Department of Environmental Conservation

Division of Environmental Remediation

Environmental Restoration
Record of Decision
Former Diamond International Paper Mill Site
City of Ogdensburg, St. Lawrence County, New York
Site Number E645027

March 2010

New York State Department of Environmental Conservation
David Patterson, *Governor* Alexander B. Grannis, *Commissioner*

DECLARATION STATEMENT
ENVIRONMENTAL RESTORATION RECORD OF DECISION

Former Diamond International Paper Mill
Environmental Restoration Site
City of Ogdensburg, St. Lawrence County, New York
Site No. E645027
March 2010

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the Former Diamond International Paper Mill Site, an environmental restoration site. The selected remedial program was chosen in accordance with the New York State Environmental Conservation Law and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Former Diamond International Paper Mill Site environmental restoration site, and the public's input to the Proposed Remedial Action Plan (PRAP) presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened release of hazardous substances and petroleum products from this site have been addressed by implementing the interim remedial measure identified in this ROD. The removal and/or treatment of contaminated soil and waste from the site has significantly reduced the threat to public health and the environment.

Description of Selected Remedy

Based on the results of the Site Investigation/Remedial Alternatives Report (SI/RAR) for the Former Diamond International Paper Mill Site and the criteria identified for evaluation of alternatives, the Department has selected no further action with institutional controls. The components of the remedy are as follows:

1. A site cover will be installed to allow for restricted residential use of the site as a component of the site development. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the restricted residential soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of two feet of soil, meeting the restricted residential SCOs for cover material as set forth in 6 NYCRR Part 375-

6.8(d). The soil cover will be placed over a demarcation layer. The upper six inches of the soil will be of sufficient quality to maintain a vegetation layer.

2. Imposition of an institutional control in the form of an environmental easement that would: (a) limit the use and development of the property to restricted residential uses only after the remedy set forth in this ROD is in place; (b) restrict use of groundwater as a source of potable or process water without necessary water quality treatment as determined by the New York State Department of Health; (c) require the property owner to complete and submit to the NYSDEC a periodic certification; and (d) create a no excavation zone over and around the solidified paper sludge area.

3. Development of a site management plan, which would include the following: (a) identification and mapping of materials and areas which must be managed in accordance with the site management plan; (b) an excavation plan to establish how soils would be tested and properly handled to protect the health and safety of workers and the nearby community if they are encountered during future excavations; and (c) a restoration plan to identify how the site would be restored at the conclusion of any redevelopment.

4. The property owner would provide a periodic certification of institutional and engineering controls for the site, prepared and submitted by a professional engineer or such other expert, acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put in place are still in place, and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that would impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy selected for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective.

MAR 1 6 2010

Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

TABLE OF CONTENTS

Environmental Restoration
RECORD OF DECISION
Former Diamond International Paper Mill Site
City of Ogdensburg, St. Lawrence County, New York
Site No. E645027
March 2010

SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected this remedy for the Former Diamond International Paper Mill Site (Diamond Site).

The 1996 Clean Water/Clean Air Bond Act provides funding to municipalities for the investigation and cleanup of brownfields. Under the Environmental Restoration Program, the state provides grants to municipalities to reimburse up to 90 percent of eligible costs for site investigation and remediation activities. Once remediated, the property can then be reused.

As more fully described in Sections 3 and 5 of this document, past industrial operations have resulted in the disposal of hazardous substances, including metals, dioxin/furans, poly-chlorinated bi-phenols (PCBs), semi-volatile organics (SVOCs) and volatile organic compounds (VOCs). These hazardous substances contaminated the soils, sediment and groundwater at the site, and prior to the Interim Remedial Measure (IRM), resulted in:

- a threat to human health associated with exposure to soils, sediment and groundwater containing metals, PCBs, dioxin/furans, SVOCs and VOCs associated with the past industrial operations; and

- an environmental threat associated with the impacts to the soils, sediment and groundwater.

During the course of the investigation, certain actions, known as interim remedial measures (IRMs), were undertaken at the Diamond Site in response to the threats identified above. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the site investigation/remedial alternatives report (SI/RAR). The IRMs undertaken at this site included: the removal of underground storage tanks (USTs); the excavation and off-site disposal of petroleum and metal contaminated soils; removal of asbestos containing materials (ACM); solidification of paper sludges in-situ; and the demolition of various structures.

Based on the implementation of the above IRMs, the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment; therefore No Further Action was selected as the remedy for this site. Institutional control (IC) in the form of an environmental easement (EE) will be implemented to address residual soil contamination, use of groundwater and the future development onsite.

The selected remedy, discussed in detail in Section 6, is intended to attain the remediation goals identified for this site in Section 6. The remedy must conform with officially promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, criteria and guidance are hereafter called SCGs.

SECTION 2: SITE LOCATION AND DESCRIPTION

The project site consists of the Diamond Site facility located in the City of Ogdensburg, St. Lawrence County, New York. The 17 acre property is situated on the southeastern bank of the St. Lawrence River. The Site is bordered to the southwest by the City of Ogdensburg water supply facility, to the southeast by Pearl Street and an adjacent warehouse, to the northeast by the former Standard Shade Roller Company industrial complex, and to the northwest by the St. Lawrence River. The Site which is owned by the City of Ogdensburg is currently vacant and devoid of any structures, although numerous buried foundation slabs remain. The site is currently zoned industrial and is in an Empire Development Zone. (See Figure 1).

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The site was historically utilized for various operations which included a ship yard, log yard and paper mill. The predominant use of the site from 1925 to 1987 was a paper mill. The past paper mill operations have most likely contributed to the conditions and contamination which was encountered during the site investigation. The owners/operators of the site included a number of paper and pulp companies from 1925 to 1987. The site ultimately was acquired by the City of Ogdensburg in 1992. The Site underwent several expansions and upgrades throughout this time period. The pulp and paper production operations ceased in 1987. From 1987 to the early 1990's, the site activities consisted of salvage operations to remove recyclable materials from the buildings. The salvage efforts ceased when asbestos was discovered in the early 1990's.

The primary environmental concerns associated with the Site include: hazardous and non-hazardous industrial sludges and residuals in the former wastewater lagoon; abandoned wastewater treatment clarifiers; SVOC, dioxin, and heavy metal contaminated soil at various locations across the Site; residual contaminants and structures associated with USTs and paper mill processing tanks; and buried building demolition debris.

3.2: Remedial History

In October of 1995, the NYSDEC conducted an initial site inspection of the Diamond Site that resulted in the identification of abandoned drums, sulfuric acid pits, potential asbestos- containing-material (ACM), an underground kerosene tank, and sludge material in both the former wastewater treatment plant clarifiers and discharge lagoon. Based on the results of this initial site inspection, the NYSDEC requested the United States Environmental Protection Agency (USEPA) conduct an investigation of the abandoned paper mill facility.

In November of 1995, representatives of the USEPA conducted a preliminary site investigation that confirmed the existence of approximately 130 drums and other containers. In July 1996, USEPA collected various media samples from the mill area in order to evaluate the nature and extent of contamination in this portion of the site. The collected samples were analyzed for VOCs, SVOCs, Target Analyte List (TAL) inorganics, Toxicity Characteristic Leaching Procedure (TCLP) metals, hazardous waste characteristics (ignitability, corrosivity, and reactivity), and pyridine. In addition, select samples were also analyzed for the presence of polychlorinated dibenzo-p-dioxin (PCDD)/polychlorinated dibenzofuran (PCDF) isomers.

In addition, USEPA collected surface soil samples and sediment samples from the Site and nearby properties during July 1996. Selected samples were submitted for laboratory analysis of some or all of the constituents listed above.

In October 29, 1996 the USEPA collected a total of six sediment samples from the St. Lawrence River for the analysis of dioxin isomers.

During June 1996, USEPA also observed test pit excavations conducted by the NYSDOT in association with the design of a storm sewer line near the southern property border of the Site. The materials encountered during the excavation activities consisted of non-native fill and laboratory analysis of grab soil samples along the proposed storm sewer alignment revealed detectable concentrations of VOCs, SVOCs, total petroleum hydrocarbons (TPH), and metals.

Between 1996 and 1997 the USEPA removal program completed the following actions:

1. All of the 55-gallon drums identified on site were over-packed, bulked, staged, loaded, and transported for off-site disposal. After bulking, there were a total of 55 drums remaining that were removed and disposed of off-site.

2. Removal of asbestos containing materials (ACM):
a) 32 cubic yards of ACM were removed from the Sulfite Mill building;
b) Approximately 75 cubic yards of ACM were removed from the pipes, dryer units, and tanks located in the first floor of the Main Mill building;
c) Approximately 80 tons of ACM were removed from 11 pulp drying units in the Main Mill building; and
d) Approximately 150 tons of ACM were removed from the dryer units and associated duct work in the Main Mill building.

3. Removal of approximately 604 gallons of lead-contaminated water from the underground storage chest located outside the Sulfite Mill building at the southwest corner.

SECTION 4: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past owners and operators, waste generators, and haulers.

Since no viable PRPs have been identified, there are currently no ongoing enforcement actions. However, legal action may be initiated at a future date by the state to recover state response costs should PRPs be identified. The City of Ogdensburg will assist the state in its efforts by providing all information to the state which identifies PRPs. The City will also not enter into any agreement regarding response costs without the approval of the Department.

Prior owners/operators of the site included; the Algonquin Paper Corporation (1925-1943), Berst-Forester-Dixfield Co. (1944-1951), Diamond Match Corporation (1951-1965), Diamond International Corporation (1965-1979), St. Law County IDA (1979-1980), Oswegatchie Associates (1980-1981), Sunoco Products Company (1981-1984), Bank of New York (1984), Ponderosa Paper Company (1984-1987), Ranger & Ripic Enterprises (1987-1991) and J.P. Handicap Services (1991).

SECTION 5: SITE CONTAMINATION

The City of Ogdensburg has recently completed a site investigation/remedial alternatives report (SI/RAR) to determine the nature and extent of any contamination by hazardous substances at this environmental restoration site.

5.1: Summary of the Site Investigation

The purpose of the SI was to define the nature and extent of any contamination resulting from previous activities at the site. The SI was conducted between September of 2005 and September of 2008. The field activities and findings of the investigation are described in the SI report.

During the course of the investigation the following data collection methods were utilized to evaluate the site:

- A complete review of all historic files, photos and data was conducted to help identify areas on site which may have been associated with past operating/disposal practices, and potential environmental problems.

- River sediment samples were collected from the bottom of the St. Lawrence River, 0-2" below the river bottom (See Figure 2).

