Lockheed Martin
Naval Electronics & Surveillance Systems-Syracuse
Post Office Box 4840 Syracuse, NY 13221-4840

LOCKHEED MARTIN

Transmitted By Certified Mail
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June 14, 2002

David Smith, Bureau Chief
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7010

Re: Shallow Side Bank Surface Soil Sampling and Analysis Work Plan
West Branch of Bloody Brook, Onondaga County, New York

Dear Mr. Smith:

In accordance with Section II, Paragraph B, Item 1 of the Voluntary Cleanup Agreement for Remedial Investigation/Remedial Action (Index #D7-0001-01-09) for the above referenced site, please find enclosed four copies (one unbound) of the Shallow Side Bank Surface Soil Sampling and Analysis Work Plan ("Investigation Work Plan") dated June 2002.

A draft of the Investigation Work Plan was submitted to the New York State Department of Environmental Conservation (NYSDEC) on April 17, 2002. On June 12, 2002 the NYSDEC (Richard Mustico) approved minor revisions to the Investigation Work Plan. Based on that approval, Lockheed Martin will implement the Investigation Work Plan on June 14, 2002.

Please contact me at (315) 456-3199 if you have any questions.

Sincerely,

Patrick Salvador

Patrick D. Salvador, P.E.
Principal Engineer

Enclosure

cc (with enclosure): Carol Conyers, Esq., NYSDEC, Albany
Sandra Lee Fenske, Esq. - Lockheed Martin Corporation
Henrietta Hamel, NYSDOH, Syracuse
Brian A. Kent - Lockheed Martin Corporation
Michael Komoroske, NYSDEC, Central Office VCP Coordinator
Gary Litwin, NYSDOH, Troy (2 copies)
Richard Mustico, P.E., NYSDEC, Albany
Virginia C. Robbins, Esq. - Bond, Schoeneck and King, LLP
Curtis B. Taylor - Shaw Environmental & Infrastructure, Inc.

IT CORPORATION
13 British American Boulevard
Latham, NY 12110-1405
Tel. 518.783.1996
Fax. 518.783.8397

A Member of The IT Group

Shallow Side Bank Surface Soil Sampling and Analysis Work Plan
West Branch of Bloody Brook
Onondaga County, New York

Prepared by:

IT Corporation
13 British American Boulevard
Latham, New York 12110

Prepared for:

Lockheed Martin Corporation
Syracuse, New York

June 2002

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FIGURES

1.0 INTRODUCTION

This Shallow Side Bank Surface Soil Sampling and Analysis Work Plan (Work Plan) has been prepared to describe the proposed sampling of shallow surface soils along the side banks of the West Branch of Bloody Brook located in Onondaga County, New York. The proposed sampling consists of collecting samples at 32 locations along the side banks of the West Branch of Bloody Brook downstream of the New York State Thruway (Thruway) and upstream of the confluence of the West and Middle Branches of Bloody Brook.

1.1 Background

The shallow surface soil samples collected pursuant to this Work Plan will be analyzed to provide information regarding the concentrations of cadmium in shallow surface soils at the locations sampled. This information is desired by the New York State Department of Health (NYSDOH) so that it may evaluate whether any human health cadmium exposure concerns exist. The sampling strategy presented in this Work Plan is based on the shallow soil sampling component of the Draft Cadmium Soil Sampling plan presented by the New York State Department of Environmental Conservation (NYSDEC) at an April 8, 2002 meeting.

1.2 Previous Side Bank Soil Sampling

Side bank soil samples have previously been collected along the West Branch of Bloody Brook in three phases. The locations and results of these previous sampling efforts are presented on Figure 1 (Existing Cadmium Data from Bloody Brook Side Banks), and are discussed below.

Onondaga County collected 5 side bank soil samples (4, 5, 6, 7 and 10) from 0-6 inches in depth between the Thruway and Brookview Lane in October 1996.

The NYSDEC collected two samples (EPSOIL-2 and EPSOIL-3) from 0-12 inches in depth between the Thruway and the confluence of the West and Middle Branches in October 2001. Two other samples were collected by the NYSDEC at that time. One sample was collected upstream of Electronics Park on the West Branch of Bloody Brook (EPSOIL-1), and one was collected downstream of the railroad tracks below the confluence of the West and Middle Branches of Bloody Brook (EPSOIL-4).

