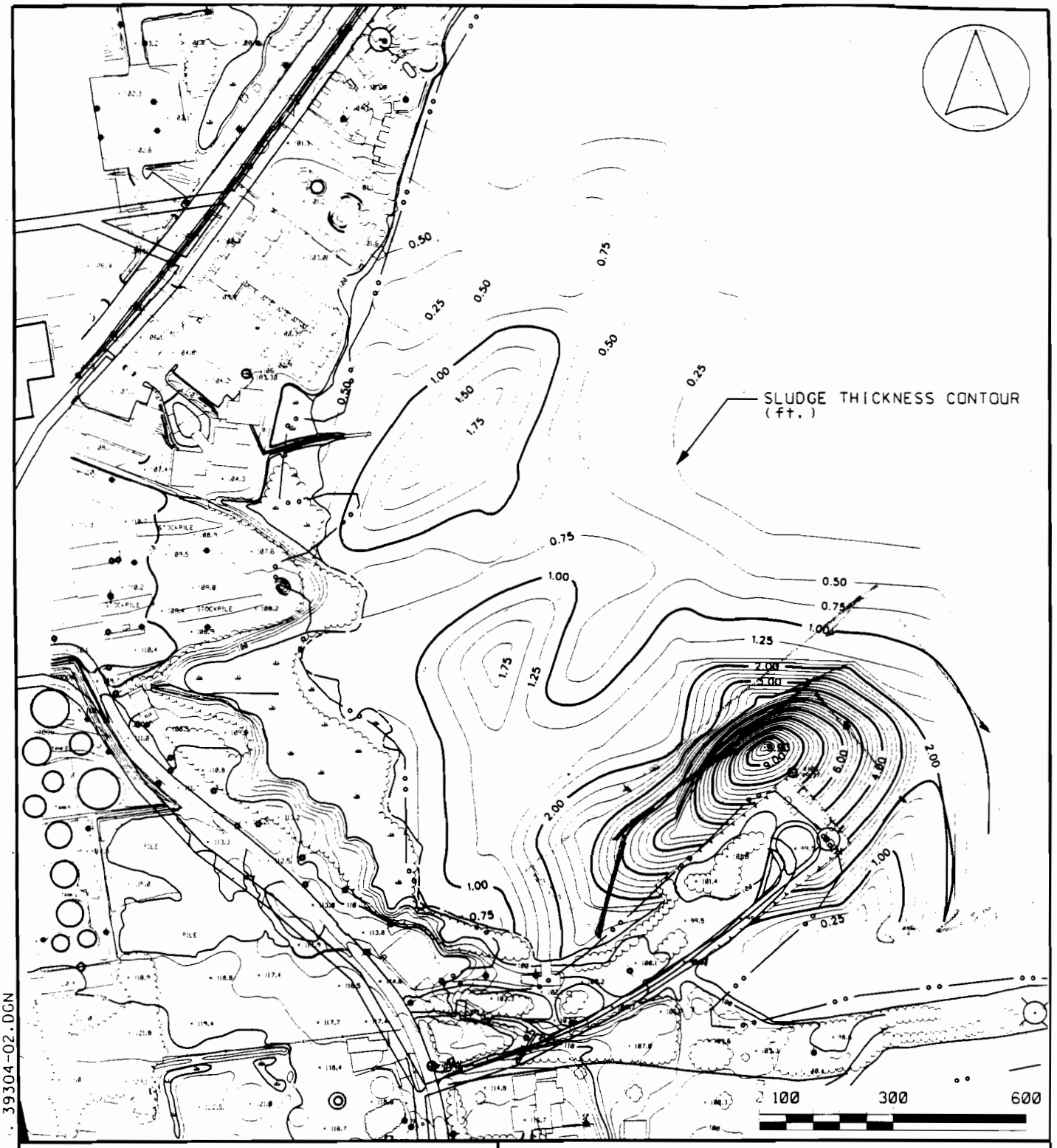
4.3.1 PCB Immunoassay Field Test Kit Results

The PCB test kit results are summarized in Table 2. The results are presented as greater than or less than the test kit detection limit (for Aroclor 1242) of 2.0 ppm. The test results revealed that PCB concentrations within the sludge bed were generally limited to a horizon approximately 6 to 12 inches below the top of the sludge bed. However, core samples A-2, A-8, B-6, C-2, C-4, and G-7 exhibited PCB concentrations greater than 2 ppm to depths up to 22 inches. Core D-8, at an interval of 19 to 34 inches, was the only sample analyzed by immunoassay test kits which exhibited PCBs greater than 2 ppm below 24 inches. While this interval contained detectable PCBs over 2 ppm by the field test kits, the stratigraphy indicated that sludge was interlayered within the interval grading to mostly sand at the base.

The beach cores analyzed by PCB immunoassay test kits typically exhibited PCBs concentrations greater than 2 ppm throughout the entire cores. In cores SL-5 and 6, PCB concentrations greater than 2 ppm were generally limited from the top of the core to a maximum depth of 1.5 feet below the surface. The remaining cores, SL-2, 3, and 7 contained detectable PCB concentrations sporadically throughout the core. The detectable PCB concentrations within the beach cores were typically associated with the presence of wood chips and other organic material.

4.3.2 NYSDEC Laboratory Results

The NYSDEC laboratory located in Saratoga Springs, New York, performed confirmation analyses on select cores for PCBs. The analytical results for core samples from A-6, C-7 East, D-6, G-8, and one paper pulp composite sample are summarized on Table 3. Core A-6 and G-8 were continuously analyzed for PCBs throughout the core. Core A-6 exhibited the highest PCB concentrations of the all cores analyzed; 67 ppm of Aroclor 1242 was identified within the 0 to 6 inch interval. Core D-6 exhibited the next highest PCB concentration within the 0 to 6 inch interval with 11 ppm of Aroclor 1242. No detectable PCB concentrations were encountered below 12 inches from any of the cores analyzed by the NYSDEC laboratory. NYSDEC laboratory PCB data sheets are included in Appendix G.



SLUDGE BED THICKNESS CONTOUR MAP

SLUDGE BED - WILCOX DOCK IRM
CUMBERLAND BAY SITE
NYSDEC SITE No. 510017

CUMBERLAND BAY — CLINTON COUNTY, NY

RUST ENVIRONMENT & INFRASTRUCTURE

PROJECT No. 39304	DATE 10/2/95	DWG. No. 39304-02	SCALE 1"=300'	FIGURE No. 4

I:\...\39304-02.DGN

TABLE 2

PCB IMMUNOASSAY FIELD TEST KIT RESULTS

SLUDGE BED - WILCOX DOCK IRM

CUMBERLAND BAY
PLATTSBURGH, NEW YORK

Sample Date	Core Location	Sample Interval (in)	Analytical Results (ppm)	Sludge/Sediment Boundary (in.)
8/8/95	C-7 East	0 - 4	>2	
		4 - 10	>2	~ 6
		10 - 16	<2	
		16 - 22	<2	
		22 - 28	<2	
	D-6	0 - 6	>2	
		6 - 12	<2	6
		12 - 18	<2	
	SL-6	0 - 6	>2	
		6 - 12	>2	
		12 - 24	>2	
		24 - 38	<2	
	SL-7	0 - 6	>2	
		6 - 12	>2	
		12 - 24	<2	
		24 - 36	~ 2	
		36 - 42	>2	
	SL-8	0 - 6	~ 2	
		6 - 12	>2	
		12 - 24	~ 2	
		24 - 32	>2	
	SL-9	0 - 7	>2	
		7 - 14	>2	
		14 - 21	>2	
		21 - 29	>2	
	SL-10	0 - 12	>2	
		12 - 24	>2	
		24 - 35	>2	
8/9/95	G-7	0 - 7	~ 2	
		7 - 15	~ 2	
		15 - 20	~ 2	>19
	I-7	0 - 7	>2	~ 4
		7 - 13	<2	
		13 - 19	<2	

TABLE 2

PCB IMMUNOASSAY FIELD TEST KIT RESULTS

SLUDGE BED - WILCOX DOCK IRM

CUMBERLAND BAY
PLATTSBURGH, NEW YORK

Sample Date	Core Location	Sample Interval (in)	Analytical Results (ppm)	Sludge/Sediment Boundary (in.)
8/10/95	C-6	0 - 6	>2	
		6 - 12	~ 2	
		12 - 18	<2	17
		18 - 24	<2	
		24 - 32	<2	
	F-6	0 - 6	>2	
		6 - 12	<2	6
		12 - 18	<2	
	G-6	0 - 6	>2	~ 6
		6 - 12 (X-2)	~ 2	
		12 - 18	<2	
		18 - 30	<2	
	I-6	0 - 7	>2	
		7 - 12	>2	~ 12
		12 - 23	<2	
	SL-4	0 - 6	>2	
		6 - 13	>2	
		13 - 24	>2	
		24 - 28	<2	
	SL-5	0 - 6	>2	
		6 - 12	>2	
		12 - 18	>2	
		18 - 38	<2	
8/11/95	E-5	0 - 9	>2	
		9 - 18	<2	9
		18 - 27	<2	
8/14/95	D-7	0 - 10	>2	
		10 - 14	<2	
		14 - 23	<2	~ 23
		23 - 30	<2	
	SL-1	0 - 6	<2	
		6 - 12	<2	
		12 - 20	<2	
		20 - 30	<2	

TABLE 2

PCB IMMUNOASSAY FIELD TEST KIT RESULTS

SLUDGE BED - WILCOX DOCK IRM

CUMBERLAND BAY
PLATTSBURGH, NEW YORK

Sample Date	Core Location	Sample Interval (in)	Analytical Results (ppm)	Sludge/Sediment Boundary (in.)
8/14/95	SL-2	0 - 7	<2	
(cont)		7 - 14	<2	
		14 - 23	>2	
		23 - 30	>2	
		30 - 34	<2	
	SL-3	0 - 7	<2	
		7 - 14	<2	
		14 - 22	>2	
		22 - 30	<2	
		30 - 34	<2	
	J-6	17 - 19	>2	<2
8/15/95	G-5	0 - 6	~ 2	~ 3
		6 - 12	<2	
		12 - 18	<2	
	C-4	0 - 9	>2	
		9 - 16	>2	
		16 - 22	>2	>22
	D-9	0 - 10	>2	
		10 - 18	<2	10
		18 - 25	<2	
	F-8	0 - 7	>2	
		7 - 14	>2	
		14 - 22	<2	~ 21
		22 - 25	<2	
	A-8	6 - 13	>2	
		13 - 18	<2	13
	B-8	0 - 8	>2	8
		8 - 16	<2	
	C-8	0 - 8	>2	
		8 - 16	<2	8
		16 - 25	<2	
	A-7	0 - 8	>2	8
		8 - 16	<2	

TABLE 2

PCB IMMUNOASSAY FIELD TEST KIT RESULTS

SLUDGE BED - WILCOX DOCK IRM

CUMBERLAND BAY
PLATTSBURGH, NEW YORK

Sample Date	Core Location	Sample Interval (in)	Analytical Results (ppm)	Sludge/Sediment Boundary (in.)
8/15/95 (cont)	F-9	0 - 6	>2	
		6 - 12	>2	~ 6
		12 - 21	<2	
	E-9	0 - 10	>2	10
		10 - 19	<2	
8/16/95	E-4	0 - 6	>2	~ 5
		6 - 12	<2	
		12 - 18	<2	
	G-4	0 - 6	>2	~ 3
		6 - 12	<2	
	G-8	0 - 6	>2	
		6 - 12	~ 2	11
		12 - 18	<2	
		18 - 24	<2	
		24 - 37	<2	
	D-8	0 - 6	>2	
		6 - 12	~ 2	
		12 - 19	<2	
		19 - 34	>2	>34
	A-6	0 - 6	>2	
		6 - 12	<2	
		12 - 18	<2	
		18 - 24	<2	
		24 - 30	<2	
		30 - 36	<2	30
		36 - 42	<2	
		42 - 48	<2	
	I-5	0 - 7	>2	~ 3
		7 - 14	<2	
		14 - 30	<2	
	I-3	0 - 8	>2	0
		8 - 14	<2	

TABLE 2

PCB IMMUNOASSAY FIELD TEST KIT RESULTS

SLUDGE BED - WILCOX DOCK IRM

CUMBERLAND BAY
PLATTSBURGH, NEW YORK

Sample Date	Core Location	Sample Interval (in)	Analytical Results (ppm)	Sludge/Sediment Boundary (in.)
8/17/95	A-2	0 - 6	>2	
		6 - 12	>2	
		12 - 21	>2	>21
	C-2	0 - 6	>2	
		6 - 12	>2	
		12 - 21	>2	>21
	E-2	0 - 6	>2	~ 3
	B-6	0 - 11	>2	
		11 - 21	>2	
		21 - 23	<2	>21
	A/B-7/8	3 - 12	>2	
		12 - 18	<2	13

Table 3

COMMERCIAL LABORATORY PCB ANALYTICAL RESULTS

SLUDGE BED - WILCOX DOCK

CUMBERLAND BAY

Sample Location		PCBs (mg/kg)			
		NYSDEC	Aquatec Lab		
		Aroclor - 1242	Aroclor -1242	Aroclor -1254	Aroclor - 1260
Sludge Bed Cores					
A-6	0" - 6"	67	38 DC	- -	- -
	6" - 12"	0.75 MI	0.75	- -	- -
	12" - 18"	- -	- -	- -	- -
	18" - 24"	- -	- -	- -	- -
	24" - 30"	- -	- -	- -	- -
	30" - 36"	- -	- -	- -	- -
	36" - 42"	- -	- -	- -	- -
	42" - 48"	- -	- -	- -	- -
C-6	0" - 6"		270 DC	- -	4.2 J
	6" - 12"		2.1	- -	- -
	12" - 18"		0.59	- -	- -
	18" - 24"		- -	- -	- -
	24" - 32"		- -	- -	- -
C-7	4" - 10"	0.73			
	10" - 16"	- -			
D-6	0" - 6"	11			
	6" - 12"	- -			
F-7	0" - 8"		3.6 DC	- -	0.6
	8" - 15"		- -	- -	- -
	15"- 24"		- -	- -	- -
	24" - 33"		- -	- -	- -
G-6	0" - 6"		57 DC	- -	1.2 J
	6" - 12"/X-2**		0.21/0.28**	- -/- -**	- -/- -**
	12" - 18"		0.023 JN	- -	- -
	18" - 30"		- -	- -	- -
G-8 Rep	0" - 6"	1	1.7	- -	- -
	6" - 12"/(X-2)*	1.1 MI	0.065 J/0.16 J*	- -/- -*	- -/- -*
	12" - 18"	- -	- -	- -	- -
	18" - 24"	- -	- -	- -	- -
	24" - 36"	- -	- -	- -	- -
Beach/shoreline cores					
SL-3	14" - 22"		0.59	- -	- -
SL-6	12" - 24"		1.4	0.28 J	- -
SL-7	12" - 24"		0.29	- -	- -
SL-8	6"-12"		14 DC	- -	0.48 J
SL-9	0" - 7"		2.7 C	0.47 J	- -
Sludge Composite Sample		21			

Note: Concentrations are in parts per million (ppm).

- - = Not detected.

* = field duplicate sample ** = blind duplicate sample

M = Matrix Interference.

J = Estimated value.

P = Percent difference between the two analytical columns is greater than 25%.

C = Compound identification has been qualitatively confirmed by GC/MS.

D = Reported value is from the analysis of a diluted sample.

Y = Result estimated from a response that exceeded the calibration range.

Of the four confirmation cores analyzed by NYSDEC, A-6 and D-6 compare well to the field test kit results. Core samples from C-7 East analyzed by NYSDEC have PCB concentrations of 0.73 ppm and "not detected" for the 4 to 10 inch and 10 to 16 inch intervals, respectively. However, the test kit results for these two intervals are greater than 2 ppm. Core G-8 exhibited PCB concentrations at approximately 1 ppm at the 0 to 12 inch interval for the NYSDEC laboratory analysis. Test kit results, however, exhibited PCB concentrations greater than 2 ppm at 0 to 6 inches and approximately 2 ppm from 6 inches to 12 inches.

The sludge composite sample collected from the sludge bed on August 18, 1995 and analyzed by the NYSDEC laboratory exhibited 21 ppm of Aroclor 1242.

4.3.3 Commercial Laboratory Analytical Results

4.3.3.1 PCB Analytical Results

Analytical results for samples analyzed for PCBs by Aquatec Laboratory are summarized in Table 3. Sludge bed cores C-6, F-7 and G-6, which were continuously analyzed throughout the core, exhibited PCB concentrations greater than 2 ppm within the top 12 inches of the sludge bed. Core C-6 exhibited 214.2 ppm (270 ppm duplicated sample) within the top 6 inches and 2.1 and 5.9 ppm within the 6 to 12 inch and 12 to 18 inch intervals, respectively. Analytical results from core samples from C-6 and G-6 compare well with the test kit data. Laboratory analytical results from core sample C-6 at the 12 to 18 inch interval exhibited 5.9 ppm while the test kit results from this interval was less than 2 ppm. Commercial laboratory PCB analytical data sheets are included in Appendix H.

Beach samples SL-7 (12 to 24 inches), SL-8 (6 to 12 inches), and SL-9 (0 to 7 inches) analyzed for PCBs by Aquatec compared well to the field test kit results. Beach sample SL-6 compared well with the test kit data since the laboratory result for this core was 1.68 ppm and the test kit detected PCBs above 2 ppm. Beach sample SL-3 did not compare well since the laboratory only detected 0.12 ppm while the test kit detected greater that 2 ppm.

Aroclor 1242 was predominantly detected in the laboratory analysis of the sludge and beach samples. This is consistent with the previous analytical sampling performed at the Site. However, Aroclor 1260 was detected in cores C-6 (0 to 6 inches), F-7 (0 to 8 inches), and SL-8 (6 to 12 inches). Aroclor 1254 was also detected in cores SL-6 and SL-9 at 12 to 24 inches and 0 to 7 inches, respectively.

4.3.3.2 Dioxin Analytical Results

Core A-6 was analyzed for dioxins from intervals 24 to 30 inches and 30 to 36 inches, and core G-8 Rep was analyzed from intervals 6 to 12 inches and 12 to 18 inches. Dioxin analytical data are summarized on Table 4. Core A-6 did not exhibit dioxin concentrations above 6 ppt for any compound at either interval. Core G-8 Rep, however, exhibited the highest dioxin concentrations at the 6 to 12 inch interval. OCDD was detected at 36.5 ppb at the 6 to 12 inch interval and 4.46 ppb

Table 4

Commercial Laboratory Dioxin Analytical Results

SLUDGE BED - WILCOX DOCK IRM

CUMBERLAND BAY

	Core Location			
Compounds	A-6 (24" - 30")	A-6 (30" - 36")	G-8 - REP (6"-12")	G-8 - REP (12" - 18")
2378 - TCDD	--	--	11.8	5.52
2378 - TCDF	--	--	3.63	0.91J
12378 - PeCDF	--	--	5.84	8.27
12378 - PeCDD	0.55 J	--	7.76	1.78
23478 - Pe CDF	--	--	19.44	3.05
123478 - HxCDF	--	--	50.91	14.20
123678 - HxCDF	--	--	102.52	35.86
123478 - HxCDD	--	--	--	2.97
123678 - HxCDD	--	--	203.95	25.86
123789 - HxCDD	--	--	22.68	3.91
234678 - HxCDF	--	--	45.18	6.63
123789 - HxCDF	--	--	10.62	3.53
1234678 - HpCDF	--	--	2179.22	528.37
1234678 - HpCDD	1.07 J	0.87 J	3099.81	423.17
1234789 - HpCDF	--	--	84.31	11.90
OCDD	--	5.30	36545.38	4458.78
OCDF	--	--	2079.62	279.14
Total 2,3,7,8 -TCDD TEF Adjusted Concentration*	0.2839 pg/g	0.0624 pg/g	161.9015 pg/g	32.1055 pg/g

Note: Concentrations are in pg/g (parts per trillion ,ppt).
J = Estimated value. Value is below Lower Method Calibration Limit (LMCL)
-- = Undetected.
* Relative toxicities are related by TEF's (toxicity equivalency factors) based 2,3,7,8-TCDD (TEF=1). The total 2,3,7,8-TCDD equivalent concentration for each sample analyzed is shown on the bottom line.

at the 12 to 18 inch interval. The dioxin compound concentrations for the 6 to 12 inch interval were generally four to eight times the 12 to 18 inch interval compound concentrations. Dioxin commercial laboratory data sheets are included in Appendix I.

4.3.3.3 Cs-137 and Pb-210 Dating

To date, approximately 25 samples from the cores collected during this SC have been analyzed for Cs-137. Although the data has not yet been finalized, preliminary inspection of the spectra indicates that Cs-137 was detected in many of the samples. Ultimately, approximately 60 samples will be analyzed. Analyses, data reduction and data interpretation will be completed in early December, 1995 and submitted in a supplemental report.

4.4 Data Validation

4.4.1 PCB Data Validation

Analytical results for 32 soil samples collected between August 9 and 16, 1995 were reviewed to evaluate data quality. The analytical work was performed in support of the NYSDEC Standby Superfund Program (SSP) for the Cumberland Bay Site. The samples were analyzed by ITS/Aquatec using the NYSDEC Analytical Services Protocol (ASP, December, 1991) Method 91-3 which is a gas chromatograph analytical method for pesticides and PCBs.

The following items/criteria were reviewed:

- Methodology
- Data Completeness
- Holding Times
- Calibration
- Blanks
- Surrogate Recovery
- Spiked Samples
- Duplicate Samples
- Compound Identification and Quantitation
- Instrument Detection Limits
- Raw Data
- Calculations and Data Transcription/Reporting

The pesticides/PCB section of the USEPA Region II CLP organic data validation checklist (SOP HW-6, Revision 8, January, 1992) has also been completed and is included in the data validation report.

4.4.2 Dioxin Data Validation

Five samples were collected on August 16, 1995 from the Cumberland Bay Site and sent to Pace Laboratory for analysis by USEPA Method SW-846 8290. The samples included two intervals from

core A-6, two intervals from core G-8, and one field duplicate from core G-8. A matrix spike/matrix spike duplicate was designated for analysis from core A-6 at one interval.

USEPA Method SW-846 8290 is a high resolution gas chromatograph (HRGC), high resolution mass spectrometer (HRMS) method capable of detecting and quantitating part per trillion or lower concentrations of 17 different 2,3,7,8-substituted polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs). Method 8290 (Revised 0; September, 1994) was published promulgated Update II to SW-846. There are a number of differences between this method and the USEPA dioxin SOW (DFLM01.1, which is the method from which NYSDEC ASP Method 91-7 is derived), which is a HRGC, low resolution MS method.

Dioxin analysis is reportedly not addressed in the site-specific QAP or other project plans (these plans were not available to the validator; however, it was indicated that the dioxin analyses were added to the sampling/analytical program after the project plans had been developed). Therefore, the review below is primarily based on the laboratory's adherence to the method and the professional judgement of the data validator. Specific QC areas evaluated include:

- Methodology
- Data Completeness
- Holding Times
- GC/MS Tuning
- Calibration
- Blanks
- Surrogate Recovery
- Spiked Samples
- Duplicate Samples
- Internal Standard Recovery
- Compound Identification and Quantitation
- Instrument Detection Limits
- Raw Data
- Calculations and Data Transcription/Reporting
- Compound Identification

5.0 SUMMARY AND CONCLUSIONS

Based on cores collected from the sludge bed and surrounding locations, the sludge which exhibited PCB concentrations typically greater than approximately 1 ppm is generally limited to the upper 12 inches of the sludge bed. Cores which exhibited greater than average thicknesses of paper sludge (i.e., adjacent to Wilcox dock to the north and northeast) were not chemically or physically sampled below approximately 36 to 40 inches based on the lack of sample recovery due to the loose, supersaturated nature of the sludge.

The volume of sludge estimation of 90,000 to 95,000 cy was based on the core data collected during the Site Characterization as well as probing radially outward from core locations. The map generated for this report illustrating the lateral extent of sludge was based on this information, where approximately 3 inches of sludge or more was considered part of the sludge bed. The southeast boundary of the sludge bed was not determined since sludge was encountered (greater than 20 inches) south and east of core locations A-2 and C-2. Available maps from the NYSTA illustrate a deep channel running southeast from Wilcox Dock into Cumberland Bay. The sludge bed appears to extend within this deep channel from Wilcox Dock into the bay, however the length and width of this channel and the sludge contained within was not determined during this investigation. The sludge within the channel may be a result of years of erosion of the sludge bed by bay currents and redeposition to the east and southeast. The sludge and wood chips likely deposited in these deeper channels similar to what was observed in the cores north of Wilcox Dock. Sludge thicknesses were greatest within the cores along Wilcox Dock to the north where a similar channel exists for barges which docked along Wilcox Dock. Natural sand and silt was encountered in each core interlayered with wood chips. These sediments are likely deposits of natural material also being transported by water currents and deposited within the sludge layers.

The cores collected along the beach indicated that the sludge thickness is greatest just north of the sludge bed at cores SL-10, SL-9, SL-8, and portions of cores SL-7 and SL-6. PCB concentrations, according to immunoassay field test kits within these cores range from 24 to 42 inches below the surface. The vertical extent of PCB contamination greater than approximately 2 ppm diminishes to the north and northeast of core SL-7. The increased sludge and possibly PCB contaminated sediment within these cores may be a result of continual erosion by bay currents and redeposition of the sludge to the north and northeast. Natural sand was encountered in each core interlayered with wood chips. These sediments are likely deposits of natural material also being transported by water currents and deposited within the sludge layers.

