Department of Environmental Conservation

Division of Environmental Remediation

Environmental Restoration
Record of Decision
Former Flintkote Plant Site
City of Lockport, Niagara County, New York
Site Number B-00161-9

March 2006

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* DENISE M. SHEEHAN, *Commissioner*

436198

DECLARATION STATEMENT
ENVIRONMENTAL RESTORATION RECORD OF DECISION

Former Flintkote Plant Environmental Restoration Site
City of Lockport, Niagara County, New York
Site No. B-00161-9

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the Former Flintkote Plant 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 (NYSDEC) for the Former Flintkote Plant environmental restoration site, and the public's input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. 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 releases of hazardous substances from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential significant threat to public health and/or the environment.

Description of Selected Remedy

Based on the results of the Site Investigation/Remedial Alternatives Report (SI/RAR) for the Former Flintkote Plant site and the criteria identified for evaluation of alternatives, the NYSDEC has selected Excavation and Containment. The components of the remedy are as follows:

- Construction of a minimum 2 foot thick, clean soil cover with demarcation layer over the non-hazardous fill materials on the 300 Parcel of the site;

- Excavation of hazardous fill materials to native soils or bedrock (where native soils are absent) on the 198 Parcel, Island and Water Street Section (WSS) of the site. These materials would be disposed off-site in an approved facility;

- Removal of sediments from the Building C sump and trench drain, and evaluate options to address sediments in the Building D deep basement;

- Removal of sediment from a portion of an outfall pipe to Eighteenmile Creek and closure of the pipe in place;

- Abatement of asbestos containing materials (ACMs). These materials would be disposed off-site in an approved facility;

- Demolition of all buildings to four feet below grade. Removal of C&D debris from exterior portions of the site. These materials would be disposed off-site in an approved facility;

- Installation of a minimum 2 foot thick, clean soil cover with demarcation layer over the demolished building footprint;

- A remedial design program to provide the details necessary to implement the remedial program;

- Development of a site management plan to address residual contamination, use restrictions, and maintenance of the soil cover;

- Imposition of an environmental easement; and

- Periodic certification of the institutional and engineering controls.

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 3 1 2006

Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

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Environmental Restoration
RECORD OF DECISION

Former Flintkote Plant Environmental Restoration Site
City of Lockport, Niagara County, New York
Site No. B-00161-9
March 2006

SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has selected this remedy for the Former Flintkote Plant Site. The presence of hazardous substances has created threats to human health and/or the environment that are addressed by this remedy.

The 1996 Clean Water/Clean Air Bond Act provides funding to municipalities for the investigation and cleanup of brownfields. Under the Environmental Restoration (Brownfields) 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, on-site disposal has resulted in the presence of hazardous substances, including semivolatile organic compounds (SVOCs) and metals. These hazardous substances have contaminated the soils and sediment at the site, and have resulted in:

- A threat to human health associated with current and potential exposure to soils and sediment; and
- An environmental threat associated with the impacts of contaminants to the adjacent Eighteenmile Creek, and potentially to groundwater.

To eliminate or mitigate these threats, the NYSDEC has selected the following remedy to allow for recreational use of the site:

- Construction of a minimum 2 foot thick, clean soil cover with demarcation layer over the non-hazardous fill materials on the 300 Parcel of the site;
- Excavation of hazardous fill materials to native soils or bedrock (where native soils are absent) on the 198 Parcel, Island and Water Street Section (WSS) of the site. These materials would be disposed off-site in an approved facility;
- Removal of sediments from the Building C sump and trench drain, and evaluate options to address sediments in the Building D deep basement;

- Removal of sediment from a portion of an outfall pipe to Eighteenmile Creek and closure of the pipe in place;

- Abatement of asbestos containing materials (ACMs). These materials would be disposed off-site in an approved facility;

- Demolition of all buildings to four feet below grade. Removal of C&D debris from exterior portions of the site. These materials would be disposed off-site in an approved facility;

- Installation of a minimum 2 foot thick, clean soil cover with demarcation layer over the demolished building footprint;

- A remedial design program to provide the details necessary to implement the remedial program;

- Development of a site management plan to address residual contamination, use restrictions, and maintenance of the soil cover;

- Imposition of an environmental easement; and

- Periodic certification of the institutional and engineering controls.

The selected remedy, discussed in detail in Section 8, 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 Former Flintkote Plant Site is an abandoned industrial property that occupies approximately six acres at 198 and 300 Mill Street in the City of Lockport, Niagara County, New York (Figure 1). Niagara County currently owns the 300 Mill Street portion of the site, while a private individual owns the 198 Mill Street portion. The majority of the site is situated along the eastern bank of Eighteenmile Creek, and is bordered by commercial property to the north, vacant land to the south, Mill Street to the east, and Eighteenmile Creek to the west (Figure 2). A small portion of the site, however, is located along the western bank of Eighteenmile Creek, and is bounded to the south by residential properties along Water Street. This portion of the site is referred to as the Water Street Section (WSS).

The site is bisected by William Street (Figure 2), which divides the site into north (300 Parcel) and south (198 Parcel) sections. William Street is no longer open to vehicular traffic. The section of 300 Mill Street between Eighteenmile Creek and the millrace is referred to as the Island.

The topography of the majority of the site is relatively flat-lying in the areas of the buildings with a steep downward slope toward Eighteenmile Creek and the millrace.

The majority of the buildings on the 198 Parcel have been razed, with remaining portions consisting of former basement walls, concrete columns and concrete floors. The buildings that remain on the 300 Parcel consist of stone, brick and concrete construction with wooden or concrete roof deck structures. These buildings are severely deteriorated, with the majority of the buildings having some structural deficiencies. There are numerous openings in the floors, roof systems are partially or completely collapsed, and stairways and hand rails are in poor condition.

The northern area of the site includes a steel water tower, boiler stack and former coal bunkers (Figure 2). A number of debris piles are also located across the site (Figure 2).

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

Flintkote began operations as a manufacturer of felt and felt products in 1928, when the property was purchased from the Beckman Dawson Roofing Company. In 1935, Flintkote began production of sound-deadening and tufting felt for installation and use in automobiles. Manufacturing of this product line was continued at Flintkote until December, 1971, when operations ceased and the plant closed. It is also believed that Flintkote manufactured composite laminates similar to those produced at the Former Spaulding Composites Company in Tonawanda, New York. Such material was observed in the southernmost demolished building on the 300 Mill Street Property.