- Surface soil samples were collected from the site from 0-2" below grade. Overlying vegetation, where present, was removed from the ground surface prior to sample collection (See Figure 2).

- Subsurface soil investigation was conducted using soil borings to evaluate the chemical and physical properties of the soil at the site (See Figure 2).

- Groundwater monitoring well installation and sampling was conducted concurrently with the subsurface soil sampling effort (See Figure 3).

- Waste characterization sampling to determine the proper means of handling and disposal of the on-site wastes. This included collecting samples of waste water and sludge in the wastewater lagoon, the two clarifiers, and the underground storage tanks.

5.1.1: Standards, Criteria, and Guidance (SCGs)

To determine whether the soil, groundwater and surface water contains contamination at levels of concern, data from the investigation were compared to the following SCGs:

- Groundwater, drinking water, and surface water SCGs are based on the Department's "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.

- Soil SCGs are based on the Department's Cleanup Objectives found in 6 NYCRR Subpart 375-6.8(b) Soil Cleanup Objectives (SCOs).

- Sediment impacts are based on the Department's "Technical Guidance for Screening Contaminated Sediments".

Based on the SI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site required remediation. These are summarized in Section 5.1.2. More complete information can be found in the SI report.

5.1.2: Nature and Extent of Contamination

This section describes the findings of the investigation for all environmental media that were investigated. As described in the SI report, many soil, groundwater, sediment and waste samples were collected to characterize the nature and extent of contamination. The main categories of contaminants that exceeded their SCGs are semi volatile organic compounds (SVOCs), dioxin and inorganics (metals).

Comparisons to SCGs are provided for each medium, where appropriate. Chemical concentrations are reported in parts per billion (ppb) for water, parts per million (ppm) for waste, soil, and sediment. The following are the media which were investigated and a summary of the findings of the investigation.

Waste Materials

Waste water and paper sludges that remained in the above ground clarifiers, the pulp chests and the on-site lagoon contained low level dioxin, metals and SVOCs. These wastes were consolidated and solidified in place in the on-site lagoon as an IRM. All asbestos containing materials (ACM) were identified and removed as part of the IRM. In addition, two 10,000 and one 500 gallon underground storage tanks were cleaned and removed. The elements of the IRM are further described in Section 5.2.

Surface Soil {0-2 inches}

Fifteen surface soil samples were collected during the site investigation and analyzed for SVOCs, metals, and dioxin/furans (See Figure 2 for locations). The analytical data was compared to 375-6.8 (b) restricted residential SCOs and the EPA guidance value of 1 ppb for dioxin. No significant visual surficial impacts were noted and subsequent surface samples were biased toward areas of known industrial operation, roadways and storage areas across the site. In addition, the 1996 surface soil sampling data obtained from the USEPA were reviewed to identify any areas of concern and/or areas which needed to be characterized.

The post IRM SVOC surface soil sample results for locations exceeded the Part 375-6.8(b) restricted residential Use SCOs. Benzo(a)anthracene was found from Non-Detect (ND) - 5.0 ppm (SCG - 1 ppm), benzo(b)fluoranthene was found from ND - 6.2 ppm (SCG - 1 ppm), benzo(a)pyrene was found from ND - 4.7 (SCG - 1 ppm), indeno(1,2,3-cd)pyrene was found from ND - 4.7 ppm (SCG - 0.5 ppm), and dibenzo(a,h)anthracene was found from ND - 0.76 J ppm (SCG - 0.33 ppm).

In 1996 the USEPA collected surface soil samples from several background locations at the site, as well from several adjacent residential properties and the samples were analyzed for SVOCs and metals. According to the USEPA, varying concentrations of SVOCs were detected in surface soil samples collected from all five of the nearby residential properties. In particular, one surface soil sample that was collected from a residential property located along Pearl Street had elevated concentrations of the following SVOCs: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenzo(a,h)anthracene. The USEPA concluded that "SVOCs have not been identified as contaminants associated with site operations or with pulp and/or paper manufacturing processes in general". The USEPA

concluded that the presence of the SVOCs on and off the Site may be the result of prior coal storage, urban fill and the former railroad line.

When compared to Part 375-6.8(b) restricted residential use SCOs, the results from one surface soil sample exceeded the SCOs for lead and mercury. Lead was detected at a concentration of 400 mg/kg as compared to the SCO of 400 mg/kg and mercury was detected at a concentration of 4.2 mg/kg, as compared to the SCO of 0.81 mg/kg for mercury. These areas found on-site that had metals above SCOs were removed, or have been covered with two feet of clean fill.

Dioxin/furans did not exceed the USEPA Guidance Value for Soils of 1 ppb. Most surface soil contamination was addressed by the IRM which is described in detail in Section 5.2. Remaining surface soil contamination identified during the SI and IRM is representative of background or attributed to historic fill.

Subsurface Soil

Seventy-eight (78) subsurface soil samples were collected during the soil boring program and were analyzed for VOCs, SVOCs, TAL metals, and dioxins/furans (See Figure 2). The analytical data was compared to 375-6.8(b) Restricted Residential Use SCOs and the EPA guidance value of 1 ppb for dioxin.

Although VOCs were detected in many of the soil samples collected during the boring program, there were no contaminant concentrations that exceeded the SCOs for restricted residential use.

SVOCs were detected in many of the soil samples collected during the boring program, however, only one boring exhibited contaminant concentrations that exceeded the SCOs. The parameters exceeded at this location were: benzo(a)anthracene at 5.5 ppm (SCO - 1 ppm), benzo(b)fluoranthene at 4.8 ppm (SCO - 1 ppm), benzo(a)pyrene at 4.5 ppm (SCO - 1 ppm), indeno(1,2,3-cd)pyrene at 1.5 ppm (SCO - 0.5 ppm) and dibenzo(a,h)anthracene at 5.5 ppm (SCO - 0.33 ppm). These soils were removed during the IRM and confirmation sampling showed compliance with the SCOs.

Based on review of the former paper plant's past operations, only low levels of VOCs, SVOCs and metals were found in the waste stream coming from the plant. The only other source of contamination found on site was related to the storage and use of petroleum products. Metal contamination found at depth, is much higher, and is not consistent with the plant's operational discharges. A review of the site use has shown that much of the current water front was filled in over the years. Metal contamination found in subsurface soils and groundwater appears to be attributable to historic fill, and not past operations.

Several metals were detected in onsite subsurface soil samples. Arsenic was detected from 5.1 ppm to 39.8 ppm (SCO-16 ppm), barium was detected from ND ppm to 898 ppm (SCO - 400 ppm), cadmium was detected from ND - 8.2 (SCO - 4.3 ppm), copper was detected from ND - 15,800 (SCO - 270 ppm), lead was detected from 114 ppm to ~~4280 J~~ 914 ppm (SCO - 400 ppm) and mercury was detected from ND to 8.1 ppm (SCO - 0.81 ppm).

Dioxin/furans found in on site or off site soils did not exceed the USEPA Guidance Value of 1 ppb. Subsurface soils were also evaluated off-site, on the Newell Company Site (See Figure 2). Soil samples collected during the off-site subsurface soil boring program, were analyzed for VOCs, SVOCs, metals, and dioxin/furans.

SVOCs were also detected in many of the soil samples collected during the off-site boring program,

however, only one boring exhibited several contaminant concentrations that exceeded the SCOs for Restricted-Residential use; which included the following: benzo(a)anthracene was detected at 8.6 ppm (SCO - 1.0 ppm), chrysene was detected at 8.2 ppm (SCO - 3.9 ppm), benzo(b)fluoranthene was detected at 11.0 ppm (SCO - 1.0 ppm), benzo(a)pyrene was detected at 5.9 ppm (SCO -1.0 ppm), indeno(1,2,3-cd)pyrene was detected at 1.8 ppm (SCO - 0.5 ppm) and dibenzo(a,h)anthracene was detected at 0.440 ppm (SCO - 0.330).

Several metals were detected in all the soil samples collected during the off-site boring program. Cadmium was detected between 0.61 ppm and 5.9 ppm (SCO - 4.3 ppm), copper was detected between 96.9 ppm and 479 ppm (SCO - 270 ppm) and lead was detected from 500 ppm to 4,280 J ppm (SCO - 400 ppm).

After a complete evaluation of the off-site data was conducted, it was determined that the Newell Company Site had a history of metal plating and petroleum use and storage on-site. It is further concluded that the impacts off-site originate from the Newell Company Site and not from the Diamond Site.

Subsurface soil contamination identified during the SI on-site was addressed during the IRM. The IRM is described in detail in Section 5.2.

Based on the results obtained during the SI, and a historic review of the file documentation, as well as historic information relative to operations at the Newell Company Site, off site contamination appears to be related to the Newell Company Site and/or historic fill. This is supported by the fact that only SVOCs detected on-site were directly related to the underground storage tanks. Also, no other SVOC contamination was identified on-site above SCOs. No SVOC contamination was found on-site near the Newell Company Site. Off-site metal contamination is similar to the on-site metal contamination found at depth. Based on discussion made in at the beginning of this section, it appears that historic fill, not past plant operations contributed to area wide metal contamination.

Groundwater

Groundwater sampling was performed in 2005, 2006 and 2007 (See Figure 3) and a total of 19 on-site groundwater monitoring wells were sampled over the three phases of the site investigation. Benzene was detected only once in a single well at 2 ppb (SCG - 0.7 ppb). Bis (2-Ethylhexyl) phthalate was also detected only in one well at 10 ppb (SCG - 5 ppb). Bis (2-Ethylhexyl) phthalate was also detected in the laboratory blank, so its presence is, most likely due to laboratory contamination, and is not considered to be characteristic of groundwater quality at the Site.

Initial groundwater sampling was analyzed for unfiltered total metals analysis. Due to high turbidity levels and subsequent analytical results, the 2nd and 3rd rounds of groundwater samples were submitted for both filtered and unfiltered analysis. The filtered samples provide a more accurate representation of the dissolved contaminant levels found in the site groundwater. The dissolved (filtered) concentrations of the following metal parameters were detected above the NYSDEC groundwater standard: antimony, arsenic, iron, magnesium, manganese, sodium, and thallium. Each on-site monitoring well exhibited exceedances for some combination of these metals. The metals that have been found to be of concern in site soils, which are believed to be related to historic fill, include: arsenic, barium, cadmium, copper, lead and mercury. Therefore, the metals of concern found in the historic fill, except for arsenic, are not becoming dissolved in the groundwater, and are remaining bound to the soil.