In November 2001, subsequent to the NYSDEC sampling, Lockheed Martin Corporation (LMC) collected side bank soil samples at 12 locations (SB-01 through SB-12) from 0-12 inches in depth and 12-24 inches in depth (where the 12-24 inch sample was obtainable) between the Thruway and the confluence of the West and Middle Branches. The 12-24 inch samples were only analyzed at locations where the 0-12 inch sample was determined to contain greater than 10 ppm of cadmium. LMC collected side bank soil samples at 6 other locations downstream of the confluence of the West and Middle Branches at that time (SB-13 through SB-18).

1.3 Work Plan Organization

The Wok Plan presents the scope of the proposed sampling in Section 2 (Shallow Surface Soil Sampling). A description of the analytical methods to be used are discussed in Section 3 (Analytical Methods). Finally, Section 3 (Implementation Schedule) provides a description of the anticipated schedule for completing the sampling and sample analysis work.

2.0 SHALLOW SURFACE SOIL SAMPLING

This section provides a detailed description of the methods that will be used to collect the soil samples for analysis. Specifically, this section discusses sample locations, sample collection methods, quality control sample collection, equipment decontamination, and sample packaging.

2.1 Sample Locations

Shallow side bank soil samples will be collected at 32 locations, as identified on Figure 2 (Proposed Shallow Side Bank Soil Sample Locations) and discussed below. These are the same locations that were identified for shallow (i.e., 0-2 inches in depth) surface soil samples in the NYSDEC's Draft Cadmium Soil Sampling plan provided to LMC at an April 8, 2002 meeting.

Ten samples (locations SB-19 through SB-28) will be collected upstream of Brookview Lane. Three samples (locations SB-29 through SB-31) will be collected between Brookview Lane and Sunflower Drive. Six samples (SB-32 through SB-37) will be collected between Sunflower Drive and Floradale Road. Six samples (SB-38 through SB-43) will be collected between Floradale Road and the Un-Named Tributary. Four samples (SB-44 through SB-47) will be collected between the Un-Named Tributary and Harborside Manor Road. Three samples (SB-48 through SB-50) will be collected between Harborside Manor Road and the confluence of the West and Middle Branches of Bloody Brook.

2.2 Sample Collection Methods

At each sampling location, the sample will be taken from a depth interval of 0 to 2 inches. The samples will be collected and handled using new disposable Nitrile gloves and a pre-cleaned stainless steel scoop.

The sample locations are vegetated with mowed grasses. The sample will be collected using the stainless steel scoop to remove the top 2 inches of soil and sod and place the material into a new disposable aluminum pan. An appropriate volume of soil and sod will be collected to ensure that there will be adequate soil sample volume after removing as much vegetative material as is practical, and to accommodate any required quality control and/or spilt samples. After placing the top 2 inches in the pan, the stainless steel scoop will be used to separate the soil from the vegetative material into the aluminum pan resulting in a sample consisting primarily of soil material. The sample containers will then be filled using the stainless steel scoop.

Sampling documentation will consist of detailed notes made as to the exact site of sampling, physical observations, sample depths, and weather conditions. These notes will be recorded in a bound field notebook.

2.3 Quality Control Sample Collection

Quality control samples will be collected to provide necessary data for future validation of the laboratory data, if required. Field duplicate samples, equipment blanks, matrix spike and matrix spike duplicates will be collected at a frequency of 1 for each 20 soil samples.

Based on the quantity of planned soil samples, 2 field duplicate samples will be collected at locations to be determined in the field. Duplicates will be created by collecting double volume for the location then splitting the sample volume between sample containers for the sample location and the duplicate sample.

In addition, 2 equipment blanks will be collected during this sampling effort. These samples will be created by placing laboratory clean water in a new collection pan with a pre-cleaned scoop then transferring this water into a sample container for analysis.

The matrix spike and matrix spike duplicate samples will be created by providing triple sample volume to the laboratory for two sample locations to be determined in the field.