The disposal history of the site is largely unknown, although aerial photographs suggest that disposal of fill on the island was taking place by 1938. The nature of the fill material at that time is unknown. It has also been reported that ash resulting from the burning of municipal garbage was dumped at the site. The fill material on the 198 Parcel and Island is consistent with such a source.

3.2: Remedial History

The portion of the property consisting of Building A and its surrounding area was formerly listed as Site No. 932072 in the Registry and assigned a Classification Code of 3. This classification is given to sites that do not present a significant threat to public health or the environment and that further action can be deferred. The basis for listing the site in the Registry was the presence of seven drums containing sweepings, solid materials and polychlorinated biphenyl (PCB) transformer oil stored in the basement of Building A. During an inspection of the site on May 12, 1983 as part of a Phase I Investigation, the drums were observed to be stored in accordance with federal regulations. Analyses of the waste oil (March 1983) indicated that none of the oil contained more than 2 parts per million (ppm) of PCBs. In January 1984 the Thomas E. Carter Trucking Company, at the time the owner of the property, had these drums removed from the site by a waste oil processor. As a result of this action the site was removed from the Registry in 1985.

In 1989, the City of Lockport Building Inspection Department reported to the NYSDEC that a number of drums containing chemicals were found in various locations throughout the buildings at 300 Mill Street. Subsequent investigation revealed that 28 of these drums contained hazardous wastes. These drums were disposed off site in May, 1991 by a NYSDEC Drum Removal Action.

Analytical results of two ash samples from the Island and two sediment samples from the millrace were included in an April 1996 NYSDEC study entitled "*Trackdown of Chemical Contaminants to Lake Ontario from New York State Tributaries*". The ash samples contained mercury, dioxins and furans, while the sediment samples contained significant concentrations of PCBs. As a result, the Former Flintkote Plant Site was cited by the NYSDEC Division of Water (DOW) as a potential source of contaminants to Eighteenmile Creek.

Sediment and ash samples were also collected by the NYSDEC Division of Environmental Remediation (DER) in August 1996. These analyses confirmed the presence of PCBs in the millrace sediment; the two ash samples collected from the island failed the Toxicity Characteristic Leaching Procedure (TCLP) Regulatory Limit for lead. The findings and conclusions of the April 1996 study and the results of the August 1996 sampling event indicated the need for additional investigation at the site.

In late 1999 the NYSDEC conducted an investigation of the entire Flintkote property, with the results of that investigation presented in a September 2000 report entitled "*Site Investigation Report, Former Flintkote Plant Site*". This investigation revealed that the Flintkote property received various wastes, refuse and debris over the years, with much of these wastes being visible at the surface and along the embankments of Eighteenmile Creek and the millrace. The subsurface investigation revealed that most of the waste at the site is ash containing glass, coal, coke, slag, ceramic, bottles, brick, buttons and wood.

The site was also the subject of a United States Environmental Protection Agency (USEPA) removal action in 2002, which focused on the removal of friable asbestos containing materials within the site's buildings and on-site debris. A total of 170 cubic yards of asbestos containing debris and 180 cubic yards of debris that did not contain asbestos were disposed offsite at an approved facility.

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. Niagara County will assist the state in its efforts by providing all information to the state which identifies PRPs. The County will also not enter into any agreement regarding response costs without the approval of the NYSDEC.

SECTION 5: SITE CONTAMINATION

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

5.1: Summary of the Site Investigation

The purpose of the SI was to further define the nature and extent of contamination resulting from previous activities at the site by filling in data gaps in the NYSDEC's 1999 investigation. Both investigations combined, therefore, constitute the SI for the Former Flintkote Plant Site. The SI was conducted in two phases: the first phase was completed by the NYSDEC between October and November 1999, while the second phase was completed by Niagara County between September and October 2003. The field activities and findings of both investigations are described in Niagara County's July 2005 "Site Investigation Report.

The following activities were conducted during the SI:

- Research of historical information;
- Installation of 67 soil borings and 16 monitoring wells for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions;
- Sampling of 15 new and existing monitoring wells (the 16th well is continually dry);
- Collection of 2 surface water samples from Eighteenmile Creek;
- Collection of 7 aquatic sediment samples from Eighteenmile Creek and the millrace;
- Collection of 10 surface soil samples for chemical analysis;
- Completion of in-situ hydraulic conductivity tests on 2 overburden and 3 bedrock wells;
- Collection of 1 surface water and 3 sediment samples from sumps and deep basements within the on-site buildings;
- Collection of 1 waste sample (a felt/tar-like material) from a column inside one of the on-site buildings;
- Completion of a visual asbestos survey of the existing buildings and debris piles; and
- Completion of a topographic survey and base map of the entire site.

To determine whether the soil, waste, sediment, surface water and groundwater contain 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 NYSDEC "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.

- Soil SCGs are based on the NYSDEC "Technical and Administrative Guidance Memorandum (TAGM) 4046; Determination of Soil Cleanup Objectives and Cleanup Levels". Two surface soil samples were collected from off-site locations to define background soil concentrations in the vicinity of the site. The metals results from these samples were similar, suggesting that they are representative of background metals concentrations. As a result, the average concentrations of the metals detected in these two samples were used as the Site Background value for comparison with metals data from on-site soil/fill samples as prescribed in TAGM 4046. These values are shaded in Table 1.

- Sediment SCGs are based on the NYSDEC "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 require remediation. These are summarized below. More complete information can be found in the SI report.

5.1.1: Site Geology and Hydrogeology

At the Former Flintkote Plant Site four major geologic units were encountered. These units, in order of increasing depth, are as follows:

- Topsoil described as a brown to dark brown silty soil with varying amounts of natural organic matter (e.g., leaves and rootlets). This unit was often encountered above fill material, but was absent in some areas of the site. Where encountered, the thickness of the topsoil layer was usually less than 0.2 feet;

- Fill material consisting primarily of various colored ash containing glass, coal, coke, slag, buttons, ceramic and brick. This material was encountered in 55 of the 67 borings completed at the site. Miscellaneous wastes (i.e., felt paper, foam, grinding powder, tar) were also encountered in some of the borings and on the ground surface. Where encountered, the thickness of the fill material ranged from 0.9 to 24.9 feet;

- A glaciolacustrine deposit consisting primarily of mottled, brown to reddish brown, silty clay and clayey silt containing traces of fine grained sand and fine gravel. This material was encountered in 52 of the 67 borings completed at the site. This deposit directly overlies bedrock, and where encountered, ranged in thickness from 0.1 to 9.8 feet; and

- Sandstone bedrock of the Grimsby Formation. This sandstone has a marbleized red and white appearance with lesser occurrences of gray and grayish-green. Depth to bedrock at the site ranged from 1.6 to 26.7 feet, with the greater depths associated with the thicker fill areas.