APPENDIX A

Core Sample Boring Logs

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: A-2**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/17/95
WATER ELEVATION: 95.24 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 11.7 feet Mud Line (ML)
– 3 – 6	0 - 6"	wood pulp sludge	8	Brown wood pulp SLUDGE, fibrous, saturated; grades to
– 9 – 12	6 - 12"		13	Brown wood pulp SLUDGE, fibrous material in cohesive (plastic) matrix, wet.
– 15 – 18 – 21	12 - 21"			1.8'
– 24 – 27 – 30 – 33 – 36 – 39 – 42				Bottom of recovery at 21".
– 45 – 48 – 51				Perform PCB field screen for all three intervals (0-21"); all three intervals (0 - 21") positive for PCBs.
– 54 – 57 – 60				Drive = 4.0' = 48" Recovery = 1.8' = 21"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: A-3**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/17/95
WATER ELEVATION: 95.24 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 16.8 feet Mud Line (ML)
– 3 – 6 – 9		silty sand	10	Black fine SAND and SILT, supersaturated. 0.8'
– 12 – 15 – 18 – 21 – 24 – 27 – 30 – 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Note: Sample liquified during opening of sample core due to vibration of circular saw. Sample could be poured from core tube after disturbance caused by opening tube. Bottom of recovery at 10". No PCB field screen performed at this location. Drive = 1.0' = 12" Recovery = 0.8' = 10"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: A-6**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/16/95
WATER ELEVATION: 95.16 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 1.1 feet Mud Line (ML)
– 3 – 6	0 - 6"	wood pulp sludge	30	Brown wood pulp SLUDGE, fibrous, saturated top 9", wet below; peat-like organics top 9", decreases with depth to occasional twig; note strong chemical odor top 18".
– 9 – 12	6 - 12"			
– 15 – 18	12 - 18"			
– 21 – 24	18 - 24"			
– 27 – 30	24 - 30"			2.5'
– 33 – 36	30 - 36"	banded sand	10	Grey to brown fine SAND and SILT, varved, wet; wood chip layer at 38".
– 39 – 42	36 - 42"			3.3'
– 45 – 48	42 - 48"	'native' sand	8	Grey to brown fine SAND and SILT, varved, very soft, wet. 4.0'
– 51 – 54 – 57 – 60				Location A-6 identified as 'Continuous Analytical Location'. The following samples were collected, including QA/QC for lab PCB and lab dioxin: 1) At 2-inch intervals for age dating (24 total). 2) Eight intervals as noted for PCB field screen; Interval 1 (0-6") positive for PCBs, and intervals 2 through 8 (6-48") negative. 3) Eight intervals as noted for laboratory analysis for PCB. 4) Two samples, 24-30" and 30-36", for CLP lab analysis for dioxin. Drive = 4.8' = 57" Recovery = 4.0' = 48"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: A-7**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/15/95
WATER ELEVATION: 95.20 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 0.0 feet Mud Line (ML)
– 3 – 6	0 - 8"	peat/ wood pulp	8	Brown PEAT and WOOD PULP, fibrous, wet at 4". 0.7'
– 9 – 12		banded sand	5	Grey fine SAND, Silty, thin wood chip laminae at 10" and 11.5", wet.
– 15	8 - 16"		3	Dark grey SILT, trace fine Sand, wet.
– 18	16 - 19"		3	Dark grey fine SAND, some Silt, large wood fragments at 19". 1.6'
– 21 – 24 – 27 – 30 – 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Sample collected above water line within 'marsh' area, west side of Bay. Bottom of recovery at 19". Perform PCB field screen for top two intervals (0-16"); interval 1 (0-8") positive for PCBs, interval 2 (8-16") negative. Drive = 3.0' = 36" Recovery = 1.6' = 19"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: A-8**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/15/95
WATER ELEVATION: 95.20 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 0.0 feet Mud Line (ML)
– 3		muck	3	Black organic MUCK, fibrous, wet; trace wood fibers. 0.25'
– 6		wood pulp sludge	6	Dark grey organic MUCK and wood pulp SLUDGE, wet; some cinders.
– 9			3	Black medium to fine SAND, trace Silt, wet.
– 12	6 - 13"		1	Black SLUDGE, cohesive, wet. 1.1'
– 15		beach sand	5	Brown grey medium to fine SAND, little Silt, wet; Silt occurs in seams at 14-15"
– 18	13 - 18"			and 17-18". 1.5'
– 21				
– 24				
– 27				
– 30				
– 33				
– 36				Sample collected above water line within 'marsh' area, west side of Bay.
– 39				Bottom of recovery at 18".
– 42				Perform PCB field screen for bottom two intervals (6-18"); interval 2 (6-13") positive for PCBs, interval 3 (13-18") negative.
– 45				
– 48				
– 51				
– 54				Drive = 3.0' = 36" Recovery = 1.5' = 18"
– 57				
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: A,B-7,8**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/17/95
WATER ELEVATION: 95.24 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 0.0 feet Mud Line (ML)
– 3		peat	3	Brown PEAT, fibrous, organics, saturated. 0.25'
– 6 – 9 – 12	3 - 12"	wood pulp sludge	9	Brown fine wood pulp SLUDGE and SILT, fibrous, varved, cohesive (plastic) matrix, very wet. 1.0'
– 15 – 18	12 - 18"	wood chips	6	Brown WOOD CHIPS, fine Sandy SILT matrix, moist. 1.5'
– 21 – 24 – 27 – 30 – 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Sample collected above water line within 'marsh' area, west side of Bay. Bottom of recovery at 18". Perform PCB field screen for bottom two intervals (3-18"); interval 1 (3-12") positive for PCBs, interval 2 (12-18") negative. Drive = 4.5' = 54" Recovery = 1.5' = 18"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: B-5**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/17/95
WATER ELEVATION: 95.24 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 5.3 feet Mud Line (ML)
– 3 – 6 – 9 – 12		paper (?) pulp sludge	12	Grey paper and wood pulp SLUDGE, supersaturated, very soft.
– 15 – 18 – 21			9	White to grey paper (?) pulp SLUDGE, globular, supersaturated. 1.8'
– 24 – 27 – 30 – 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Note: Due to suspected high level of contamination associated with pulp sludge, sample core was not opened. The sample core was logged and photographed through the clear plastic core cylinder. Bottom of recovery at 21". No PCB field screen performed at this location. Drive = 5.7' = 69" Recovery = 1.8' = 21"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: B-6**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/17/95
WATER ELEVATION: 95.24 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 1.5 feet Mud Line (ML)
– 3 – 6		wood pulp sludge	8	Brown wood pulp SLUDGE, fibrous, saturated; grades to
– 9	0 - 11"		3	Dark grey fine wood pulp SLUDGE, fibrous, saturated; grades to
– 12 – 15			10	Brown wood pulp SLUDGE, wet; note blue sheen on material from 13" to 15".
– 18	11 - 21"			1.7'
– 21	21 - 23"	sand	2	Grey brown fine SAND, little Silt, black wood fragments at 21-21.5". 1.9'
– 24 – 27 – 30 – 33 – 36				Sample collected above water line within 'marsh' area, west side of Bay.
– 39				Bottom of recovery at 23".
– 42 – 45				Perform PCB field screen for all three intervals (0-23"); intervals 1 and 2 (0-21") positive for PCBs, interval 3 (21-23") negative.
– 48 – 51 – 54				Drive = 3.8' = 46" Recovery = 1.9' = 23"
– 57 – 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: B-7**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/14/95
WATER ELEVATION: 95.24 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 1.0 feet Mud Line (ML)
– 3 – 6 – 9 – 12 – 15		wood pulp sludge	17	Dark brown wood pulp SLUDGE, fibrous, numerous roots and organics. 1.4'
– 18 – 21		banded sand	6	Dark brown fine SAND, little Silt, wet; note large wood pieces at 19" and 23", and wood chips from 20" to 21". 1.9'
– 24		'native' sand	2	Grey fine SAND, little Silt, wet. 2.1'
– 27 – 30 – 33 – 36 – 39 – 42				Bottom of recovery at 25".
– 45				No PCB field screen performed at this location.
– 48 – 51 – 54 – 57 – 60				Drive = 3.3' = 40" Recovery = 2.1' = 25"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: B-8**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/15/95
WATER ELEVATION: 95.20 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 0.0 feet Mud Line (ML)
– 3 – 6	0 - 8"	peat/ wood pulp	8	Brown PEAT and WOOD PULP, fibrous, Silt seam at 5-6", dry to moist. 0.7'
– 9 – 12 – 15 – 18	8 - 16"	banded sand	20	Brown medium to fine SAND, little Silt, thin wood chip layer at 14", and thick wood chip layer from 26-28" with some Silt, wet. 2.3'
– 21 – 24 – 27 – 30 – 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Sample collected above water line within 'marsh' area, west side of Bay. Bottom of recovery at 28". Perform PCB field screen for top two intervals (0-16"); interval 1 (0-8") positive for PCBs, interval 2 (8-16") negative. Drive = 3.0' = 36" Recovery = 2.3' = 28"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: C-1**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/17/95
WATER ELEVATION: 95.24 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 7.4 feet Mud Line (ML)
– 3 – 6 – 9			8	Dark grey fine SAND, little Silt, occasional weathered wood fragment, wet; sparse vegetation top 1".
– 12 – 15 – 18 – 21 – 24 – 27 – 30 – 33		banded sand	27	Brown fine SAND, little Silt, wet; coarse bark layers at 16-16.5" and 18.5-19", finer bark lenses at 23" and 35". 2.9'
– 36 – 39 – 42 – 45 – 48		'native' sand	13	Brown fine SAND, some Silt, wet; note single large wood fragment at 42". 4.0'
– 51 – 54 – 57 – 60				Bottom of recovery at 48". No PCB field screen performed at this location. Drive = 4.1' = 49" Recovery = 4.0' = 48"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: C-2**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/17/95
WATER ELEVATION: 95.24 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 10.4 feet Mud Line (ML)
– 3				
– 6	0 - 6"		11	Brown wood pulp SLUDGE, fibrous, organics, saturated; grades to
– 9		wood pulp sludge		
– 12	6 - 12"			
– 15			10	Brown wood pulp SLUDGE, fibrous material in cohesive (plastic) matrix, wet; some fine Sand with depth.
– 18				
– 21	12 - 21"			1.8'
– 24				
– 27				
– 30				
– 33				
– 36				
– 39				Bottom of recovery at 21".
– 42				
– 45				Perform PCB field screen for all three intervals (0-21"); all three intervals (0 - 21") positive for PCBs.
– 48				
– 51				Drive = 5.6' = 66"
– 54				Recovery = 1.8' = 21"
– 57				
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: C-4**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/15/95
WATER ELEVATION: 95.20 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 16.0 feet Mud Line (ML)
– 3 – 6 – 9	0 - 9"	wood pulp sludge	9	Dark brown wood pulp SLUDGE, fibrous, saturated.
– 12 – 15	9 - 16"		7	Tan paper (?) pulp sludge, saturated; bottom 1" cohesive.
– 18 – 21	16 - 22"		6	Grey brown wood pulp sludge, fibrous, wet; bottom 1" some fine Sand. 1.8'
– 24 – 27 – 30 – 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 22". Perform PCB field screen for all three intervals (0-22"); all three intervals (0-22") positive for PCBs. Note: Sampling crew reported that sampling apparatus was "covered" with sludge upon retrieval, and that bottom 5' of core sample was lost as core sampler was brought out of water. Drive = 7.6' = 91" Recovery = 1.8' = 22"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: C-5**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/10/95
WATER ELEVATION: 95.12 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 3.3 feet Mud Line (ML)
– 3 – 6 – 9 – 12		wood pulp sludge	12	Brown wood pulp SLUDGE, very soft, saturated; note strong chemical odor; top 2" contains organics and plant material. 1.0'
– 15 – 18 – 21		paper(?) pulp sludge	10	Black to dark grey paper pulp SLUDGE, very soft, saturated; note much less wood pulp than overlying material. 1.8'
– 24 – 27		'native' (?) sand	6	Grey fine SAND, some Silt, some organics, note single rounded coarse gravel at 28". 2.3'
– 30 – 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 28". No PCB field screen test performed at this location. Drive = 4.1' = 49" Recovery = 2.3' = 28"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: C-6**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/10/95
WATER ELEVATION: 95.12 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 1.5 feet Mud Line (ML)
– 3 – 6	0 - 6"	paper(?) pulp sludge	6	Dark grey to black paper (?) pulp SLUDGE, very soft, saturated, strong chemical odor. 0.5'
– 9 – 12 – 15	6 - 12"	wood pulp sludge	11	Brown wood pulp SLUDGE, very soft, saturated. 1.4'
– 18 – 21 – 24 – 27 – 30 – 33	12 - 18" 18 - 24" 24 - 32"	banded sand	17	Light brown fine to medium SAND, little Silt, wet; note 1/2" wood chip layer. at 31" and 1/4" wood chip layer at 36"; grades coarser with depth. 2.8'
– 36 – 39		'native' sand	6	Light brown fine to medium SAND, little Silt, wet. 3.3'
– 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 40". Location C-6 identified as 'Continuous Analytical Location'. The following samples were collected: 1) At 2-inch intervals for age dating (20 total). 2) Five intervals as noted for PCB field screen; Intervals 1 and 2 (0 - 12") positive for PCB, and intervals 3,4,5 (12-32") negative. 3) Five intervals as noted for CLP laboratory analysis for PCB. Drive = 4.3' = 52" Recovery = 3.3' = 40"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: C-7**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/14/95
WATER ELEVATION: 95.24 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 1.2 feet Mud Line (ML)
– 3		wood pulp sludge	5	Dark brown wood pulp SLUDGE, fibrous, saturated; grades to
– 6				
– 9			13	Grey wood (?) pulp SLUDGE, fibrous, saturated.
– 12				
– 15				
– 18				1.5'
– 21		banded sand	3	Grey fine SAND, little Silt, thick wood chip layer 19-21", wet. 1.8'
– 24				
– 27				
– 30				
– 33				
– 36				
– 39				
– 42				Bottom of recovery at 21".
– 45				No PCB field screen performed at this location.
– 48				
– 51				
– 54				Drive = 3.3' = 40" Recovery = 1.8' = 21"
– 57				
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: C-7/100'E**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/8/95
WATER ELEVATION: 95.06 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 1.8 feet Mud Line (ML)
– 3 – 6 – 9	0 - 4" 4 - 10"	wood pulp sludge	11	Brown wood pulp SLUDGE, fibrous, some roots, very soft, wet. 0.9'
– 12 – 15 – 18 – 21	10 - 16" 16 - 22"	banded sand	17	Brown fine SAND, little Silt, intermittent thin wood chip layers at 14", 16", 19", and 21"; typical wood chip layer 1" to 1.5" thick. 1.8'
– 24 – 27	22 - 28"	'native' sand	6	Brown fine SAND, little Silt, occasional twig, wet.
– 30 – 33	28 - 33"		5	Grey brown medium to fine SAND, little Silt, occasional twig, wet. 2.7'
– 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 33". Perform PCB field screen for all six intervals (0-33"); intervals 1 and 2 (0-10") positive for PCBs, intervals 3 through 6 (10-33") negative. Drive = 5.2' = 64" Recovery = 2.7' = 33"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: C-8**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/15/95
WATER ELEVATION: 95.20 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 0.0 feet Mud Line (ML)
– 3 – 6	0 - 8"	peat/ wood pulp	8	Brown PEAT and WOOD PULP, fibrous, Silty with depth, dry to moist. 0.7'
– 9 – 12 – 15	8 - 16"	beach sand	8	Light grey fine SAND, little Silt, roots and fibers, wet. 1.3'
– 18 – 21 – 24	16 - 25"	banded sand	9	Brown to grey fine SAND, some Silt, wood chip layers from 16-18" and 21-25", cohesive matrix from 21-25", wet. 2.1'
– 27 – 30 – 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Sample collected above water line within 'marsh' area, west side of Bay. Bottom of recovery at 25". Perform PCB field screen for all three intervals (0-25"); interval 1 (0-8") positive for PCBs, intervals 2 and 3 (8-25") negative. Drive = 3.0' = 36" Recovery = 2.1' = 25"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: D-4**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/16/95
WATER ELEVATION: 95.16 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 5.7 feet Mud Line (ML)
– 3 – 6 – 9 – 12 – 15 – 18		wood pulp sludge	18	Brown wood pulp SLUDGE, very soft, wet; some grey paper (?) sludge 8-10"; top 9" very wet, material becomes more cohesive 9" to 18". 1.5'
– 21		'native' sand (?)	4	Brown fine SAND, little Silt, wet. 1.8'
– 24 – 27 – 30 – 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 22". No PCB field screen performed at this location. Drive = 3.6' = 43" Recovery = 1.8' = 22"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: D-5**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/11/95
WATER ELEVATION: 95.12 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 4.6 feet Mud Line (ML)
– 3 – 6 – 9 – 12 – 15		wood pulp sludge	17	Brown wood pulp SLUDGE, top 8" very wet, bottom 9" wet. 1.4'
– 18 – 21 – 24 – 27 – 30 – 33		banded sand	17	Brown medium to fine SAND, little Silt, wet; note upward fining of sand; thin wood chip layer at 19", dark laminae at 22", and bark chips at 28". 2.8'
– 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 34". No PCB field screen performed at this location. HNu = 0.5 - 1ppm top 17". Drive = 4.0' = 48" Recovery = 2.8' = 34"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: D-6**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/8/95
WATER ELEVATION: 95.06 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 2.4 feet Mud Line (ML)
– 3 – 6	0 - 6"	wood pulp sludge	6	Black wood pulp SLUDGE, fibrous, organics, very soft, wet. 0.5'
– 9 – 12	6 - 12"	banded sand	18	Light brown fine SAND, litttle Silt, wet, occasional wood chip layers at 11-12", 17", 19", and 23-24". (Grades to grey brown 12" to 24".) 2.0'
– 15 – 18 – 21 – 24	12 - 18"			
– 27 – 30 – 33 – 36 – 39		'native' sand	15	Grey brown medium to fine SAND, little Silt, wet. (Driftwood (?) fragment at 36".) 3.3'
– 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 39". Perform PCB field screen test for top three intervals (0-18"); interval 1 (0-6") positive for PCBs, intervals 2 and 3 (6"-18") negative. Drive = 4.6' = 55" Recovery = 3.3' = 39"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: D-7**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/14/95
WATER ELEVATION: 95.24 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 1.5 feet Mud Line (ML)
– 3		wood pulp sludge	3	Dark brown wood pulp SLUDGE, organics, very soft, saturated.
– 6			6	Grey paper (?) pulp SLUDGE, wet.
– 9	0 - 10"		1	Black pulpy SLUDGE, wet.
– 12	10 - 14"		4	Grey fine SAND, little Silt, wet.
– 15				
– 18			9	Brown to grey wood pulp SLUDGE, fibrous, wet; note sheen on pulp from 22" to 23".
– 21	14 - 23"			1.9'
– 24		banded sand	11	Light brown fine SAND, little Silt, wood chip layers 24" to 25" and 28" to 28.5".
– 27				
– 30	23 - 30"			2.7'
– 33				
– 36				
– 39				
– 42				Bottom of recovery at 32".
– 45				Perform PCB field screen for all four intervals (0-30"); interval 1 (0-10") positive for PCBs, intervals 2, 3, and 4 (10-30") negative.
– 48				Note strong chemical odor when sampling tube opened for logging.
– 51				
– 54				Drive = 3.6' = 43" Recovery = 2.7' = 32"
– 57				
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: D-8**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/16/95
WATER ELEVATION: 95.16 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 1.1 feet Mud Line (ML)
– 3 – 6	0 - 6"	wood pulp sludge	6	Brown wood pulp SLUDGE, fibrous, saturated, very soft.
– 9 – 12	6 - 12"		6	Black wood pulp SLUDGE, Sandy, saturated. 1.0'
– 15 – 18	12 - 19"	beach sand (?)	7	Black fine SAND, some Silt, wet. 1.6'
– 21 – 24 – 27 – 30 – 33	19 - 34"	wood pulp sludge	15	Brown and black wood pulp SLUDGE, Sandy, wet; large wood fragments throughout; grey paper (?) sludge from 20" to 22"; bottom 2" predominantly Sand. 2.8'
– 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 34". Perform PCB field screen for all four intervals (0-34"); interval 1 (0-6") and interval 4 (19-34") positive for PCBs, interval 2 (6-12") and interval 3 (12-19") negative. Drive = 3.7' = 44" Recovery = 2.8' = 34"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: D-9**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/15/95
WATER ELEVATION: 95.20 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 1.2 feet Mud Line (ML)
– 3		beach sand	5	Black coarse to fine SAND, little Silt, wet. 0.4'
– 6 – 9	0 - 10"	wood pulp sludge	5	Black to grey wood pulp SLUDGE, fibrous, wet; bottom 1" cohesive, grey. 0.8'
– 12 – 15 – 18	10 - 18"	banded sand	15	Grey brown fine SAND, little Silt, black wood chip layer at 21-22", and cohesive, fibrous wood chip layer at 24-25", wet.
– 21 – 24	18 - 25"			2.1'
– 27 – 30 – 33 – 36 – 39				Bottom of recovery at 25".
– 42 – 45 – 48 – 51				Perform PCB field screen for all three intervals (0-25"); interval 1 (0-10") positive for PCBs, intervals 2 and 3 (10-25") negative.
– 54 – 57 – 60				Drive = 2.8' = 34" Recovery = 2.1' = 25"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: E-2**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/17/95
WATER ELEVATION: 95.24 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 10.4 feet Mud Line (ML)
		sand	2	Brown fine SAND, Silty, vegetation top 1", wet. 0.15'
– 3		sludge	2	Dark grey fine SAND and SLUDGE (?), wet. 0.15'
– 6	0 - 6"		5	Tan medium to fine SAND and SILT, varved, fine wood chip laminae, wet.
– 9				
– 12		banded sand		
– 15				
– 18			25	Brown fine SAND, little Silt, large wood fragments at 18", 24", 32", 33", and 36", finer wood chip laminae at 12" and 15", wet.
– 21				
– 24				
– 27				
– 30				
– 33				
– 36				3.0'
– 39		'native' sand	9	Brown fine SAND, little Silt, wet.
– 42				
– 45				3.7'
– 48				Bottom of recovery at 45".
– 51				Perform PCB field screen for top 6" interval, bias sample to material from 2" to 4"; interval (0-6") tested positive for PCBs.
– 54				
– 57				Drive = 4.8' = 58" Recovery = 3.7' = 45"
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: E-4**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/16/95
WATER ELEVATION: 95.16 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 6.2 feet Mud Line (ML)
– 3		wood pulp sludge	3	Brown fine Silty SAND and WOOD PULP, fibrous, saturated.
– 6	0 - 6"		2	Grey fine Sandy SLUDGE (?), very soft, wet; note sheen. 0.4'
– 9			4	Grey fine SAND, Silty, wood chip layers at 6", 8", and 9", wet.
– 12	6 - 12"			
– 15				
– 18		banded sand	27	Grey brown to Brown fine SAND, little Silt, wood chip layers at 24", bark or driftwood fragments at 19.5" and 32", wet.
– 21				
– 24	12 - 24"			
– 27				
– 30				
– 33				
– 36				3.0'
– 39				
– 42				Sample collected above water line within 'marsh' area, west side of Bay.
– 45				Bottom of recovery at 36".
– 48				Perform PCB field screen for top three intervals (0-24"); interval 1 (0-6") positive for PCBs, intervals 2 and 3 (6-24") negative.
– 51				
– 54				Drive = 3.8' = 46" Recovery = 3.0' = 36"
– 57				
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: E-5**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/11/95
WATER ELEVATION: 95.12 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 4.8 feet Mud Line (ML)
– 3 – 6 – 9	0 - 9"	wood/ paper pulp sludge	9	Brown wood pulp SLUDGE and Grey paper pulp SLUDGE (3-5"), fibrous, very wet; note trace organics top 1", trace fine Sand bottom 1". 0.8'
– 12 – 15		banded sand	6	Grey brown fine SAND, little Silt, wet; thin wood chip seams at 13" and 14". 1.3'
– 18 – 21	9 - 18"	'native' sand	9	(Disturbed sediment zone due to settling of sediment into void created by loss of 0.7' of sample from bottom of core at time of collection. Material within interval consists of brown fine Sand, considered same as underlying zone.)
– 24 – 27	18 - 27"		7	Brown medium to fine SAND, little Silt, wet; note occasional darker fine Sand laminae.
– 30 – 33 – 36			5	Dark grey brown fine SAND, little Silt, wet; note bark chip at 36". 3.0'
– 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 36". Perform PCB field screen on top three intervals (0-27"); interval 1 (0-9") tested positive for PCBs, intervals 2 and 3 (9-27") were negative; note strong odor top 9" of sample. Drive = 4.0' = 48" Recovery = 3.0' = 36"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: E-6**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/8/95
WATER ELEVATION: 95.06 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 3.8 feet Mud Line (ML)
– 3 – 6 – 9 – 12		wood pulp sludge	12	Dark grey wood pulp SLUDGE, fibrous, organics, very soft, wet; interval 8"-12" contains some fine Sand. 1.0'
– 15		banded sand	5	Grey brown fine SAND, litttle Silt, wet, wood chip layer at 17". 1.4'
– 18 – 21 – 24 – 27 – 30 – 33 – 36		'native' sand	19	Light brown fine SAND, little Silt, wet. (Driftwood (?) layer at 32".) 3.0'
– 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 36". No PCB field screen performed at this location. Drive = 6.7' = 80" Recovery = 3.0' = 36"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: E-7**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/8/95
WATER ELEVATION: 95.06 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 2.4 feet Mud Line (ML)
– 3 – 6 – 9		wood pulp sludge	9	Brown wood pulp SLUDGE, fibrous, paper fibers, some roots, very soft, wet. 0.8'
– 12 – 15 – 18 – 21 – 24 – 27 – 30		banded sand	23	Light brown fine SAND, some Silt, occasional wood chip layers at 22", 30", and 32", wet. 2.6'
– 33 – 36 – 39		'native' sand	8	Grey brown medium to fine SAND, little Silt, wet. 3.3'
– 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 40". No PCB field screen performed at this location. Drive = 4.6' = 55" Recovery = 3.3' = 40"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: E-8**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/15/95
WATER ELEVATION: 95.20 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 1.9 feet Mud Line (ML)
– 3		wood pulp sludge	2	Black organic, wood pulp SLUDGE, fibrous, wet.
			3	Brown wood pulp SLUDGE and chips, wet.
– 6			2	Grey wood pulp SLUDGE, cohesive, wet. 0.6'
– 9		banded sand	10	Light brown fine SAND, some Silt, black bark chip layer at 9-10", wet. 1.4'
– 12				
– 15				
– 18				
– 21				
– 24				
– 27				
– 30				
– 33				
– 36				
– 39				
– 42				Bottom of recovery at 17".
– 45				No PCB field screen performed at this location.
– 48				
– 51				Drive = 3.3' = 40" Recovery = 1.4' = 17"
– 54				
– 57				
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: E-9**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/15/95
WATER ELEVATION: 95.20 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 0.0 feet Mud Line (ML)
– 3 – 6		peat/ wood pulp	8	Brown PEAT and WOOD PULP, fibrous, dry to moist. 0.7'
– 9	0 - 10"	pulp sludge	2	Brown wood pulp SLUDGE, fibrous, wood chips, wet. 0.9'
– 12 – 15 – 18 – 21	10 - 19"	banded sand	12	Black coarse to fine SAND and wood CHIPS, little Silt, wet; note sheen on soil surface. 1.9'
– 24 – 27 – 30 – 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Sample collected above water line within 'marsh' area, west side of Bay. Bottom of recovery at 22". Perform PCB field screen for top two intervals (0-19"); interval 1 (0-10") positive for PCBs, interval 2 (10-19") negative. Note: Core sample inadvertently photographed with Sample ID = A-7; this is incorrect. E-9 occupies photos 11 and 12, Roll #4 (12 exposure roll). Drive = 3.0' = 36" Recovery = 1.9' = 22"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: F-3**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/16/95
WATER ELEVATION: 95.16 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 7.7 feet Mud Line (ML)
– 3		beach sand	1 2	Brown fine SAND, some Silt, trace organics (plants, roots) wet. Dark grey fine SAND, little Silt, wet. 0.3'
– 6 – 9 – 12		banded sand	11	Brown fine SAND, little Silt, wet; wood chip fragments at 8" and 14". 1.2'
– 15 – 18 – 21 – 24 – 27 – 30 – 33 – 36		'native' sand	22	Brown fine SAND, little Silt, wet. 3.0'
– 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 36". No PCB field screen performed at this location. Drive = 3.7' = 45" Recovery = 3.0' = 36"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: F-4**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/16/95
WATER ELEVATION: 95.16 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 7.0 feet Mud Line (ML)
– 3			1	Brown fine SAND, little Silt, organics (roots, plants), wet.
			2	Dark Grey fine SAND, little Silt, occasional root, wet.
– 6		banded sand		
– 9				
			21	Light brown fine SAND, little Silt, occasional very thin bark lens at 5" and 24", wet.
– 12				
– 15				
– 18				
– 21				
– 24				2.0'
– 27		'native' sand	9	Light brown fine SAND, little Silt, occasional fine dark sand laminae 26" to 33", wet.
– 30				
– 33				2.8'
– 36				
– 39				Bottom of recovery at 33".
– 42				No PCB field screen performed at this location.
– 45				Note: Photograph at this location inadvertently incorrectly identified as D-4; Sample F-4 occupies photo nos. 22 and 23, Roll #5.
– 48				
– 51				
– 54				Drive = 3.3' = 40" Recovery = 2.8' = 33"
– 57				
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: F-5**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/15/95
WATER ELEVATION: 95.20 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 6.0 feet Mud Line (ML)
– 3		pulp sludge	3	Brown wood pulp SLUDGE and SILT, organics, wet. 0.25'
– 6			2	Grey fine Sand, some Silt, wet; grades to
– 9 – 12 – 15 – 18 – 21 – 24 – 27 – 30 – 33 – 36		banded sand	32	Brown fine SAND, little SILT, thick wood chip layer from 7" to 9", and thin wood chip layer at 21.5", coarser bark layer at 35", wet; note occasional fine darker sand laminae 30" to 37". 3.1'
– 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 37". No PCB field screen performed at this location. Drive = 4.0' = 48" Recovery = 3.1' = 37"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: F-6**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/10/95
WATER ELEVATION: 95.12 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 4.6 feet Mud Line (ML)
– 3 – 6	0 - 6"	wood pulp sludge	6	Dark brown wood pulp SLUDGE, saturated; top 1" organic muck. 0.5'
– 9 – 12	6 - 12"	banded sand	6	Grey fine SAND, little Silt, wet; note thick wood chip seam 8.5" to 10.5", and thinner seam at 11.5" to 12". 1.0'
– 15 – 18 – 21 – 24 – 27 – 30 – 33	12 - 18"	'native' sand	21	Brown medium to fine SAND, little Silt, wet; note grades coarser with depth; occasional bark chip at 26". 2.8'
– 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 33". Perform PCB field screen on top three intervals (0-18"); interval 1 (0-6") positive for PCB field screen test, intervals 2 and 3 (6-18") negative. Collect large volume grab sample from approximately 12" to 30" for possible geotechnical analysis. Drive = 3.1' = 37" Recovery = 2.8' = 33"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: F-7**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/9/95
WATER ELEVATION: 95.10 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 2.4 feet Mud Line (ML)
– 3		silt	2	Dark brown organic SILT, very soft, saturated. 0.2'
– 6	0 - 8"	wood pulp sludge	11	Dark grey brown wood pulp SLUDGE, fibrous, very soft, saturated; note top 6" contains fine Sand; black seam at 8".
– 9				
– 12				
– 15	8 - 15"			1.3'
– 18		banded sand	9	Light brown fine SAND, little Silt, wet; note wood chip layers at 20" and 24", and bark (?) layers at 17" and 19".
– 21				
– 24	15 - 24"			2.0'
– 27		'native' sand	9	Light brown fine SAND, little Silt, wet.
– 30				
– 33	24 - 33"			2.7'
– 36				Bottom of recovery at 33".
– 39				
– 42				Location F-7 identified as 'Continuous Analytical Location'. The following samples were collected:
– 45				1) At 2-inch intervals for age dating (17 total). 2) Four intervals as noted for PCB field screen. 3) Four intervals as noted for CLP laboratory analysis for PCB.
– 48				
– 51				
– 54				Drive = 3.6' = 43" Recovery = 2.7' = 33"
– 57				
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: F-8**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/15/95
WATER ELEVATION: 95.20 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 1.6 feet Mud Line (ML)
– 3 – 6	0 - 7"	banded sand	7	Grey fine SAND, some Silt, organics (roots), wet.
– 9 – 12	7 - 14"		5	Dark grey fine SAND, some Silt, laminated very thin wood chip layers throughout, wet.
– 15 – 18 – 21	14 - 22"		10	Brown to Grey wood and paper PULP and fine SAND, wet; fibrous matrix.
– 24	22 - 26"		4	Light grey fine SAND, little Silt, wood chip layer at 23.5", wet. 2.2'
– 27 – 30 – 33 – 36 – 39				Bottom of recovery at 26".
– 42 – 45 – 48 – 51				Perform PCB field screen for all four intervals (0-26"); intervals 1 and 2 (0-14") positive for PCBs, intervals 3 and 4 (14-26") negative.
– 54				Drive = 3.7' = 44" Recovery = 2.2' = 26"
– 57 – 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: F-9**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/16/95
WATER ELEVATION: 95.16 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 0.0 feet Mud Line (ML)
– 3		peat/ wood pulp	4	Brown wood PULP and PEAT, dry. 0.3'
– 6	0 - 6"	sludge	2	Black to grey fine SAND, some Silt, some wood Pulp, wet. 0.5'
– 9				
– 12	6 - 12"	banded sand	15	Grey fine SAND, little Silt, wood chip layers at 8", 12", 15", 17", and 20", wet; typical layer 1/4" thick.
– 15				
– 18				
– 21	12 - 21"			1.8'
– 24				
– 27				
– 30				
– 33				
– 36				Sample collected above water line within 'marsh' area, west side of Bay.
– 39				Bottom of recovery at 21".
– 42				Perform PCB field screen for all three intervals (0-21"); intervals 1 and 2 (0-12") positive for PCBs, interval 3 (12-21") negative.
– 45				
– 48				
– 51				
– 54				Drive = 3.0' = 36" Recovery = 1.8' = 21"
– 57				
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: G-4**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/16/95
WATER ELEVATION: 95.16 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 7.1 feet Mud Line (ML)
– 3			1	Brown fine Silty SAND, trace organics (roots), wet.
			2	Grey fine SILT and SAND, wet.
– 6	0 - 6"			
– 9				
– 12	6 - 12"	banded sand	27	Brown fine SAND, little Silt, thin wood chip laminae at 6", coarse wood chip lens at 12", bark or driftwood layer at 30", wet.
– 15				
– 18				
– 21				
– 24				
– 27				
– 30				2.5'
– 33		'native' sand	7	Brown fine SAND, little Silt, wet.
– 36				3.1'
– 39				
– 42				
– 45				Bottom of recovery at 37".
– 48				Perform PCB field screen for top two intervals (0-12"); interval 1 (0-6") positive for PCBs, interval 2 (6-12") negative.
– 51				
– 54				Drive = 3.7' = 45" Recovery = 3.1' = 37"
– 57				
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: G-5**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/15/95
WATER ELEVATION: 95.20 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 6.9 feet Mud Line (ML)
– 3		sandy sludge	3	Black fibrous, organic SILT and fine SAND, some wood pulp Sludge, wet; grades to 0.25'
– 6	0 - 6"			
– 9				
– 12	6 - 12"			
– 15		banded sand	27	Light brown to grey brown fine SAND, little SILT, wood chip layers at 10" and 11", coarser chip/bark layers at 23" and 30", wet.
– 18				
– 21				
– 24	12 - 24"			
– 27				
– 30				2.5'
– 33		'native' sand	9	Light brown to grey brown fine SAND, little SILT, wet; note occasional fine darker sand laminae from 27" to 39".
– 36				
– 39				3.3'
– 42				Bottom of recovery at 39".
– 45				Perform PCB field screen for top three intervals (0-24"); interval 1 (0-6") very slightly positive (at detection limit of 2 ppm), intervals 2 and 3 (6-24") found negative. Note interval 1 sample biased to sludge material top 3".
– 48				
– 51				Collect larger volume grab sample of material from 6" to 30" for geotechnical analyses.
– 54				
– 57				Drive = 3.5' = 42" Recovery = 3.3' = 39"
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: G-6**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/10/95
WATER ELEVATION: 95.12 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 5.2 feet Mud Line (ML)
– 3		wood pulp sludge	5	Dark grey to black paper (?) pulp SLUDGE, very soft, saturated, strong chemical odor. 0.4'
– 6	0 - 6"			
– 9		banded sand	6	Gray fine SAND, little Silt, wet; note fine wood chip layers at 9.5" and 10", and from 11" to 12". 0.9'
– 12	6 - 12"			
– 15		'native' sand	23	Light brown fine SAND, little Silt, wet; occasional organic (twig); note occasional dark fine sand laminae.
– 18	12 - 18"			
– 21				
– 24				
– 27				
– 30	18 - 30"			2.8'
– 33				
– 36				
– 39				Bottom of recovery at 34".
– 42				Location G-6 identified as 'Continuous Analytical Location'. The following samples were collected:
– 45				1) At 2-inch intervals for age dating (17 total). 2) Four intervals as noted for PCB field screen; Intervals 1 and 2 (0 - 12") positive for PCB, intervals 3 and 4 (12-30") negative. 3) Four intervals as noted for laboratory analysis for PCB. Collect field duplicate for lab analysis of 6-12" interval, ID = X2/6-12"
– 48				
– 51				
– 54				
– 57				Drive = 3.0' = 36" Recovery = 2.8' = 34"
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: G-7**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/9/95
WATER ELEVATION: 95.10 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 2.2 feet Mud Line (ML)
– 3		sand	7	Light brown fine SAND, some Silt, wet.
– 6	0 - 7"			0.6'
– 9		wood pulp sludge	2	Light brown fine SAND, some Silt, some wood pulp, wet.
– 12			6	Dark grey wood pulp SLUDGE, very soft, wet.
– 15	7 - 15"			
– 18	15 - 19"		4	Brown wood pulp SLUDGE, very soft, wet. 1.6'
– 21				
– 24				
– 27				
– 30				
– 33				
– 36				
– 39				
– 42				Bottom of recovery at 19".
– 45				Perform PCB field screen for all three intervals (0-19"); all three intervals (0-19") at detection limit as positive for PCB field screen test.
– 48				
– 51				
– 54				Drive = 3.7' = 44" Recovery = 1.6' = 19"
– 57				
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: G-8**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/16/95
WATER ELEVATION: 95.16 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 1.4 feet Mud Line (ML)
– 3				
– 6	0 - 6"		7	Grey fine SAND, some Silt, thin wood chip seams from 3" to 4", wet.
– 9				
– 12	6 - 12"		4	Brown very fine WOOD PULP and Black fine SAND, little Silt, wet.
– 15				
– 18	12 - 18"	banded sand	13	Grey fine SAND, some Silt, thin wood chip layers at 13.5" and 14", wet.
– 21				
– 24	18 - 24"			(Note: Sample core contained a 2" void from 23.5" to 25.5" upon recovery
– 27				due to loss of bottom 2" when core was retrieved from water. Sample core assumed to be continuous to 36".)
– 30				
– 33			12	Brown fine SAND, little Silt, wood chips at 33.5" and 35".
– 36	24 - 36"			3.0'
– 39				Note: Two discrete core samples were obtained at G-8 location, G-8 and G-8 REP. Analytical samples were obtained from both cores as noted below. Two samples were collected to provide sufficient sample volume for QA/QC analyses; QA/QC samples were obtained from G-8 REP. Location G-8 identified as 'Continuous Analytical Location'. The following samples were collected:
– 42				1) At 2-inch intervals from G-8 for age dating (18 total).
– 45				2) Five intervals (0-36") from G-8, as noted, for PCB field screen. Intervals 1 and 2 (0-12") positive for PCBs, intervals 3, 4, and 5 (12-36") negative.
– 48				3) Top two intervals (0-12") from G-8 REP, and bottom three intervals (12-36") from G-8, for CLP laboratory analysis for PCB.
– 51				4) Two samples, 6-12" and 12-18", from G-8 REP for CLP laboratory analysis for dioxin.
– 54				
– 57				
– 60				Drive = 3.3' = 40" Recovery = 3.1' = 37"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: G-8 REP**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/16/95
WATER ELEVATION: 95.16 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 1.2 feet Mud Line (ML)
– 3		banded sand	7	Grey fine SAND, little Silt, thin wood chip layer at 3", wet.
– 6	0 - 6"			
– 9			4	Brown very fine WOOD PULP and Black fine SAND, little Silt, wet.
– 12	6 - 12"			
– 15			24	Grey brown fine SAND, little Silt, thin wood chip layers at 15", 16", 28", 29", and 30", wet.
– 18	12 - 18"			
– 21				
– 24	18 - 24"			
– 27				
– 30				
– 33				
– 36	24 - 36"			3.0'
– 39				Bottom of recovery at 36".
– 42				Note: Two discrete core samples were obtained at G-8 location, G-8 and G-8 REP. Analytical samples were obtained from both cores as noted below. Two samples were collected to provide sufficient sample volume for QA/QC analyses; QA/QC samples were obtained from G-8 REP. Location G-8 identified as 'Continuous Analytical Location'. The following samples were collected:
– 45				1) At 2-inch intervals from G-8 for age dating (18 total).
– 48				2) Five intervals (0-36") from G-8, as noted, for PCB field screen.
– 51				3) Top two intervals (0-12") from G-8 REP, and bottom three intervals (12-36") from G-8, for CLP laboratory analysis for PCB.
– 54				4) Two samples, 6-12" and 12-18", from G-8 REP for CLP laboratory analysis for dioxin.
– 57				
– 60				Drive = 3.7' = 44" Recovery = 3.0' = 36"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: H-4**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/16/95
WATER ELEVATION: 95.16 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 7.1 feet Mud Line (ML)
			2	Dark brown fine SAND, some Silt, organics, wet.
– 3			1	Tan WOOD PULP and SILT, wet.
– 6	0 - 6"			
– 9				
– 12	6 - 12"	banded sand	30	Grey brown fine SAND, little Silt, thin wood chip laminae at 8.5", coarse bark or driftwood layers at 5.5", 26", 28", 33", wet.
– 15				
– 18				
– 21				
– 24				
– 27				
– 30				2.5'
– 33		'native' sand	7	Brown fine SAND, little Silt, wet.
– 36				3.1'
– 39				
– 42				
– 45				Bottom of recovery at 37".
– 48				No PCB field screen performed at this location.
– 51				
– 54				Drive = 4.1' = 49" Recovery = 3.1' = 37"
– 57				
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: H-5**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/15/95
WATER ELEVATION: 95.20 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 6.4 feet Mud Line (ML)
– 3		sandy sludge	4	Dark grey fine SAND and wood pulp SLUDGE, organics and grey paper pulp sludge top 1". 0.3'
– 6 – 9 – 12 – 15 – 18 – 21 – 24 – 27 – 30 – 33 – 36 – 39		banded sand	37	Light brown fine SAND, little to some Silt, thin wood chip layers at 23", 27", and 30", coarser bark layers at 36" and 39", wet. 3.4'
– 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 41". No PCB field screen performed at this location. Drive = 3.5' = 42" Recovery = 3.4' = 41"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: H-6**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/10/95
WATER ELEVATION: 95.12 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 5.2 feet Mud Line (ML)
– 3		wood pulp sludge	5	Brown wood pulp SLUDGE, saturated; top 1" organics. 0.4'
– 6 – 9		paper pulp sludge	4	Dark grey fibrous paper pulp (?) SLUDGE, saturated; grades to fine Sand. 0.8'
– 12			No Recovery	(Note: Due to loss of bottom 3" during retrieval of core sampler, a void was created within sampler; interval from 9" to 12" subsequently settled into void.)
– 15 – 18 – 21 – 24 – 27		'native' sand	16	Brown fine SAND, little Silt, wet; occasional twig or bark chip. 2.3'
– 30 – 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 28". No PCB field screen performed at this location. Note HNu = 5 -10 ppm on top 9" of core, strong odor present. (A photograph of the core was inadvertently not obtained at this location.) Drive = 2.8' = 34" Recovery = 2.3' = 28"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: H-7**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-100	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/9/95
WATER ELEVATION: 95.10 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 3.8 feet Mud Line (ML)
– 3 – 6		wood pulp sludge	8	Dark brown to black wood pulp SLUDGE, fibrous, organics, very soft, wet; top 2" primarily organics; bottom 1" grey cohesive sludge. 0.7'
– 9 – 12 – 15		banded sand	7	Grey fine SAND, some Silt, wet; grades to
– 18 – 21 – 24 – 27			14	Grey brown medium to fine SAND, some Silt, bark (?) layer at 28", wet. 2.4'
– 30 – 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 29". No PCB field screen performed at this location. Collect grab sample of material from 8" to 29" for possible physical testing (grain size distribution, etc.). Drive = 2.8' = 33" Recovery = 2.4' = 29"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: H-8**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/15/95
WATER ELEVATION: 95.20 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 0.8 feet Mud Line (ML)
– 3 – 6 – 9		banded sand	9	Light brown fine SAND, little Silt, occasional fine wood chip laminae at 3", 4", and 5.5" to 8", wet.
– 12 – 15 – 18 – 21 – 24			15	Grey fine SAND, little Silt, wet; soft, thin wood chip layers at 11-12", 16-17", and 21-22". 2.0'
– 27 – 30 – 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 24". No PCB field screen performed at this location. No photograph obtained of core at this location. Drive = 2.2' = 26" Recovery = 2.0' = 24"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: I-3**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/16/95
WATER ELEVATION: 95.16 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 8.5 feet Mud Line (ML)
– 3 – 6	0 - 8"	banded sand	8	Brown and Grey (alternating bands 2-3" thick), fine Silty SAND, wet; some organics top 1"; very thin wood chip layer at 4.5".
– 9 – 12 – 15 – 18 – 21	8 - 14"	banded sand	13	Brown fine SAND, little Silt, wet; very thin wood chip layer at 21"; bark or driftwood fragment at 15". 1.8'
– 24 – 27 – 30 – 33 – 36		'native' sand	17	Brown fine SAND, little Silt, wet; bark or driftwood fragments at 31" and 35". 3.2'
– 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 38". Perform PCB field screen for top two intervals (0-14"); interval 1 (0-8") positive for PCBs, interval 2 (8-14") negative. Drive = 3.7' = 44" Recovery = 3.2' = 38"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: I-4**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/16/95
WATER ELEVATION: 95.16 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 7.3 feet Mud Line (ML)
– 3		banded sand	2	Brown WOOD CHIPS, wet.
– 6			6	Light brown fine SAND, little Silt, wet; note darker fine Sand from 5" to 6".
– 9			3	Brown WOOD CHIPS, wet.
– 12			3	Light brown fine SAND, little Silt, very thin wood chip laminae at 12" and 13.5". 1.2'
– 15		'native' sand	27	Brown fine SAND, little Silt, wet; bark or driftwood fragments at 22" and 36".
– 18				
– 21				
– 24				
– 27				
– 30				
– 33				
– 36				
– 39				3.3'
– 42				Bottom of recovery at 40".
– 45				No PCB field screen performed at this location.
– 48				
– 51				Drive = 4.0' = 48" Recovery = 3.3' = 40"
– 54				
– 57				
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: I-5**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/16/95
WATER ELEVATION: 95.16 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 6.3 feet Mud Line (ML)
– 3		wood pulp sludge	5	Brown wood pulp SLUDGE, very soft, wet; organics top 3", grey 3" to 5".
– 6			2	Dark brown Silty SAND, occasional wood pulp, wet. 0.6'
	0 - 7"			
– 9				
– 12				
	7 - 14"	banded sand	18	Brown fine SAND, litttle Silt, wood chip laminae at 15", 19", and 25", bark layer at 11", wet.
– 15				
– 18				
– 21				
– 24				2.1'
– 27		'native' sand	6	Brown fine SAND, little Silt, wet.
– 30	14 - 30"			2.6'
– 33				
– 36				
– 39				
– 42				Bottom of recovery at 31".
– 45				Perform PCB field screen for all three intervals (0-30"); interval 1 (0-7") positive for PCBs, intervals 2 and 3 (7-30") negative.
– 48				
– 51				
– 54				Drive = 3.7' = 44" Recovery = 3.2' = 38"
– 57				
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: I-6**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/10/95
WATER ELEVATION: 95.12 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 5.1 feet Mud Line (ML)
– 3 – 6	0 - 7"	wood pulp sludge	7	Brown wood pulp SLUDGE, fibrous, saturated; top 1" organics. 0.6'
– 9 – 12	7 - 12"	paper pulp sludge	4	Dark grey fibrous paper pulp (?) SLUDGE, saturated; grades to fine Sand. 0.9'
– 15 – 18 – 21	12 - 23"	banded sand	12	Brown fine SAND, little Silt, wet; occasional very thin wood chip layer at 18" and 21". 1.9'
– 24 – 27 – 30		'native' sand	8	Grey medium to fine SAND, little Silt, wet, occasional bark chip. 2.6'
– 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 31". Perform PCB field screen for top three intervals (0-23"); intervals 1 and 2 (0-12") positive, interval 3 (12-23") negative for PCBs. Note HNu = 10 to 25 ppm on top 9"; chemical odor associated with sludges, and sheen on free water top 9". Drive = 3.0' = 36" Recovery = 2.6' = 31"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: I-7**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/9/95
WATER ELEVATION: 95.10 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 2.1 feet Mud Line (ML)
– 3		pulp sludge	4	0-2": Dark grey fine SAND, some Silt, occasional shell fragment, wet. 2-4": Dark grey wood pulp SLUDGE, wet. 0.3'
– 6	0 - 7"	banded sand	9	Brown fine SAND, little Silt, wet; black fine sand and wood chip layer from 6-7", very thin fine wood chip layer at 13".
– 9				
– 12	7-13"			1.1'
– 15		'native' sand		Dark grey fine SAND, little Silt, wet.
– 18	13 - 19"			1.6'
– 21				
– 24				
– 27				
– 30				
– 33				
– 36				
– 39				
– 42				Bottom of recovery at 19".
– 45				Perform PCB field screen for all three intervals (0-19"); interval 1 (0-7") positive for PCB field screen, intervals 2 and 3 (7-19") negative.
– 48				
– 51				
– 54				Drive = 1.8' = 22" Recovery = 1.6' = 19"
– 57				
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: J-5**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/16/95
WATER ELEVATION: 95.16 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 6.5 feet Mud Line (ML)
		sludge	2	Grey wood pulp SLUDGE, very soft, saturated, organics top 1/2". 0.2'
– 3			3	Grey fine SAND, some Silt, wet; grades to
– 6		banded sand	10	Brown fine SAND, little Silt, numerous twigs, acorn at 10", bark layers
– 9				at 11" and 15", wet; note darker fine Sand laminae from 11" to 15".
– 12				
– 15				1.3'
– 18		'native' sand	23	Brown fine SAND, little Silt, wet.
– 21				
– 24				
– 27				
– 30				
– 33				
– 36				3.2'
– 39				
– 42				Bottom of recovery at 38".
– 45				No PCB field screen performed at this location.
– 48				
– 51				Drive = 4.7' = 56" Recovery = 3.2' = 38"
– 54				
– 57				
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: J-6**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/10/95
WATER ELEVATION: 95.12 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 2.3 feet Mud Line (ML)
– 3		sand	2	Light brown fine SAND, wet; grades to
– 6 – 9 – 12 – 15			15	Light grey fine SAND, little Silt, wet; note occasional darker fine Sand laminae at 5-6", 10-11", and 15-16".
– 18	17 - 19"	sludge (?)	2	1.4' Dark grey cohesive SLUDGE, very soft, wet; contains occ. shell fragment. 1.6'
– 21 – 24 – 27 – 30		'native' sand	12	Light brown fine SAND, little Silt, wet. 2.6'
– 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 31". Perform PCB field screen on 17" - 19" interval on 8/14/95; interval tested positive for PCBs, therefore was identified as sludge. HNu = 1-2 ppm on same interval. Drive = 2.8' = 34" Recovery = 2.6' = 31"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: J-7**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/16/95
WATER ELEVATION: 95.16 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 1.0 feet Mud Line (ML)
– 3		beach sand	2	Brown fine SAND, little Silt, wet; note thin black fine Sand laminae. 0.2'
– 6 – 9 – 12 – 15		banded sand	13	Dark grey fine SAND, little Silt, wet; very thin wood chip layer at 15", note dark sand laminae at 12". 1.3'
– 18 – 21		'native' sand	7	Dark grey fine SAND, little Silt, wet. 1.8'
– 24 – 27 – 30 – 33 – 36 – 39 – 42				Bottom of recovery at 22".
– 45				No PCB field screen performed at this location.
– 48 – 51 – 54 – 57 – 60				Drive = 2.0' = 24" Recovery = 1.8' = 22"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: SL-1**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/14/95
WATER ELEVATION: 95.24 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
				Water Column = 0.0 feet Mud Line (ML)
– 3 – 6	0 - 6"	beach sand	12	Tan fine SAND, little Silt, wet.
– 9 – 12	6 - 12"			1.0'
– 15 – 18	12 - 20"	banded sand	8	Grey medium to fine SAND, trace Silt, thin wood chip layers at 13", 16", and 19", occasional darker fine sand laminae.
– 21 – 24 – 27	20 - 29"		10	Light Grey fine SAND, little Silt, note coarse Sand and wood chips at 27", thin wood chip laminae at 22" and 23".
– 30				2.5'
– 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 30". Sample collected along shoreline above waterline. Sample location selected 8/14/95 as previously staked location was lost. Perform PCB field screen on all four intervals (0-29"); all four intervals found negative for PCBs. Drive = 3.0' = 36" Recovery = 2.5' = 30"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: SL-2**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/14/95
WATER ELEVATION: 95.24 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
				Water Column = 0.0 feet Mud Line (ML)
– 3 – 6 – 9 – 12	0 - 7" 7 - 14"	beach sand	14	Light brown fine SAND, little Silt, wet. 1.2'
– 15 – 18 – 21	14 - 23"	banded sand	9	Light brown fine SAND, little Silt, thin wood chip layers at 15", 16", 17", 18", and 19", wet.
– 24 – 27 – 30	23 - 30"		7	Light grey fine SAND, little Silt, wood chip layers at 22", 23", 24-27", and 28-29"; occasional fine gravel in soft silt lens 29-30". 2.5'
– 33	30 - 34"	'native' sand	4	Dark grey fine SAND, little Silt, wet; note single piece of coarse gravel at 34". 2.8'
– 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 34". Sample collected along shoreline above waterline. Perform PCB field screen on all five intervals (0-34"); intervals 1, 2, and 5 (0-14" and 30-34") negative for PCBs, intervals 3 and 4 (14-23") positive for PCB field screen. Drive = 3.0' = 36" Recovery = 2.8' = 34"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: SL-3**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/14/95
WATER ELEVATION: 95.24 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
				Water Column = 0.0 feet Mud Line (ML)
– 3 – 6	0 - 7"	beach sand	5	Tan fine SAND, little Silt, trace organics, moist.
– 9 – 12	7 - 14"		10	Light brown fine SAND, little Silt, occasional darker medium Sand laminae, wet. 1.3'
– 15 – 18 – 21	14 - 22"	banded sand		Grey fine SAND, little Silt, wood chip layers at 18", 19", 20" and 25"; note fine gravel layer at 30".
– 24 – 27 – 30	22 - 30"			
– 33	30 - 34"		4	Light brown fine SAND, little Silt, wet; very thin wood chip layer at 33". 2.8'
– 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 34". Sample collected along shoreline above waterline. Perform PCB field screen on all five intervals (0-34"); intervals 1, 2, 4, and 5 (0-14" and 22-34") negative for PCBs, interval 3 (14-22") positive for PCB field screen. Interval 3 (22-30") sent for CLP analytical laboratory PCB analysis. Drive = 3.0' = 36" Recovery = 2.8' = 34"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: SL-4**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/10/95
WATER ELEVATION: 95.12 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
				Water Column = 0.0 feet Mud Line (ML)
– 3		beach sand	4	Light brown medium to fine SAND, little Silt, wet; organics top 1/2". 0.3'
– 6	0 - 6"			
– 9			9	Grey fine SAND, little Silt, occasional root, wood chip lenses at 6" and 12" to 13".
– 12	6 - 13"			
– 15		banded sand		
– 18			15	Grey brown fine SAND, some Silt, numerous wood pulp laminae from 16" to 23" in fine Sand matrix, wet.
– 21				
– 24	13 - 24"			
– 27	24 - 28"			2.3'
– 30				
– 33				
– 36				
– 39				Sample collected along shoreline above water line.
– 42				Bottom of recovery at 28".
– 45				
– 48				Perform PCB field screen on all four intervals (0-28"); intervals 1,2 and 3 (0-24") positive for PCB field screen test, interval 4 (24-28") negative.
– 51				
– 54				Drive = 3.0' = 36" Recovery = 2.3' = 28"
– 57				
– 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: SL-5**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/10/95
WATER ELEVATION: 95.12 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
				Water Column = 0.0 feet Mud Line (ML)
– 3 – 6	0 - 6"	banded sand	11	Light brown fine SAND, little Silt, thin wood pulp lense at 0-1", 3"and 5", very thin wood chip laminae at 6" and 8", thick wood chip layer from 11" to 12", wet.
– 9 – 12	6 - 12"		4	Grey medium SAND, trace Silt, wood chip layer from 14" to 15", wet.
– 15 – 18			4	Light brown fine SAND, little Silt, bark lenses at 17" and 19", wet. 1.6'
– 21 – 24	12 - 24"	'native' sand	17	Light brown fine SAND, little Silt, occasional fine dark Sand laminae, bark or driftwood fragments at 30", wet.
– 27 – 30 – 33 – 36	24 - 36"			3.0'
– 39				Sample collected along shoreline above water line.
– 42				Bottom of recovery at 36".
– 45 – 48				Perform PCB field screen on all four intervals (0-28"); intervals 1,2 and 3 (0-24") positive for PCB field screen test, interval 4 (24-36") negative.
– 51 – 54				Drive = 3.0' = 36" Recovery = 3.0' = 36"
– 57 – 60				