2.4 Equipment Decontamination

Field decontamination will be minimized to the extent practical by using disposable equipment and precleaned stainless steel scoops. However, as necessary, reusable sampling equipment will be decontaminated before use. The decontamination procedure will consist of a wash with Alconox® and potable water and a potable water rinse, followed by a 10% nitric acid rinse, and a final distilled water rinse. The decontaminated equipment will be allowed to air dry and will then be placed in a plastic bag or wrapped in aluminum foil to keep the equipment clean.

2.5 Sample Packaging

Sample containers will be pre-labelled. Sample containers will be packaged in protective coverings, and the sample custodians will handle the sample containers to minimize the potential for container breakage. Samples will be kept in a cooler with ice, and will be delivered to the laboratory under proper chain of custody on a daily basis as they are collected.

3.0 ANALYTICAL METHODS

All samples collected pursuant to this Work Plan will be analyzed by a NYSDOH ELAP certified laboratory. Soil samples will be analyzed for cadmium using SW-846 Method 6010B. The laboratory will provide a NYSDEC ASP Category B deliverable data package to allow for data validation in the future.

To support the future validation data needs, quality control samples (field duplicates, equipment blanks and matrix spike and matrix spike duplicate) will be collected in the field and will be analyzed by the laboratory.

4.0 IMPLEMENTATION SCHEDULE

This section discusses the anticipated schedule to complete the work described herein, contingent upon NYSDEC approval.

Upon receipt of NYSDEC approval of this Work Plan, LMC will perform the field sampling activities within 5 work days. LMC anticipates that the duration of the field sampling work will be one day.

Sample analysis will be completed and a preliminary data report will be provided within 5 work days of completing the sample collection. LMC anticipates that the Category B laboratory data package will be completed approximately 4 weeks after sample collection.

Based on the above, LMC anticipates that the shallow surface soil sample results will be provided to NYSDEC within 10 work days of NYSDEC providing approval of this Work Plan.

5.0 DATA EVALUATION

Once the preliminary data report is received, it will be provided to the NYSDEC and the NYSDOH for review. LMC anticipates that a meeting between LMC, NYSDEC and NYSDOH will be scheduled to discuss the data, the human health implications of the data, and the need for further work. A separate Work Plan will be prepared to describe further work for NYSDEC review.