Groundwater underlying the 198 and 300 Parcels of the site occurs primarily in the fractured sandstone bedrock, and moves in a westerly direction toward the millrace and Eighteenmile Creek. Saturated conditions were not encountered in the overburden soils on the eastern-most portion of the site. As groundwater migrates to the west, it discharges from the bedrock into the overburden along the base of the sloped bedrock surface. Groundwater continues to migrate westward within the fill material and discharges to Eighteenmile Creek and the millrace.

The depth to groundwater in the overburden wells ranged from 2.3 to 24.0 feet below ground surface (bgs), while the depth to groundwater in the bedrock wells ranged from 9.7 to 26.2 feet bgs.

5.1.2: Nature of Contamination

As described in the SI report, soil, fill, groundwater, surface water and sediment samples were collected to characterize the nature and extent of contamination. As summarized in Table 1, the main categories of contaminants that exceed their SCGs are semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs) and inorganics (metals).

The primary SVOC contaminants of concern include dibenzo(a,h)anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene and chrysene. These contaminants belong to a class of SVOCs known as polycyclic aromatic hydrocarbons (PAHs). PAHs are a group of over 100 different chemicals that are common in the environment. Sources of PAHs include incomplete combustion of coal, oil, gasoline, garbage and wood from stoves, automobiles and incinerators.

PCBs were also detected in soils and fill throughout the site at low concentrations (less than 10 ppm).

The primary inorganic contaminants of concern include antimony, arsenic, barium, chromium, copper, lead, mercury, nickel, silver and zinc.

5.1.3: Extent of Contamination

This section describes the findings of the investigation for all environmental media that were investigated.

Chemical concentrations are reported in parts per billion (ppb) for water and parts per million (ppm) for waste, soil, and sediment. For comparison purposes, where applicable, SCGs are provided for each medium.

Table 1 summarizes the degree of contamination for the contaminants of concern in surface soil/fill, subsurface ash fill, subsurface native soil, creek and millrace sediment, groundwater, creek surface water, sediments in buildings, waste in buildings and standing water in buildings, and compares the data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

Surface Soil/Fill

Ten surface soil/fill samples were collected during the SI from throughout the site (Figure 3). These samples were collected from previously identified areas of concern and from areas selected to represent conditions across the site. The contaminants of concern in these samples include SVOCs, metals, and to a lesser degree PCBs (Table 1). The SVOCs detected consisted primarily of polycyclic aromatic hydrocarbons (PAHs). Of these compounds, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and dibenzo(a,h)anthracene were detected at concentrations that most frequently exceeded the TAGM 4046 soil cleanup objectives (Table 1). Because the ash found at the site appears related to the combustion of both coal and municipal garbage, the presence of PAHs in the waste material is not surprising.

PCBs were only detected in 3 of the surface soil/fill samples with the concentration of each sample exceeding the TAGM 4046 surface soil cleanup objective for PCBs (1.0 ppm).

Metals were also detected in the surface soil/fill samples collected during the SI. Of these compounds, antimony, arsenic, barium, chromium, copper, lead, mercury, nickel, silver and zinc were detected at concentrations that most frequently exceeded the TAGM 4046 soil cleanup objectives (Table 1).

Subsurface Ash Fill

A total of sixty-seven soil borings were completed throughout the site during the SI (Figure 4). Twenty-six samples of the subsurface ash fill were collected from these borings and analyzed for SVOCs. Like the surface soil/fill samples, the SVOCs detected consisted primarily of PAHs. Of these compounds, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and dibenzo(a,h)anthracene were detected at concentrations that most frequently exceeded the TAGM 4046 soil cleanup objectives (Table 1).

Eighteen subsurface ash fill samples were analyzed for PCBs. Although PCBs were detected in these samples, none of the concentrations exceeded the TAGM 4046 subsurface soil cleanup objective for PCBs (10.0 ppm).

Twenty-seven samples of the subsurface ash fill were collected and analyzed for metals, with eighteen of these samples analyzed for the characteristics of hazardous waste using the Toxicity Characteristic Leaching Procedure (TCLP). Of the metals detected, antimony, arsenic, chromium, copper, lead, mercury, nickel, silver and zinc were detected at concentrations that most frequently exceeded the TAGM 4046 soil cleanup objectives (Table 1). A summary of the TCLP data for cadmium and lead is also given in Table 1, which reveals that some of the subsurface ash fill exceeds regulatory values and would be considered a characteristic hazardous waste.

The SI estimated the presence of approximately 46,500 cubic yards of ash fill at the Former Flintkote Plant Site.

Subsurface Soil - Native

Samples of the native soil underlying the ash fill were also collected for analysis to determine if these soils were preventing the downward migration of contaminants from the fill into the upper bedrock. The contaminants of concern in these samples include SVOCs (PAHs) and metals (Table 1). Table 1 indicates that there is a significant decrease in the concentrations of individual PAHs in the native soils when compared to the subsurface ash fill.

Metals were also detected in the subsurface native soil samples collected during the SI. Like the SVOC data, concentrations of individual metals are significantly lower in the native soil samples than in the subsurface ash fill (Table 1).

These data suggest that significant downward migration of contaminants to the upper bedrock underlying the Former Flintkote Plant Site is not occurring.

Creek and Millrace Sediment

Seven sediment samples were collected from Eighteenmile Creek and the millrace during the SI (Figure 5). The contaminants of concern in these samples include SVOCs (PAHs), PCBs and metals (Table 1). Of the PAHs detected, the concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene and indeno(1,2,3-cd)pyrene most frequently exceeded the sediment SCGs (Table 1).