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: SL-6**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/9/95
WATER ELEVATION: 95.10 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
				Water Column = 0.0 feet Mud Line (ML)
– 3 – 6	0 - 6"	beach sand	12	Tan fine SAND, little Silt, note very thin wood chip layer at 9", moist.
– 9 – 12	6 - 12"			1.0'
– 15 – 18 – 21 – 24	12 - 24"	banded sand	13	Grey fine SAND, some Silt, wood chip layers at 13", 15", 18", 23" and 23.5", wet.
				2.1'
– 27 – 30 – 33 – 36	24 - 38"	'native' sand	13	Light brown fine SAND, little Silt, occasional twig, wet.
				3.2'
– 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 38". Sample collected along shoreline above waterline. Perform PCB field screen on all four intervals (0-38"); top three intervals (0-24") positive for PCB field screen test, bottom interval (24-38") negative. Interval 3 (12-24") sent for CLP laboratory PCB analysis. Drive = 5.0' = 60" Recovery = 3.2' = 38"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: SL-7**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/9/95
WATER ELEVATION: 95.10 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
				Water Column = 0.0 feet Mud Line (ML)
– 3 – 6	0 - 6"	beach sand	7	Tan fine SAND, little Silt, note very thin wood chip layer at 3", moist. 0.6'
– 9 – 12	6 - 12"	banded sand	16	Grey fine SAND, some Silt, wood chip layers at 9" (bark?), 15", and 23", wet. 1.9'
– 15 – 18 – 21 – 24	12 - 24"			
– 27 – 30 – 33 – 36	24 - 36"	'native' sand	19	Light brown fine SAND, little Silt, very thin wood chip layer at 36", note faint dark, fine sand laminae bottom 14".
– 39 – 42	36 - 42"			3.5'
– 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 42". Sample collected along shoreline above waterline. Perform PCB field screen on all five intervals (0-42"); intervals 0-6", 6-12", 24-36", and 36-42" positive for PCB field screen test, interval 12-24" negative. Interval 3 (12-24") sent for CLP laboratory PCB analysis for confirmation of negative field screen result. Drive = 5.0' = 60" Recovery = 3.5' = 42"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: SL-8**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-212	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/9/95
WATER ELEVATION: 95.10 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
				Water Column = 0.0 feet Mud Line (ML)
– 3 – 6	0 - 6"	beach sand	7	Tan fine SAND, little Silt, occasional wood pulp/fibers, fine driftwood pieces top 1", dry. 0.6'
– 9 – 12	6 - 12"	wood pulp sand	5	Brown to black fine Sandy WOOD PULP, some Silt bottom 1", wet. 1.0'
– 15 – 18 – 21 – 24 – 27 – 30	12 - 24" 24-32"	banded sand	20	Light brown fine SAND, some Silt, wood chip layers at 17", 18", several 20-23", 26", and 30" (bark?), wet.; note faint, dark fine sand laminae 12-20". 2.7'
– 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 32". Sample collected along shoreline above waterline. Perform PCB field screen on all four intervals (0-32"); all four intervals positive for PCB field screen test. Interval 2 (6-12") sent for CLP laboratory PCB analysis. Drive = 5.0' = 60" Recovery = 2.7' = 32"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: SL-9**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-100	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/9/95
WATER ELEVATION: 95.10 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
		water		Water Column = 0.2 feet Mud Line (ML)
– 3 – 6 – 9	0 - 7"	wood pulp and sand	9	Brown wood pulp SLUDGE, and Grey fine SAND, alternating layers 1/4" to 1" thick, some Silt in sand layers, wet. (10 wood pulp/chip layers) 0.75'
– 12 – 15 – 18 – 21	7 - 14" 14 - 21"	banded sand	14	Grey brown fine SAND, some Silt, apparent bark seam at 14", occasional fibers, wet. (1 wood chip layer) 1.9'
– 24 – 27	21 - 29"		6	Grey fine SAND, little Silt and wood chips, alternating layers 1/4" to 1/2" thick, wet. (6 wood chip layers) 2.4'
– 30 – 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 29". Sample collected along shoreline at waterline. Perform PCB field screen on all four intervals (0 - 29"); all four intervals positive for PCB field screen. Interval 1(0 - 7") sent for CLP laboratory PCB analysis. Drive = 5.0' = 60" Recovery = 2.4' = 29"