FIGURES

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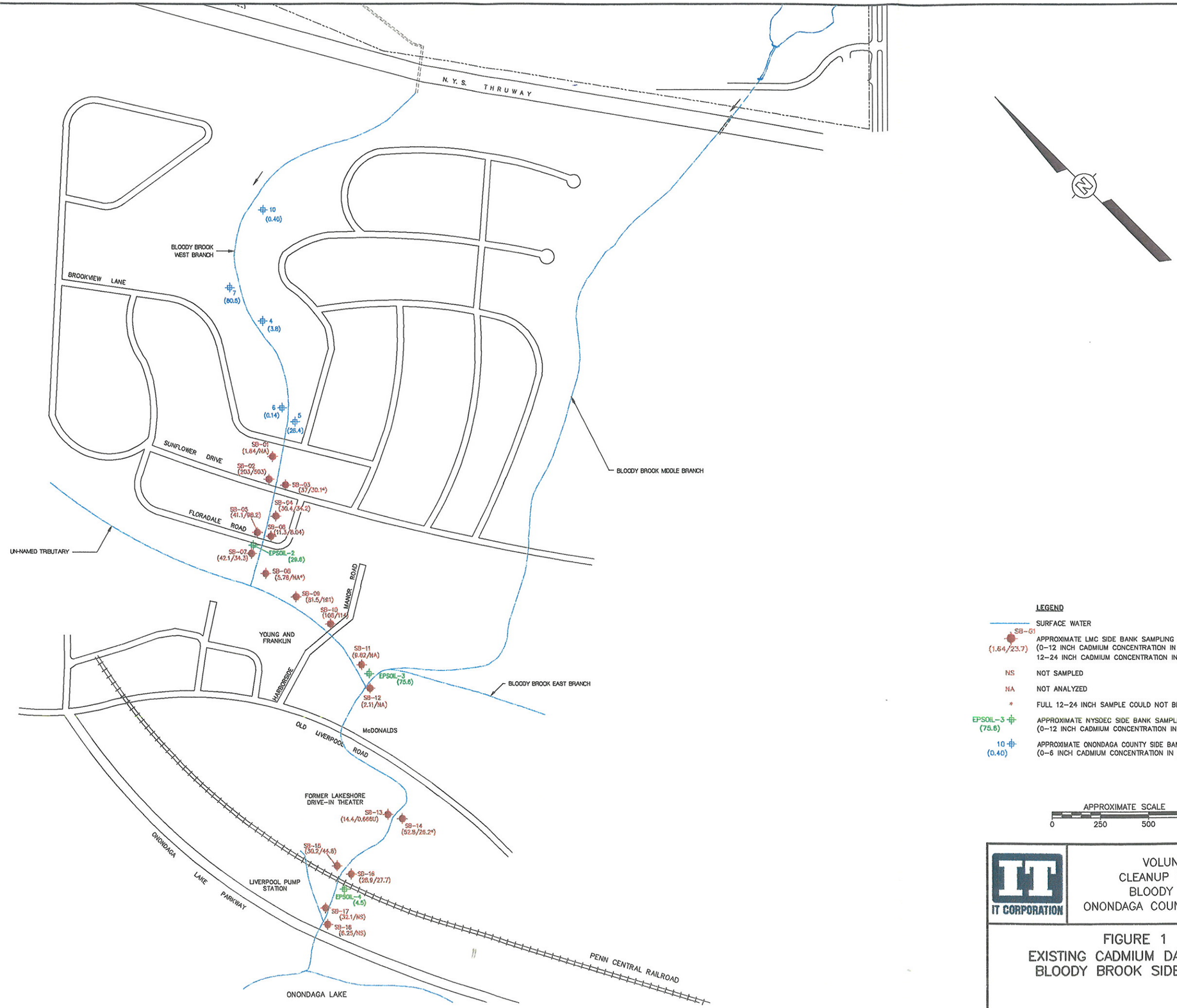

LEGEND

- SURFACE WATER
- SB-01 (1.64/23.7) — APPROXIMATE LMC SIDE BANK SAMPLING LOCATION (0–12 INCH CADMIUM CONCENTRATION IN ppm/ 12–24 INCH CADMIUM CONCENTRATION IN ppm)
- NS — NOT SAMPLED
- NA — NOT ANALYZED
- * — FULL 12–24 INCH SAMPLE COULD NOT BE COLLECTED
- EPSOIL-3 (75.6) — APPROXIMATE NYSDEC SIDE BANK SAMPLING LOCATION (0–12 INCH CADMIUM CONCENTRATION IN ppm)
- 10 (0.40) — APPROXIMATE ONONDAGA COUNTY SIDE BANK SAMPLING LOCATION (0–6 INCH CADMIUM CONCENTRATION IN ppm)