PCBs were detected in 6 of the 7 sediment samples with the concentration in 5 samples exceeding the TAGM 4046 surface soil cleanup objective for PCBs (1.0 ppm).

Metals were also detected in the sediment samples collected from Eighteenmile Creek and the millrace. Of these compounds, chromium, copper, lead, mercury, nickel, silver and zinc were detected at concentrations that most frequently exceeded the sediment SCGs.

Groundwater

Eighteen groundwater samples from on-site monitoring wells (Figure 6) were collected during the SI. A summary of the detected compounds is given in Table 1. The contaminants of concern in these samples include metals, and to a lesser degree SVOCs and PCBs (Table 1).

The only SVOC detected was pentachlorophenol, which was only detected in one well (MW-1RK). Likewise, PCBs were only detected in one well (198-F). The concentrations of both compounds, however, exceeded their respective groundwater standards (Table 1).

Metals were the primary contaminants detected in site groundwater, but only in the samples that were not filtered to remove entrained ash and soil particles prior to analysis. For these samples, the metals that most frequently exceeded their respective groundwater standards were antimony, arsenic, chromium, copper, lead, mercury, nickel and zinc (Table 1). For the filtered samples, none of the detected concentrations exceeded groundwater standards (Table 1). The difference in these

analytical results is likely caused by the soil and ash particles in the unfiltered samples, which become analyzed along with the groundwater.

Creek Surface Water

Two surface water samples were collected from Eighteenmile Creek during the SI (Figure 5). The primary contaminants detected in these samples were metals, although none of the detected concentrations exceeded surface water standards (Table 1).

Sediments in Buildings

Three sediment samples from within on-site buildings were collected during the SI (Figure 3). These samples were collected from lower portions of the buildings where contaminants originating from most areas of the building would likely be deposited (e.g., deep basements, sumps). The contaminants of concern in these samples include SVOCs (PAHs and some phthalates), PCBs and metals (Table 1). Of the PAHs detected, the concentrations of benzo(a)anthracene, benzo(a)pyrene and chrysene most frequently exceeded the TAGM 4046 soil cleanup objectives (Table 1). Of the phthalates detected, the concentration of bis(2-ethylhexyl)phthalate most frequently exceed the TAGM 4046 soil cleanup objective for this contaminant (Table 1).

PCBs were detected in all three sediment samples, with the concentrations of two of the samples exceeding the TAGM 4046 surface soil cleanup objective (Table 1). One sample contained PCBs at a concentration of 108 ppm, making these sediments hazardous waste by exceeding the 50 ppm hazardous waste threshold criterion.

Metals were also detected in the sediment samples collected from within site buildings. Of these compounds, antimony, arsenic, chromium, copper, lead, mercury, nickel, silver and zinc were detected at concentrations that most frequently exceeded the TAGM 4046 soil cleanup objectives (Table 1).

Waste in Buildings

One waste sample of a felt/tar-like material from within an on-site building was collected during the SI (Figure 3). The contaminants of concern in this sample include SVOCs, PCBs, pesticides and metals (Table 1). The only SVOCs detected were di-n-butyl phthalate and pentachlorophenol, with the concentrations of both compounds exceeding their respective TAGM 4046 soil cleanup objectives (Table 1). It is important to note, however, that the laboratory detection limits for the SVOCs that were not detected were significantly elevated, so it is possible that other SVOCs are present in the felt/tar-like material.

PCBs and one pesticide (dieldrin) were also present in the felt/tar-like material, with the concentrations of these contaminants exceeding the TAGM 4046 soil cleanup objectives (Table 1).

Metals were also detected in the felt/tar-like material. Of these compounds, antimony, chromium, copper, lead, mercury, silver and zinc were detected at concentrations that exceeded the TAGM 4046 soil cleanup objectives (Table 1).

Standing Water in Buildings

One sample of standing water from the deepest basement of the on-site buildings was collected during the SI (Figure 3). The contaminants of concern in this sample include PCBs and one pesticide (dieldrin) detected at concentrations that slightly exceeded their respective surface water standards (Table 1).

Several metals were also detected in the standing water sample, although none of the detected concentrations exceeded surface water standards (Table 1).

Asbestos Containing Materials

The results of the visual asbestos survey identified several areas of suspect asbestos containing materials (ACM) in the on-site buildings. Most of the suspect ACM would likely be classified as non-friable or non-friable organically bound, including roofing material, window glazing, materials within the debris piles, floor tile mastic, electrical wire, insulation/backer board, transite panels, gaskets, canvas cloth and tar. The suspect ACM that would likely be identified as friable was generally found in small quantities. If determined to contain asbestos, however, some of the larger quantities would include prefabricated roofing blocks, fire brick inside furnaces, and the brick mortar associated with the coal silo, chimney and building structures. It is important to note that the visual asbestos assessment did not include the sampling or analysis of suspect ACM.

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.

There were no IRMs performed at this site during the SI/RAR.

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. A more detailed discussion of the human exposure pathways can be found in Section 5.3 of the SI report.

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.

Completed pathways of exposure to site-related contaminants exist on-site at this time. They include:

- Dermal contact, incidental ingestion and inhalation of contaminated dust/soil particles in surface and subsurface soil/fill to persons known to trespass on the site for the purpose of excavating artifacts from the Island portion of the site; and

- Dermal contact, incidental ingestion and inhalation of waste materials contained within the buildings, associated debris, sump/drainage structure sediments, felt/tar materials and standing water in building basements to persons known to trespass in the buildings.

Potential pathways of exposure to site-related contaminants which could occur in the future include:

- Dermal contact, incidental ingestion and inhalation of contaminated surface and subsurface soil/fill to construction workers or site trespassers; and

- Inhalation of asbestos fibers released from damaged and friable asbestos containing materials in the buildings.

Public water serves the area; therefore, ingestion of contaminated groundwater is unlikely and any future use of groundwater will be restricted via institutional controls. It is expected that future site use will be recreational; therefore, remediation and/or institutional controls (e.g., environmental easements) will be required to mitigate known and potential future exposure pathways. The institutional controls would also require that any on-site excavations be performed under a site management plan that would address potential worker/community contact with residual contamination.

5.4: Summary of Environmental Impacts

This section summarizes the existing and potential future environmental impacts presented by the site. 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.