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: SL-10**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: RUST E&I	PAGE 1 OF 1
PROJECT NO.: 5799-100	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 8/9/95
WATER ELEVATION: 95.10 feet	DATUM: Lake Champlain - Ferry Dock	TAMS REP.: J. Kaczor

Depth from ML (Inches)	PCB Field Screen	Stratum	Recovered Thickness (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
				Water Column = 0.0 feet Mud Line (ML)
– 3 – 6 – 9		wood pulp and sand	11	Brown wood pulp SLUDGE and Brown fine SAND, some Silt, organics, pulp primarily from 2" to 9", moist. 0.9'
– 12	0 - 12"	banded sand	18	(Sample wet at 12") Brown grey fine SAND, some Silt, wood chip layers at 17", 18", 20", 23", and 25", wet.
– 15 – 18 – 21 – 24	12 - 24"			
– 27 – 30	24 - 30"			2.5'
– 33 – 36 – 39 – 42 – 45 – 48 – 51 – 54 – 57 – 60				Bottom of recovery at 30". Sample collected along shoreline above waterline. Perform PCB field screen on all three intervals (0 - 29"); all three intervals positive for PCB field screen. Drive = 4.0 = 48" Recovery = 2.5' = 30"

APPENDIX B

Core Photographs

Photo 1: Core sample SL-4 collected along the beach southwest of Dead Creek. Note wood chip layer at 1-foot interval.

Photo 2: Core sample SL-7 collected along the beach northeast of the Plattsburgh Chamber of Commerce Building.

Photo 3: Core sample SL-9 collected along shoreline northeast of sludge bed.

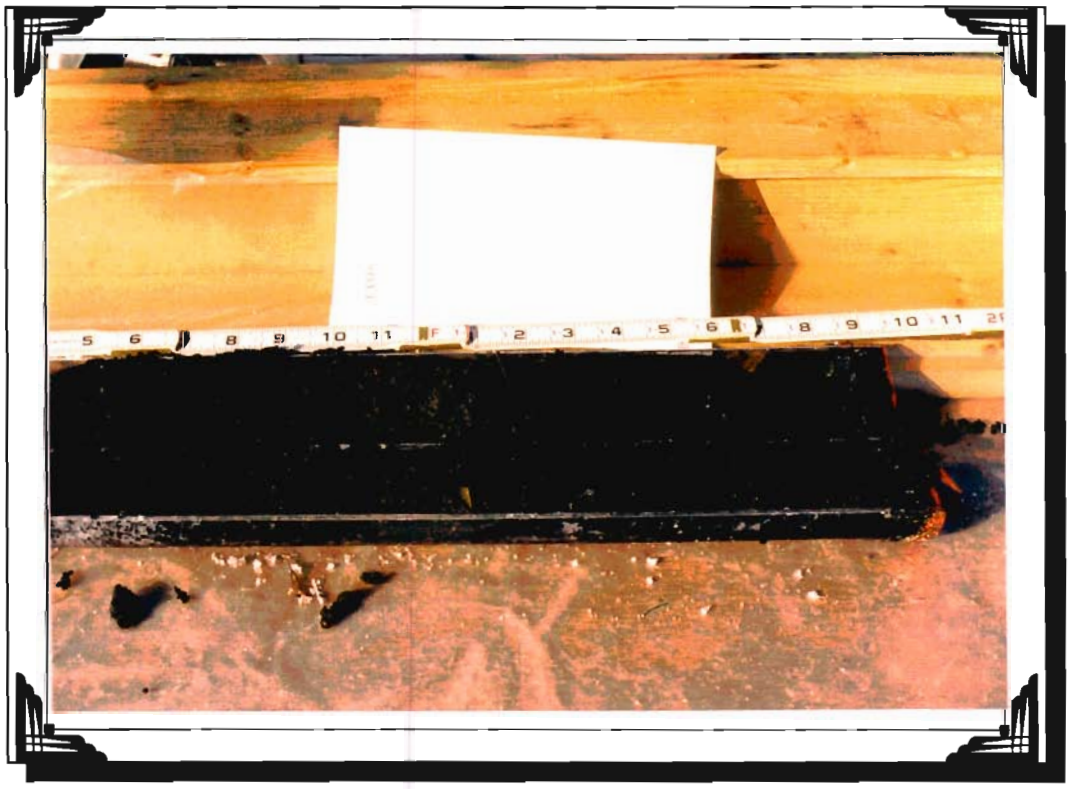


Photo 4: Core sample A-7. Dark organic zones encountered throughout core.

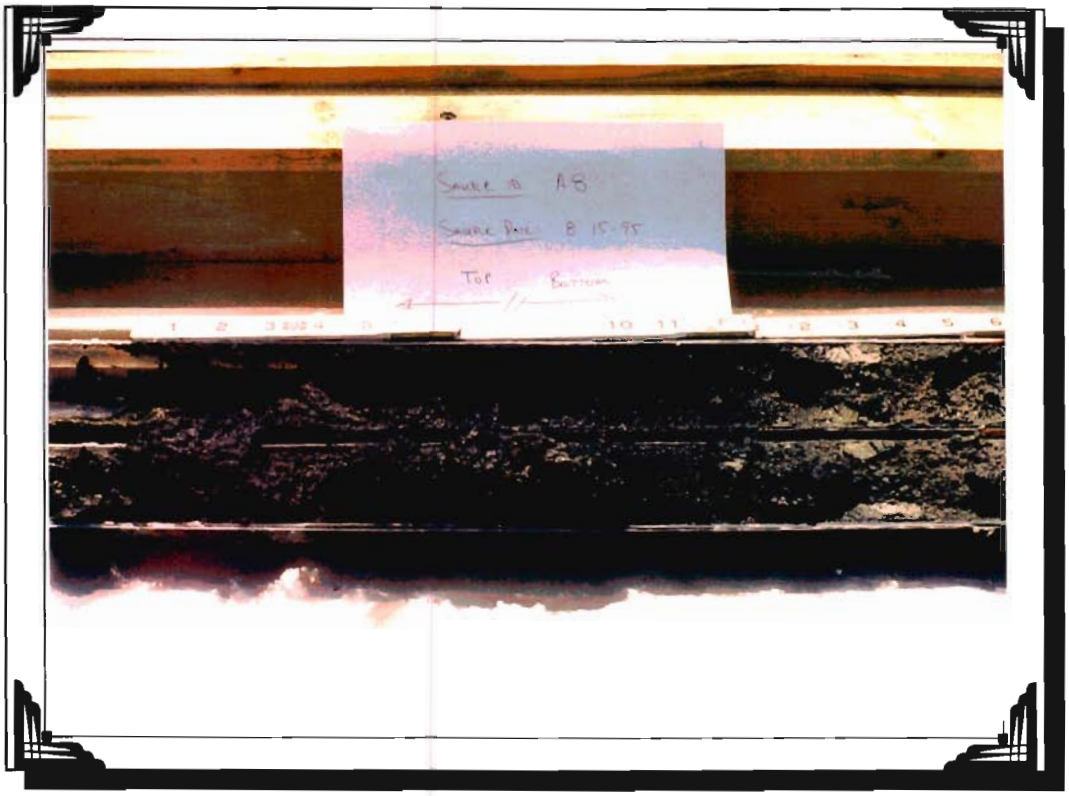


Photo 5: Core sample A-8 depicting sludge material throughout core.

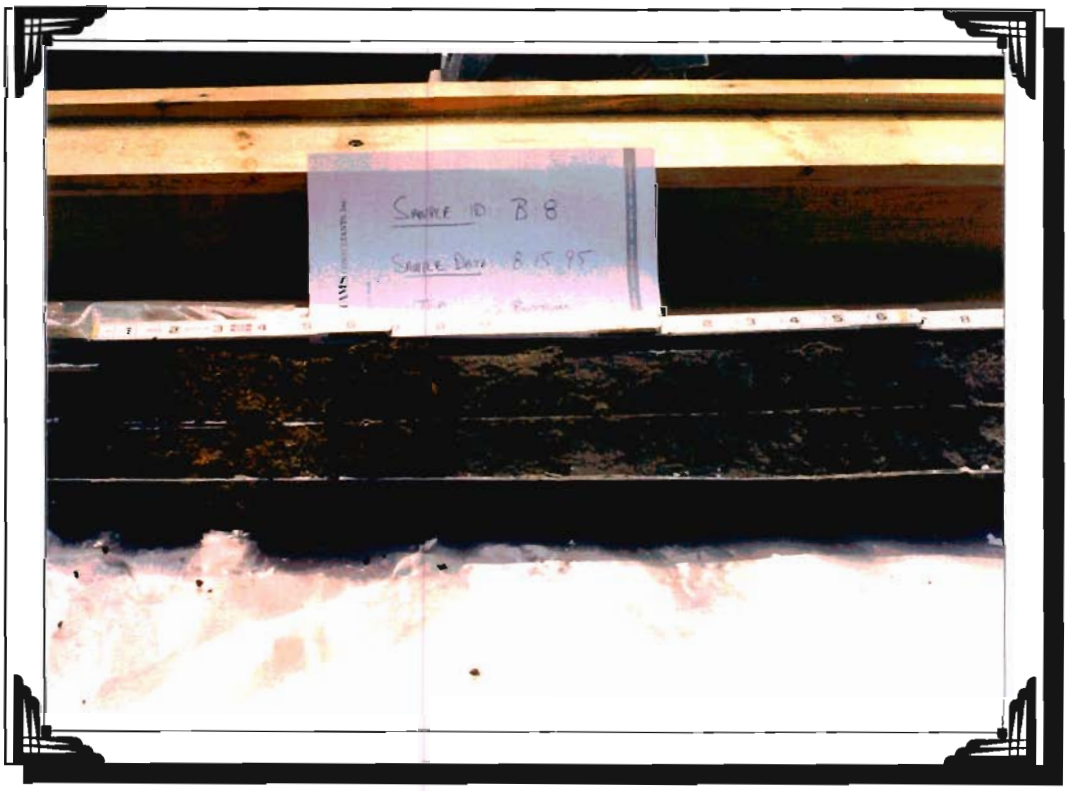


Photo 6: Core sample B-8 illustrating boundary between sludge and sand layers.

Photo 7: Core sample C-4 illustrating dark sludge layer (top of core) and white paper pulp sludge near center of core.

Photo 8: Core sample C-5 illustrating wet, organic sludge.

Photo 9: Core sample D-8 illustrating sludge with extensive wood chip material.

Photo 10: Core sample D-9 depicting the boundary between sludge and sand at the 10-inch interval. Note wood chip layer at base of sample.

Photo 11: Core sample E-5 illustrating sludge material with interlaying of wood chips.

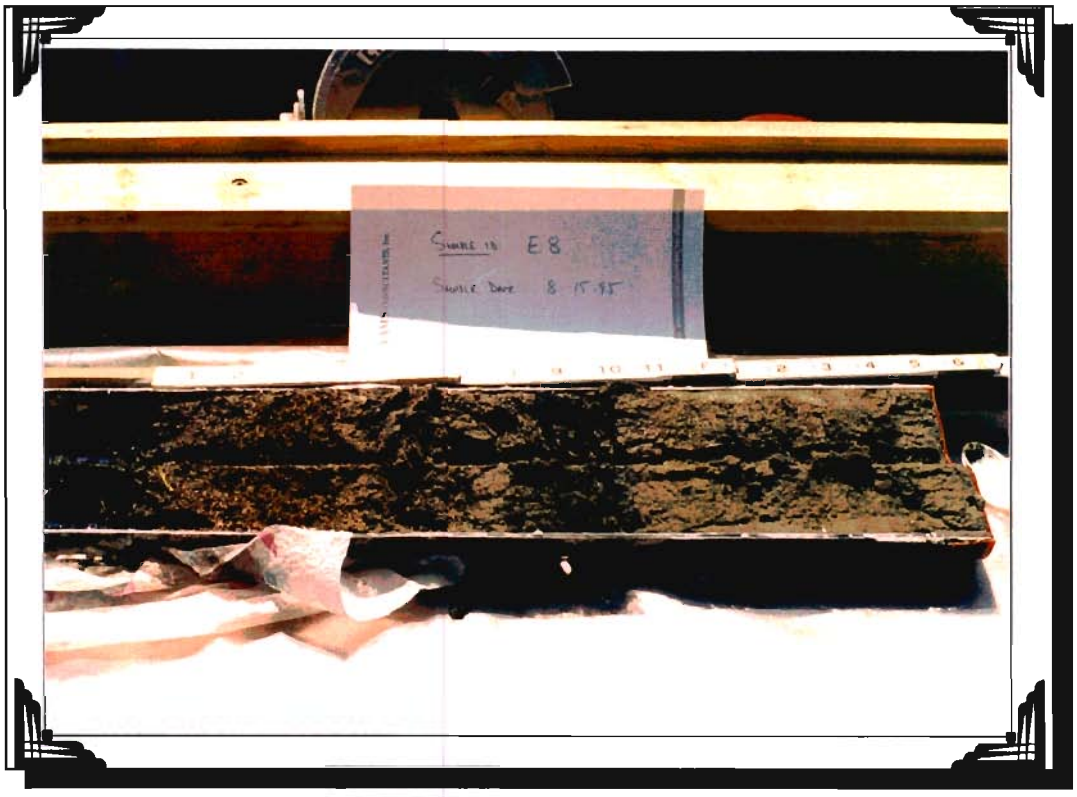


Photo 12: Core sample E-8 sludge layer with organic layering.

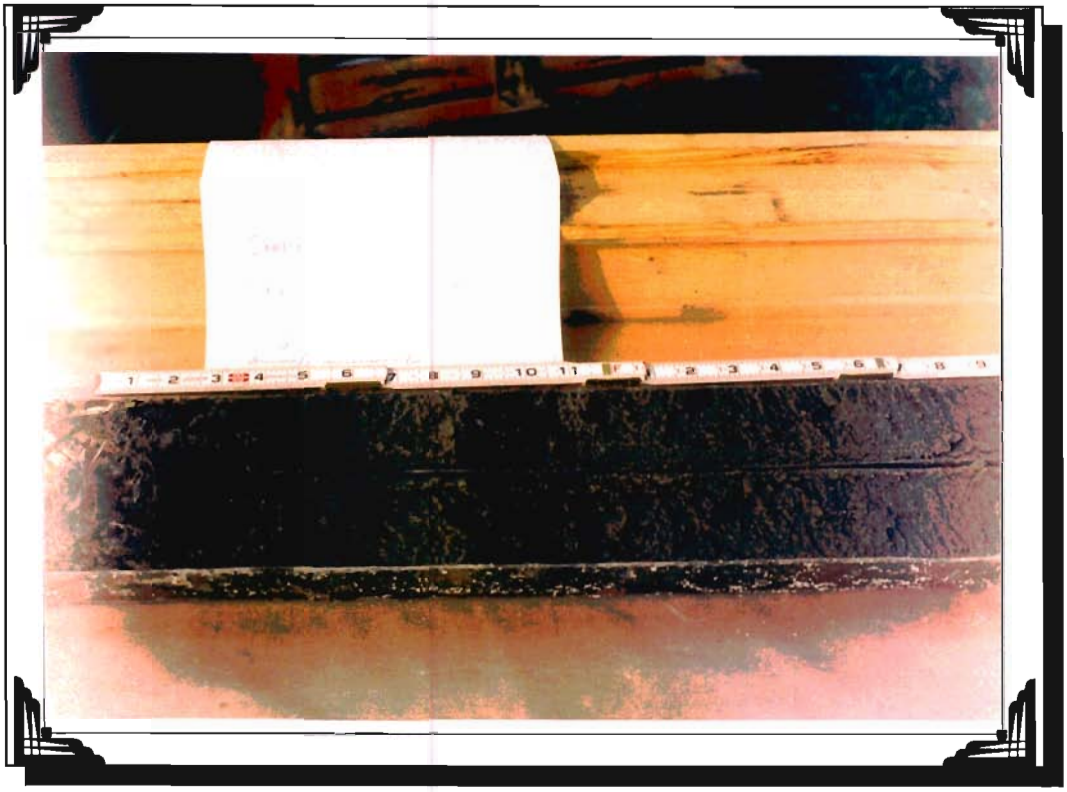


Photo 13: Core sample F-6 illustrating sludge and sand boundaries with wood chip layer above sand.

Photo 14: Core sample F-8 illustrating interlayering of wood chips within sand at base of core.

Photo 15: Core sample I-4 illustrating wood chip layers within sand sediment.

Photo 16: Core sample (location labeled as A/B-5/6) collected of white paper pulp sludge material.

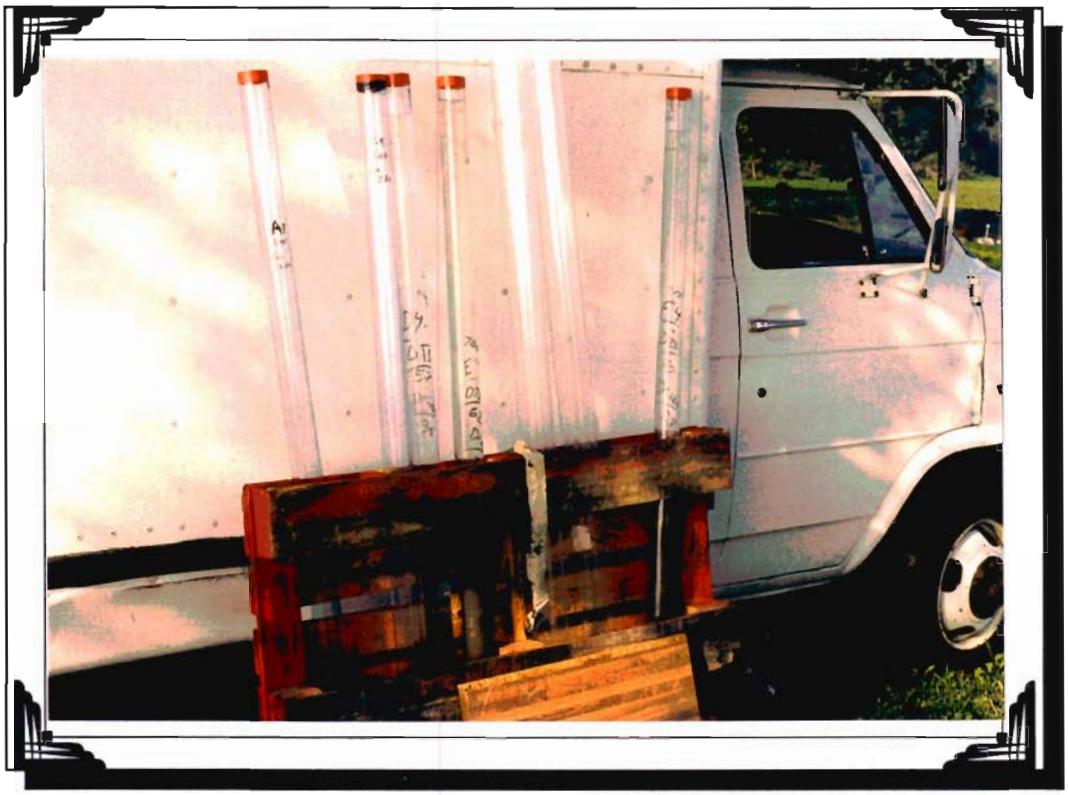


Photo 17: Core samples prior to physical characterization.

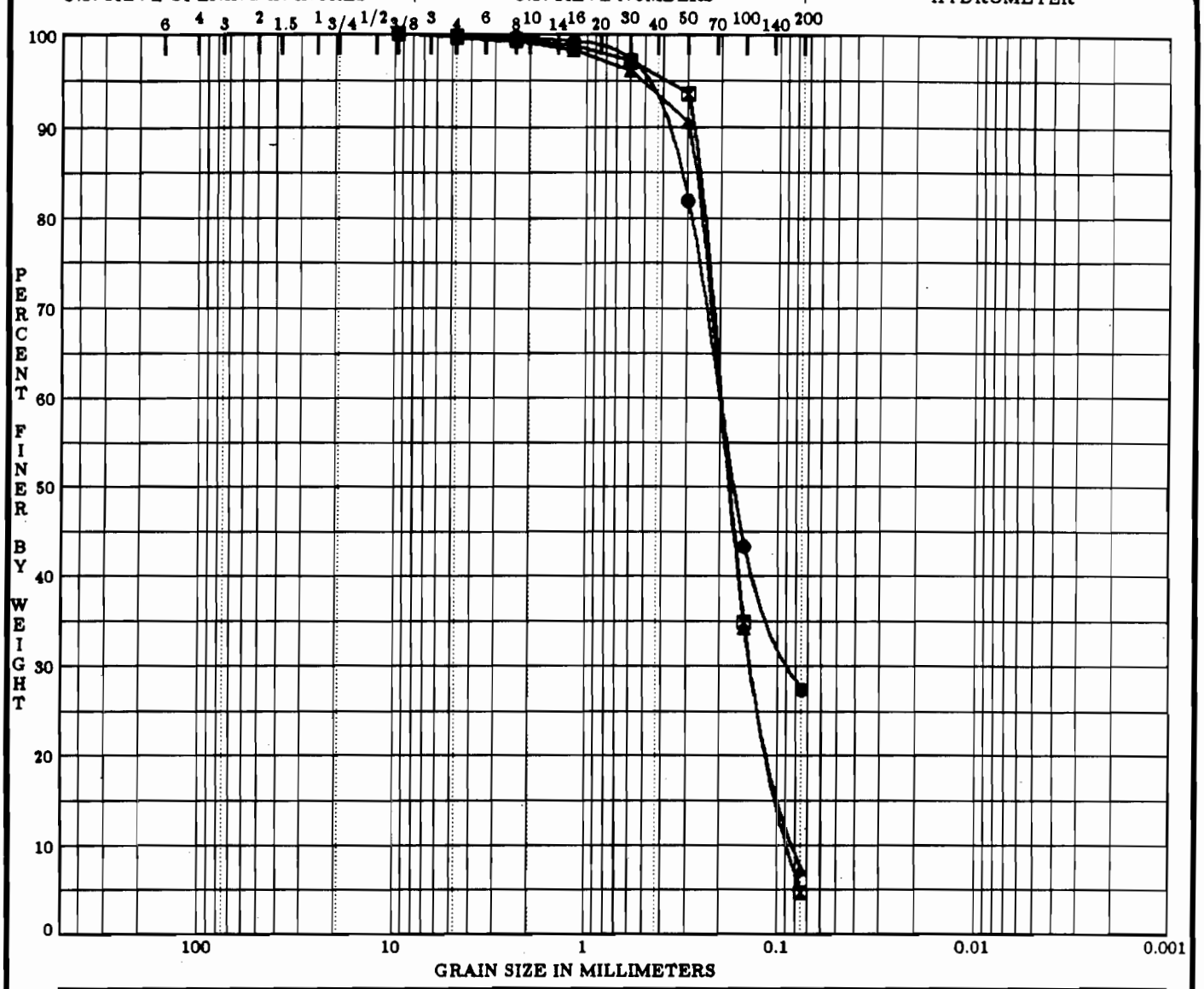
Photo 18: View of site from Wilcox Dock. Note Chamber of Commerce Building to right in photo.

Photo 19: View of shoreline from Chamber of Commerce breakwater looking south. Wilcox Dock is at left in photo.

Photo 20: Pontoon sampling boat with crew during core sample collection.