APPROXIMATE SCALE
0 250 500 750 FEET

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ONONDAGA COUNTY, NEW YORK

FIGURE 1
EXISTING CADMIUM DATA FROM BLOODY BROOK SIDE BANKS

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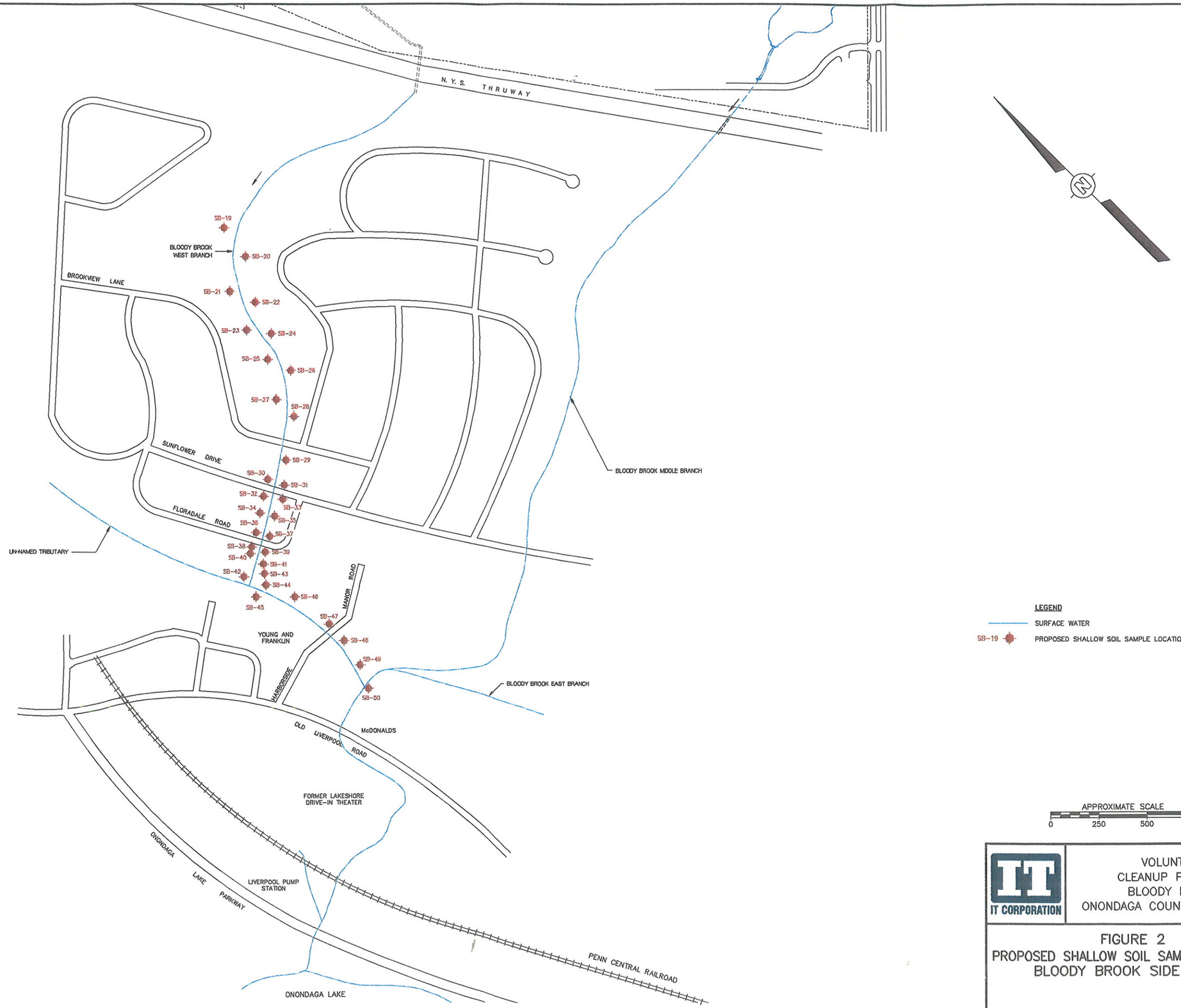