The noted above dissolved metals results, are fairly widespread across the Site, and do not appear to be concentrated in, or limited to, any particular area. As discussed at the beginning of this section, metal

contamination appears to be related to historic fill and not plant operations. All known source materials of contamination were identified during the SI, have been removed. The contamination remaining on site is related to historic fill and is found at depth. Groundwater flows from the south-east to the north-west and directly toward the St. Lawrence River (See Figure 4).

In order to evaluate if on-site conditions had impacted off-site groundwater, four groundwater wells were installed off-site on the adjacent Newell Company Site. VOCs exceeding groundwater standards occurred at two off-site monitoring well locations, vinyl chloride was found at 100 ppb (SCG 2 ppb), cis-1,2-dichloroethene was found at 180 ppb (SCG - 5 ppb), tolune was found at 14 ppb (SCG 5 ppb) and 4-isopropyltoluene was found at 140 ppb (SCG 5 ppb). These compounds are generally attributed to paint strippers and solvents. Since they were not detected on site, their presence is most likely related to operations at the Newell Company Site and not the Diamond Site. Also, groundwater flows from the south-east to the north-west and directly toward the St. Lawrence River (See Figure 4). Therefore, groundwater from the Diamond Site would not migrate to the Newell Company Site.

SVOC parameters with concentrations in exceedance of their respective groundwater standards were detected in one off-site monitoring well in the 2005-2006 sampling rounds. Benzo(a) anthracene was detected at 3 ppb (SCG .002 ppb), chrysene was detected at 3 ppb (SCG .002), benzo(b)fluoranthene was detected at 4 ppb (SCG .002 ppb), benzo(k)fluoranthene was detected at 2 ppb (SCG .002 ppb), benzo(a) pyrene was detected at 3 ppb (SCG .002) and indeno(1,2,3-cd)pyrene was found at 1 ppb (SCG .002 ppb). Bis (2-Ethylhexyl) phthalate was detected above groundwater standards in the duplicate sample from S-1 at 7 ppb (SCG 5 ppb).

In February 2007 two water quality samples were collected at each off-site well location. One sample was analyzed for total metals and the second sample was field-filtered and analyzed to represent dissolved metals. The dissolved metals concentrations detected above groundwater standards in the three off-site wells consist of antimony, iron, lead, magnesium, manganese, and sodium. A combination of these parameters exceeded the groundwater standards at each of the off-site monitoring well locations.

Off-site monitoring wells S-1 and S-2, at the Newell Company Site, exhibited dissolved concentrations of dioxins/furans in exceedance of the respective groundwater standard. The source of the dioxin contamination is believed to be from past releases on the Newell Company Site, and/or from overflows of the wastewater treatment system. In addition, as mentioned above, groundwater at the Diamond Site flows directly towards the St. Lawrence River, parallel to the Newell Company Site. Therefore, groundwater contamination from Diamond Site is not likely to move toward the Newell Company Site.

Although groundwater contamination remains on-site and off-site, the impacts to groundwater from source materials have been removed. In addition, the City of Ogdensburg requires all development to utilize City supplied sewer and water systems. The use of groundwater would be restricted at both the Diamond Site, and/or for the adjacent Newell Company Site, by the City of Ogdensburg.

Surface Water

Surface water samples were not collected since flow rates in the St. Lawrence River are extremely high, and it was believed that, the samples would not represent the site related impacts. Surface water was not present on site, except for the waste water in the on-site lagoon and clarifiers. Therefore, no site remedial alternatives need to be evaluated for surface water.

Sediments

Five river sediment samples were collected from 0-2" below the St. Lawrence River at the locations shown on (Figure 2). The samples were analyzed for SVOCs, metals, and dioxin/furans.

Elevated SVOCs were not detected except in the field duplicate river sediment sample collected at the SED-5 sediment sample location. SED-5 was collected north or downstream of the Newell Company Site. The sample is down gradient of the Newell Company Site. Benzo (a) anthracene was detected at 8.9 ppm (SCG - 0.261 ppm), chrysene was detected at 8.1 ppm (SCG - 0.384 ppm), benzo(b)fluoranthene was detected at 6.4 ppm (SCG - 4.022 ppm), benzo(k)fluoranthene was detected at 5.8 ppm (SCG - 4.022 ppm) and benzo(a)pyrene was detected at 7.2 ppm (SCG - 0.043 ppm). The total PAH concentrations exceed the effective range low (ERL) sediment cleanup criteria of 4, as established in the Technical Guidance for Screening Sediment Criteria. However, the total PAH concentration was below the effective range moderate (ERM) sediment cleanup criteria of 44.792 ppm, as established in the Technical Guidance for Screening Sediment Criteria.

Mercury was detected at a concentration slightly exceeding the value established in the Technical Guidance for Screening Sediment Criteria at river sediment sample location SED-5.

Sediment samples (SED 3 and SED-4) taken immediately up stream of SED-5, do not show any exceedances of PAHs or metals, however, the surface soil samples taken up land of SED- 5, on the Newell Company Site, exhibit similar PAH contaminates, as were found in SED-5. Also, the Diamond Site surface and subsurface soil samples did not show any exceedances of PAH compounds. Therefore, the contamination detected at the SED-5 location is most likely attributable to the Newell Company Site.

Soil Vapor/Sub-Slab Vapor/Air

Benzene was detected in one onsite groundwater at 2 ppb. No VOCs were detected in on-site soils, and no structures exist on-site. Therefore, soil vapor / sub-slab vapor / air, is not considered to be of concern.

5.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when, a source of contamination or exposure pathway can be effectively addressed before completion of the SI/RAR. Based on the results of the site investigation data, IRMs were developed to address the following major areas of concern:

1. Petroleum product, as well as, petroleum contaminated soils and groundwater associated with underground storage tanks. These tanks contained No. 6 Fuel Oil used in the paper plant's boilers;

2. Sludge and pulp waste associated with the former paper making and waste water treatment systems. Sludge and pulp were found in the plant's basements, vaults and pits. Sludges were found in the waste water treatment system, which included a primary clarifier, secondary clarifier and over flow lagoon;

3. Asbestos containing materials found in subsurface vaults, piping, and structures;

4. Surface and subsurface soils that were contaminated with metals. The soil contamination was

Between October 24, 2007 and September 10, 2008 the following IRM activities took place (See Figure 5, 6 & 7):

1. 1 - 500 gallon underground fuel oil storage tank was excavated and removed from the site;

2. 1 - 330,000 gallon Clarifier was de-watered, cleaned and demolished;

3. 1 - 660,000 gallon Clarifier was de-watered, cleaned and demolished;

4. 2 - 10,000 gallon No. 6 Fuel Oil tanks were removed, cleaned, and recycled;

5. 10 - 12 tons of solid waste was sent off site for disposal;

6. 68.66 lineal feet of lagoon and Clarifier piping were removed;

7. 51 drums of water, soil and sludge were combined with similar materials and treated on site;

8. 69 cubic feet of rip-rap were installed on site to stabilize the river bank;

9. 75 - 80 tons of metal was sent off-site for recycling;

10. 259 cubic yards of contaminated paper and waste water sludge were taken off-site for proper disposal;

11. 424 tons of contaminated soils were taken off site for proper disposal;

12. 1,384 tons of cement were used to solidify 3,226 cubic yards of lagoon and paper waste sludge;

13. 5,055 tons of soils contaminated with petroleum and/or metals were excavated and taken off-site for proper disposal;

14. 6,030 cubic yards of concrete was crushed, cleaned and used as backfill;

15. 12,388 gallons of sludge and water was taken off-site for proper disposal;

16. 13,853 gallons of petroleum contaminated fluids were collected and taken off-site for proper disposal;

17. 2,621,990 gallons of waste water were pumped, treated and discharged on-site through an on-site infiltration gallery;

Following the IRM confirmation sampling was conducted to verify the level of cleanup which had been achieved. The following summarizes the outcomes of this sampling program:

1. Pursuant to 6 NYCRR Part 375, soil sampling was conducted along the perimeter and bottom of the underground tank excavation. No exceedances of SCOs were found.

2. Following the solidification of all lagoon and paper waste sludge samples of the stabilized sludge were obtained for and submitted for Toxicity Characteristic Leaching Procedures (TCLP) to evaluate if there was any potential for leaching of contaminants from the solidified materials. The analytical data was compared to groundwater standards and showed no exceedances of SCGs, therefore, demonstrating that the solidified material is stable, and does not pose a threat for leaching of contaminants in the future.

3. Verification sampling that was conducted hot spots A through G, showed no exceedances for VOCs, SVOCs and/or Dioxins. However, metals contamination exceeding SCOs was found at various locations, approximately 3 to 8 ft below ground, as follows:
1.
   a) At hot spot B arsenic was found from 11.7 ppm to 32.2 ppm (SCO 16 ppm), barium was found from 94.6 ppm to 898 ppm (SCO 400 ppm), copper was found from 43.7 ppm to 357 ppm (SCO 270 ppm), lead was found from 190 ppm to 12,000 ppm (SCO 400 ppm), mercury was found from 0.091 ppm to 1.6 ppm (SCO 0.81 ppm). Groundwater sampling in the vicinity of hot spot B, from 2007 for filtered metals, did not show any exceedances for the above metals.
   2.
   b) At hot spot D, lead was the only metal found above SCOs at 576 ppm (SCO 400 ppm). This sample was taken at the bottom of the excavation, approximately eight feet below grade.
   3.
   c) At hot spot E, arsenic was found from 24.3 ppm to 38.8 ppm (SCO 16 ppm), cadmium was found from 0.05 ppm to 8.2 ppm (SCO 4.3 ppm), copper was found from 145 ppm to 15,800 ppm (SCO 270 ppm), Lead was found from 502 ppm to 1,190 ppm (SCO 400 ppm), mercury was found from 0.055 ppm to 1.7 ppm (SCO 0.81 ppm). Groundwater sampling in the vicinity of hot spot E, from 2007 for filtered metals, did not show any exceedances for the above metals.
   4.
   d) At hot spot G, mercury was the only metal found above SCOs. Mercury was found from 0.48 to 8.1 ppm (SCO-0.81 ppm). Mercury was not detected in the groundwater down gradient of hot spot G.

As discussed above in Section 5.1.2, the metal contamination is site wide and appears to be from historic fill. The absence of metals contamination in groundwater indicates the soil contamination does not pose a significant threat to the environment

5.3: Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.

The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location

where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway exist. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist, but could in the future.

Due to the successful completion of interim remedial measures, there are no current completed human exposure pathways. Potential future exposures may exist for site workers encountering residual contamination in subsurface soils. Similarly, on-site groundwater is contaminated with metals. However, its use is currently restricted by local regulations requiring use of the municipal public water supply. Thus, a completed human exposure pathway is not foreseen for on-site groundwater.