APPENDIX C

Gradation Curves



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	MC%	LL	PL	PI	Cc	Cu
●	B-8	8.0	B-8, 8-16 inches						
⊠	D-7	23.0	D-7, 23-30 inches					1.05	2.4
▲	D-9	10.0	D-9, 10-18 inches					1.10	2.6

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-8	8.0	9.50	0.20	0.084		0.1	72.5	27.4	
⊠	D-7	23.0	9.50	0.20	0.134	0.0847	0.2	95.1	4.7	
▲	D-9	10.0	9.50	0.21	0.135	0.0806	0.4	92.4	7.2	

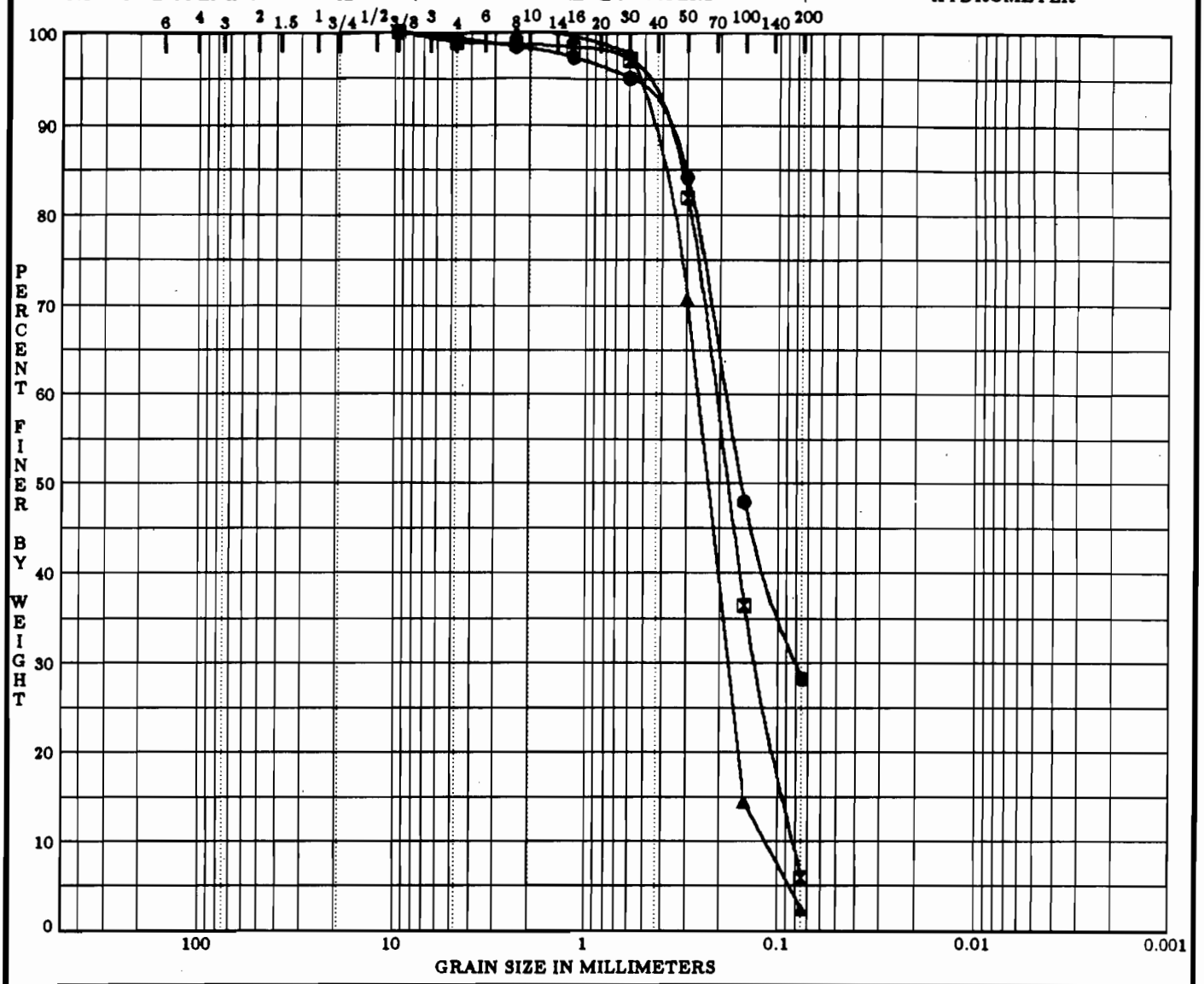
PROJECT SSP - NYSDEC, CUMBERLAND BAY - JOB NO. 39304.002

DATE 09/07/95

GRADATION CURVES

RUST Environment & Infrastructure

12 Metro Park, Albany, NY 12205



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	MC%	LL	PL	PI	Cc	Cu
●	E-4	6.0	E-4, 6-12 inches						
⊠	G-5	18.0	G-5, 18-24 inches					0.95	2.6
▲	G-6	18.0	G-6, 18-30 inches					1.08	2.3

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	E-4	6.0	9.50	0.19	0.080		0.6	71.2	28.2	
⊠	G-5	18.0	9.50	0.21	0.130	0.0823	1.0	93.1	5.9	
▲	G-6	18.0	2.36	0.26	0.182	0.1163	0.0	97.6	2.4	

PROJECT SSP - NYSDEC, CUMBERLAND BAY -

JOB NO. 39304.002

DATE 09/07/95

GRADATION CURVES

RUST Environment & Infrastructure

12 Metro Park, Albany, NY 12205

APPENDIX D

Geotechnical Boring Logs

TAMS CONSULTANTS, Inc. | BORING LOG | Boring No.: D-4/15' E

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: Green Mountain Boring, Inc.	PAGE 1 OF 2
PROJECT NO.: 5799-205	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 9/15/95
Lake Surface Elevation: 94.30 feet	DATUM: Ferry Dock DRILLER: S. Lawrence	TAMS REP.: J. KACZOR

WATER LEVELS

DATE	TIME	DEPTH	CASING	REF. POINT

DRILLING AND SAMPLING

	CASING	SAMPLER	CORE	TUBE
TYPE	Flush Joint	Split Spoon	-	-
I.D.	4 inch	1-3/8 in.	-	-
WT./Fall	300 lb./24 in.	140 lb./30 in.	-	-

Depth (ft below water)	Casing Blows per/ft	Sample Number	Sampler Blows per/6"	Recovery (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
-- 1					Water Column = 4.9 feet
-- 2					
-- 3					
-- 4					
-- 5					
	0				
-- 6					(No samples collected from 4.9 feet (mud line) to 9.0 feet; refer to Sediment Sample Log D-4 for additional detail.)
	0				
-- 7					
	0				
-- 8					
	11				
-- 9					
	13		8 - 6		
--10		S - 1		17	Grey coarse to fine SAND, some Silt, loose, wet.
	23		3 - 5		
--11					
	10		4 - 6		Grey coarse to fine SAND, some Silt, medium dense, wet; note rounded
--12		S - 2		11	and angular coarse Sand, no stratification apparent.
	15		4 - 6		(Jar sample collected.)
--13					
	26		10 - 11		
--14		S - 3		13	Same; note 6" fine Sand, little Silt lens at 13.3'.
	32		9 - 13		
--15					(Note: 4" FJ casing inadvertently 'driven' to 15.5' while cleaning out casing
	13/6"		17/6"		from 13.0' to 15.0'; no sample collected from 15.0' to 15.5'.)
--16		S - 4		6	
	27		12 - 9		Same.
--17					
	27		31 - 18		
--18		S - 5		8	Grey coarse to fine SAND, some Silt to Silty, dense, moist; note occasional
	32		12 - 21		thin clean fine Sand lens. 19.0'
--19					
	60		13 - 17		
--20		S - 6		12	Grey SILT, some coarse to fine SAND, very hard, moist.

TAMS CONSULTANTS, INC. **BORING LOG** **Boring No. D-4/15' E**

PROJECT: CUMBERLAND BAY IRM

PROJECT NO.: 5799-205 PAGE 2 OF 2

Depth (ft below water)	Casing Blows per/ft	Sample Number	Sampler Blows per/6"	Recovery (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
--20	80	S - 6 (con't)	13 - 17	12	Grey SILT, some coarse to fine SAND, very hard, moist.
--21					
--22	- -	S - 7	14 - 20	6	Grey SILT, some coarse to fine Sand, very hard, moist; note occasional clean fine Sand lens. 23.0'
--23	- -		28 - 30		
--24					Boring terminated at 23.0 feet below lake surface.
--25					
--26					
--27					
--28					
--29					
--30					
--31					
--32					
--33					
--34					
--35					
--36					
--37					
--38					
--39					
--40					

TAMS CONSULTANTS, Inc. | BORING LOG | Boring No.: D-6/10' E

PROJECT: CUMBERLAND BAY IRM | CONTRACTOR: Green Mountain Boring, Inc. | PAGE 1 OF 1

PROJECT NO.: 5799-205 | LOCATION: Cumberland Bay, Plattsburgh, NY | DATE: 9/12 - 13/9

Lake Surface Elevation: 94.32 feet | DATUM: Ferry Dock | DRILLER: S. Lawrenc | TAMS REP.: J. KACZOR

WATER LEVELS

DATE	TIME	DEPTH	CASING	REF. POINT

DRILLING AND SAMPLING

	CASING	SAMPLER	CORE	TUBE
TYPE	Flush Joint	Split Spoon	-	-
I.D.	4 inch	1-3/8 in.	-	-
WT./Fall	300 lb./24 in.	140 lb./30 in.	-	-

Depth (ft below water)	Casing Blows per/ft	Sample Number	Sampler Blows per/6"	Recovery (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
-- 1	----------		----------		Water Column = 1.7 feet
					1.7'
-- 2	----------		----------		
	0				(Wood pulp sludge - refer to Sediment Sample Log D-6 for additional detail.)
-- 3	----------	----------	----------	----------	3.2'
	3		2 - 2		
-- 4	----------	S - 1	----------	15	Dark grey fine SAND, little Silt, very loose, wet; note 1/2" thick wood chip
	3		1 - 2		lens at 4.0'.
-- 5	----------	----------	----------	----------	
	3		5 - 8		
-- 6	----------	S - 2	----------	12	Same; note wood chip lens at 5.8'. 6.5'
	16		15/6"		(Only 18" drive due to equipment failure. Stop work 9-12-95.)
-- 7	----------	----------	----------	----------	
	18		8 - 8		
-- 8	----------	S - 3	----------	10	Grey fine SAND and SILT, medium dense, wet; note 1/2" medium sand
	21		8 - 8		lens at 7.5'.
-- 9	----------	----------	----------	----------	
	7/6"		4 - 5		
--10	----------	S - 4	----------	16	Grey fine SAND and SILT, medium dense, wet.
	21		6 - 4		(Jar sample collected.)
--11	----------	----------	----------	----------	
	12		3 - 3		
--12	----------	S - 5	----------	11	Grey SILT, little Clay, trace coarse to fine rounded Sand, firm, wet.
	19		4 - 3		(Jar sample collected.) 13.0'
--13	----------	----------	----------	----------	---------- ---------- ---------- ----------
	34		14 - 14		Grey coarse to fine SAND, some Silt, trace fine Gravel, medium dense, wet;
--14	----------	S - 6	----------	6	angular sand and gravel fragments.
	23		5 - 4		(Jar sample collected.)
--15	----------	----------	----------	----------	
	50		15 - 11		Grey coarse to fine SAND, some coarse to fine angular Gravel, little Silt,
--16	----------	S - 7	----------	8	medium dense, wet.
	90		12 - 19		(Jar sample collected.)
--17	----------	----------	----------	----------	
	58		42 - 40		Black coarse to fine GRAVEL and SAND, trace Silt, extremely dense, wet;
--18	----------	S - 8	----------	12	platy and angular limestone (?) fragments.
	126		50 - 100/4"		
--19	----------	----------	----------	----------	Grey coarse to fine SAND, some coarse to fine Gravel, some Silt, extremely
	- -	S - 9	58 - 100/3"	5	dense, wet. 19.75'
--20	----------	----------	----------	----------	---------- ---------- ---------- ----------
					Boring terminated at 19.75 feet below lake surface.

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: F-5**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: Green Mountain Boring, Inc.	PAGE 1 OF 2
PROJECT NO.: 5799-205	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 9/14/95
Lake Surface Elevation: 94.30 feet	DATUM: Ferry Dock DRILLER: S. Lawrence	TAMS REP.: J. KACZOR

WATER LEVELS

DATE	TIME	DEPTH	CASING	REF. POINT

DRILLING AND SAMPLING

	CASING	SAMPLER	CORE	TUBE
TYPE	Flush Joint	Split Spoon	-	-
I.D.	4 inch	1-3/8 in.	-	-
WT./Fall	300 lb./24 in.	140 lb./30 in.	-	-

Depth (ft below water)	Casing Blows per/ft	Sample Number	Sampler Blows per/6"	Recovery (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
-- 1					Water Column = 5.0 feet
-- 2					
-- 3					
-- 4					
-- 5					5.0'
-- 6	0				(No samples collected from 5.0 feet (mud line) to 8.0 feet; refer to Sediment Sample Log F-5 for additional detail.)
-- 7	2				
-- 8	3				
-- 9	3	S - 1	1 - 3	21	Brown medium to fine SAND, little Silt, loose, wet; note varved Silt /Clay laminae from 7" to 14".
--10	4		4 - 3		
--11	8	S - 2	4 - 6	0	No recovery.
--12	13		4 - 9		12.0'
--13	11	S - 3	4 - 6	12	Grey fine SAND and SILT, medium dense, wet; top 4" alternating thin lenses sand and silt.
--14	13		7 - 5		
--15	8	S - 4	3 - 4	14	Top 8" same; grades to Dark grey medium to fine SAND, trace Silt, loose, wet.
--16	26		5 - 7		
--17	18	S - 5	7 - 6	14	Top 4" same; grades to Grey fine SAND, Silty, medium dense, wet.
--18	24		7 - 7		(Note: 4" FJ casing 'driven' to 18.5' while flushing casing from 16' to 18'.)
--19	- -	S - 6	11 - 7	17	Grey coarse to fine SAND, trace Silt, alternating layers with Grey fine Silty SAND, medium dense, wet.
--20	16		7 - 21		20.0'

TAMS CONSULTANTS, INC. **BORING LOG** **Boring No. F-5**

PROJECT: CUMBERLAND BAY IRM

PROJECT NO.: 5799-205

Depth (ft below water)	Casing Blows per/ft	Sample Number	Sampler Blows per/6"	Recovery (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
--20					
	50		22 - 20		Dark grey to black coarse to fine SAND, little fine Gravel, trace Silt, dense,
--21		S - 7		9	wet.
	67		10 - 9		(Jar sample collected.)
--22					
	44		18 - 14		
--23		S - 8		11	Dark grey coarse to fine SAND, little Silt, trace fine Gravel, medium dense,
	50		14 - 14		wet.
--24					
	37		- -		(Note: Approximately 12" wash accumulated on top of sample interval.)
--25		S - 9		8	
	58		18 - 22		DARK grey coarse to fine SAND, little Silt, trace coarse to fine Gravel, very
--26					dense, wet.
	- -		74 - 92		
--27		S - 10		5	Same; note 2 gravel pieces greater than 2" diameter.
	- -		67 - 100/5"		(Collect sample using 3" OD split spoon.) 27.9'
--28					
--29					Boring terminated at 27.9 feet below lake surface.
--30					
--31					
--32					
--33					
--34					
--35					
--36					
--37					
--38					
--39					
--40					

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: H-5/5' N**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: Green Mountain Boring, Inc.	PAGE 1 OF 2
PROJECT NO.: 5799-205	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 9/14/95
Lake Surface Elevation: 94.30 feet	DATUM: Ferry Dock DRILLER: S. Lawrence	TAMS REP.: J. KACZOR

WATER LEVELS

DATE	TIME	DEPTH	CASING	REF. POINT

DRILLING AND SAMPLING

	CASING	SAMPLER	CORE	TUBE
TYPE	Flush Joint	Split Spoon	-	Shelby
I.D.	4 inch	1-3/8 in.	-	2-7/8 in.
WT./Fall	300 lb./24 in.	140 lb./30 in.	-	n/a

Depth (ft below water)	Casing Blows per/ft	Sample Number	Sampler Blows per/6"	Recovery (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
-- 1					
-- 2					Water Column = 5.5 feet
-- 3					
-- 4					
-- 5					5.5'
	0				
-- 6					(No samples collected from 5.5' (mud line) to 9'; refer to Sediment Sample
	2				Log H-5 for additional detail.)
-- 7					
	3				
-- 8					
	8				
-- 9					
	3		1/12"		Brown medium to fine SAND, trace Silt, very loose, wet; 9.8'
--10		S - 1		21	Grey Clayey SILT, very soft, wet; medium plasticity.
	5		1 - 1		(Jar sample collected.)
--11					
	3		- -		
--12		U - 1		24	Shelby tube sample collected; note first 18" pushed by hand, final 6" driven
	4		- -		with four blows of 140 lb. hammer.
--13					
	7		1/12"		
--14		S - 2		24	Grey CLAY and SILT, very soft, wet, medium plasticity.
	11		1 - 1		(Jar sample collected.)
--15					
	8		1 - 1		
--16		S - 3		24	Grey CLAY and SILT, very soft, wet, medium plasticity.
	9		1 - 1		
--17					
	15		12 - 5		
--18		S - 4		24	Grey Silty CLAY, trace coarse Sand, firm, wet, note thick fine Sand lens
	19		3 - 3		from 10" to 17".
--19					
	21		1/12"		Grey Silty CLAY, very soft, wet.
--20		S - 5		24	(Jar sample collected.)

TAMS CONSULTANTS, INC. **BORING LOG** **Boring No. H-5/5' N**

PROJECT: CUMBERLAND BAY IRM

PROJECT NO.: 5799-205 PAGE 2 OF 2

Depth (ft below water)	Casing Blows per/ft	Sample Number	Sampler Blows per/6"	Recovery (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
--20	17	S - 5 (con't)	1 - 1	24	Grey Silty CLAY, very soft, wet.
--21					
--22	19 22	S - 6	3 - 3 4 - 4	24	Grey Silty CLAY, firm, wet; note bottom 10" grades to SILT, little Clay.
--23					
--24	29 32	S - 7	6 - 5 10 - 4	24	Grey Silty CLAY, trace coarse Sand, stiff, wet; bottom 10" grades to fine Sand and Silt.
--25					
--26	38 47	S - 8	6 - 8 9 - 12	17	Grey fine Silty SAND, medium dense, wet; grades to 26.2' Grey coarse to fine SAND, little coarse to fine Gravel, little Silt, wet.
--27					
--28	35 33	S - 9	11 - 8 7 - 6	16	Grey coarse to fine SAND, Silty, trace coarse to fine Gravel, medium dense, moist.
--29					
--30	- - - -	S - 10	3 - 5 3 - 4	8	Grey coarse to fine SAND and SILT, trace fine Gravel, loose, moist. 31.0'
--31					
--32					Boring terminated at 31.0 feet below lake surface.
--33					
--34					
--35					
--36					
--37					
--38					
--39					
--40					

TAMS CONSULTANTS, Inc. **BORING LOG** **Boring No.: H-7/5' N**

PROJECT: CUMBERLAND BAY IRM	CONTRACTOR: Green Mountain Boring, Inc.	PAGE 1 OF 2
PROJECT NO.: 5799-205	LOCATION: Cumberland Bay, Plattsburgh, NY	DATE: 9/13/95
Lake Surface Elevation: 94.22 feet	DATUM: Ferry Dock DRILLER: S. Lawrence	TAMS REP.: J. KACZOR

WATER LEVELS

DATE	TIME	DEPTH	CASING	REF. POINT

DRILLING AND SAMPLING

	CASING	SAMPLER	CORE	TUBE
TYPE	Flush Joint	Split Spoon	-	Shelby
I.D.	4 inch	1-3/8 in.	-	2-7/8 in.
WT./Fall	300 lb./24 in.	140 lb./30 in.	-	n/a

Depth (ft below water)	Casing Blows per/ft	Sample Number	Sampler Blows per/6"	Recovery (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
-- 1					Water Column = 3.1 feet
-- 2					
-- 3					3.1'
-- 4	0				(Wood pulp sludge - refer to Sediment Sample Log H-7 for additional detail.)
-- 5	2	S - 1	2 - 3	18	Brown medium to fine SAND, little Silt, loose, wet.
-- 6	5		4 - 3		
-- 7	3	S - 2	2 - 1	11	Same.
-- 8	9		4 - 2		8.0'
-- 9	17	S - 3	2 - 2	17	Grey fine SAND and SILT, loose, wet.
--10	15		5 - 4		(Jar sample collected.)
--11	17	U - 1	- -	0	Shelby tube attempt failed, no recovery.
--12	21		- -		Push = 21" = 1.75'
--13	19	S - 4	7 - 8	4	Recovery = 0" = 0'
--14	14		9 - 7		Grey fine SAND and SILT, medium dense, wet; note trace amount of coarse, sub-rounded Sand. (Sample S-4 collected with 3" OD split spoon.) 14.0'
--15	15	S - 5	3 - 2	20	Grey coarse to fine SAND, little coarse to fine Gravel, little Silt, loose, wet; bottom 10" saturated.
--16	23		3 - 5		(Jar sample collected.)
--17	24	S - 6	16 - 15	5	Grey coarse to fine SAND, some coarse to fine Gravel, little Silt, medium dense, wet.
--18	40		11 - 9		
--19	52	S - 7	12 - 26	9	Grey coarse to fine SAND, some coarse to fine Gravel, little Silt, trace Clay, very dense, moist; note angular limestone (?) fragments.
--20	158		32 - 76		(Jar sample collected.)

TAMS CONSULTANTS, INC. **BORING LOG** **Boring No. H-7/5' N**

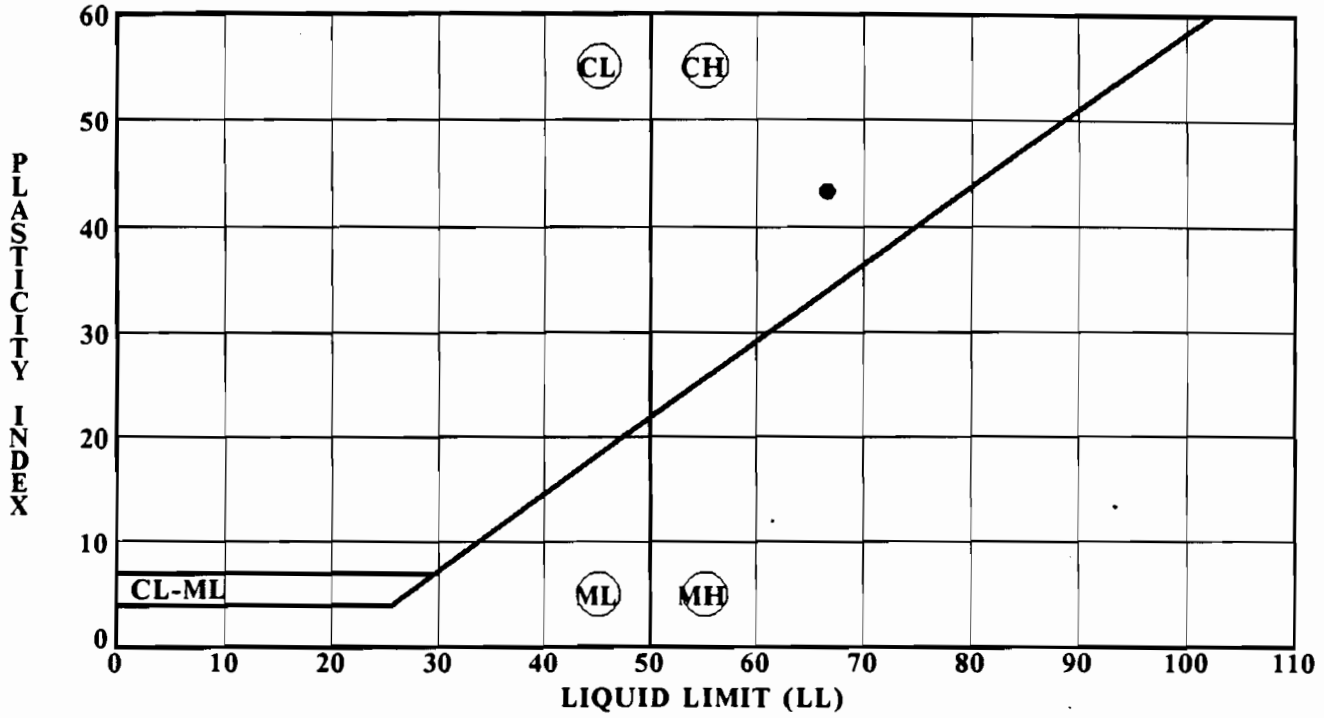
PROJECT: CUMBERLAND BAY IRM

PROJECT NO.: 5799-205

Depth (ft below water)	Casing Blows per/ft	Sample Number	Sampler Blows per/6"	Recovery (Inches)	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES
--20					Grey coarse to fine SAND, some coarse to fine Gravel, little Silt, extremely
	- -	S - 8	62 - 100/4"	4	dense, moist; mottled green. 20.8'
--21					
					Boring terminated at 20.8 feet below lake surface.
--22					
--23					
--24					
--25					
--26					
--27					
--28					
--29					
--30					
--31					
--32					
--33					
--34					
--35					
--36					
--37					
--38					
--39					
--40					

APPENDIX E

Atterberg Limit Results



	Sample Identification		LL	PL	PI	Fines	Notes
●	*H5*	*12.0*	*67*	*23*	*43*		*H5, U-1, 11-13 feet*

PROJECT *SSP - NYSDEC, CUMBERLAND BAY -*

JOB NO. *39304.002*
DATE *10/16/95*

ATTERBERG LIMITS RESULTS
RUST Environment & Infrastructure
12 Metro Park, Albany, NY 12205

APPENDIX F

Wilcox Dock Investigation
Boring Logs

DOT PLATTSBURGH

DISTRICT NO. 7
COUNTY CLINTON
B.S.M. PROJ. NO. —

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS
BUREAU OF SOIL MECHANICS

SUBSURFACE INFORMATION

HOLE NO. D.H. #1
LINE & STA. See attached MAP.
OFFSET

NAME Plattsburgh State Dock
QUAD. LOCATION 236-1-R21
PED. CLASS.
DATE, START 7/23/62
DATE, FINISH 7/24/62
GND. ELEV. 80.99
GW ELEV. 95.49

CASING O.D. 2.875" I.D. 2.323"
SAMPLER O.D. 2.0" I.D. 1.5"
WEIGHT OF HAMMER 300#
INSIDE LENGTH OF SAMPLER 2.0'
HAMMER FALL CASING 18" SAMPLER 18"

DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER (0/6, 6/12, 12/18, 18/24)	CROSS SECTION	MOISTURE	COLOR	MECH. ANALYSIS % PASSING SIEVE NO. 4	10	40	200	FIELD IDENTIFICATION OF SOIL & REMARKS
0	40										
	12										
	22										
	20										
5.0	38										
	44										
	50	1	5 15 20 25			M GR					Medium Fine Sand (0.0-8.0)
	94										
9.0	185										
	62	2	25 26 16 18			M GR					
11.0	90										
	92										
	205										
14.0	550										No Recovery
14.5	548	3	65								
	460										
	500										(8.0-18.5)
18.0	453										
18.5		4	75			W GR					Medium Fine Sand, Some Gravel

Bottom of Hole 18.5

Washed out casing from
13.7' ahead to 13.9'
14.0' " " 15.0'
16.0' " " 16.5'
17.2' " " 18.0'

DISTRICT NO. 7
COUNTY CLINTON
B.S.M PROJ. NO.

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS
BUREAU OF SOIL MECHANICS

SUBSURFACE INFORMATION

HOLE NO. D.H. #2
LINE & STA. See attached Map
OFFSET

NAME Plattsburgh State Dock
QUAD. LOCATION 236-1-P-21 DATE, START 7/24/62 Lake Bed GND. ELEV. 80.03
PED. CLASS DATE, FINISH 7/25/62 G.W. ELEV. 94.63

CASING O.D. 2.875 I.D. 2.323 WEIGHT OF HAMMER 300#
SAMPLER O.D. 2.0" I.D. 1.5" INSIDE LENGTH OF SAMPLER 2.0'
HAMMER FALL CASING 18" SAMPLER 18"

DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER (0/6, 6/12, 12/18, 18/24)	CROSS SECTION	MOISTURE	COLOR	MECH. ANALYSIS % PASSING SIEVE NO. 4	10	40	200	FIELD IDENTIFICATION OF SOIL & REMARKS
0	10										
	40										
	42										
4.0	80										
	72	1	35 25								
6.0	114		15 17		W	GR					
	256										
8.0	520				W	GR					Med. Fine Sand, Some Silt & Clay, Tr. Gravel
9.0	538										
10.0	425	2	50 75		M	GR					
	420										
12.0	460										
13.0		3	60 80		M	GR					Fine Sand, Some Silt, Tr. Gravel

Bottom of Hole 13.0'

Washed out casing from
7.5' ahead to 8.0'
10.0 " " 10.5
11.0 " " 11.5

DOT PLATTSBURGH

DISTRICT NO. 7
COUNTY CLINTON
B.S.M. PROJ. NO.