A formal Fish and Wildlife Impact Analysis was not completed during the SI. Environmental impacts, however, were discussed in the SI report in Section 5.3, Potential Exposure Pathways. This section discusses existing and potential impacts from the site to fish and wildlife receptors. The following environmental exposure pathways have been identified:

- Dermal contact with contaminated surface soil/fill, subsurface ash fill and sediment by terrestrial and aquatic organisms inhabiting the site and stream corridor;

- Inhalation of contaminated surface soil/fill and subsurface ash fill by terrestrial organisms inhabiting the site; and

- Ingestion of contaminated surface soil/fill, subsurface ash fill and sediment by terrestrial and aquatic organisms inhabiting the site and stream corridor.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS AND THE PROPOSED USE OF THE SITE

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. 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.

The proposed future use for the Former Flintkote Plant Site is recreational.

The remediation goals for this site are to eliminate or reduce to the extent practicable:

- exposures of persons at or around the site to SVOCs, PCBs, pesticides and metals in surface soil/fill, subsurface ash fill, creek and millrace sediment, unfiltered groundwater, sediments in buildings, waste in buildings and standing water in buildings;

- environmental exposures of flora or fauna to SVOCs, PCBs and metals in surface soil/fill, subsurface ash fill, and creek and millrace sediment;

- the release of contaminants from subsurface ash fill into groundwater that may create exceedances of groundwater quality standards; and

- the release of contaminants from surface soil/fill, subsurface ash fill, unfiltered groundwater, sediments in buildings, waste in buildings and standing water in buildings into Eighteenmile Creek and the millrace through the discharge of contaminated storm water runoff, the discharge of contaminated sediments, waste and standing water in the buildings, and the erosion of contaminated surface soil/fill and subsurface ash fill.

Further, the remediation goals for the site include attaining to the extent practicable:

- ambient water quality standards;

- TAGM 4046 soil cleanup objectives; and

- sediment SCGs.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy must be protective of human health and the environment, be cost-effective and comply with other statutory requirements. Potential remedial alternatives for the Former Flintkote Plant Site were identified, screened and evaluated in the RA report which is available at the document repositories identified in Section 1.

A summary of the remedial alternatives that were considered for this site are discussed below. The present worth represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved.

7.1: Description of Remedial Alternatives

The following potential remedies were considered to address the contaminated surface soil/fill, subsurface ash fill, groundwater, sediments and waste in buildings, standing water in buildings and asbestos containing materials at the site. Because the sediments in Eighteenmile Creek upstream of the Former Flintkote Plant site are significantly contaminated with PCBs and metals, remediation of the creek and millrace adjacent to the site will be addressed through the Eighteenmile Creek Corridor Site (Site Number 932121).

Alternative 1: No Action

Present Worth: *$0*
Capital Cost: *$0*
Annual OM&M: (Years 1-30): *$0*

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

Alternative 2 – Exposure Pathway Removal

Present Worth: *$1,410,000*
Capital Cost: *$1,305,000*
Annual OM&M (Years 1-30): *$6,800*

This alternative would consist of a minimum 2 foot thick, clean soil cover with demarcation layer over non-hazardous fill materials on the 300 Parcel of the site, and the excavation and stabilization of hazardous fill materials from the Island, 198 Parcel and WSS. The stabilized fill materials would be placed back on the Island and 198 Parcel and capped with a minimum 2 foot thick, clean soil cover with demarcation layer. In addition, this alternative would also include the removal of

sediment from the Building C sump and trench drain, and from the outfall pipe to Eighteenmile Creek. The remaining interior sumps would be addressed through institutional controls and access controls, while the outfall pipe would be closed in place. Lastly, asbestos containing materials would be abated and select portions of the buildings that are in danger of collapsing would be demolished. The asbestos containing materials and building debris would be properly disposed off-site. The remaining building openings would be secured to prevent access. Alternative 2 could be implemented during one construction season.

Institutional controls, along with a site management plan, would be required since contaminated materials would remain on site. Long-term monitoring of the soil cover would also be required.

Alternative 3 – Containment with Limited Removal

Present Worth: *$2,335,000*
Capital Cost: *$2,230,000*
Annual OM&M (Years 1-30): *$6,800*

This alternative would consist of a minimum 2 foot thick, clean soil cover with demarcation layer over non-hazardous fill materials on the 300 Parcel of the site, and a minimum 2 foot thick low permeability cover system including demarcation layer over the hazardous fill materials on the Island and 198 Parcel. Hazardous fill materials on the WSS would be excavated and disposed off-site. In addition, this alternative would also include the removal of sediment from the Building C sump and trench drain, and from a portion of the outfall pipe to Eighteenmile Creek. The outfall pipe would be closed in place. Contaminated sediment from the Building D deep basement would be stabilized in situ with cement. Lastly, asbestos containing materials would be abated and the buildings would be demolished to four feet below grade. The asbestos containing materials and building debris would be properly disposed off-site. A minimum 2 foot thick, clean soil cover with demarcation layer would be installed over the demolished buildings. Alternative 3 could be implemented during one construction season.

Institutional controls, along with a site management plan, would be required since contaminated materials would remain on site. Long-term monitoring of the soil cover would also be required.

Alternative 4 – Excavation and Containment

Present Worth: *$5,614,000*
Capital Cost: *$5,552,000*
Annual OM&M (Years 1-30): *$4,000*

This alternative would consist of a minimum 2 foot thick, clean soil cover with demarcation layer over non-hazardous fill materials on the 300 Parcel of the site, and the excavation of hazardous fill materials to native soil or bedrock (where native soil is absent) on the Island, 198 Parcel and WSS. These materials would be properly disposed off-site. Following the excavation and off-site disposal of contaminated materials, clean fill would be brought to the site and the site would be re-graded to promote positive drainage. In addition, this alternative would also include the removal of sediment from the Building C sump and trench drain, and from a portion of the outfall pipe to

Eighteenmile Creek. The outfall pipe would be closed in place. Remedial options for the contaminated sediment in the Building D deep basement would be evaluated. Lastly, asbestos containing materials would be abated and the buildings would be demolished to four feet below grade. The asbestos containing materials and building debris would be properly disposed off-site. A minimum 2 foot thick, clean soil cover with demarcation layer would be installed over the demolished buildings. Alternative 4 could be implemented during one construction season.