5.4: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential, future environmental impacts, presented by the site, prior to the IRM. Environmental impacts include: existing and potential future exposure pathways to fish and wildlife receptors, as well as, damage to natural resources, such as, aquifers and wetlands. The following environmental exposure pathways and ecological risks have been identified:

The SI identified predominantly SVOCs and metal contamination in surface soils, subsurface soils and groundwater at many locations across the site, and in St. Lawrence River sediments. Based on these results, an IRM was conducted, with the goal of removing all areas of known contamination on the site. Confirmation sampling was conducted, following the removal of contaminated soils from each area of concern. Based on the confirmation data, only metal contamination remains on-site, but at a depth of approximately three to eight feet below grade. The metal contamination is related to historic fill and not the past plant's operations.

Except for several SVOCs along the former rail road and entrance road, all surface soils that had contamination above the restricted residential cleanup limits have been removed. An institutional control, in the form of an environmental easement, and site management plan (SMP), will effectively eliminate and control exposure to the contamination that remains at depth (i.e., below 2 feet).

Groundwater at the site remains contaminated by metals above the Department's groundwater standards, however, exposure to contaminated groundwater would be eliminated through groundwater use restrictions placed on the site. In addition, impacted groundwater is not expected to migrate off site or worsen, since the majority of the source materials have been removed

SECTION 6: SUMMARY OF THE REMEDIATION GOALS, SELECTED REMEDY AND THE SELECTED USE OF THE SITE

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous substances disposed at the site through the proper application of scientific and engineering principles.

encountered during future excavations; and (c) a restoration plan to identify how the site would be restored at the conclusion of any redevelopment.

4. The site management plan would include a restoration program that will require that all exposed surface soils will meet restricted residential SCOs and establish that excavated soils be removed from the site for proper disposal and/or be covered with 2 feet of clean soil or equivalent material such as asphalt, concrete, and/or structures. Clean gravel backfill must be from a native source which is acceptable to the NYSDEC.

5. The City or property owner would provide a periodic certification of institutional and engineering controls for the site, prepared and submitted by a professional engineer or such other expert, acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put in place are still in place, and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that would impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

SECTION 7: HIGHLIGHTS OF COMMUNITY PARTICIPATION:

As part of the environmental restoration process, a number of Citizen Participation activities were undertaken to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- Repositories for documents pertaining to the site were established.
- A public contact list, which included nearby property owners, elected officials, local media and other interested parties, was established.
- A public meeting was held on December 8, 2009 to present and receive comment on the PRAP.
- A responsiveness summary (Appendix A) was prepared to address the comments received during the public comment period for the PRAP.

No significant public comments were received.

Prior to the completion of the IRM described in Section 5.2, the remediation goals for this site were to eliminate or reduce to the extent practicable:

- Exposures of persons at or around the site to soils, sediments and debris which contained SVOCs and metals contamination, and

- The release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards.

The Department believes that the IRM has accomplished these remediation goals as described in Section 5.2.

The main SCGs applicable to this project are as follows:

- Groundwater, drinking water, and surface water SCGs are based on the Department's "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code. 5.
- Soil SCGs are based on the Department's Cleanup Objectives found in 6 NYCRR Subpart 375-6.8(b) Restricted Residential Use Soil Cleanup Objectives.

Based on the results of the investigations at the site, the IRM that has been performed, and the evaluation presented here, the Department has selected No Further Action as the preferred alternative for the site. The Department believes that this alternative will be protective of human health and the environment and will satisfy all SCGs as described above. Overall protectiveness is achieved through meeting the remediation goals listed above.

Therefore, the Department proposes No Further Action with institutional controls as follows:

1. A site cover will be installed to allow for restricted residential use of the site as a component of the site development. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the restricted residential soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of two feet of soil, meeting the restricted residential SCOs for cover material as set forth in 6 NYCRR Part 375-6.8(d). The soil cover will be placed over a demarcation layer. The upper six inches of the soil will be of sufficient quality to maintain a vegetation layer.

2. Imposition of an institutional control in the form of an environmental easement that would: (a) limit the use and development of the property to restricted residential uses only after the remedy set forth in this ROD is in place; (b) restrict use of groundwater as a source of potable or process water without necessary water quality treatment as determined by the New York State Department of Health; (c) require the property owner to complete and submit to the NYSDEC a periodic certification; and (d) create a no excavation zone over and around the solidified paper sludge area.

3. Development of a site management plan, which would include the following: (a) identification and mapping of materials and areas which must be managed in accordance with the site management plan; (b) an excavation plan to establish how soils would be tested and properly handled to protect the health and safety of workers and the nearby community if they are

TABLE 1
Nature and Extent of Contamination

SURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semi volatile Organic Compounds (SVOCs)	Benzo(a)anthracene	ND - 5.0	1	3 out of 15
	Benzo(b) fluoranthene	ND - 6.2	1	3 out of 15
	Benzo(a)pyrene	ND - 4.7	1	3 out of 15
	Indeno(1,2,3-cd) pyrene	ND - 2.5	0.5	3 out of 15
	Dibenzo(a,h) anthracene	ND - 0.76 J	0.33	3 out of 15

SUBSURFACE SOIL (PRE-IRM)	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semi volatile Organic Compounds (SVOCs)	Benzo(a)anthracene	ND - 8.7	1	2 out of 117
	Chrysene	ND - 8.2	1	2 out of 117
	Benzo(b) fluoranthene	ND - 11 E	1.7	2 out of 117
Inorganic	Arsenic	ND - 195	16	3 out of 42
	Barium	ND - 477	400	1 out of 42
	Cadmium	ND - 5.9	4.3	1 out of 42
	Lead	ND - 4280 J	400	7 out of 42

SEDIMENTS	Contaminants of Concern	Concentration Range Detected(ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semi volatile Organic Compounds (SVOCs)	Benzo(a)anthracene	ND - 8.9	0.0261	1 out of 5
	Chrysene	ND - 8.1	0.384	1 out of 5
	Benzo(b) fluoranthene	ND - 6.4	4.022	1 out of 5
	Benzo(k)fluoranthene	ND - 5.8	4.022	1 out of 5
	Benzo(a)pyrene	ND - 7.2	0.430	1 out of 5
Inorganic Compounds	Mercury	ND - 2.1	LEL[c] -	0.15
			SEL[c] -	1.3

SUBSURFACE SOIL (POST-IRM)	Contaminants of Concern	Concentration Range Detected(ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Inorganic Compounds	Arsenic	ND – 39.8	16	8 out of 52
	Barium	ND - 898	400	4 out of 52
	Cadmium	ND - 8.2	4.3	1 out of 52
	Copper	ND - 15,800	270	3 out of 52
	Mercury	ND - 8.1	0.81	7 out of 52
	Lead	ND – 12,000 N	400	6 out of 48

GROUNDWATER (Un-Filtered On-Site)	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds	Bis(2-Ethylhexyl) phthalate	ND - 10 B	5	4 out of 28
Inorganic Compounds	Antimony	ND - 10.4 B	3	10 out of 28
	Arsenic	ND - 372	25	5 out of 28
	Chromium	12.6 - 138	50	6 out of 28
	Iron	9500 -127,000 J	300	28 out of 28
	Lead	19.2 - 3910	25	19 out of 28
	Magnesium	269,000-208,000	35,000	22 out of 28
	Manganese	524 E - 3560 J	300	24 out of 28
	Sodium	31,100 - 82,700	20,000	20 out of 28
	Thallium	ND - 11.7	0.5	9 out of 28
	Mercury	0.068 - 9	0.7	3 out of 13
Dioxins/furans Un-Filtered	Total	ND - 157.09 pg/l	0.7 pg/l	5 out of 10

GROUNDWATER (Filtered On-Site)	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Benzene	ND - 2	0.7	1 out of 15
Inorganic Compounds	Antimony	ND - 5.5 B	3	1 out of 15
	Arsenic	ND - 135	25	3 out of 15
	Iron	45.5 - 151,000	300	8 out of 15
	Magnesium	269,000 - 208,000	35,000	7 out of 15
	Manganese	5.3 B - 1794	300	8 out of 15
	Sodium	4,220 - 104,000	20,000	14 out of 15
	Thallium	ND - 3.8	0.5	3 out of 15
	Mercury	ND - 7.4	0.7	1 out of 15

GROUNDWATER Off-Site (Un-Filtered)	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Vinyl Chloride	ND - 100 ppb	2	1 out of 6
	cis-1,2-Dichloroethene	ND - 180 ppb	5	1 out of 6
	Toluene	ND - 14	5	1 out of 6
	4-isopropyl toluene	ND - 140	5	1 out of 6
Semi volatile Organic Compounds (SVOCs)	Benzo(a)anthracene	ND - 3	0.002	1 out of 6
	Chrysene	ND - 3	0.002	1 out of 6
	Benzo(b)fluoranthene	ND - 4	0.002	1 out of 6
	Benzo(k)fluoranthene	ND - 2	0.002	1 out of 6
	Benzo(a)pyrene	ND - 3	0.002	1 out of 6
	Bis(2-Ethylhexyl) phthalate	ND - 10 B	5	1 out of 6
	Indeno(1,2,3-cd)pyrene	ND - 1	0.002	1 out of 6
Inorganic Compounds	Antimony	ND - 6.2 E	3	2 out of 6
	Cadmium	ND - 11.2	5	2 out of 6

GROUNDWATER (Filtered On-Site)	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
	Iron	18,100 - 58,400	300	6 out of 6
	Lead	62.4 to 824	25	6 out of 6
	Magnesium	35,800 - 39,700	35,000	6 out of 6
	Manganese	371 - 520	300	3 out of 6
	Sodium	31,100 - 65,500	20,000	3 out of 6
Dioxins/furans Un-Filtered	Total	0.29936 - 14.35 pg/l	0.7 pg/l	2 out of 6
Inorganic Compounds (Dissolved)	Antimony	ND - 5.6 B	3	2 out of 6
	Iron	1,790 - 56,700	300	6 out of 6
	Lead	ND - 35.5	25	1 out of 6
	Magnesium	37,000 - 39,000	35,000	4 out of 6
	Manganese	199-434	300	2 out of 6
	Sodium	35,600 - 64,200	20,000	6 out of 6
Dioxins/furans Un-Filtered	Dissolved	0.0147 - 12.137 pg/l	0.7 pg/l	5 out of 6

[a] ppb = parts per billion, which is equivalent to micrograms per liter, ug/L, in water;
ppm = parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
ug/m^3 = micrograms per cubic meter

[b] SCG = standards, criteria, and guidance values;
6NYCRR Part 375 -6.8 (a) Restricted Residential Use Soil Cleanup Objectives
6NYCRR Part 703 Groundwater Quality Standards
N=Matrix spike was recoveries were outside of QC limits for elements
J= Estimated concentration

Responsiveness Summary
RESPONSIVENESS SUMMARY

Former Diamond International Paper Mill Site
City of Ogdensburg, St. Lawrence **County, New York**
Site No. E645027
March 2010

The Proposed Remedial Action Plan (PRAP) for the Former Diamond International Paper Mill Site was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on November 10, 2009. The PRAP outlined the remedial measure proposed for the contaminated soils and groundwater at the Former Diamond International Paper Mill Site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on December 8, 2009, which included a presentation of the Site Investigation (SI) and the Remedial Alternatives Report (RAR) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on December 29, 2009.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

COMMENT 1: What is the timing of the Record of Decision?