LEGEND

SURFACE WATER

SB-19 PROPOSED SHALLOW SOIL SAMPLE LOCATIONS

APPROXIMATE SCALE

0 250 500 750 FEET

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VOLUNTARY
CLEANUP PROGRAM
BLOODY BROOK
ONONDAGA COUNTY, NEW YORK

FIGURE 2
PROPOSED SHALLOW SOIL SAMPLE LOCATIONS
BLOODY BROOK SIDE BANKS

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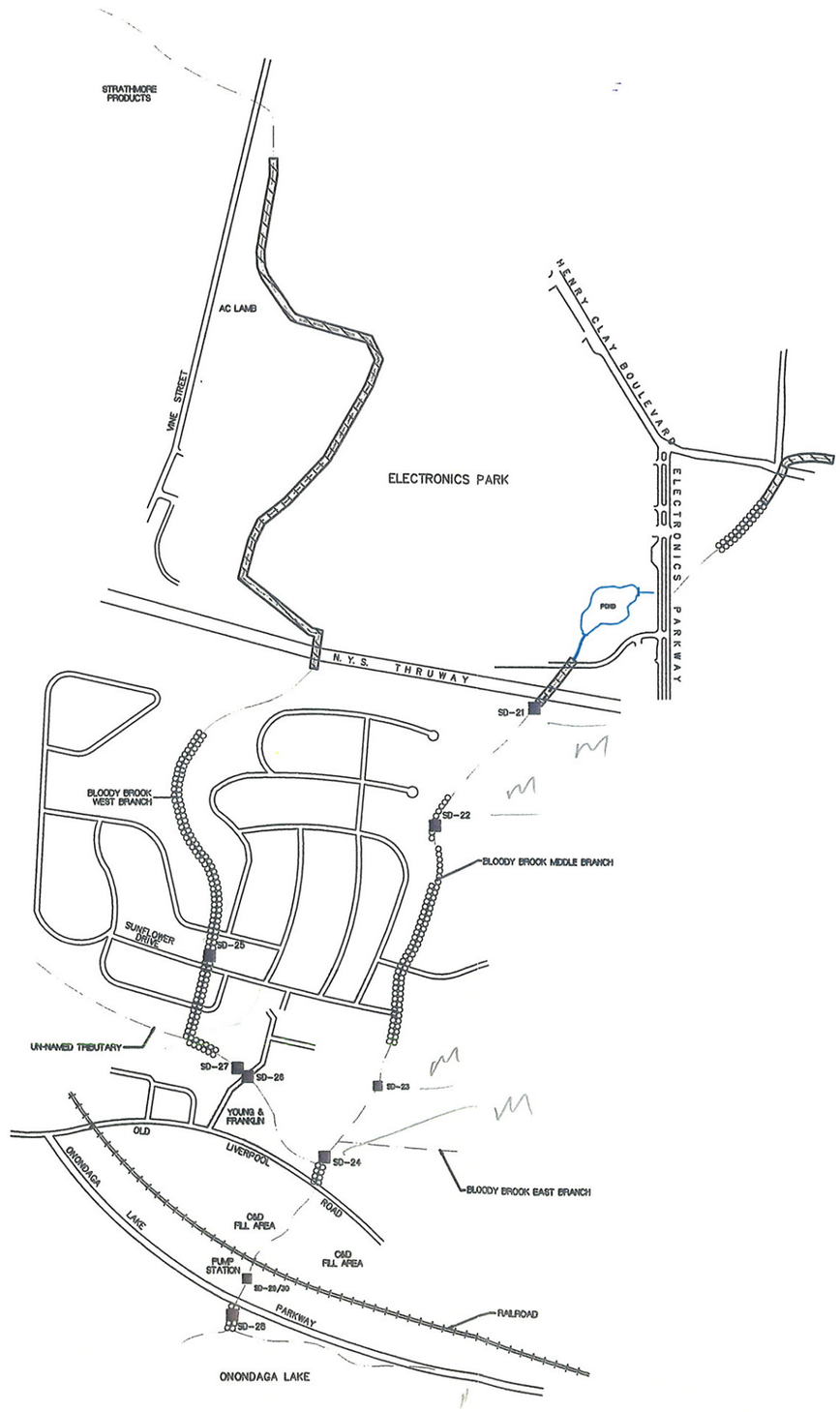

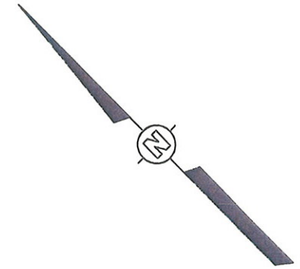

LEGEND

- SURFACE WATER
- RIP-RAP, GABION OR PAVED
- CULVERTED
- APPROXIMATE EXTENT OF 1999 SEDIMENT REMOVAL AREA
- MAY/JULY 1999 SEDIMENT SAMPLING LOCATION

SCALE

0 1000 2000 FEET

Shaw Environmental, Inc.

WEST BRANCH OF BLOODY BROOK
BLOODY BROOK VOLUNTARY
CLEANUP PROGRAM
ONONDAGA COUNTY, NEW YORK

FIGURE 3
MAY/JULY 1999 SEDIMENT SAMPLING MAP

OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	S. SHKOLNIK 09-21-07			824446B6

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