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS
BUREAU OF SOIL MECHANICS

SUBSURFACE INFORMATION

HOLE NO. D.H. # 3
LINE & STA. See Attached Map
OFFSET

NAME Plattsburgh State Dock
QUAD. LOCATION 236-1-P.21
PED. CLASS.

DATE, START 7/25/62 — Lake Bed NO. ELEV. 81.67
DATE, FINISH 7/26/62 — G.W. ELEV. 94.77

CASING O.D 2.875" I.D 2.323" WEIGHT OF HAMMER 300# HAMMER FALL
SAMPLER O.D 2.0" I.D 1.5" INSIDE LENGTH OF SAMPLER 2.0' CASING 18" SAMPLER 18"

DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER (0/6 6/12 12/18 18/24)	CROSS SECTION	MOISTURE	COLOR	MECH. ANALYSIS % PASSING SIEVE NO. (4 10 40 200)	FIELD IDENTIFICATION OF SOIL & REMARKS
0	4							
	18							
	32							
4.0	49							
	11	1	16 14					
6.0	106		35 18		W	GR		
	151				W	GR		Fine Sand & Silt, Tr. Gravel
9.0	25							
	67	2	20 13					
11.0	460		12 50		W	GR		
	540							
	642							
	538							
15.0	520				W	GR		Fine Sand, Some Silt & Gravel
16.0		3	82 98		M	GR		Fine Sand, Some Gravel, Tr Silt

Bottom of Hole 16.0'

Washed out casing from
11.0 ahead to 11.3
11.8 " " 12.2
13.0 " " 13.5
14.0 " " 14.5

Boulder at 11.3
Drilled and Broke,
Recovered 1pc. 0.3

DOT PLATTSBURGH

DISTRICT NO. 7
COUNTY CLINTON
B.S.M. PROJ. NO.

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS
BUREAU OF SOIL MECHANICS

SUBSURFACE INFORMATION

HOLE NO. D.H. # 4
LINE & STA. See Attached Map
OFFSET

NAME Plattsburgh State Dock
QUAD. LOCATION 236-1-P-21
PED. CLASS

DATE, START 7/27/62
DATE, FINISH 7/30/62

LAKE BED NO.
GND. ELEV. 79.57
LAKE W ELEV. 94.77

CASING O.D. 2.875" I.D. 2.323" WEIGHT OF HAMMER 300# HAMMER FALL
SAMPLER O.D. 2.0" I.D. 1.5" INSIDE LENGTH OF SAMPLER 2.0' CASING 16" SAMPLER 18"

DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER (0-6 / 6-12 / 12-18 / 18-24)	CROSS SECTION	MOISTURE	COLOR	MECH. ANALYSIS % PASSING SIEVE NO. (4 / 10 / 40 / 200)	FIELD IDENTIFICATION OF SOIL & REMARKS
0	48							
	53							
	53							
4.0	40							
	29	1	7 / 12					
6.0	33		6 / 45			W	GR	Fine Sand, Some Silt, Tr. Gravel
	67							
	66							
9.0	87							
9.5	380	2	113			W	GR	Same
11.0	860							
	1088							
	680		T					
14.0	442							Fine Sand & Silt, Some Gravel
15.0		3	38 / 25			M	GR	

Bottom of Hole 15.0'

Washed out casing from 14.5 to 14.0

DISTRICT NO. 7
COUNTY CLINTON
B S M PROJ. NO.

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS
BUREAU OF SOIL MECHANICS

SUBSURFACE INFORMATION

HOLE NO. D.H. 5
LINE & STA. Sec
OFFSET Attached Map

NAME Plattsburgh State Dock
QUAD LOCATION 236-1-P.21 DATE, START 7/30/62 GND. ELEV. 75.86
PED. CLASS. DATE, FINISH 8/2/62 ELEV. 94.96

CASING O.D. 2.875 I.D. 2.323 WEIGHT OF HAMMER 300# HAMMER FALL
SAMPLER O.D. 2.0" I.D. 1.5" INSIDE LENGTH OF SAMPLER 2.0' CASING 18" SAMPLER 18"

DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER (0-6 / 6-12 / 12-18 / 18-24)	CROSS SECTION	MOISTURE	COLOR	MECH ANALYSIS % PASSING SIEVE NO. (4, 10, 40, 200)	FIELD IDENTIFICATION OF SOIL & REMARKS
0	72							
	69							
	75							
4.0	80							
	26	1	14 20					
6.0	93		43 59		M	Gr		
	418							
	414				M	GR		Fine Sand, Some Gravel, Tr Silt
9.0	540							
	355	2	70 110		M	GR		
11.0	370							
	426							
	565							
14.0	525							
15.0	410	3	60 95		M	GR		
	560							
	625							
	330				M	GR		Fine Sand, Some Silt, & Gravel
19.0	900							
	420	4	70 140		M	GR		
21.0	870							
	700							
	496							
24.0	738				M	GR		Fine Sand, Some Silt, Tr Gravel
								Bottom of Hole 24.0'
								Washed ahead of casing From 7.0' to 24.0'

DISTRICT NO 7
COUNTY CLINTON
R S M PROJ. NO.

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS
BUREAU OF SOIL MECHANICS

SUBSURFACE INFORMATION

HOLE NO. D.H. # 6
LINE & STA. See Attached Map
OFFSET

NAME Plattsburgh State Dock NO.
QUAD. LOCATION 236-4P-21 DATE, START 8/3/62 GND EL'EV. 99.14
PED. CLASS DATE, FINISH 8/6/62 S.W.E.L.V. 88.14

CASING O.D. 2.875" I.D. 2.323" WEIGHT OF HAMMER 300# HAMMER FALL
SAMPLER O.D. 2.0" I.D. 1.5" INSIDE LENGTH OF SAMPLER 2.0' CASING 18" SAMPLER 18"

DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO	BLOWS ON SAMPLER (0-6 / 6-12 / 12-18 / 18-24)	CROSS SECTION	MOISTURE	COLOR	MECH. ANALYSIS % PASSING SIEVE NO. (4 / 10 / 40 / 200)	FIELD IDENTIFICATION OF SOIL & REMARKS
0	6							
	10							
	12							
4.0	17							
	6	1	1 1					
6.0	10		1 1		M	GR		
	9							
	10				M	GR		Fine Sand, Some Silt, Tr. Clay
	10							
9.0	5	2	1 2					
11.0	11		1 1		W	GR		
	15							
	16				W	GR		Med. Fine Sand, Some Gravel, Tr. Silt & Clay
	8							
14.0	8	3	6 2					
16.0	14		4 4		W	GR		
	15							
	8				W	GR		Med Fine Sand Some Silt & Gravel
	20							
19.0	50	4	17 10					
21.0	132		15 28		M	GR		
	135							
	138							
	134				M	GR		Med Fine Sand, Some Silt, Tr. Gravel & Clay
24.0	100	5	20 15					
26.0	65		17 12					No Recovery
	97							
	386							
29.0	670							
	345	6	20 14					
30.5	870		35		M	GR		Fine Sand & Silt, Tr. Gravel
	800							
	250							
34.0	542							
		7	23 24					
32.0			50 115		M	GR		Fine Sand & Silt, Tr. Gravel
								Bottom of Hole 32.0'

Washed out casing from
30.2' ahead to 30.7'
31.0 " " 31.5'
31.9 " " 32.1
32.4 " " 32.6
33.0 " " 33.1
33.1 " " 33.2

DISTRICT NO. 7
COUNTY CLINTON
B S M. PROJ. NO.

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS
BUREAU OF SOIL MECHANICS

SUBSURFACE INFORMATION

HOLE NO. D.H.# 7
LINE & STA. See Hached Map
OFFSET

NAME Plattsburgh State Dock
QUAD LOCATION 236-1-R.21
PED. CLASS

DATE, START 8/8/62
DATE, FINISH 8/9/62

NO.
Lake Bed ELEV. 80.31
~~GND~~ ELEV. 95.01

CASING O.D. 2.875" I.D. 2.323" WEIGHT OF HAMMER 300#
HAMMER FALL
SAMPLER O.D. 2.0" I.D. 1.5" INSIDE LENGTH OF SAMPLER 2.0' CASING 18" SAMPLER 16"

DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER (0-6 / 6-12 / 12-18 / 18-24)	CROSS SECTION	MOISTURE	COLOR	MECH ANALYSIS % PASSING SIEVE NO. (4 / 10 / 40 / 200)	FIELD IDENTIFICATION OF SOIL & REMARKS
0	14							
	8							
	39							
	63							
4.0	36	1	14 15					
6.0	33		14 16			W GR		
	42							
	64					W GR		Fine Sand, Tr. Silt
9.0	163							
	75	2	31 32					
11.0	180		49 77			M GR		
	386							
	514					M GR		Fine Sand Tr. Silt & Gravel
14.0	650							
15.	512	3	85 145			M GR		
16.	800							
16.5		4	95			M GR		Fine Sand Some Silt & Gravel

Bottom of Hole 16.5'
Broke Casing off 16.5' so called hole off.

Washed out casing from
12.8 ahead to 13.2
13.4 " " 13.9
14.8 " " 15.1
15.2 " " 15.5
15.8 " " 16.0

DISTRICT NO. 7
COUNTY CLINTON
B.S.M. PROJ. NO.

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS
BUREAU OF SOIL MECHANICS

SUBSURFACE INFORMATION

HOLE NO. D.H.# 8
LINE & STA. See
OFFSET Attached Map

NAME Plattsburgh State Dock
QUAD LOCATION 236-NE-21 DATE, START 8/9/62 LAKE BM NO. ELEV. 82.47
PED. CLASS DATE, FINISH 8/10/62 LAKE BM ELEV. 95.27

CASING O.D. 2.875" I.D. 2.323" WEIGHT OF HAMMER 300# HAMMER FALL
SAMPLER O.D. 2.0" I.D. 1.5" INSIDE LENGTH OF SAMPLER 20' CASING 18" SAMPLER 18"

DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO	BLOWS ON SAMPLER (0-6 / 6-12 / 12-18 / 18-24)	CROSS SECTION	MOISTURE	COLOR	MECH. ANALYSIS % PASSING SIEVE NO. 4	10	40	200	FIELD IDENTIFICATION OF SOIL & REMARKS
0	2										
	2										
	2										
4.0	2	1	2 5								
6.0	5		5 10			W GR					
	20										
	33					W GR					Fine Sand, Tr Silt
9.0	18										
	12	2	6 6								
11.0	34		5 6			W GR					
	86										
	247					W GR					Medium Fine Sand, Tr Silt
14.0	200										
	515	3	33 61								
15.8	820		110			M GR					
	900										
	753										
19.0	860										
19.5		4	115			M. GR					Fine Sand, Some Silt & Gravel
											Bottom of Hole 19.5'

Washed out casing from
15.2 ahead to 15.7
16.0 " " 16.5
16.8 " " 17.0
17.0 " " 17.3
17.5 " " 17.9
18.2 " " 18.7

APPENDIX G

NYSDEC Laboratory PCB Analytical Data

TCL PESTICIDES/AROCLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

SAMPLE NUMBER: 595-223-01

MATRIX: SEDIMENT

FIELD ID: 4" - 10" (2 TUBE INT - 2

EXTRACTION METHOD: SFE

% SOLID: NC

PESTICIDE	QUANT ( )
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	NA
HEPTACHLOR EPOXIDE	NA
ENDOSULFAN I	NA
DIELDRIN	NA
4,4'-DDE	NA
ENDRIN	NA
ENDOSULFAN II	NA
4,4'-DDD	NA
ENDOSULFAN SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

PESTICIDES - CRDL

AROCLORS - CRDL

AROCLOR	QUANT (ug/g)
1016	ND
1221	ND
1232	ND
1242	0.73
1248	ND
1254	ND
1260	ND

TCL PESTICIDES/AROCLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

FIELD ID: 10" - 16"

SAMPLE NUMBER: 595-223-02

EXTRACTION METHOD: SFE

MATRIX: SEDIMENT

% SOLID: NC

PESTICIDE	QUANT ( )
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	NA
HEPTACHLOR EPOXIDE	NA
ENDOSULFAN I	NA
DIELDRIN	NA
4,4'-DDE	NA
ENDRIN	NA
ENDOSULFAN II	NA
4,4'-DDD	NA
ENDOSULFAN SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

PESTICIDES - CRDL

AROCLORS - CRDL

AROCLOR	QUANT (ug/g)
1016	ND
1221	ND
1232	ND
1242	ND
1248	ND
1254	ND
1260	ND

TCL PESTICIDES/AROCLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

FIELD ID: 06 INT - 1 0" - 6"

SAMPLE NUMBER: 595-223-03

EXTRACTION METHOD: SFE

MATRIX: SEDIMENT

% SOLID: NC

PESTICIDE	QUANT ( )
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	NA
HEPTACHLOR EPOXIDE	NA
ENDOSULFAN I	NA
DIELDRIN	NA
4,4'-DDE	NA
ENDRIN	NA
ENDOSULFAN II	NA
4,4'-DDD	NA
ENDOSULFAN SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

PESTICIDES - CRDL

AROCLORS - CRDL

AROCLOR	QUANT (ug/g)
1016	ND
1221	ND
1232	ND
1242	11
1248	ND
1254	ND
1260	ND

TCL PESTICIDES/AROCLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

FIELD ID: 6" - 12"

SAMPLE NUMBER: 945-223-114

EXTRACTION METHOD: SFE

MATRIX: SEDIMENT

% SOLID: NC

PESTICIDE	QUANT ( )
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	NA
HEPTACHLOR EPOXIDE	NA
ENDOSULFAN I	NA
DIELDRIN	NA
4,4'-DDE	NA
ENDRIN	NA
ENDOSULFAN II	NA
4,4'-DDD	NA
ENDOSULFAN SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

PESTICIDES - CRQL

AROCLORS - CRDL

AROCLOR	QUANT (ug/g)
1016	ND
1221	ND
1232	ND
1242	ND
1248	ND
1254	ND
1260	ND

TCL PESTICIDES/AROCLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

FIELD ID: A6 0" - 6"

SAMPLE NUMBER: 595-229-01

EXTRACTION METHOD: SFE

MATRIX: SEDIMENT

% SOLID: NC

PESTICIDES	QUANT ( )
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	NA
HEPTACHLOR EPOXIDE	NA
ENDOSULFAN I	NA
DIELDRIN	NA
4,4'-DDE	NA
ENDRIN	NA
ENDOSULFAN II	NA
4,4'-DDD	NA
ENDOSULFAN SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

PESTICIDES - CRDL

AROCLORS - CRDL

AROCLOR	QUANT (ug/g)
1016	ND
1221	ND
1232	ND
1242	67
1248	ND
1254	ND
1260	ND

TCL PESTICIDES/AROCLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

FIELD ID: A6 6" - 12"

SAMPLE NUMBER: 595-229-112

EXTRACTION METHOD: SFE

MATRIX: SEDIMENT

% SOLID: NC

PESTICIDE	QUANT ( )
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	NA
HEPTACHLOR EPOXIDE	NA
ENDOSULFAN I	NA
DIELDRIN	NA
4,4'-DDE	NA
ENDRIN	NA
ENDOSULFAN II	NA
4,4'-DDD	NA
ENDOSULFAN SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

PESTICIDES - CROL

AROCLORS - CROL

AROCLOR	QUANT (ug/g)
1016	ND
1221	ND
1232	ND
1242	0.25 MI
1248	ND
1254	ND
1260	ND

MI - MATRIX INTERFERENCE

TCL PESTICIDES/AROCLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

FIELD ID: A6 12" - 18"

SAMPLE NUMBER: 595-229-113

EXTRACTION METHOD: SFE

MATRIX: SEDIMENT

% SOLID: ND

PESTICIDE	QUANT ( )
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	NA
HEPTACHLOR EPOXIDE	NA
ENDOSULFAN I	NA
DIELDRIN	NA
4,4'-DDE	NA
ENDRIN	NA
ENDOSULFAN II	NA
4,4'-DDD	NA
ENDOSULFAN SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

PESTICIDES - CRDL

AROCLORS - CRDL

AROCLOR	QUANT (ug/g)
1016	ND
1221	ND
1232	ND
1242	ND
1248	ND
1254	ND
1260	ND

[illegible] PESTICIDES/AROCLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

FIELD ID: A6 18" - 24"

SAMPLE NUMBER: 595 [illegible]9-04

EXTRACTION METHOD: SFE

MATRIX: SEDIMENT

% SOLID: [illegible]

PESTICIDE	QUANT ([illegible])
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	NA
[illegible]	[illegible]
[illegible]	NA
[illegible] SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

PESTICIDES - CRQL

AROCLORS - CRQL

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
1242	[illegible]
[illegible]	ND
1254	ND
1260	ND

TCL PESTICIDES/AROCLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

FIELD ID: A6 24" - 30"

SAMPLE NUMBER: 595-229-05

EXTRACTION METHOD: SFE

MATRIX: SEDIMENT

% SOLID: NC

PESTICIDE	QUANT ( )
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	NA
HEPTACHLOR EPOXIDE	NA
ENDOSULFAN I	NA
DIELDRIN	NA
4,4'-DDE	NA
ENDRIN	NA
ENDOSULFAN II	NA
4,4'-DDD	NA
ENDOSULFAN SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

PESTICIDES - CROL

AROCLORS - CROL

AROCLOR	QUANT (ug/g)
1016	ND
1221	ND
1232	ND
1242	ND
1248	ND
1254	ND
1260	ND

TCL PESTICIDES/AROCLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

FIELD ID: A6 30" - 36"

SAMPLE NUMBER: 595-229-06

EXTRACTION METHOD: SFE

MATRIX: SEDIMENT

% SOLID: NC

PESTICIDE	QUANT ( )
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	NA
HEPTACHLOR EPOXIDE	NA
ENDOSULFAN I	NA
DIELDRIN	NA
4,4'-DDE	NA
ENDRIN	NA
ENDOSULFAN II	NA
4,4'-DDD	NA
ENDOSULFAN SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

PESTICIDES - CRDL

AROCLORS - CRDL

AROCLOR	QUANT (ug/g)
1016	ND
1221	ND
1232	ND
1242	ND
1248	ND
1254	ND
1260	ND

TCL PESTICIDES/AROCLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

FIELD ID: A6 36" - 42"

SAMPLE NUMBER: 595-229-07

EXTRACTION METHOD: SFE

MATRIX: SEDIMENT

% SOLID: NC

PESTICIDE	QUANT ( )
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	NA
HEPTACHLOR EPOXIDE	NA
ENDOSULFAN I	NA
DIELDRIN	NA
4,4'-DDE	NA
ENDRIN	NA
ENDOSULFAN II	NA
4,4'-DDD	NA
ENDOSULFAN SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

PESTICIDES - CRDL

AROCLORS - CRDL

AROCLOR	QUANT (ug/g)
1016	ND
1221	ND
1232	ND
1242	ND
1248	ND
1254	ND
1260	ND

TCL PESTICIDES/AROCLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

FIELD ID: A6 42" - 48"

SAMPLE NUMBER: 595-229-08

EXTRACTION METHOD: SFE

MATRIX: SEDIMENT

% SOLID: ND

PESTICIDE	QUANT ( )
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	NA
HEPTACHLOR EPOXIDE	NA
ENDOSULFAN I	NA
DIELDRIN	NA
4,4'-DDE	NA
ENDRIN	NA
ENDOSULFAN II	NA
4,4'-DDD	NA
ENDOSULFAN SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

PESTICIDES - CRDL

AROCLORS - CRDL

AROCLOR	QUANT (ug/g)
1016	ND
1221	ND
1232	ND
1242	ND
1248	ND
1254	ND
1260	ND

TCL PESTICIDES/AROCLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

FIELD ID: GB 0" - 6"

SAMPLE NUMBER: 595-229-09

EXTRACTION METHOD: SFE

MATRIX: SEDIMENT

% SOLID: NC

PESTICIDE	QUANT ( )
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	NA
HEPTACHLOR EPOXIDE	NA
ENDOSULFAN I	NA
DIELDRIN	NA
4,4'-DDE	NA
ENDRIN	NA
ENDOSULFAN II	NA
4,4'-DDD	NA
ENDOSULFAN SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

PESTICIDES - CRDL

AROCLORS - CRDL

AROCLOR	QUANT (ug/g)
1016	ND
1221	ND
1232	ND
1242	1.0
1248	ND
1254	ND
1260	ND

TCL PESTICIDES/AROCLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

FIELD ID: GB 6" - 12"

SAMPLE NUMBER: 595-229-10

EXTRACTION METHOD: SFE

MATRIX: SEDIMENT

% SOLID: ND

PESTICIDE	QUANT (ug/g)
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	NA
HEPTACHLOR EPOXIDE	NA
ENDOSULFAN I	NA
DIELDRIN	NA
4,4'-DDE	NA
ENDRIN	NA
ENDOSULFAN II	NA
4,4'-DDD	NA
ENDOSULFAN SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

PESTICIDES - CRDL

AROCLORS - CRDL

AROCLOR	QUANT (ug/g)
1016	ND
1221	ND
1232	ND
1242	1.1 MI
1248	ND
1254	ND
1260	ND

MI - MATRIX INTERFERENCE

TCL PESTICIDES/AROCLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

FIELD ID: SB 12" - 18"

SAMPLE NUMBER: 595-229-11

EXTRACTION METHOD: SFE

MATRIX: SEDIMENT

% SOLID: NC

PESTICIDE	QUANT (ug/g)
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	NA
HEPTACHLOR EPOXIDE	NA
ENDOSULFAN I	NA
DIELDRIN	NA
4,4'-DDE	NA
ENDRIN	NA
ENDOSULFAN II	NA
4,4'-DDD	NA
ENDOSULFAN SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

PESTICIDES - CRDL

AROCLORS - CRDL

AROCLOR	QUANT (ug/g)
1016	ND
1221	ND
1232	ND
1242	ND
1248	ND
1254	ND
1260	ND

TCL PESTICIDES/AROCLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

FIELD ID: SB 19" - 24"

SAMPLE NUMBER: 595-229-12

EXTRACTION METHOD: SFE

MATRIX: SEDIMENT

% SOLID: NC

PESTICIDE	QUANT (ug/g)
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	NA
HEPTACHLOR EPOXIDE	NA
ENDOSULFAN I	NA
DIELDRIN	NA
4,4'-DDE	NA
ENDRIN	NA
ENDOSULFAN II	NA
4,4'-DDD	NA
ENDOSULFAN SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

PESTICIDES - CRDL

AROCLORS - CRDL

AROCLOR	QUANT (ug/g)
1016	ND
1221	ND
1232	ND
1242	ND
1248	ND
1254	ND
1260	ND

TCL PESTICIDES/AROCLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

FIELD ID: 58 24" - 37"

SAMPLE NUMBER: 595-229-13

EXTRACTION METHOD: SFE

MATRIX: SEDIMENT

% SOLID: NC

PESTICIDE	QUANT ( )
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	NA
HEPTACHLOR EPOXIDE	NA
ENDOSULFAN I	NA
DIELDRIN	NA
4,4'-DDE	NA
ENDRIN	NA
ENDOSULFAN II	NA
4,4'-DDD	NA
ENDOSULFAN SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

PESTICIDES - CROL

AROCLORS - CROL

AROCLOR	QUANT (ug/g)
1016	ND
1221	ND
1232	ND
1242	ND
1248	ND
1254	ND
1260	ND

TCL PESTICIDES/ARODLORS ANALYSIS

SITE NAME: CUMBERLAND BAY

FIELD ID: SLUDGE COMPOSITE

SAMPLE NUMBER: 595-253-01

EXTRACTION METHOD: SHE

MATRIX: SEDIMENT

% SOLID: NO

PESTICIDE	QUANT ( )
ALPHA-BHC	NA
BETA-BHC	NA
DELTA-BHC	NA
GAMMA-BHC	NA
HEPTACHLOR	NA
ALDRIN	NA
HEPTACHLOR EPOXIDE	NA
ENDOSULFAN I	NA
DIELDRIN	NA
4,4'-DDE	NA
ENDRIN	NA
ENDOSULFAN II	NA
4,4'-DDD	NA
ENDOSULFAN SULFATE	NA
4,4'-DDT	NA
ENDRIN ALDEHYDE	NA
ENDRIN KETONE	NA
METHOXYCHLOR	NA
CHLORDANE (ALPHA/GAMMA)	NA/NA
TOXAPHENE	NA

DETECTION LIMIT:

- PESTICIDES - CRDL
- ARODLORS - CRDL

ARODLOR	QUANT (ug/g)
1016	ND
1221	ND
1232	ND
1242	21
1248	ND
1254	ND
1260	ND

APPENDIX H

Commercial Laboratory PCB Analytical Data

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

A606

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53185

Matrix: (soil/water) SOIL Lab Sample ID: 268157

Sample wt/vol: 30.0 (g) Lab File ID: Q268157S

% Moisture: 81 Date Received: 08/17/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/21/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) Y pH: 7.0 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	3400	U
11104-28-2	Aroclor-1221	7000	U
11141-16-5	Aroclor-1232	3400	U
53469-21-9	Aroclor-1242	~~38,000~~ 32000	~~D~~ C ~~CY~~
12672-29-6	Aroclor-1248	3400	U
11097-69-1	Aroclor-1254	3400	U
11096-82-5	Aroclor-1260	3400	U

Fran 200 DF A606 DL

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

A606DL

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53185

Matrix: (soil/water) SOIL Lab Sample ID: 268157D1

Sample wt/vol: 30.0 (g) Lab File ID: Q268157S

% Moisture: 81 Date Received: 08/17/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/21/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 200

GPC Cleanup: (Y/N) Y pH: 7.0 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	35000	U
11104-28-2	Aroclor-1221	71000	U
11141-16-5	Aroclor-1232	35000	U
53469-21-9	Aroclor-1242	38000	DC
12672-29-6	Aroclor-1248	35000	U
11097-69-1	Aroclor-1254	35000	U
11096-82-5	Aroclor-1260	35000	U

Transfered to A606

USE 20.0 Dilution

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

A6612

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53185

Matrix: (soil/water) SOIL Lab Sample ID: 268158

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 64 Date Received: 08/17/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/21/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	92	U
11104-28-2	Aroclor-1221	190	U
11141-16-5	Aroclor-1232	92	U
53469-21-9	Aroclor-1242	750	
12672-29-6	Aroclor-1248	92	U
11097-69-1	Aroclor-1254	92	U
11096-82-5	Aroclor-1260	92	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

A61218

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53185

Matrix: (soil/water) SOIL Lab Sample ID: 268159

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 58 Date Received: 08/17/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/21/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	79	U
11104-28-2	Aroclor-1221	160	U
11141-16-5	Aroclor-1232	79	U
53469-21-9	Aroclor-1242	79	U
12672-29-6	Aroclor-1248	79	U
11097-69-1	Aroclor-1254	79	U
11096-82-5	Aroclor-1260	79	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

A61824

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 268155

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 56 Date Received: 08/17/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/21/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/10/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	75	U
11104-28-2	Aroclor-1221	150	U
11141-16-5	Aroclor-1232	75	U
53469-21-9	Aroclor-1242	75	U
12672-29-6	Aroclor-1248	75	U
11097-69-1	Aroclor-1254	75	U
11096-82-5	Aroclor-1260	75	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

A62430

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53185

Matrix: (soil/water) SOIL Lab Sample ID: 268160

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 46 Date Received: 08/17/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/21/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	61	U
11104-28-2	Aroclor-1221	120	U
11141-16-5	Aroclor-1232	61	U
53469-21-9	Aroclor-1242	61	U
12672-29-6	Aroclor-1248	61	U
11097-69-1	Aroclor-1254	61	U
11096-82-5	Aroclor-1260	61	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