RESPONSE 1: The Record of Decision will be issued after the public comment period ends. The public comment period ends on December 29, 2009.

COMMENT 2: Can the site be used for fishing?

RESPONSE 2: There are no NYSDOH Fish Advisories for the St. Lawrence River in this area and fishing is permitted from the water. Fishing access on shore has been restricted due to the uneven ground and some holes between the soil and sheet pile along the river.. Once developed, in accordance with this ROD, fishing from the shoreline could be allowed by the property owner if so desired.

APPENDIX A

APPENDIX B

Administrative Record

Administrative Record

Former Diamond International Paper Mill Site
City of Ogdensburg, St. Lawrence **County, New York**
Site No. E645027
March 2010

1. Proposed Remedial Action Plan for the Former Diamond International Paper Mill Site, dated November 2009, prepared by the Department.

2. Site Investigation / Remedial Alternatives Report for the Former Diamond International Paper Mill Site, dated May 2009, prepared by Barton & Loguidice

3. Tank Closure Plan, for the Former Diamond International Paper Mill Site, dated October 31, 2007, prepared by Barton & Loguidice

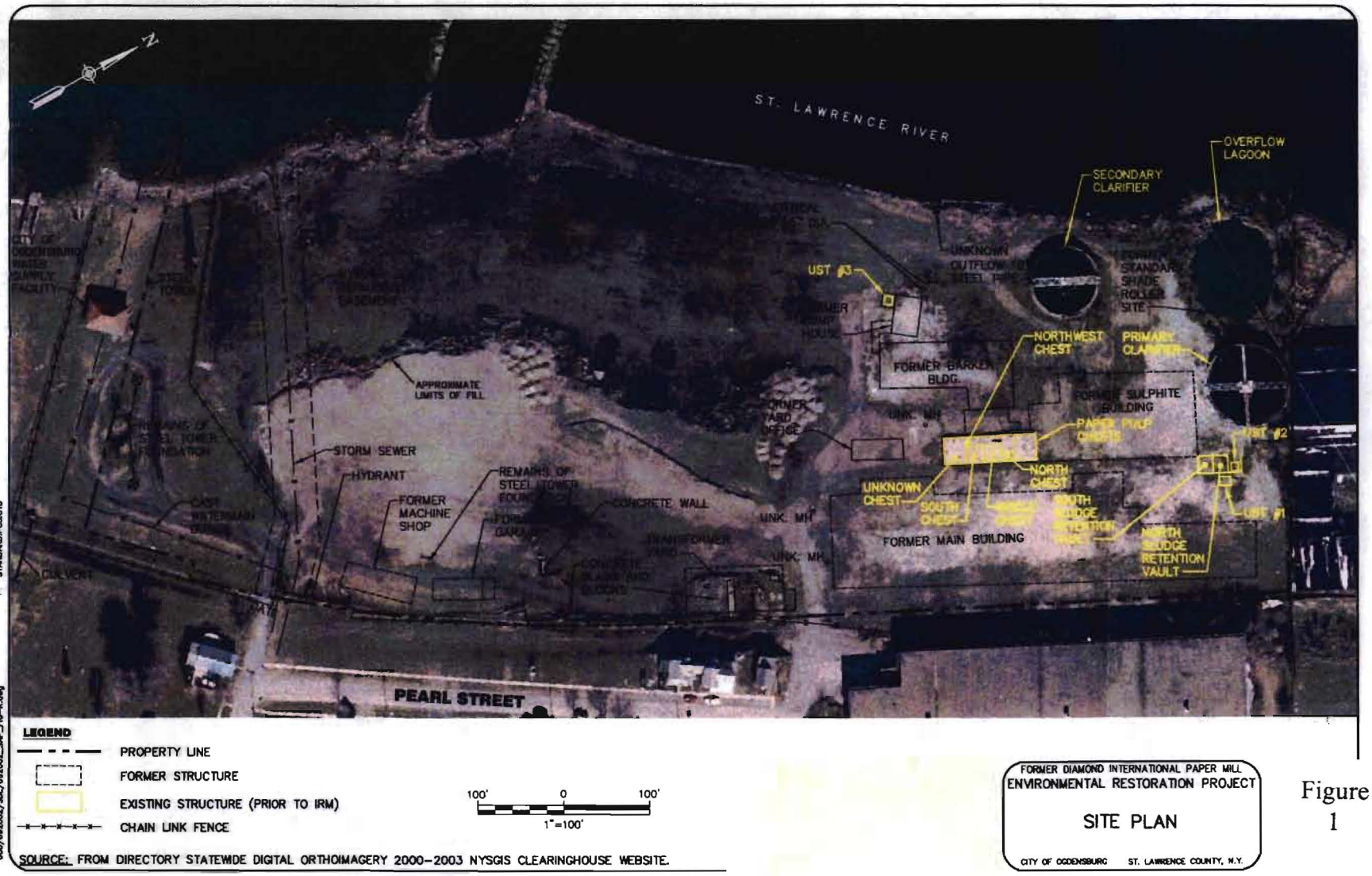
4. Dewatering and Wastewater Treatment Plan, for the Former Diamond International Paper Mill Site, dated October 15, 2007, prepared by Barton & Loguidice

5. Reassessment of Dioxin/Furan Surface Soil Concentrations, for the Former Diamond International Paper Mill Site, dated November 2007, prepared by Barton & Loguidice

6. Supplemental Information Document for the Interim Remedial Measure Contract, for the Former Diamond International Paper Mill Site, dated August 2007, prepared by Barton & Loguidice

7. Hazardous Waste Characterization Sampling and Analysis Plan, for the Former Diamond International Paper Mill Site, dated March 2006, prepared by Barton & Loguidice

8. Site Investigation Work Plan, for the Former Diamond International Paper Mill Site, dated May 2005, prepared by Barton & Loguidice



FORMER DIAMOND INTERNATIONAL PAPER MILL
ENVIRONMENTAL RESTORATION PROJECT

SITE PLAN

CITY OF OGDENSBURG ST. LAWRENCE COUNTY, N.Y.