Institutional controls, along with a site management plan, would be required since contaminated materials would remain on site. Long-term monitoring of the soil cover would also be required.

Alternative 5 – Complete Excavation

Present Worth: *$8,653,000*
Capital Cost: *$8,653,000*
Annual OM&M (Years 1-30): *$0*

This alternative would consist of the excavation and off-site disposal of all fill materials on the site. In addition, this alternative would also include the removal of sediment from the Building D deep basement, the Building C sump and trench drain, and the complete removal of the outfall pipe from Eighteenmile Creek to the building. Lastly, asbestos containing materials would be abated and the buildings would be demolished to four feet below grade. The asbestos containing materials and building debris would be properly disposed off-site. Following the excavation and off-site disposal of contaminated materials, clean fill would be brought to the site and the site would be re-graded to promote positive drainage. At the completion of this remedial alternative, the site would consist of an open grass area. Alternative 5 could be effectively implemented within one to two construction seasons.

Institutional controls, long-term monitoring and a site management plan would not be required as all contaminated materials would be removed from the site.

7.2 Evaluation of Remedial Alternatives

The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375, which governs the remediation of environmental restoration projects in New York State. A detailed discussion of the evaluation criteria and comparative analysis is included in the RA report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the NYSDEC has determined to be applicable on a case-specific basis.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

7. Cost-Effectivness. Capital costs and operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision. The costs for each alternative are presented in Table 2.

This final criterion is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

8. Community Acceptance. Concerns of the community regarding the SI/RA reports and the PRAP have been evaluated. The responsiveness summary (Appendix A) presents the public comments received and the manner in which the NYSDEC addressed the concerns raised.

In general, the public comments received were supportive of the selected remedy.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based on the Administrative Record (Appendix B) and the discussion presented below, the NYSDEC has selected Alternative 4, Excavation and Containment, as the remedy for this site. The elements of this remedy are described at the end of this section.

The selected remedy is based on the results of the SI and the evaluation of alternatives presented in the RAR.

Alternative 4 (Excavation and Containment) was selected because, as described below, it satisfies the threshold criteria and provides the best balance of the primary balancing criteria described in Section 7.2. It will achieve the remediation goals for the site by removing the fill materials that create the most significant threat to public health and the environment, and capping the remaining fill materials in place. Alternatives 2, 3, and 5 will also comply with the threshold selection criteria but to a lesser degree, with lower certainty or at greater cost.

Under Alternative 1 (No Action), the site and existing structures will remain in their current states. Existing access controls (i.e. partial chain-link fencing, boarded-up windows and doors, and police patrols) have not been fully effective in preventing trespassing, resulting in the potential for chemical and/or asbestos exposure to trespassers. Moreover, the structures are severely deteriorated, and this condition will continue to worsen, further diminishing the effectiveness of access controls and increasing the potential for contaminant releases to the surrounding community. As a result, the existing threats to public health and the environment are expected to increase over time as site conditions continue to erode. As this alternative does not satisfy the "threshold criteria" (it is not protective of human health and the environment, and does not achieve compliance with SCGs), it will not be considered for implementation at the Former Flintkote Plant Site.

Because Alternatives 2, 3, 4, and 5 satisfy the threshold criteria, the five balancing criteria are particularly important in selecting a final remedy for the site.

Alternative 2 (Exposure Pathway Removal) will satisfy the remediation goals for the protection of human health and the environment for the current use, but will not be protective of human health with respect to construction workers or the proposed future use as a recreational area because most of the contamination, although stabilized and covered with soils, will remain on-site under a soil cover and will exceed the majority of the SCGs. Alternatives 3 (Containment with Limited Removal), 4 (Excavation and Containment) and 5 (Complete Excavation), however, will satisfy the remediation goals for both the current and the proposed future use, although a future risk to construction and/or site workers will exist under Alternatives 3 and 4 as contaminated fill materials will remain on-site.

Alternatives 2 (Exposure Pathway Removal), 3 (Containment with Limited Removal), 4 (Excavation and Containment) and 5 (Complete Excavation) all have potential short term exposure risks to construction workers and the surrounding community (e.g., dust generation, noise, etc.) that will result during the implementation of these alternatives. These impacts, however, could be mitigated through standard construction practices. The application of common health and safety precautions will also minimize potential health risks to remedial contractors and the surrounding community during the implementation of these alternatives. Caution during excavation near the millrace and Eighteenmile Creek will be required to prevent impacts to these surface water bodies.

The soil covers (or cover systems) of Alternatives 2, 3 and 4 will be subject to weathering, erosion, and degradation from tree growth and vector intrusion. The potential for erosion of the soil covers or cover systems, however, will be reduced through the implementation of a semiannual monitoring

program. Operation, maintenance, and monitoring (OM&M) of the covers will be conducted as needed. Additionally, exposure risks to construction workers and the surrounding community associated with future invasive activities at the site could be effectively minimized through the use of a site management plan and standard construction and health and safety precautions. Long-term effectiveness is best achieved by Alternative 5 as all contaminated materials will be removed from the site.

Under Alternatives 2 (Exposure Pathway Removal), 3 (Containment with Limited Removal), 4 (Excavation and Containment) and 5 (Complete Excavation), the volume of contaminants will be reduced through the removal of contaminants associated with the sump and trench drain in Building C, the outfall pipe to Eighteenmile Creek and asbestos containing materials within the existing buildings. The volume of contaminants will be further reduced under Alternatives 4 and 5 as hazardous (Alternatives 4 and 5) and non-hazardous (Alternative 5) fill materials will be excavated and disposed off-site.

For Alternative 2 (Exposure Pathway Removal), while the toxicity and mobility of contaminants within the hazardous fill will be reduced through the stabilization process and the installation of a soil cover, the stabilization process will result in an increase in the total volume of contaminated media on site. For Alternatives 3 (Containment with Limited Removal) and 4 (Excavation and Containment), the mobility of both organic and inorganic contaminants in the fill materials will be reduced by the cover systems. Alternative 5 will completely reduce the toxicity and mobility of the contaminants at the site.

The cost of the alternatives varies significantly. Although Alternatives 2 (Exposure Pathway Removal) and 3 (Containment with Limited Removal) are less expensive than Alternatives 4 (Excavation and Containment) and 5 (Complete Excavation), hazardous fill materials will remain on-site under these alternatives. Alternative 5 has the greatest cost because all contaminated materials will be removed from the site. The additional cost of this alternative compared to Alternative 4 (approximately $3,000,000) makes this alternative less favorable.