A63036

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53185

Matrix: (soil/water) SOIL Lab Sample ID: 268161

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 19 Date Received: 08/17/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/21/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	41	U
11104-28-2	Aroclor-1221	83	U
11141-16-5	Aroclor-1232	41	U
53469-21-9	Aroclor-1242	41	U
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	41	U
11096-82-5	Aroclor-1260	41	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

A63642

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53185

Matrix: (soil/water) SOIL Lab Sample ID: 268162

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 51 Date Received: 08/17/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/21/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	67	U
11104-28-2	Aroclor-1221	140	U
11141-16-5	Aroclor-1232	67	U
53469-21-9	Aroclor-1242	67	U
12672-29-6	Aroclor-1248	67	U
11097-69-1	Aroclor-1254	67	U
11096-82-5	Aroclor-1260	67	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

A64248

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53185

Matrix: (soil/water) SOIL Lab Sample ID: 268163

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 46 Date Received: 08/17/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/21/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	61	U
11104-28-2	Aroclor-1221	120	U
11141-16-5	Aroclor-1232	61	U
53469-21-9	Aroclor-1242	61	U
12672-29-6	Aroclor-1248	61	U
11097-69-1	Aroclor-1254	61	U
11096-82-5	Aroclor-1260	61	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

C606

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267091

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 79 Date Received: 08/11/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/15/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 50.0

GPC Cleanup: (Y/N) Y pH: 7.3 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	7900	U
11104-28-2	Aroclor-1221	16000	U
11141-16-5	Aroclor-1232	7900	U
53469-21-9	Aroclor-1242	~~210000~~ 210,000	EMC
12672-29-6	Aroclor-1248	7900	U
11097-69-1	Aroclor-1254	7900	U
11096-82-5	Aroclor-1260	4200	J

ATB 10/20/95

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

C606DL

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267091D1

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 79 Date Received: 08/11/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/15/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 500

GPC Cleanup: (Y/N) Y pH: 7.3 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	79000	U
11104-28-2	Aroclor-1221	160000	U
11141-16-5	Aroclor-1232	79000	U
53469-21-9	Aroclor-1242	270000	DC
12672-29-6	Aroclor-1248	79000	U
11097-69-1	Aroclor-1254	79000	U
11096-82-5	Aroclor-1260	79000	U

USE C606 RESULTS

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

C6612

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267092

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 83 Date Received: 08/11/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/15/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 7.8 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	1900	U
11104-28-2	Aroclor-1221	3900	U
11141-16-5	Aroclor-1232	1900	U
53469-21-9	Aroclor-1242	2100	
12672-29-6	Aroclor-1248	1900	U
11097-69-1	Aroclor-1254	1900	U
11096-82-5	Aroclor-1260	1900	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

C61218

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267093

Sample wt/vol: 30.1 (g) Lab File ID:

% Moisture: 64 Date Received: 08/11/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/15/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) Y pH: 7.8 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	460	U
11104-28-2	Aroclor-1221	930	U
11141-16-5	Aroclor-1232	460	U
53469-21-9	Aroclor-1242	590	
12672-29-6	Aroclor-1248	460	U
11097-69-1	Aroclor-1254	460	U
11096-82-5	Aroclor-1260	460	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

C61824

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267094

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 21 Date Received: 08/11/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/15/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	85	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	42	U
11096-82-5	Aroclor-1260	42	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

C62432

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267095

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 30 Date Received: 08/11/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/15/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	47	U
11104-28-2	Aroclor-1221	96	U
11141-16-5	Aroclor-1232	47	U
53469-21-9	Aroclor-1242	47	U
12672-29-6	Aroclor-1248	47	U
11097-69-1	Aroclor-1254	47	U
11096-82-5	Aroclor-1260	47	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

F708

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267083

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 28 Date Received: 08/10/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/14/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/10/95

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) Y pH: 6.8 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	230	U
11104-28-2	Aroclor-1221	470	U
11141-16-5	Aroclor-1232	230	U
53469-21-9	Aroclor-1242	~~3500~~ 3600	DC
12672-29-6	Aroclor-1248	230	U
11097-69-1	Aroclor-1254	230	U
11096-82-5	Aroclor-1260	600	

FROM F705DL

USE THIS RESULT
AB 10/20/95

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

F708DL

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267083D1

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 28 Date Received: 08/10/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/14/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/10/95

Injection Volume: 1.0 (uL) Dilution Factor: 50.0

GPC Cleanup: (Y/N) Y pH: 6.8 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	2300	U
11104-28-2	Aroclor-1221	4700	U
11141-16-5	Aroclor-1232	2300	U
53469-21-9	Aroclor-1242	3600	DC
12672-29-6	Aroclor-1248	2300	U
11097-69-1	Aroclor-1254	2300	U
11096-82-5	Aroclor-1260	2300	U

use F708

USE F708
DF = 5.0

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

F7815

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267084

Sample wt/vol: 30.2 (g) Lab File ID:

% Moisture: 67 Date Received: 08/10/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/14/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/10/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	99	U
11104-28-2	Aroclor-1221	200	U
11141-16-5	Aroclor-1232	99	U
53469-21-9	Aroclor-1242	99	U
12672-29-6	Aroclor-1248	99	U
11097-69-1	Aroclor-1254	99	U
11096-82-5	Aroclor-1260	99	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

F71524

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267085

Sample wt/vol: 30.1 (g) Lab File ID:

% Moisture: 20 Date Received: 08/10/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/14/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/10/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	41	U
11104-28-2	Aroclor-1221	83	U
11141-16-5	Aroclor-1232	41	U
53469-21-9	Aroclor-1242	41	U
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	41	U
11096-82-5	Aroclor-1260	41	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

F72433

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267086

Sample wt/vol: 30.1 (g) Lab File ID:

% Moisture: 21 Date Received: 08/10/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/14/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/10/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	85	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	42	U
11096-82-5	Aroclor-1260	42	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.: G606

Lab Name: Aquatec, Inc. Lab Code: AQUAI
Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267096
Sample wt/vol: 30.2 (g) Lab File ID:
% Moisture: 60 Date Received: 08/11/95
Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/15/95
Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95
Injection Volume: 1.0 (uL) Dilution Factor: 20.0
GPC Cleanup: (Y/N) Y pH: 7.4 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	1600	U
11104-28-2	Aroclor-1221	3300	U
11141-16-5	Aroclor-1232	1600	U
53469-21-9	Aroclor-1242	~~38000~~ 57,000	DCY
12672-29-6	Aroclor-1248	1600	U
11097-69-1	Aroclor-1254	1600	U
11096-82-5	Aroclor-1260	1200	J

From G606DL

USE THIS RESULT
AB 10/20/95

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

G606DL

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267096D1

Sample wt/vol: 30.2 (g) Lab File ID:

% Moisture: 60 Date Received: 08/11/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/15/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 200

GPC Cleanup: (Y/N) Y pH: 7.4 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	16000	U
11104-28-2	Aroclor-1221	33000	U
11141-16-5	Aroclor-1232	16000	U
53469-21-9	Aroclor-1242	57000	DC
12672-29-6	Aroclor-1248	16000	U
11097-69-1	Aroclor-1254	16000	U
11096-82-5	Aroclor-1260	16000	U

TO G-606

USE G-606
DF = 20 RESULT
MB 10/20/95

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

G6612

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267097

Sample wt/vol: 30.1 (g) Lab File ID:

% Moisture: 31 Date Received: 08/11/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/15/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	48	U
11104-28-2	Aroclor-1221	97	U
11141-16-5	Aroclor-1232	48	U
53469-21-9	Aroclor-1242	210	
12672-29-6	Aroclor-1248	48	U
11097-69-1	Aroclor-1254	48	U
11096-82-5	Aroclor-1260	48	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

G61218

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267098

Sample wt/vol: 30.1 (g) Lab File ID:

% Moisture: 19 Date Received: 08/11/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/15/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	41	U
11104-28-2	Aroclor-1221	82	U
11141-16-5	Aroclor-1232	41	U
53469-21-9	Aroclor-1242	23	J/N
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	41	U
11096-82-5	Aroclor-1260	41	U

AB 10/24/95

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

G61830

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267099

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 21 Date Received: 08/11/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/15/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	85	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	42	U
11096-82-5	Aroclor-1260	42	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

G81218

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53185

Matrix: (soil/water) SOIL Lab Sample ID: 268167

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 31 Date Received: 08/17/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/21/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	48	U
11104-28-2	Aroclor-1221	97	U
11141-16-5	Aroclor-1232	48	U
53469-21-9	Aroclor-1242	48	U
12672-29-6	Aroclor-1248	48	U
11097-69-1	Aroclor-1254	48	U
11096-82-5	Aroclor-1260	48	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

G81824

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53185

Matrix: (soil/water) SOIL Lab Sample ID: 268168

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 23 Date Received: 08/17/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/21/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	43	U
11104-28-2	Aroclor-1221	87	U
11141-16-5	Aroclor-1232	43	U
53469-21-9	Aroclor-1242	43	U
12672-29-6	Aroclor-1248	43	U
11097-69-1	Aroclor-1254	43	U
11096-82-5	Aroclor-1260	43	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

G82436

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53185

Matrix: (soil/water) SOIL Lab Sample ID: 268169

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 32 Date Received: 08/17/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/21/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	49	U
11104-28-2	Aroclor-1221	99	U
11141-16-5	Aroclor-1232	49	U
53469-21-9	Aroclor-1242	49	U
12672-29-6	Aroclor-1248	49	U
11097-69-1	Aroclor-1254	49	U
11096-82-5	Aroclor-1260	49	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

G8REP06

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53185

Matrix: (soil/water) SOIL Lab Sample ID: 268164

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 24 Date Received: 08/17/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/21/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 7.4 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	430	U
11104-28-2	Aroclor-1221	880	U
11141-16-5	Aroclor-1232	430	U
53469-21-9	Aroclor-1242	1700	
12672-29-6	Aroclor-1248	430	U
11097-69-1	Aroclor-1254	430	U
11096-82-5	Aroclor-1260	430	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

G8REP612

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53185

Matrix: (soil/water) SOIL Lab Sample ID: 268165

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 36 Date Received: 08/17/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/21/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	52	U
11104-28-2	Aroclor-1221	100	U
11141-16-5	Aroclor-1232	52	U
53469-21-9	Aroclor-1242	65	J
12672-29-6	Aroclor-1248	52	U
11097-69-1	Aroclor-1254	52	U
11096-82-5	Aroclor-1260	52	U

AB 10/24/95

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

G8RX2612

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53185

Matrix: (soil/water) SOIL Lab Sample ID: 268166

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 29 Date Received: 08/17/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/21/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	46	U
11104-28-2	Aroclor-1221	94	U
11141-16-5	Aroclor-1232	46	U
53469-21-9	Aroclor-1242	160	J
12672-29-6	Aroclor-1248	46	U
11097-69-1	Aroclor-1254	46	U
11096-82-5	Aroclor-1260	46	U

MB 10/20/95

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

SL31422

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267544

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 25 Date Received: 08/15/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/18/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/10/95

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) Y pH: 7.1 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	220	U
11104-28-2	Aroclor-1221	450	U
11141-16-5	Aroclor-1232	220	U
53469-21-9	Aroclor-1242	590	
12672-29-6	Aroclor-1248	220	U
11097-69-1	Aroclor-1254	220	U
11096-82-5	Aroclor-1260	220	U

USE THIS REVISION AB 10/18/95

RECEIVED
OCT 18 1995
TAMS
BLOOMFIELD, N.J.

Revised 10/13/95 SJF

000218

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.
SL3[illegible]422

Lab Name: Aquatec, Inc. Lab Code: AQUAI
Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL
Sample wt/vol: 30.0 (g)
% Moisture: 25
Extraction: SONC (Sepf/Cont/Sonc)
Conc. Extract Volume: 5000 (uL)
Injection Volume: 1.0 (uL)
GPC Cleanup: (Y/N) Y pH: 7.1

Lab Sample ID: 267544
Lab File ID:
Date Received: 08/15/95
Date Extracted: 08/18/95
Date Analyzed: 09/10/95
Dilution Factor: 10
Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	44	U
11104-28-2	Aroclor-1221	89	U
11141-16-5	Aroclor-1232	44	U
53469-21-9	Aroclor-1242	140	
12672-29-6	Aroclor-1248	44	U
11097-69-1	Aroclor-1254	44	U
11096-82-5	Aroclor-1260	44	U

SUPERSEDED
USE REVISION
REC'D 10/18/95

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

SL61224

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267100

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 20 Date Received: 08/11/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/15/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 7.8 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	410	U
11104-28-2	Aroclor-1221	840	U
11141-16-5	Aroclor-1232	410	U
53469-21-9	Aroclor-1242	1400	
12672-29-6	Aroclor-1248	410	U
11097-69-1	Aroclor-1254	280	J
11096-82-5	Aroclor-1260	410	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

SL71224

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267101

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 22 Date Received: 08/11/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/15/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 7.7 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	85	U
11104-28-2	Aroclor-1221	170	U
11141-16-5	Aroclor-1232	85	U
53469-21-9	Aroclor-1242	290	
12672-29-6	Aroclor-1248	85	U
11097-69-1	Aroclor-1254	85	U
11096-82-5	Aroclor-1260	85	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

SL8

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267102

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 44 Date Received: 08/11/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/15/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 7.4 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	590	U
11104-28-2	Aroclor-1221	1200	U
11141-16-5	Aroclor-1232	590	U
53469-21-9	Aroclor-1242	~~12000~~ 14000	DCY
12672-29-6	Aroclor-1248	590	U
11097-69-1	Aroclor-1254	590	U
11096-82-5	Aroclor-1260	480	JP

FROM SL9 DL

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

SL8DL

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267102D1

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 44 Date Received: 08/11/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/15/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/16/95

Injection Volume: 1.0 (uL) Dilution Factor: 100

GPC Cleanup: (Y/N) Y pH: 7.4 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	5900	U
11104-28-2	Aroclor-1221	12000	U
11141-16-5	Aroclor-1232	5900	U
53469-21-9	Aroclor-1242	14000	DC
12672-29-6	Aroclor-1248	5900	U
11097-69-1	Aroclor-1254	5900	U
11096-82-5	Aroclor-1260	5900	U

USE SL8
DF = 10.0 RESULT

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

SL907

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267087

Sample wt/vol: 30.3 (g) Lab File ID:

% Moisture: 33 Date Received: 08/10/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/14/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/10/95

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 7.5 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	490	U
11104-28-2	Aroclor-1221	990	U
11141-16-5	Aroclor-1232	490	U
53469-21-9	Aroclor-1242	2700	C
12672-29-6	Aroclor-1248	490	U
11097-69-1	Aroclor-1254	470	J
11096-82-5	Aroclor-1260	490	U

FORM 1
PCB ANALYSIS DATA SHEET

EPA SAMPLE NO.

X2612

Lab Name: Aquatec, Inc. Lab Code: AQUAI

Contract: 94204 Case: 94204 SDG: 53024

Matrix: (soil/water) SOIL Lab Sample ID: 267103

Sample wt/vol: 30.0 (g) Lab File ID:

% Moisture: 38 Date Received: 08/11/95

Extraction: SONC (Sepf/Cont/Sonc) Date Extracted: 08/15/95

Conc. Extract Volume: 5000 (uL) Date Analyzed: 09/12/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7 Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/Kg)	Q
12674-11-2	Aroclor-1016	53	U
11104-28-2	Aroclor-1221	110	U
11141-16-5	Aroclor-1232	53	U
53469-21-9	Aroclor-1242	280	
12672-29-6	Aroclor-1248	53	U
11097-69-1	Aroclor-1254	53	U
11096-82-5	Aroclor-1260	53	U

APPENDIX I

Commercial Laboratory Dioxin Analytical Data

EPA SAMPLE NO.
A-6 24"-30"

1DFA
PCDD/PCDF SAMPLE DATA SUMMARY

Lab Name:	PACE INC.	Case No.:	IL1445
Contract:	IL1445	SDG No.:	N/A
Lab Code:	IN-049	SAS No.:	N/A
Matrix:	SO	Lab Sample ID:	IL1445-1
Sample wt/vol:	10.02	Lab File ID:	SAM0825051
Water Sample Prep:	Sep Funnel	Date Received:	17-AUG-95
Conc. Extract Vol.:	20 ul	Date Extracted:	18-AUG-95
Injection Volume:	2 ul	Date Analyzed:	25-AUG-95
GC Column ID:	DB-5	Dilution Factor:	N/A
% Solids:	N/A	Concentration Units:	pg/g

ANALYTE	PEAK RT	ION RATIO	SELECTED IONS	CONCENTRATION	EMPC	EDL
2378-TCDD	32:51		320/322	ND		0.25
2378-TCDF	31:36		304/306	ND		1.31
12378-PeCDF	36:26		340/342	ND		0.87
12378-PeCDD	37:35	1.48	356/358	0.55 J		
23478-PeCDF	37:13		340/342	ND		0.91
123478-HxCDF	40:35		374/376	ND		0.75
123678-HxCDF	40:43		374/376	ND		0.69
123478-HxCDD	41:39		390/392	ND		0.91
123678-HxCDD	41:39		390/392	ND		0.76
123789-HxCDD	42: 3		390/392	ND		0.83
234678-HxCDF	41:22		374/376	ND		0.83
123789-HxCDF	42:17		374/376	ND		1.07
1234678-HpCDF	44:43		408/410	ND	1.25	
1234678-HpCDD	46:12	0.91	424/426	1.07 J		
1234789-HpCDF	46:57		408/410	ND		1.61
OCDD	51:58		458/460	ND	5.58	
OCDF	52:13		442/444	ND		5.17

INTERNAL STANDARDS	PEAK RT	ION RATIO	SELECTED IONS	ION RATIO LIMITS	% REC	RECOVERY LIMITS
13C-2378-TCDF	31:31	0.79	316/318	0.65-0.89	83.35	40-135%
13C-2378-TCDD	32:47	0.78	332/334	0.65-0.89	74.85	40-135%
13C-12378-PeCDF	36:23	1.57	352/354	1.32-1.78	39.73	40-135%
13C-12378-PeCDD	37:34	1.53	368/370	1.32-1.78	65.22	40-135%
13C-123478-HxCDF	40:35	0.51	384/386	1.05-1.43	160.89	40-135%
13C-123678-HxCDD	41:38	1.25	402/404	1.05-1.43	159.88	40-135%
13C-1234678-HpCDF	44:42	0.45	420/422	0.88-1.20	163.33	40-135%
13C-1234678-HpCDD	46:12	1.05	436/438	0.88-1.20	177.13	40-135%
13C-OCDD	51:57	0.90	470/472	0.76-1.01	229.51	40-135%

NOTE: Concentrations, EMPC's, and EDL's are calculated on a wet weight basis.
"J" = Estimated value. Value is below Lower Method Calib. Limit (LMCL).

EPA SAMPLE NO.
A-6 24"-30" MS

1DFA

PCDD/PCDF SAMPLE DATA SUMMARY

Lab Name:	PACE INC.	Case No.:	IL1445
Contract:	IL1445	SDG No.:	N/A
Lab Code:	IN-049	SAS No.:	N/A
Matrix:	SO	Lab Sample ID:	IL1445-2MS
Sample wt/vol:	10.04	Lab File ID:	SAM0825101
Water Sample Prep:	Sep Funnel	Date Received:	17-AUG-95
Conc. Extract Vol.:	20 ul	Date Extracted:	18-AUG-95
Injection Volume:	2 ul	Date Analyzed:	25-AUG-95
GC Column ID:	DB-5	Dilution Factor:	N/A
% Solids:	N/A	Concentration Units:	pg/g

ANALYTE	PEAK RT	ION RATIO	SELECTED IONS	CONCENTRATION	EMPC	EDL
2378-TCDD	32:47	0.77	320/322	10.30		
2378-TCDF	31:31	0.80	304/306	11.02		
12378-PeCDF	36:24	1.60	340/342	22.54		
12378-PeCDD	37:34	1.63	356/358	26.53		
23478-PeCDF	37:11	1.56	340/342	50.44		
123478-HxCDF	40:34	1.24	374/376	26.23		
123678-HxCDF	40:41	1.21	374/376	24.10		
123478-HxCDD	41:31	1.28	390/392	27.35		
123678-HxCDD	41:36	1.23	390/392	22.96		
123789-HxCDD	42: 0	1.19	390/392	15.60		
234678-HxCDF	41:24	1.19	374/376	24.16		
123789-HxCDF	42:20	1.25	374/376	28.78		
1234678-HpCDF	44:41	1.02	408/410	26.80		
1234678-HpCDD	46:11	1.03	424/426	25.68		
1234789-HpCDF	46:56	0.99	408/410	30.97		
OCDD	51:57	0.96	458/460	54.38		
OCDF	52:14	0.94	442/444	50.79		

INTERNAL STANDARDS	PEAK RT	ION RATIO	SELECTED IONS	ION RATIO LIMITS	% REC	RECOVERY LIMITS
13C-2378-TCDF	31:30	0.80	316/318	0.65-0.89	84.48	40-135%
13C-2378-TCDD	32:46	0.80	332/334	0.65-0.89	74.91	40-135%
13C-12378-PeCDF	36:23	1.56	352/354	1.32-1.78	36.09	40-135%
13C-12378-PeCDD	37:33	1.59	368/370	1.32-1.78	63.40	40-135%
13C-123478-HxCDF	40:32	0.51	384/386	1.05-1.43	133.68	40-135%
13C-123678-HxCDD	41:35	1.27	402/404	1.05-1.43	133.97	40-135%
13C-1234678-HpCDF	44:40	0.46	420/422	0.88-1.20	142.31	40-135%
13C-1234678-HpCDD	46:11	1.06	436/438	0.88-1.20	147.13	40-135%
13C-OCDD	51:55	0.90	470/472	0.76-1.01	176.82	40-135%

NOTE: Concentrations, EMPC's, and EDL's are calculated on a wet weight basis.
"J" = Estimated value. Value is below Lower Method Calib. Limit (LMCL).

EPA SAMPLE NO.
A-6 24"-30" MSD

1DFA
PCDD/PCDF SAMPLE DATA SUMMARY

Lab Name:	PACE INC.	Case No.:	IL1445
Contract:	IL1445	SDG No.:	N/A
Lab Code:	IN-049	SAS No.:	N/A
Matrix:	SO	Lab Sample ID:	IL1445-3MSD
Sample wt/vol:	10.01	Lab File ID:	SAM0825111
Water Sample Prep:	Sep Funnel	Date Received:	17-AUG-95
Conc. Extract Vol.:	20 ul	Date Extracted:	18-AUG-95
Injection Volume:	2 ul	Date Analyzed:	25-AUG-95
GC Column ID:	DB-5	Dilution Factor:	N/A
% Solids:	N/A	Concentration Units:	pg/g

ANALYTE	PEAK RT	ION RATIO	SELECTED IONS	CONCENTRATION	EMPC	EDL
2378-TCDD	32:50	0.83	320/322	10.87		
2378-TCDF	31:34	0.81	304/306	12.07		
12378-PeCDF	36:24	1.71	340/342	28.15		
12378-PeCDD	37:35	1.55	356/358	28.53		
23478-PeCDF	37:12	1.50	340/342	41.34		
123478-HxCDF	40:35	1.21	374/376	29.35		
123678-HxCDF	40:44	1.29	374/376	25.81		
123478-HxCDD	41:33	1.22	390/392	25.73		
123678-HxCDD	41:39	1.21	390/392	28.47		
123789-HxCDD	42: 2	1.18	390/392	15.97		
234678-HxCDF	41:27	1.20	374/376	27.37		
123789-HxCDF	42:22	1.23	374/376	30.86		
1234678-HpCDF	44:43	1.02	408/410	29.44		
1234678-HpCDD	46:14	1.15	424/426	27.95		
1234789-HpCDF	46:58	1.02	408/410	34.77		
OCDD	51:58	0.91	458/460	56.42		
OCDF	52:16	0.89	442/444	59.60		

INTERNAL STANDARDS	PEAK RT	ION RATIO	SELECTED IONS	ION RATIO LIMITS	% REC	RECOVERY LIMITS
13C-2378-TCDF	31:32	0.79	316/318	0.65-0.89	89.32	40-135%
13C-2378-TCDD	32:48	0.81	332/334	0.65-0.89	74.51	40-135%
13C-12378-PeCDF	36:24	1.64	352/354	1.32-1.78	53.54	40-135%
13C-12378-PeCDD	37:33	1.57	368/370	1.32-1.78	68.97	40-135%
13C-123478-HxCDF	40:34	0.52	384/386	1.05-1.43	143.68	40-135%
13C-123678-HxCDD	41:38	1.25	402/404	1.05-1.43	143.15	40-135%
13C-1234678-HpCDF	44:42	0.45	420/422	0.88-1.20	153.71	40-135%
13C-1234678-HpCDD	46:12	1.04	436/438	0.88-1.20	159.18	40-135%
13C-OCDD	51:57	0.88	470/472	0.76-1.01	204.37	40-135%

NOTE: Concentrations, EMPC's, and EDL's are calculated on a wet weight basis.
"J" = Estimated value. Value is below Lower Method Calib. Limit (LMCL).

EPA SAMPLE NO.
A-6 30"-36"

1DFA

PCDD/PCDF SAMPLE DATA SUMMARY

Lab Name:	PACE INC.	Case No.:	IL1445
Contract:	IL1445	SDG No.:	N/A
Lab Code:	IN-049	SAS No.:	N/A
Matrix:	SO	Lab Sample ID:	IL1445-4
Sample wt/vol:	10	Lab File ID:	SAM0825061
Water Sample Prep:	Sep Funnel	Date Received:	17-AUG-95
Conc. Extract Vol.:	20 ul	Date Extracted:	18-AUG-95
Injection Volume:	2 ul	Date Analyzed:	25-AUG-95
GC Column ID:	DB-5	Dilution Factor:	N/A
% Solids:	N/A	Concentration Units:	pg/g

ANALYTE	PEAK RT	ION RATIO	SELECTED IONS	CONCENTRATION		EMPC	EDL
2378-TCDD	32:44		320/322	ND			0.13
2378-TCDF	31:25		304/306	ND			0.76
12378-PeCDF	36:21		340/342	ND			0.43
12378-PeCDD	37:30		356/358	ND			0.48
23478-PeCDF	37:23		340/342	ND			0.45
123478-HxCDF	40:37		374/376	ND			0.34
123678-HxCDF	40:41		374/376	ND			0.31
123478-HxCDD	41:29		390/392	ND			0.52
123678-HxCDD	41:37		390/392	ND			0.44
123789-HxCDD	42: 0		390/392	ND			0.47
234678-HxCDF	41:25		374/376	ND			0.37
123789-HxCDF	42:21		374/376	ND			0.48
1234678-HpCDF	44:42		408/410	ND		0.80	
1234678-HpCDD	46:12	0.89	424/426	0.87	J		
1234789-HpCDF	46:57		408/410	ND			1.03
OCDD	51:57	0.99	458/460	5.30			
OCDF	52:19		442/444	ND			2.54

INTERNAL STANDARDS	PEAK RT	ION RATIO	SELECTED IONS	ION RATIO LIMITS	% REC	RECOVERY LIMITS
13C-2378-TCDF	31:21	0.79	316/318	0.65-0.89	90.42	40-135%
13C-2378-TCDD	32:39	0.79	332/334	0.65-0.89	87.27	40-135%
13C-12378-PeCDF	36:18	1.59	352/354	1.32-1.78	67.38	40-135%
13C-12378-PeCDD	37:30	1.61	368/370	1.32-1.78	76.91	40-135%
13C-123478-HxCDF	40:34	0.51	384/386	1.05-1.43	203.36	40-135%
13C-123678-HxCDD	41:38	1.25	402/404	1.05-1.43	205.11	40-135%
13C-1234678-HpCDF	44:40	0.45	420/422	0.88-1.20	211.59	40-135%
13C-1234678-HpCDD	46:10	1.02	436/438	0.88-1.20	238.61	40-135%
13C-OCDD	51:57	0.89	470/472	0.76-1.01	276.81	40-135%

NOTE: Concentrations, EMPC's, and EDL's are calculated on a wet weight basis.
"J" = Estimated value. Value is below Lower Method Calib. Limit (LMCL).