Figure 1

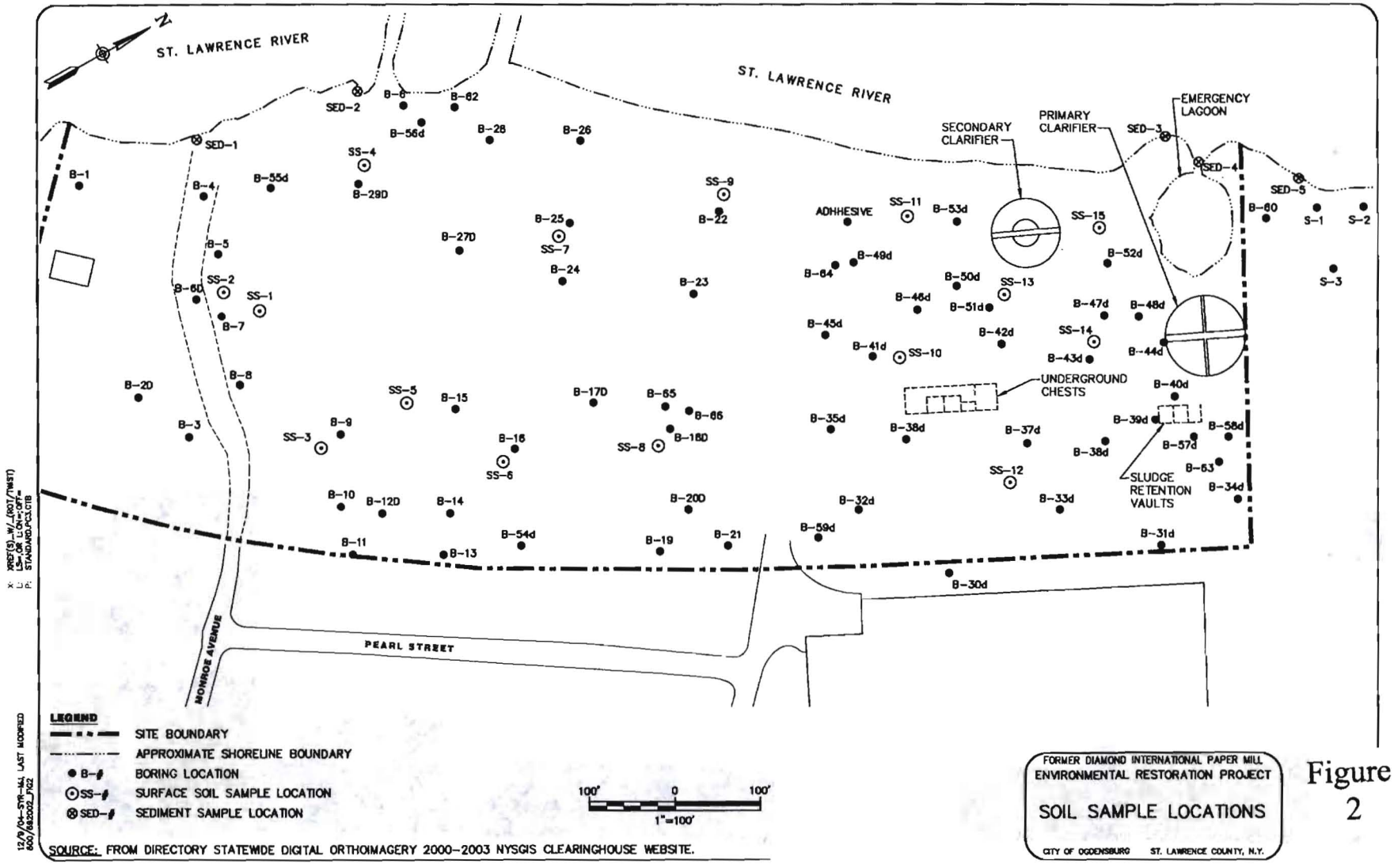

N
ST. LAWRENCE RIVER
ST. LAWRENCE RIVER
SECONDARY CLARIFIER
PRIMARY CLARIFIER
EMERGENCY LAGOON
ADHHESIVE
UNDERGROUND CHESTS
SLUDGE RETENTION VAULTS
PEARL STREET
MONROE AVENUE
SED-1
SED-2
SED-3
SED-4
SED-5
SS-1
SS-2
SS-3
SS-4
SS-5
SS-6
SS-7
SS-8
SS-9
SS-10
SS-11
SS-12
SS-13
SS-14
SS-15
B-1
B-2D
B-3
B-4
B-5
B-6D
B-7
B-8
B-9
B-10
B-11
B-12D
B-13
B-14
B-15
B-16
B-17D
B-18D
B-19
B-20D
B-21
B-22
B-23
B-24
B-25
B-26
B-27D
B-28
B-29D
B-30d
B-31d
B-32d
B-33d
B-34d
B-35d
B-37d
B-38d
B-39d
B-40d
B-41d
B-42d
B-43d
B-44d
B-45d
B-46d
B-47d
B-48d
B-49d
B-50d
B-51d
B-52d
B-53d
B-54d
B-55d
B-56d
B-57d
B-58d
B-59d
B-60
B-62
B-63
B-64
B-65
B-66
S-1
S-2
S-3
LEGEND
SITE BOUNDARY
APPROXIMATE SHORELINE BOUNDARY
B-# BORING LOCATION
SS-# SURFACE SOIL SAMPLE LOCATION
SED-# SEDIMENT SAMPLE LOCATION
100' 0 100'
1"=100'
SOURCE: FROM DIRECTORY STATEWIDE DIGITAL ORTHOIMAGERY 2000-2003 NYSGIS CLEARINGHOUSE WEBSITE.
FORMER DIAMOND INTERNATIONAL PAPER MILL
ENVIRONMENTAL RESTORATION PROJECT
SOIL SAMPLE LOCATIONS
CITY OF OGDENSBURG ST. LAWRENCE COUNTY, N.Y.

Figure 2

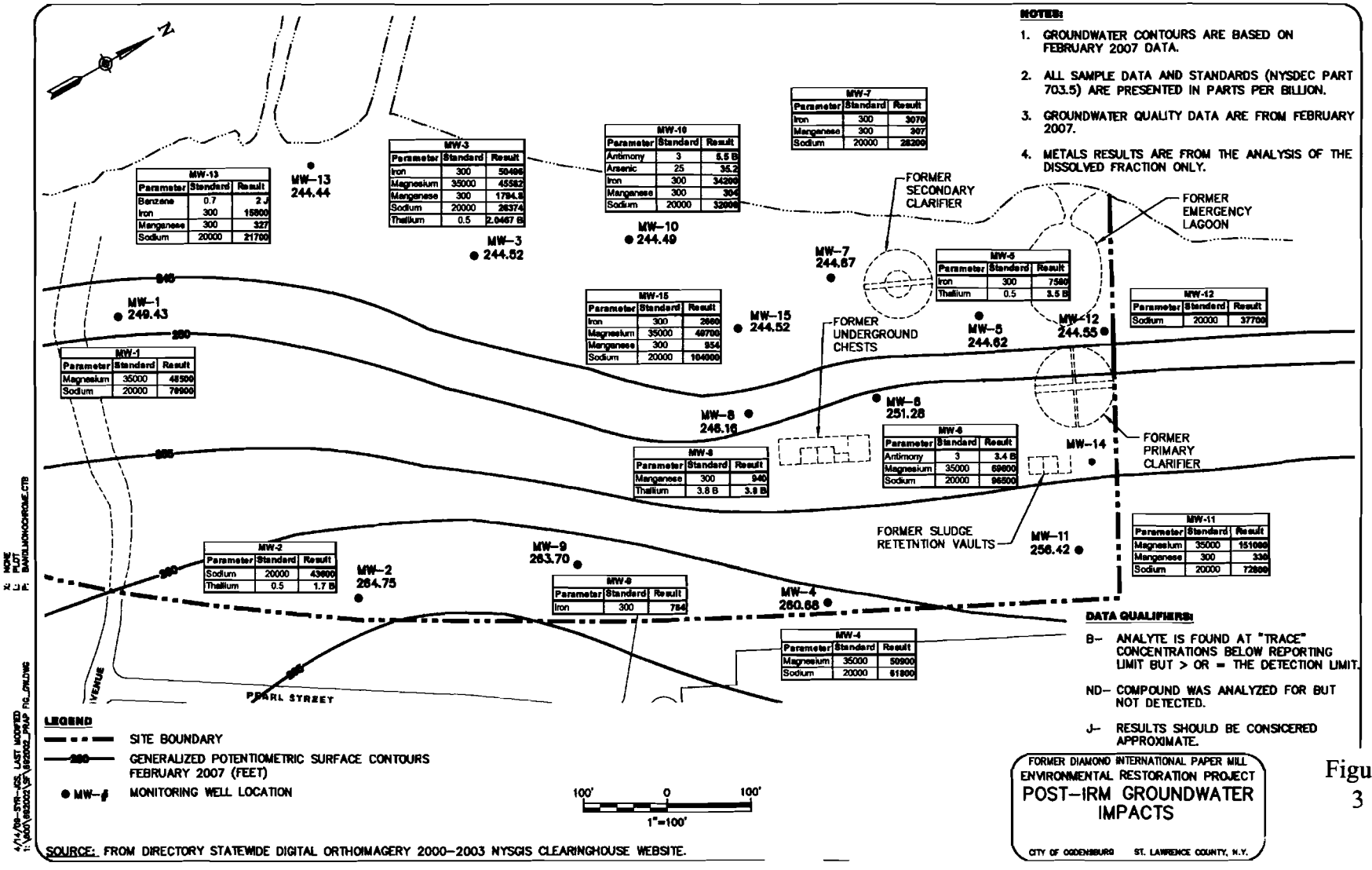

NOTES:
1. GROUNDWATER CONTOURS ARE BASED ON FEBRUARY 2007 DATA.
2. ALL SAMPLE DATA AND STANDARDS (NYSDEC PART 703.5) ARE PRESENTED IN PARTS PER BILLION.
3. GROUNDWATER QUALITY DATA ARE FROM FEBRUARY 2007.
4. METALS RESULTS ARE FROM THE ANALYSIS OF THE DISSOLVED FRACTION ONLY.
MW-13 244.44
MW-3 244.52
MW-10 244.49
MW-7 244.67
MW-1 249.43
MW-15 244.52
MW-5 244.62
MW-12 244.55
MW-8 246.16
MW-6 251.28
MW-14
MW-9 263.70
MW-2 264.75
MW-4 260.68
MW-11 256.42
FORMER SECONDARY CLARIFIER
FORMER EMERGENCY LAGOON
FORMER UNDERGROUND CHESTS
FORMER PRIMARY CLARIFIER
FORMER SLUDGE RETETNTION VAULTS
PEARL STREET
DATA QUALIFIERS:
B– ANALYTE IS FOUND AT "TRACE" CONCENTRATIONS BELOW REPORTING LIMIT BUT > OR = THE DETECTION LIMIT.
ND– COMPOUND WAS ANALYZED FOR BUT NOT DETECTED.
J– RESULTS SHOULD BE CONSICERED APPROXIMATE.
LEGEND
SITE BOUNDARY
GENERALIZED POTENTIOMETRIC SURFACE CONTOURS FEBRUARY 2007 (FEET)
MW-# MONITORING WELL LOCATION
100' 0 100'
1"=100'
SOURCE: FROM DIRECTORY STATEWIDE DIGITAL ORTHOIMAGERY 2000–2003 NYSGIS CLEARINGHOUSE WEBSITE.
FORMER DIAMOND INTERNATIONAL PAPER MILL
ENVIRONMENTAL RESTORATION PROJECT
POST–IRM GROUNDWATER IMPACTS
CITY OF OGDENSBURG ST. LAWRENCE COUNTY, N.Y.