The estimated present worth cost to implement the remedy is $5,614,000. The cost to construct the remedy is estimated to be $5,552,000 and the estimated average annual operation, maintenance, and monitoring costs for 30 years is $6,800.

The elements of the selected remedy are as follows:

- Construction of a minimum 2 foot thick, clean soil cover with demarcation layer over the non-hazardous fill materials on the 300 Parcel of the site;

- Excavation of hazardous fill materials to native soils or bedrock (where native soils are absent) on the 198 Parcel, Island and Water Street Section (WSS) of the site. These materials will be disposed off-site in an approved facility;

- Removal of sediments from the Building C sump and trench drain, and evaluate options to address sediments in the Building D deep basement;

- Removal of sediment from a portion of an outfall pipe to Eighteenmile Creek and closure of the pipe in place;

- Abatement of asbestos containing materials (ACMs). These materials will be disposed off-site in an approved facility;

- Demolition of all buildings to four feet below grade. Removal of C&D debris from exterior portions of the site. These materials will be disposed off-site in an approved facility;

- Installation of a minimum 2 foot thick, clean soil cover with demarcation layer over the demolished building footprint;

- A remedial design program to provide the details necessary to implement the remedial program;

- Development of a site management plan to: (a) address residual contaminated soils that may be excavated from the site during future redevelopment. The plan will require soil characterization and, where applicable, disposal/reuse in accordance with NYSDEC regulations; (b) identify any use restrictions; and (c) provide for the operation and maintenance of the components of the remedy.

- Imposition of an institutional control in the form of an environmental easement that will (a) require compliance with the approved site management plan; (b) limit the use and development of the property to recreational uses only; (c) restrict the use of groundwater as a source of potable water, without necessary water quality treatment as determined by NYSDOH; and (d) require the property owner to complete and submit to the NYSDEC a periodic certification.

- The property owner will provide a periodic certification, prepared and submitted by a professional engineer or such other expert acceptable to the NYSDEC, until the NYSDEC notifies the property owner in writing that this certification is no longer needed. This submittal will contain certification that the institutional controls and engineering controls, are still in place, allow the NYSDEC access to the site, and that nothing has occurred that will 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; and

- Since the remedy results in untreated hazardous substances remaining at the site, a long term monitoring program will be instituted. This monitoring program will consist of semiannual inspections of the soil cover to document its continued effectiveness.

SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the Former Flintkote Plant Site 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 Fact Sheet summarizing the results of the Site Investigation completed by the NYSDEC was distributed to the mailing list in March 2001.
- A Fact Sheet announcing the beginning of the Site Investigation by Niagara County was distributed to the mailing list in August 2003.
- A Fact Sheet announcing the public meeting on the PRAP was distributed to the mailing list in February 2006.
- A public meeting was held on February 27, 2005 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.

TABLE 1
Nature and Extent of Contamination
October 1995 - October 2003

SURFACE SOIL/ FILL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	Benzo(a)anthracene	0.22 - 110.0	0.224	9 of 10
	Benzo(a)pyrene	ND[c] - 20.0	0.061	9 of 10
	Benzo(b)fluoranthene	0.32 - 160.0	1.1	5 of 10
	Benzo(k)fluoranthene	ND - 200.0	1.1	6 of 10
	Chrysene	0.26 - 92.0	0.4	9 of 10
	Dibenzo(a,h)anthracene	ND - 16.0	0.014	6 of 10
PCBs	PCB - 1254	ND - 4.6	1.0	3 of 10
Inorganic Compounds	Antimony	1.5 - 149.0	2.0	8 of 10
	Arsenic	9.2 - 59.6	7.5	10 of 10
	Barium	64.2 - 2,440	300.0	6 of 10
	Chromium	11.1 - 186.0	14.0	8 of 10
	Copper	36.4 - 51,000	25.0	10 of 10
	Lead	57.6 - 7,610	53.0	10 of 10
	Mercury	0.25 - 10.8	0.1	10 of 10
	Nickel	16.4 - 549.0	18.0	9 of 10
	Silver	0.13 - 19.2	0.19	8 of 10
	Zinc	115.0 - 21,900	255.0	7 of 10

SUBSURFACE ASH FILL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	Benzo(a)anthracene	ND - 16.0	0.224	19 of 26
	Benzo(a)pyrene	ND - 12.0	0.061	20 of 26
	Benzo(b)fluoranthene	ND - 12.0	1.1	19 of 26
	Benzo(k)fluoranthene	ND - 16.0	1.1	9 of 26
	Chrysene	ND - 14.0	0.4	20 of 26
	Dibenzo(a,h)anthracene	ND - 1.5	0.014	8 of 26
PCBs	PCB - Total	ND - 6.8	10.0	0 of 18

TABLE 1
Nature and Extent of Contamination (Continued)

SUBSURFACE ASH FILL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Inorganic Compounds	Antimony	1.4 - 128.0	2.0	6 of 7
	Arsenic	10.3 - 188.0	7.5	27 of 27
	Barium	82.4 - 9,190	300.0	18 of 27
	Chromium	5.7 - 314.0	14.0	22 of 27
	Copper	42.4 - 35,800	25.0	27 of 27
	Lead	50.0 - 23,100	53.0	26 of 27
	Mercury	0.071 - 65.8	0.1	26 of 27
	Nickel	8.6 - 3,560	18.0	24 of 27
	Silver	ND - 23.6	0.19	21 of 27
	Zinc	74.8 - 13,000	255.0	22 of 27
Inorganic Compounds - TCLP[d]	Cadmium	ND - 1.58	1.0	1 of 18
	Lead	0.018 - 114.0	5.0	7 of 18