EPA SAMPLE NO.
G8-REP 6"-12"

1DFA
PCDD/PCDF SAMPLE DATA SUMMARY

Lab Name:	PACE INC.	Case No.:	IL1445
Contract:	IL1445	SDG No.:	N/A
Lab Code:	IN-049	SAS No.:	N/A
Matrix:	SO	Lab Sample ID:	IL1445-5
Sample wt/vol:	10.02	Lab File ID:	SAM0825071
Water Sample Prep:	Sep Funnel	Date Received:	17-AUG-95
Conc. Extract Vol.:	20 ul	Date Extracted:	18-AUG-95
Injection Volume:	2 ul	Date Analyzed:	25-AUG-95
GC Column ID:	DB-5	Dilution Factor:	N/A
% Solids:	N/A	Concentration Units:	pg/g

ANALYTE	PEAK RT	ION RATIO	SELECTED IONS	CONCENTRATION	EMPC	EDL
2378-TCDD	33: 9	0.82	320/322	11.80		
2378-TCDF	32: 0	0.71	304/306	3.63		
12378-PeCDF	36:31	1.61	340/342	5.84		
12378-PeCDD	37:37	1.61	356/358	7.76		
23478-PeCDF	37:26	1.47	340/342	19.44		
123478-HxCDF	40:32	1.21	374/376	50.91		
123678-HxCDF	40:41	1.22	374/376	102.52		
123478-HxCDD	41:28		390/392	ND		1.25
123678-HxCDD	41:36	1.30	390/392	203.95		
123789-HxCDD	41:59	1.20	390/392	22.68		
234678-HxCDF	41:17	1.20	374/376	45.18		
123789-HxCDF	42: 8	1.26	374/376	10.62		
1234678-HpCDF	44:38	1.04	408/410	2179.22		
1234678-HpCDD	46: 9	1.05	424/426	3099.81		
1234789-HpCDF	46:53	1.03	408/410	84.31		
OCDD	51:53	0.90	458/460	36545.38		
OCDF	52:10	0.89	442/444	2079.62		

INTERNAL STANDARDS	PEAK RT	ION RATIO	SELECTED IONS	ION RATIO LIMITS	% REC	RECOVERY LIMITS
13C-2378-TCDF	31:59	0.81	316/318	0.65-0.89	103.42	40-135%
13C-2378-TCDD	33: 8	0.82	332/334	0.65-0.89	101.52	40-135%
13C-12378-PeCDF	36:30	1.54	352/354	1.32-1.78	59.59	40-135%
13C-12378-PeCDD	37:36	1.63	368/370	1.32-1.78	81.56	40-135%
13C-123478-HxCDF	40:31	0.52	384/386	1.05-1.43	119.81	40-135%
13C-123678-HxCDD	41:35	1.26	402/404	1.05-1.43	120.74	40-135%
13C-1234678-HpCDF	44:38	0.44	420/422	0.88-1.20	122.10	40-135%
13C-1234678-HpCDD	46: 8	1.04	436/438	0.88-1.20	128.69	40-135%
13C-OCDD	51:52	0.91	470/472	0.76-1.01	133.61	40-135%

NOTE: Concentrations, EMPC's, and EDL's are calculated on a wet weight basis.
"J" = Estimated value. Value is below Lower Method Calib. Limit (LMCL).

EPA SAMPLE NO.
G8-REP 12"-18"

1DFA
PCDD/PCDF SAMPLE DATA SUMMARY

Lab Name:	PACE INC.	Case No.:	IL1445
Contract:	IL1445	SDG No.:	N/A
Lab Code:	IN-049	SAS No.:	N/A
Matrix:	SO	Lab Sample ID:	IL1445-6
Sample wt/vol:	10.01	Lab File ID:	SAM0825081
Water Sample Prep:	Sep Funnel	Date Received:	17-AUG-95
Conc. Extract Vol.:	20 ul	Date Extracted:	18-AUG-95
Injection Volume:	2 ul	Date Analyzed:	25-AUG-95
GC Column ID:	DB-5	Dilution Factor:	N/A
% Solids:	N/A	Concentration Units:	pg/g

ANALYTE	PEAK RT	ION RATIO	SELECTED IONS	CONCENTRATION		EMPC	EDL
2378-TCDD	32:32	0.74	320/322	5.52			
2378-TCDF	31:12	0.72	304/306	0.91	J		
12378-PeCDF	36:13	1.55	340/342	8.27			
12378-PeCDD	37:25	1.62	356/358	1.78			
23478-PeCDF	37:13	1.70	340/342	3.05			
123478-HxCDF	40:26	1.30	374/376	14.20			
123678-HxCDF	40:34	1.24	374/376	35.86			
123478-HxCDD	41:24	1.11	390/392	2.97			
123678-HxCDD	41:30	1.26	390/392	25.86			
123789-HxCDD	41:53	1.11	390/392	3.91			
234678-HxCDF	41:11	1.17	374/376	6.63			
123789-HxCDF	42:17	1.25	374/376	3.53			
1234678-HpCDF	44:34	1.02	408/410	528.37			
1234678-HpCDD	46: 5	1.05	424/426	423.17			
1234789-HpCDF	46:49	0.97	408/410	11.90			
OCDD	51:51	0.89	458/460	4458.78			
OCDF	52: 8	0.88	442/444	279.14			

INTERNAL STANDARDS	PEAK RT	ION RATIO	SELECTED IONS	ION RATIO LIMITS	% REC	RECOVERY LIMITS
13C-2378-TCDF	31:10	0.79	316/318	0.65-0.89	100.44	40-135%
13C-2378-TCDD	32:30	0.79	332/334	0.65-0.89	86.89	40-135%
13C-12378-PeCDF	36:13	1.57	352/354	1.32-1.78	87.98	40-135%
13C-12378-PeCDD	37:24	1.67	368/370	1.32-1.78	87.22	40-135%
13C-123478-HxCDF	40:25	0.53	384/386	1.05-1.43	166.15	40-135%
13C-123678-HxCDD	41:29	1.25	402/404	1.05-1.43	166.98	40-135%
13C-1234678-HpCDF	44:33	0.45	420/422	0.88-1.20	169.78	40-135%
13C-1234678-HpCDD	46: 4	1.04	436/438	0.88-1.20	187.85	40-135%
13C-OCDD	51:50	0.89	470/472	0.76-1.01	206.55	40-135%

NOTE: Concentrations, EMPC's, and EDL's are calculated on a wet weight basis.
"J" = Estimated value. Value is below Lower Method Calib. Limit (LMCL).

EPA SAMPLE NO.
G-8 REP X2 12"-1

1DFA

PCDD/PCDF SAMPLE DATA SUMMARY

Lab Name:	PACE INC.	Case No.:	IL1445
Contract:	IL1445	SDG No.:	N/A
Lab Code:	IN-049	SAS No.:	N/A
Matrix:	SO	Lab Sample ID:	IL1445-7
Sample wt/vol:	10	Lab File ID:	SAM0825091
Water Sample Prep:	Sep Funnel	Date Received:	17-AUG-95
Conc. Extract Vol.:	20 ul	Date Extracted:	18-AUG-95
Injection Volume:	2 ul	Date Analyzed:	25-AUG-95
GC Column ID:	DB-5	Dilution Factor:	N/A
% Solids:	N/A	Concentration Units:	pg/g

ANALYTE	PEAK RT	ION RATIO	SELECTED IONS	CONCENTRATION		EMPC	EDL
2378-TCDD	32:28	0.79	320/322	3.00			
2378-TCDF	31: 7	0.80	304/306	0.93	J		
12378-PeCDF	36:12	1.62	340/342	4.46			
12378-PeCDD	37:22	1.59	356/358	0.90	J		
23478-PeCDF	37:10	1.55	340/342	2.89			
123478-HxCDF	40:21	1.18	374/376	10.11			
123678-HxCDF	40:21	1.18	374/376	9.31			
123478-HxCDD	41:18	1.09	390/392	1.11	J		
123678-HxCDD	41:25	1.26	390/392	12.30			
123789-HxCDD	41:49	1.19	390/392	2.50			
234678-HxCDF	41:10	1.21	374/376	9.34			
123789-HxCDF	42:15	1.27	374/376	2.58			
1234678-HpCDF	44:30	1.04	408/410	546.83			
1234678-HpCDD	46: 2	1.05	424/426	193.37			
1234789-HpCDF	46:46	1.09	408/410	7.64			
OCDD	51:48	0.90	458/460	2063.46			
OCDF	52: 5	0.89	442/444	186.41			

INTERNAL STANDARDS	PEAK RT	ION RATIO	SELECTED IONS	ION RATIO LIMITS	% REC	RECOVERY LIMITS
13C-2378-TCDF	31: 4	0.80	316/318	0.65-0.89	102.17	40-135%
13C-2378-TCDD	32:28	0.79	332/334	0.65-0.89	89.86	40-135%
13C-12378-PeCDF	36:11	1.60	352/354	1.32-1.78	97.95	40-135%
13C-12378-PeCDD	37:20	1.60	368/370	1.32-1.78	93.59	40-135%
13C-123478-HxCDF	40:20	0.52	384/386	1.05-1.43	125.14	40-135%
13C-123678-HxCDD	41:24	1.26	402/404	1.05-1.43	122.28	40-135%
13C-1234678-HpCDF	44:30	0.45	420/422	0.88-1.20	125.90	40-135%
13C-1234678-HpCDD	46: 1	1.05	436/438	0.88-1.20	131.06	40-135%
13C-OCDD	51:47	0.90	470/472	0.76-1.01	138.97	40-135%

NOTE: Concentrations, EMPC's, and EDL's are calculated on a wet weight basis.
"J" = Estimated value. Value is below Lower Method Calib. Limit (LMCL).

EPA SAMPLE NO.
A-6 30"-36"

1DFB

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY

Lab Name:	PACE INC.	Case No.:	IL1445
Contract:	IL1445	SDG No.:	N/A
Lab Code:	IN-049	SAS No.:	N/A
Matrix:	SO	Lab Sample ID:	IL1445-4
Sample wt/vol:	10	Lab File ID:	SAM0825061
Water Sample Prep:	Sep Funnel	Date Received:	17-AUG-95
Conc. Extract Vol.:	20 ul	Date Extracted:	18-AUG-95
Injection Volume:	2 ul	Date Analyzed:	25-AUG-95
GC Column ID:	DB-5	Dilution Factor:	N/A
% Solids:	N/A	Concentration Units:	pg/g

ANALYTE	CONCENTRATION	TOXICITY EQUIVALENCE FACTOR	TEF-ADJUSTED CONCENTRATION
2378-TCDD	0.00	1.0	0.0000
2378-TCDF	0.00	0.1	0.0000
12378-PeCDF	0.00	0.05	0.0000
12378-PeCDD	0.00	0.5	0.0000
23478-PeCDF	0.10	0.5	0.0485
123478-HxCDF	0.00	0.1	0.0000
123678-HxCDF	0.00	0.1	0.0000
123478-HxCDD	0.00	0.1	0.0000
123678-HxCDD	0.00	0.1	0.0000
123789-HxCDD	0.00	0.1	0.0000
234678-HxCDF	0.00	0.1	0.0000
123789-HxCDF	0.00	0.1	0.0000
1234678-HpCDF	0.00	0.01	0.0000
1234678-HpCDD	0.87	0.01	0.0087
1234789-HpCDF	0.00	0.01	0.0000
OCDD	5.30	0.001	0.0053
OCDF	0.00	0.001	0.0000
		TOTAL	0.0624

NOTE: Do NOT include EMPC or EDL values in the TEF-adjusted concentration.

EPA SAMPLE NO.
G8-REP 6"-12"

1DFB

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY

Lab Name:	PACE INC.	Case No.:	IL1445
Contract:	IL1445	SDG No.:	N/A
Lab Code:	IN-049	SAS No.:	N/A
Matrix:	SO	Lab Sample ID:	IL1445-5
Sample wt/vol:	10.02	Lab File ID:	SAM0825071
Water Sample Prep:	Sep Funnel	Date Received:	17-AUG-95
Conc. Extract Vol.:	20 ul	Date Extracted:	18-AUG-95
Injection Volume:	2 ul	Date Analyzed:	25-AUG-95
GC Column ID:	DB-5	Dilution Factor:	N/A
% Solids:	N/A	Concentration Units:	pg/g

ANALYTE	CONCENTRATION	TOXICITY EQUIVALENCE FACTOR	TEF-ADJUSTED CONCENTRATION
2378-TCDD	11.80	1.0	11.8011
2378-TCDF	3.63	0.1	0.3626
12378-PeCDF	5.84	0.05	0.2921
12378-PeCDD	7.76	0.5	3.8813
23478-PeCDF	19.44	0.5	9.7197
123478-HxCDF	50.91	0.1	5.0911
123678-HxCDF	102.52	0.1	10.2524
123478-HxCDD	0.00	0.1	0.0000
123678-HxCDD	203.95	0.1	20.3949
123789-HxCDD	22.68	0.1	2.2680
234678-HxCDF	45.18	0.1	4.5183
123789-HxCDF	10.62	0.1	1.0617
1234678-HpCDF	2179.22	0.01	21.7922
1234678-HpCDD	3099.81	0.01	30.9981
1234789-HpCDF	84.31	0.01	0.8431
OCDD	36545.38	0.001	36.5454
OCDF	2079.62	0.001	2.0796
		TOTAL	161.9015

NOTE: Do NOT include EMPC or EDL values in the TEF-adjusted concentration.

EPA SAMPLE NO.
G8-REP 12"-18"

1DFB

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY

Lab Name:	PACE INC.	Case No.:	IL1445
Contract:	IL1445	SDG No.:	N/A
Lab Code:	IN-049	SAS No.:	N/A
Matrix:	SO	Lab Sample ID:	IL1445-6
Sample wt/vol:	10.01	Lab File ID:	SAM0825081
Water Sample Prep:	Sep Funnel	Date Received:	17-AUG-95
Conc. Extract Vol.:	20 ul	Date Extracted:	18-AUG-95
Injection Volume:	2 ul	Date Analyzed:	25-AUG-95
GC Column ID:	DB-5	Dilution Factor:	N/A
% Solids:	N/A	Concentration Units:	pg/g

ANALYTE	CONCENTRATION	TOXICITY EQUIVALENCE FACTOR	TEF-ADJUSTED CONCENTRATION
2378-TCDD	5.52	1.0	5.5195
2378-TCDF	0.91	0.1	0.0911
12378-PeCDF	8.27	0.05	0.4134
12378-PeCDD	1.78	0.5	0.8884
23478-PeCDF	3.05	0.5	1.5246
123478-HxCDF	14.20	0.1	1.4198
123678-HxCDF	35.86	0.1	3.5864
123478-HxCDD	2.97	0.1	0.2969
123678-HxCDD	25.86	0.1	2.5860
123789-HxCDD	3.91	0.1	0.3914
234678-HxCDF	6.63	0.1	0.6632
123789-HxCDF	3.53	0.1	0.3526
1234678-HpCDF	528.37	0.01	5.2837
1234678-HpCDD	423.17	0.01	4.2317
1234789-HpCDF	11.90	0.01	0.1190
OCDD	4458.78	0.001	4.4588
OCDF	279.14	0.001	0.2791
		TOTAL	32.1055

NOTE: Do NOT include EMPC or EDL values in the TEF-adjusted concentration.

EPA SAMPLE NO.
G-8 REP X2 12"-1

1DFB

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY

Lab Name:	PACE INC.	Case No.:	IL1445
Contract:	IL1445	SDG No.:	N/A
Lab Code:	IN-049	SAS No.:	N/A
Matrix:	SO	Lab Sample ID:	IL1445-7
Sample wt/vol:	10	Lab File ID:	SAM0825091
Water Sample Prep:	Sep Funnel	Date Received:	17-AUG-95
Conc. Extract Vol.:	20 ul	Date Extracted:	18-AUG-95
Injection Volume:	2 ul	Date Analyzed:	25-AUG-95
GC Column ID:	DB-5	Dilution Factor:	N/A
% Solids:	N/A	Concentration Units:	pg/g

ANALYTE	CONCENTRATION	TOXICITY EQUIVALENCE FACTOR	TEF-ADJUSTED CONCENTRATION
2378-TCDD	3.00	1.0	3.0049
2378-TCDF	0.93	0.1	0.0930
12378-PeCDF	4.46	0.05	0.2232
12378-PeCDD	0.90	0.5	0.4516
23478-PeCDF	2.89	0.5	1.4437
123478-HxCDF	10.11	0.1	1.0106
123678-HxCDF	9.31	0.1	0.9309
123478-HxCDD	1.11	0.1	0.1113
123678-HxCDD	12.30	0.1	1.2297
123789-HxCDD	2.50	0.1	0.2501
234678-HxCDF	9.34	0.1	0.9344
123789-HxCDF	2.58	0.1	0.2579
1234678-HpCDF	546.83	0.01	5.4683
1234678-HpCDD	193.37	0.01	1.9337
1234789-HpCDF	7.64	0.01	0.0764
OCDD	2063.46	0.001	2.0635
OCDF	186.41	0.001	0.1864
		TOTAL	19.6697

NOTE: Do NOT include EMPC or EDL values in the TEF-adjusted concentration.

EPA SAMPLE NO.
N/A

1DFA

PCDD/PCDF SAMPLE DATA SUMMARY

Lab Name:	PACE INC.	Case No.:	IL1445
Contract:	IL1445	SDG No.:	N/A
Lab Code:	IN-049	SAS No.:	N/A
Matrix:	SO	Lab Sample ID:	LCS-IL1445
Sample wt/vol:	10.01	Lab File ID:	SAM0828A081
Water Sample Prep:	Sep Funnel	Date Received:	17-AUG-95
Conc. Extract Vol.:	20 ul	Date Extracted:	18-AUG-95
Injection Volume:	2 ul	Date Analyzed:	28-AUG-95
GC Column ID:	DB-5	Dilution Factor:	N/A
% Solids:	N/A	Concentration Units:	pg/g

ANALYTE	PEAK RT	ION RATIO	SELECTED IONS	CONCENTRATION	EMPC	EDL
2378-TCDD	32:23	0.78	320/322	10.22		
2378-TCDF	31: 0	0.76	304/306	10.10		
12378-PeCDF	36: 9	1.52	340/342	24.87		
12378-PeCDD	37:24	1.53	356/358	24.58		
23478-PeCDF	37: 4	1.53	340/342	23.06		
123478-HxCDF	40:20	1.29	374/376	25.33		
123678-HxCDF	40:28	1.23	374/376	21.42		
123478-HxCDD	41:17	1.26	390/392	29.22		
123678-HxCDD	41:23	1.25	390/392	22.45		
123789-HxCDD	41:51	1.23	390/392	24.95		
234678-HxCDF	41:10	1.21	374/376	18.40		
123789-HxCDF	42:12	1.22	374/376	25.43		
1234678-HpCDF	44:31	1.04	408/410	24.61		
1234678-HpCDD	46: 3	0.99	424/426	26.05		
1234789-HpCDF	46:47	1.06	408/410	25.88		
OCDD	51:48	0.84	458/460	57.90		
OCDF	52: 5	0.87	442/444	50.50		

INTERNAL STANDARDS	PEAK RT	ION RATIO	SELECTED IONS	ION RATIO LIMITS	% REC	RECOVERY LIMITS
13C-2378-TCDF	30:57	0.79	316/318	0.65-0.89	91.81	40-135%
13C-2378-TCDD	32:21	0.79	332/334	0.65-0.89	88.71	40-135%
13C-12378-PeCDF	36: 9	1.59	352/354	1.32-1.78	84.72	40-135%
13C-12378-PeCDD	37:23	1.60	368/370	1.32-1.78	74.30	40-135%
13C-123478-HxCDF	40:19	0.52	384/386	1.05-1.43	104.23	40-135%
13C-123678-HxCDD	41:22	1.25	402/404	1.05-1.43	96.31	40-135%
13C-1234678-HpCDF	44:30	0.45	420/422	0.88-1.20	154.92	40-135%
13C-1234678-HpCDD	46: 1	1.03	436/438	0.88-1.20	143.44	40-135%
13C-OCDD	51:46	0.89	470/472	0.76-1.01	138.83	40-135%

NOTE: Concentrations, EMPC's, and EDL's are calculated on a wet weight basis.
"J" = Estimated value. Value is below Lower Method Calib. Limit (LMCL).

1DFB

EPA SAMPLE NO.
N/A

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY

Lab Name:	PACE INC.	Case No.:	IL1445
Contract:	IL1445	SDG No.:	N/A
Lab Code:	IN-049	SAS No.:	N/A
Matrix:	SO	Lab Sample ID:	MB-IL1445
Sample wt/vol:	10	Lab File ID:	SAM0825041
Water Sample Prep:	Sep Funnel	Date Received:	17-AUG-95
Conc. Extract Vol.:	20 ul	Date Extracted:	18-AUG-95
Injection Volume:	2 ul	Date Analyzed:	25-AUG-95
GC Column ID:	DB-5	Dilution Factor:	N/A
% Solids:	N/A	Concentration Units:	pg/g

ANALYTE	CONCENTRATION	TOXICITY EQUIVALENCE FACTOR	TEF-ADJUSTED CONCENTRATION
2378-TCDD	0.21	1.0	0.2059
2378-TCDF	0.05	0.1	0.0055
12378-PeCDF	0.00	0.05	0.0000
12378-PeCDD	0.00	0.5	0.0000
23478-PeCDF	0.00	0.5	0.0000
123478-HxCDF	0.00	0.1	0.0000
123678-HxCDF	0.00	0.1	0.0000
123478-HxCDD	0.05	0.1	0.0048
123678-HxCDD	0.00	0.1	0.0000
123789-HxCDD	0.00	0.1	0.0000
234678-HxCDF	0.00	0.1	0.0000
123789-HxCDF	0.00	0.1	0.0000
1234678-HpCDF	0.00	0.01	0.0000
1234678-HpCDD	0.00	0.01	0.0000
1234789-HpCDF	0.00	0.01	0.0000
OCDD	1.43	0.001	0.0014
OCDF	4.38	0.001	0.0044
		TOTAL	0.2219

NOTE: Do NOT include EMPC or EDL values in the TEF-adjusted concentration.

EPA SAMPLE NO.
A-6 24"-30"

1DFB

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY

Lab Name:	PACE INC.	Case No.:	IL1445
Contract:	IL1445	SDG No.:	N/A
Lab Code:	IN-049	SAS No.:	N/A
Matrix:	SO	Lab Sample ID:	IL1445-1
Sample wt/vol:	10.02	Lab File ID:	SAM0825051
Water Sample Prep:	Sep Funnel	Date Received:	17-AUG-95
Conc. Extract Vol.:	20 ul	Date Extracted:	18-AUG-95
Injection Volume:	2 ul	Date Analyzed:	25-AUG-95
GC Column ID:	DB-5	Dilution Factor:	N/A
% Solids:	N/A	Concentration Units:	pg/g

ANALYTE	CONCENTRATION	TOXICITY EQUIVALENCE FACTOR	TEF-ADJUSTED CONCENTRATION
2378-TCDD	0.00	1.0	0.0000
2378-TCDF	0.00	0.1	0.0000
12378-PeCDF	0.00	0.05	0.0000
12378-PeCDD	0.55	0.5	0.2732
23478-PeCDF	0.00	0.5	0.0000
123478-HxCDF	0.00	0.1	0.0000
123678-HxCDF	0.00	0.1	0.0000
123478-HxCDD	0.00	0.1	0.0000
123678-HxCDD	0.00	0.1	0.0000
123789-HxCDD	0.00	0.1	0.0000
234678-HxCDF	0.00	0.1	0.0000
123789-HxCDF	0.00	0.1	0.0000
1234678-HpCDF	0.00	0.01	0.0000
1234678-HpCDD	1.07	0.01	0.0107
1234789-HpCDF	0.00	0.01	0.0000
OCDD	0.00	0.001	0.0000
OCDF	0.00	0.001	0.0000
		TOTAL	0.2839

NOTE: Do NOT include EMPC or EDL values in the TEF-adjusted concentration.

EPA SAMPLE NO.
A-6 24"-30" MS

1DFB

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY

Lab Name:	PACE INC.	Case No.:	IL1445
Contract:	IL1445	SDG No.:	N/A
Lab Code:	IN-049	SAS No.:	N/A
Matrix:	SO	Lab Sample ID:	IL1445-2MS
Sample wt/vol:	10.04	Lab File ID:	SAM0825101
Water Sample Prep:	Sep Funnel	Date Received:	17-AUG-95
Conc. Extract Vol.:	20 ul	Date Extracted:	18-AUG-95
Injection Volume:	2 ul	Date Analyzed:	25-AUG-95
GC Column ID:	DB-5	Dilution Factor:	N/A
% Solids:	N/A	Concentration Units:	pg/g

ANALYTE	CONCENTRATION	TOXICITY EQUIVALENCE FACTOR	TEF-ADJUSTED CONCENTRATION
2378-TCDD	10.30	1.0	10.2968
2378-TCDF	11.02	0.1	1.1021
12378-PeCDF	22.54	0.05	1.1271
12378-PeCDD	26.53	0.5	13.2638
23478-PeCDF	50.44	0.5	25.2199
123478-HxCDF	26.23	0.1	2.6230
123678-HxCDF	24.10	0.1	2.4100
123478-HxCDD	27.35	0.1	2.7346
123678-HxCDD	22.96	0.1	2.2961
123789-HxCDD	15.60	0.1	1.5600
234678-HxCDF	24.16	0.1	2.4159
123789-HxCDF	28.78	0.1	2.8782
1234678-HpCDF	26.80	0.01	0.2680
1234678-HpCDD	25.68	0.01	0.2568
1234789-HpCDF	30.97	0.01	0.3097
OCDD	54.38	0.001	0.0544
OCDF	50.79	0.001	0.0508
		TOTAL	68.8672

NOTE: Do NOT include EMPC or EDL values in the TEF-adjusted concentration.

EPA SAMPLE NO.
A-6 24"-30" MSD

1DFB

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY

Lab Name:	PACE INC.	Case No.:	IL1445
Contract:	IL1445	SDG No.:	N/A
Lab Code:	IN-049	SAS No.:	N/A
Matrix:	SO	Lab Sample ID:	IL1445-3MSD
Sample wt/vol:	10.01	Lab File ID:	SAM0825111
Water Sample Prep:	Sep Funnel	Date Received:	17-AUG-95
Conc. Extract Vol.:	20 ul	Date Extracted:	18-AUG-95
Injection Volume:	2 ul	Date Analyzed:	25-AUG-95
GC Column ID:	DB-5	Dilution Factor:	N/A
% Solids:	N/A	Concentration Units:	pg/g

ANALYTE	CONCENTRATION	TOXICITY EQUIVALENCE FACTOR	TEF-ADJUSTED CONCENTRATION
2378-TCDD	10.87	1.0	10.8669
2378-TCDF	12.07	0.1	1.2066
12378-PeCDF	28.15	0.05	1.4076
12378-PeCDD	28.53	0.5	14.2628
23478-PeCDF	41.34	0.5	20.6716
123478-HxCDF	29.35	0.1	2.9352
123678-HxCDF	25.81	0.1	2.5807
123478-HxCDD	25.73	0.1	2.5733
123678-HxCDD	28.47	0.1	2.8467
123789-HxCDD	15.97	0.1	1.5972
234678-HxCDF	27.37	0.1	2.7372
123789-HxCDF	30.86	0.1	3.0857
1234678-HpCDF	29.44	0.01	0.2944
1234678-HpCDD	27.95	0.01	0.2795
1234789-HpCDF	34.77	0.01	0.3477
OCDD	56.42	0.001	0.0564
OCDF	59.60	0.001	0.0596
		TOTAL	67.8091

NOTE: Do NOT include EMPC or EDL values in the TEF-adjusted concentration.