Figure 3

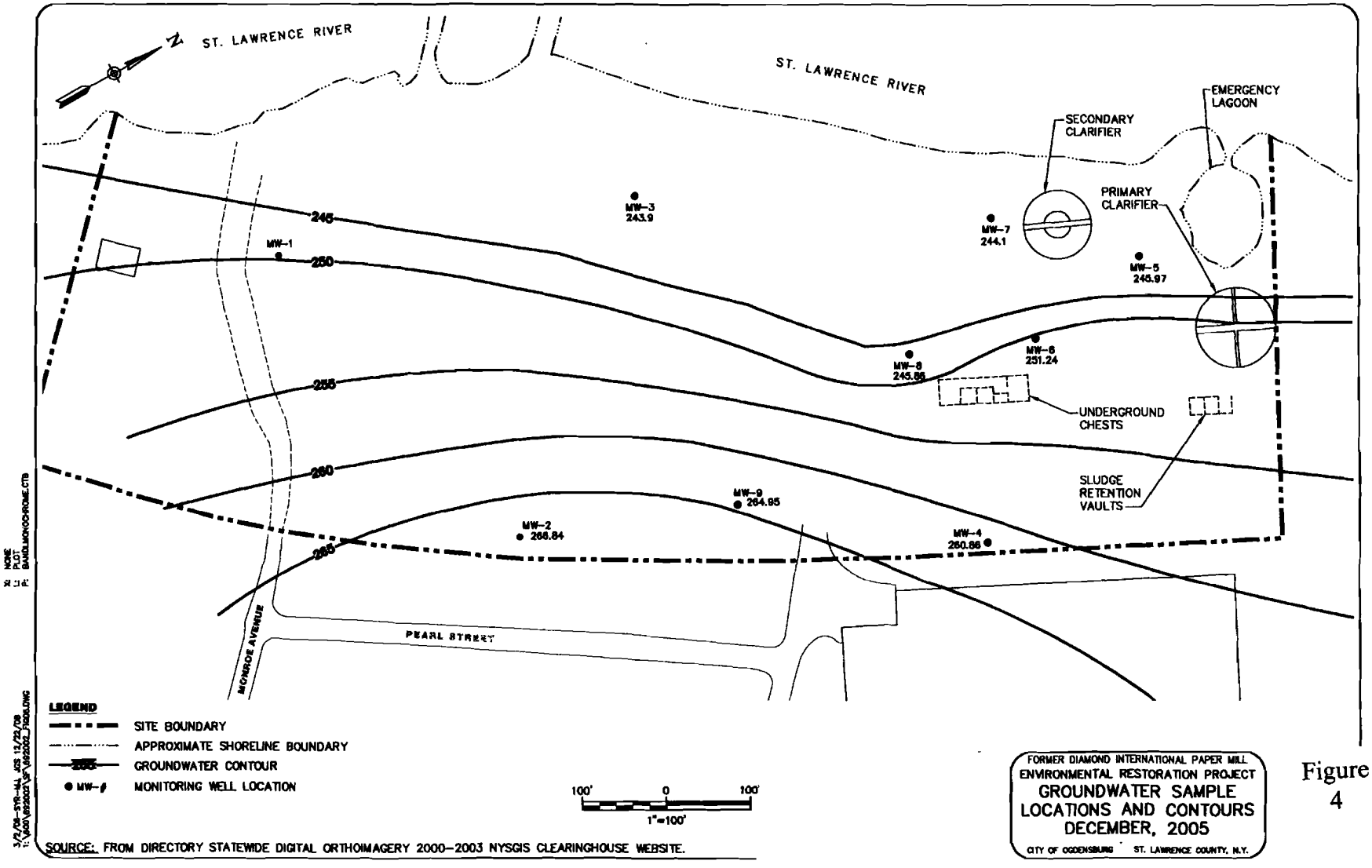

N
ST. LAWRENCE RIVER
ST. LAWRENCE RIVER
EMERGENCY LAGOON
SECONDARY CLARIFIER
PRIMARY CLARIFIER
MW-1
MW-2
266.84
MW-3
243.9
MW-4
260.86
MW-5
245.97
MW-6
251.24
MW-7
244.1
MW-8
245.85
MW-9
264.95
245
250
255
260
265
UNDERGROUND CHESTS
SLUDGE RETENTION VAULTS
PEARL STREET
MONROE AVENUE
LEGEND
SITE BOUNDARY
APPROXIMATE SHORELINE BOUNDARY
GROUNDWATER CONTOUR
MW-# MONITORING WELL LOCATION
100' 0 100'
1"=100'
SOURCE: FROM DIRECTORY STATEWIDE DIGITAL ORTHOIMAGERY 2000-2003 NYSGIS CLEARINGHOUSE WEBSITE.
FORMER DIAMOND INTERNATIONAL PAPER MILL
ENVIRONMENTAL RESTORATION PROJECT
GROUNDWATER SAMPLE LOCATIONS AND CONTOURS
DECEMBER, 2005
CITY OF OGDENSBURG ST. LAWRENCE COUNTY, N.Y.

Figure 4

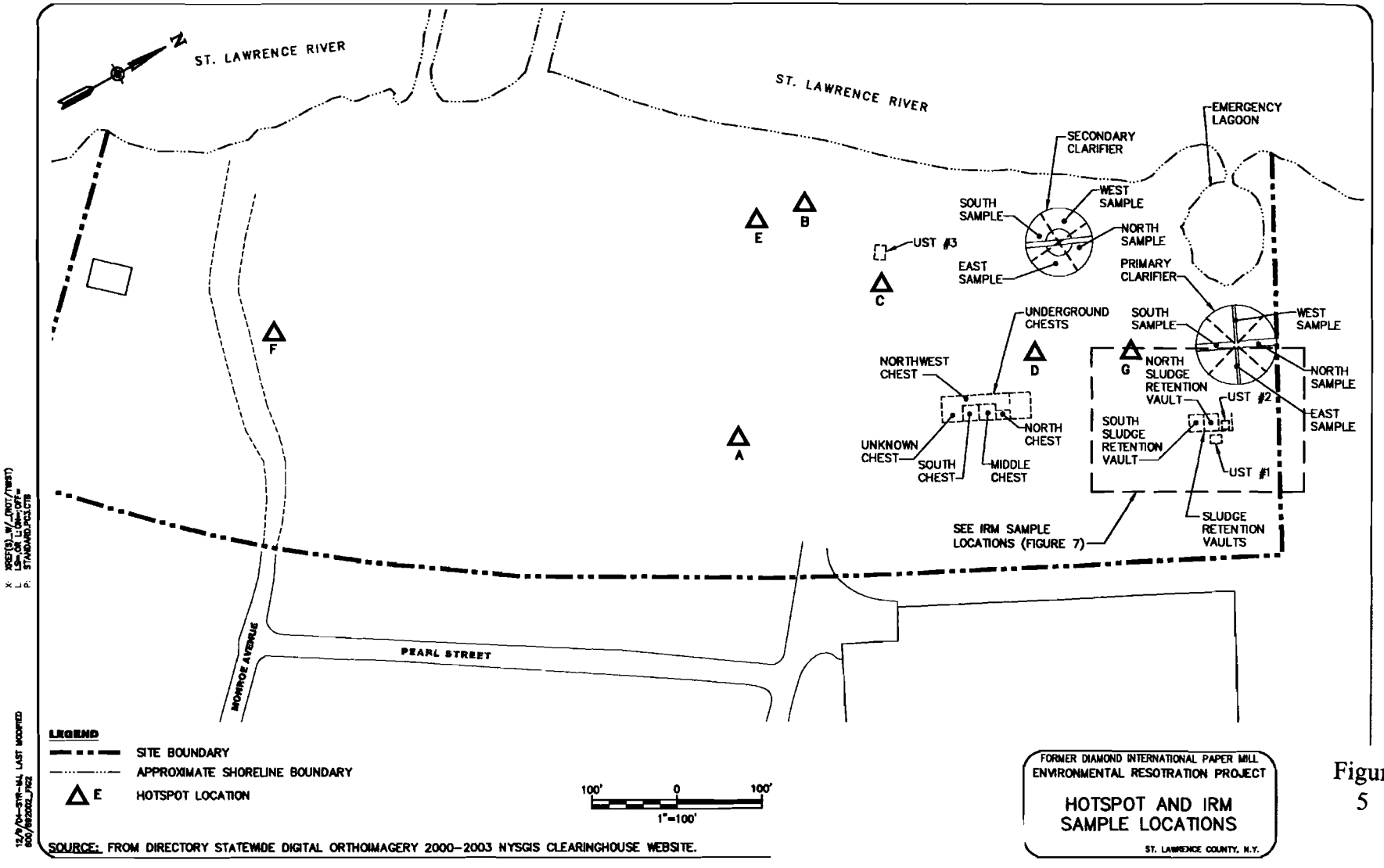

N
ST. LAWRENCE RIVER
ST. LAWRENCE RIVER
EMERGENCY LAGOON
SECONDARY CLARIFIER
WEST SAMPLE
SOUTH SAMPLE
NORTH SAMPLE
EAST SAMPLE
UST #3
PRIMARY CLARIFIER
UNDERGROUND CHESTS
SOUTH SAMPLE
WEST SAMPLE
NORTHWEST CHEST
NORTH SLUDGE RETENTION VAULT
NORTH SAMPLE
UST #2
EAST SAMPLE
NORTH CHEST
SOUTH SLUDGE RETENTION VAULT
UNKNOWN CHEST
SOUTH CHEST
MIDDLE CHEST
UST #1
SEE IRM SAMPLE LOCATIONS (FIGURE 7)
SLUDGE RETENTION VAULTS
A
B
C
D
E
F
G
MONROE AVENUE
PEARL STREET
LEGEND
SITE BOUNDARY
APPROXIMATE SHORELINE BOUNDARY
E HOTSPOT LOCATION
100' 0 100'
1"=100'
SOURCE: FROM DIRECTORY STATEWIDE DIGITAL ORTHOIMAGERY 2000-2003 NYSGIS CLEARINGHOUSE WEBSITE.
FORMER DIAMOND INTERNATIONAL PAPER MILL
ENVIRONMENTAL RESOTRATION PROJECT
HOTSPOT AND IRM SAMPLE LOCATIONS
ST. LAWRENCE COUNTY, N.Y.

Figure 5

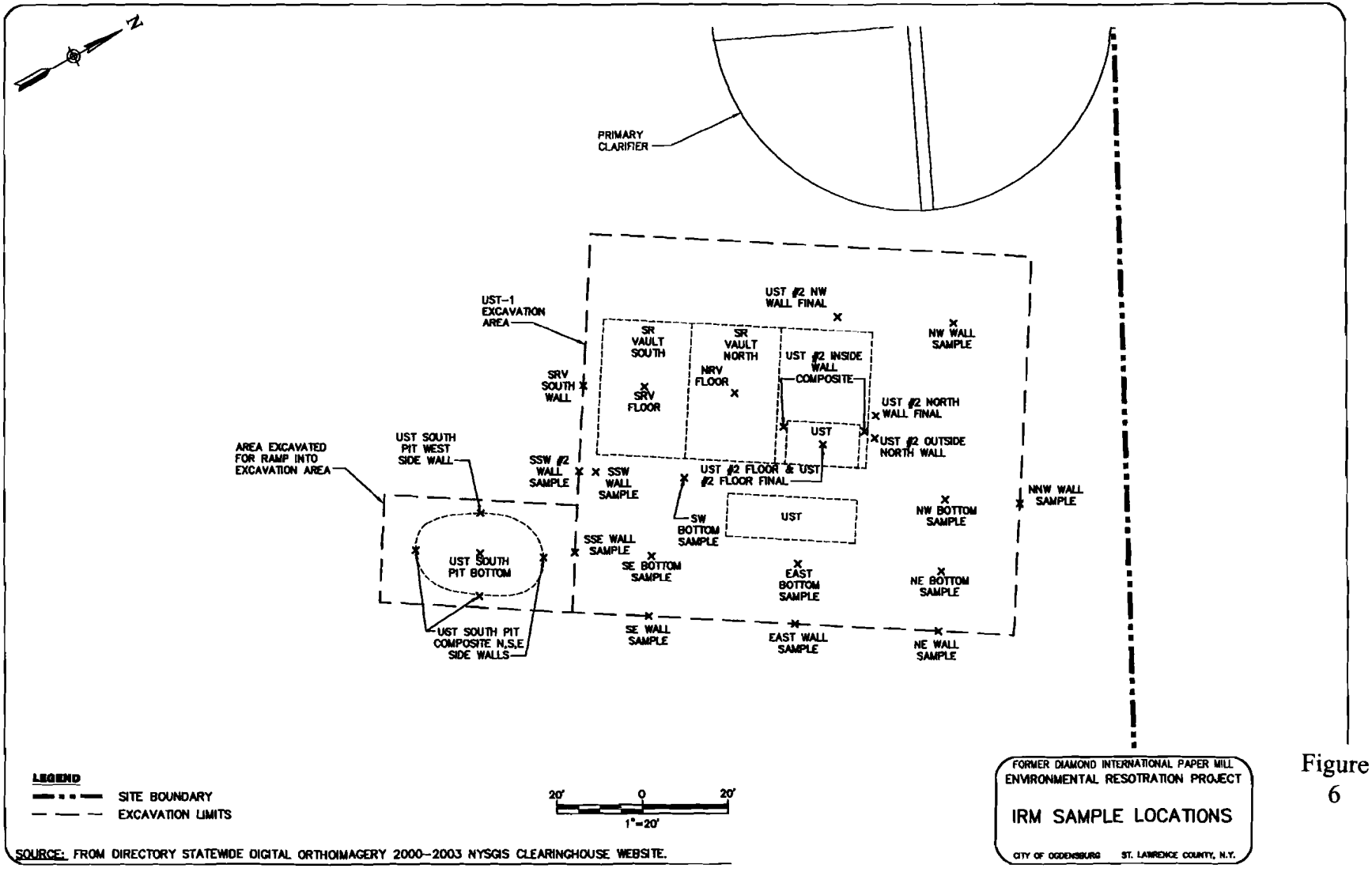

N
PRIMARY CLARIFIER
UST-1 EXCAVATION AREA
UST #2 NW WALL FINAL
NW WALL SAMPLE
SR VAULT SOUTH
SR VAULT NORTH
UST #2 INSIDE WALL COMPOSITE
NRV FLOOR
SRV SOUTH WALL
SRV FLOOR
UST #2 NORTH WALL FINAL
UST
UST #2 OUTSIDE NORTH WALL
AREA EXCAVATED FOR RAMP INTO EXCAVATION AREA
UST SOUTH PIT WEST SIDE WALL
SSW #2 WALL SAMPLE
SSW WALL SAMPLE
UST #2 FLOOR & UST #2 FLOOR FINAL
NNW WALL SAMPLE
SW BOTTOM SAMPLE
UST
NW BOTTOM SAMPLE
SSE WALL SAMPLE
UST SOUTH PIT BOTTOM
SE BOTTOM SAMPLE
EAST BOTTOM SAMPLE
NE BOTTOM SAMPLE
UST SOUTH PIT COMPOSITE N,S,E SIDE WALLS
SE WALL SAMPLE
EAST WALL SAMPLE
NE WALL SAMPLE
LEGEND
SITE BOUNDARY
EXCAVATION LIMITS
20' 0 20'
1"=20'
SOURCE: FROM DIRECTORY STATEWIDE DIGITAL ORTHOIMAGERY 2000-2003 NYSGIS CLEARINGHOUSE WEBSITE.
FORMER DIAMOND INTERNATIONAL PAPER MILL
ENVIRONMENTAL RESOTRATION PROJECT
IRM SAMPLE LOCATIONS
CITY OF OGDENSBURG ST. LAWRENCE COUNTY, N.Y.

Figure 6

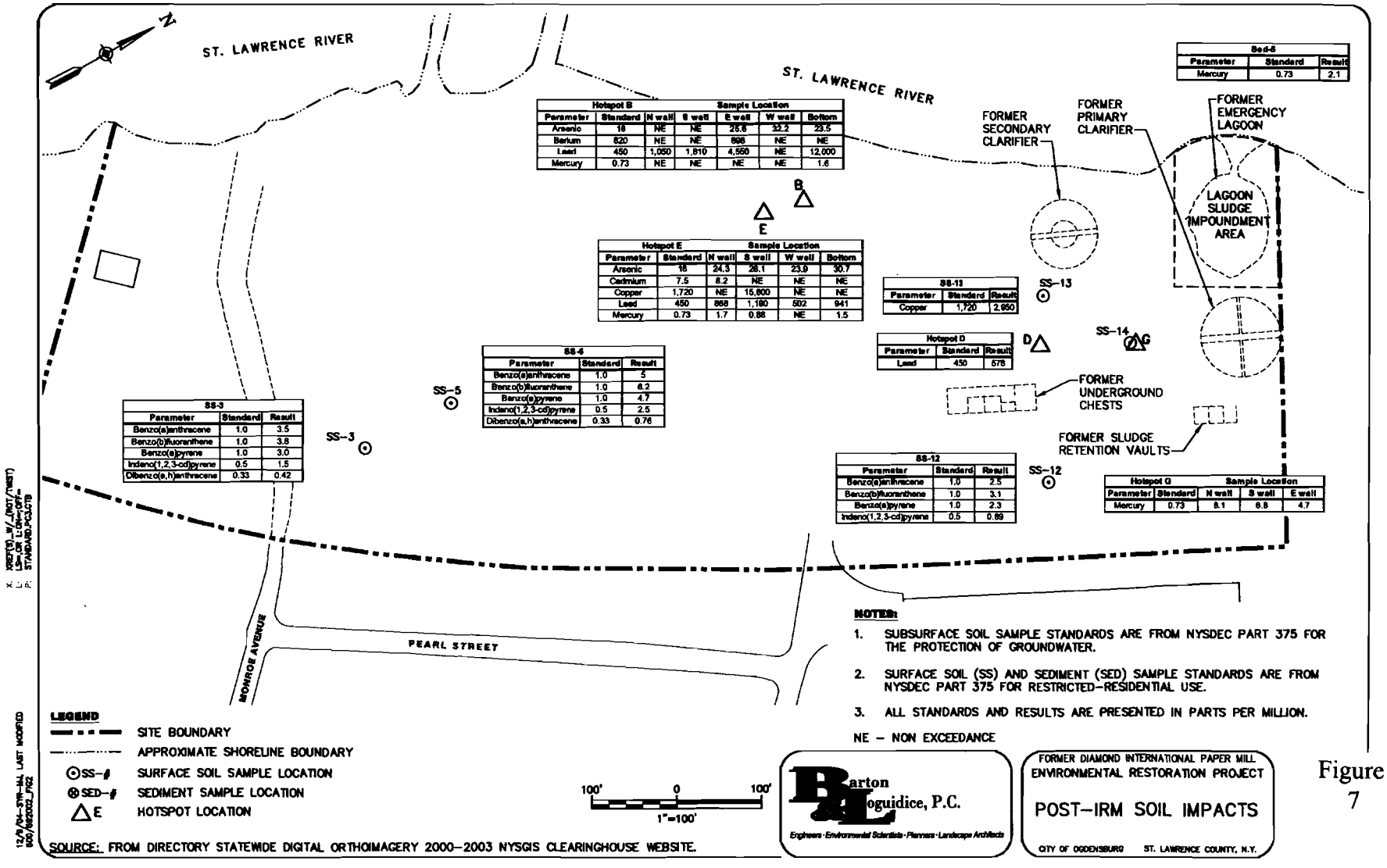

ST. LAWRENCE RIVER
ST. LAWRENCE RIVER
FORMER SECONDARY CLARIFIER
FORMER PRIMARY CLARIFIER
FORMER EMERGENCY LAGOON
LAGOON SLUDGE IMPOUNDMENT AREA
FORMER UNDERGROUND CHESTS
FORMER SLUDGE RETENTION VAULTS
PEARL STREET
MONROE AVENUE
SS-3
SS-5
SS-12
SS-13
SS-14
B
E
D
G
Hotspot B — Sample Location
Parameter | Standard | N wall | S wall | E wall | W wall | Bottom
Arsenic | 16 | NE | NE | 25.6 | 32.2 | 23.5
Barium | 820 | NE | NE | 896 | NE | NE
Lead | 450 | 1,050 | 1,810 | 4,550 | NE | 12,000
Mercury | 0.73 | NE | NE | NE | NE | 1.6
Hotspot E — Sample Location
Parameter | Standard | N wall | S wall | W wall | Bottom
Arsenic | 16 | 24.3 | 28.1 | 23.9 | 30.7
Cadmium | 7.5 | 8.2 | NE | NE | NE
Copper | 1,720 | NE | 15,800 | NE | NE
Lead | 450 | 868 | 1,180 | 502 | 941
Mercury | 0.73 | 1.7 | 0.88 | NE | 1.5
SS-13
Parameter | Standard | Result
Copper | 1,720 | 2,950
Hotspot D
Parameter | Standard | Result
Lead | 450 | 578
SS-4
Parameter | Standard | Result
Benzo(a)anthracene | 1.0 | 5
Benzo(b)fluoranthene | 1.0 | 6.2
Benzo(a)pyrene | 1.0 | 4.7
Indeno(1,2,3-cd)pyrene | 0.5 | 2.5
Dibenzo(a,h)anthracene | 0.33 | 0.76
SS-3
Parameter | Standard | Result
Benzo(a)anthracene | 1.0 | 3.5
Benzo(b)fluoranthene | 1.0 | 3.8
Benzo(a)pyrene | 1.0 | 3.0
Indeno(1,2,3-cd)pyrene | 0.5 | 1.5
Dibenzo(a,h)anthracene | 0.33 | 0.42
SS-12
Parameter | Standard | Result
Benzo(a)anthracene | 1.0 | 2.5
Benzo(b)fluoranthene | 1.0 | 3.1
Benzo(a)pyrene | 1.0 | 2.3
Indeno(1,2,3-cd)pyrene | 0.5 | 0.89
Sed-5
Parameter | Standard | Result
Mercury | 0.73 | 2.1
Hotspot G — Sample Location
Parameter | Standard | N wall | S wall | E wall
Mercury | 0.73 | 8.1 | 6.8 | 4.7
NOTES:
1. SUBSURFACE SOIL SAMPLE STANDARDS ARE FROM NYSDEC PART 375 FOR THE PROTECTION OF GROUNDWATER.
2. SURFACE SOIL (SS) AND SEDIMENT (SED) SAMPLE STANDARDS ARE FROM NYSDEC PART 375 FOR RESTRICTED-RESIDENTIAL USE.
3. ALL STANDARDS AND RESULTS ARE PRESENTED IN PARTS PER MILLION.
NE - NON EXCEEDANCE
LEGEND
SITE BOUNDARY
APPROXIMATE SHORELINE BOUNDARY
SS-# SURFACE SOIL SAMPLE LOCATION
SED-# SEDIMENT SAMPLE LOCATION
E HOTSPOT LOCATION
100' 0 100'
1"=100'
SOURCE: FROM DIRECTORY STATEWIDE DIGITAL ORTHOIMAGERY 2000-2003 NYSGIS CLEARINGHOUSE WEBSITE.
Barton Loguidice, P.C.
Engineers · Environmental Scientists · Planners · Landscape Architects
FORMER DIAMOND INTERNATIONAL PAPER MILL
ENVIRONMENTAL RESTORATION PROJECT
POST-IRM SOIL IMPACTS
CITY OF OGDENSBURG ST. LAWRENCE COUNTY, N.Y.

Figure 7