SUBSURFACE SOIL - NATIVE	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	Benzo(a)anthracene	ND - 3.2	0.224	2 of 10
	Benzo(a)pyrene	ND - 2.6	0.061	3 of 10
	Benzo(b)fluoranthene	ND - 2.9	1.1	1 of 10
	Benzo(k)fluoranthene	ND - 2.3	1.1	1 of 10
	Chrysene	ND - 3.1	0.4	2 of 10
	Dibenzo(a,h)anthracene	ND - 0.61	0.014	3 of 10
Inorganic Compounds	Antimony	ND - 6.8	2.0	2 of 11
	Arsenic	1.0 - 14.2	7.5	3 of 11
	Barium	22.8 - 87.7	300.0	0 of 11
	Chromium	4.9 - 13.9	14.0	0 of 11
	Copper	3.9 - 406.0	25.0	7 of 11
	Lead	2.7 - 914.0	53.0	2 of 11

TABLE 1
Nature and Extent of Contamination (Continued)

SUBSURFACE SOIL - NATIVE	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Inorganic Compounds (continued)	Mercury	ND - 0.629	0.1	2 of 11
	Nickel	6.1 - 26.8	18.0	2 of 11
	Silver	ND - 0.49	0.19	3 of 11
	Zinc	16.7 - 259.0	255.0	1 of 11

CREEK/MILLRACE SEDIMENT	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	Benzo(a)anthracene	1.2 - 480.0	1.3[e]	6 of 7
	Benzo(a)pyrene	0.98 - 98.0	1.3[e]	6 of 7
	Benzo(b)fluoranthene	1.8 - 390.0	1.3[e]	7 of 7
	Benzo(k)fluoranthene	0.68 - 260.0	1.3[e]	3 of 7
	Chrysene	1.1 - 450.0	1.3[e]	6 of 7
	Dibenzo(a,h)anthracene	ND - 100.0	NS[f]	
	Indeno(1,2,3-cd)pyrene	0.45 - 100.0	1.3[e]	4 of 7
	Phenanthrene	0.82 - 1,900	120[g]	1 of 7
PCBs	PCB - Total	ND - 8.8	1.0[h]	5 of 7
Inorganic Compounds	Antimony	2.1	LEL[i] - 2.0	1 of 1
			SEL[j] - 25.0	0 of 1
	Arsenic	2.1 - 36.8	LEL[i] - 6.0	2 of 7
			SEL[j] - 33.0	1 of 7
	Barium	81.7 - 784.0	NS	
	Chromium	17.7 - 167.0	LEL[i] - 26.0	5 of 7
			SEL[j] - 110.0	1 of 7
	Copper	108.0 - 7,550	LEL[i] - 16.0	7 of 7
			SEL[j] - 110.0	6 of 7
	Lead	189.0 - 5,940	LEL[i] - 31.0	7 of 7
			SEL[j] - 110.0	7 of 7

TABLE 1
Nature and Extent of Contamination (Continued)

CREEK/MILLRACE SEDIMENT	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Inorganic Compounds (continued)	Mercury	0.26 - 4.9	LEL[i] - 0.15	7 of 7
			SEL[i] - 1.3	1 of 7
	Nickel	19.1 - 333.0	LEL[i] - 16.0	7 of 7
			SEL[i] - 50.0	1 of 7
	Silver	0.39 - 15.4	LEL[i] - 1.0	5 of 7
			SEL[i] - 2.2	3 of 7
	Zinc	359.0 - 13,000	LEL[i] - 120.0	7 of 7
			SEL[i] - 270.0	7 of 7

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
SVOCs	Pentachlorophenol	ND - 200.0	1.0	1 of 17
PCBs	PCB - 1254	ND - 8.1	0.09	2 of 17
Inorganic Compounds - Unfiltered	Antimony	ND - 65.3	3.0	7 of 13
	Arsenic	ND - 238.0	25.0	11 of 18
	Barium	50.2 - 3,830	1,000	5 of 18
	Chromium	ND - 388.0	50.0	10 of 18
	Copper	ND - 13,200	200.0	13 of 18
	Lead	3.4 - 12,100	25.0	13 of 18
	Mercury	ND - 9.8	0.7	7 of 18
	Nickel	2.2 - 649.0	100.0	8 of 18
	Silver	ND - 26.2	50.0	0 of 18
	Zinc	6.4 - 34,100	2,000	10 of 18
Inorganic Compounds - Filtered	Arsenic	ND - 5.9	25.0	0 of 11
	Barium	28.6 - 353.0	1,000	0 of 11
	Chromium	ND - 1.1	50.0	0 of 11
	Lead	ND - 13.3	25.0	0 of 11

TABLE 1
Nature and Extent of Contamination (Continued)

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Inorganic Compounds - Filtered (continued)	Mercury	ND	0.7	0 of 11
	Silver	ND	50.0	0 of 11

CREEK SURFACE WATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Inorganic Compounds	Antimony	ND	3.0	0 of 1
	Arsenic	ND	50.0	0 of 2
	Barium	27.9 - 53.9	1,000	0 of 2
	Chromium	ND - 4.0	50.0	0 of 2
	Copper	1.9 - 5.4	200.0	0 of 2
	Lead	ND - 3.5	50.0	0 of 2
	Mercury	ND	0.7	0 of 2
	Nickel	2.5 - 2.8	100.0	0 of 2
	Silver	ND	50.0	0 of 2
	Zinc	3.9 - 27.2	2,000	0 of 2

SEDIMENTS IN BUILDINGS	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	Benzo(a)anthracene	0.95 - 3.5	0.224	3 of 3
	Benzo(a)pyrene	ND - 4.8	0.061	2 of 3
	Benzo(b)fluoranthene	0.72 - 3.6	1.1	1 of 3
	Benzo(k)fluoranthene	0.78 - 3.8	1.1	1 of 3
	Bis(2-ethylhexyl)phthalate	ND - 120.0	50.0	2 of 3
	Chrysene	0.86 - 4.5	0.4	3 of 3
	Dibenzo(a,h)anthracene	ND - 0.85	0.014	1 of 3
	Dimethylphthalate	ND - 3.0	2.0	1 of 3
	Di-n-butyl Phthalate	ND - 41.0	8.1	1 of 3

TABLE 1
Nature and Extent of Contamination (Continued)

SEDIMENTS IN BUILDINGS	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
PCBs	PCBs - Total	0.97 - 108.0	1.0	2 of 3
Inorganic Compounds	Antimony	13.9 - 279.0	2.0	3 of 3
	Arsenic	30.2 - 55.5	7.5	3 of 3
	Barium	248.0 - 357.0	300.0	1 of 3
	Chromium	93.7 - 180.0	14.0	3 of 3
	Copper	3,150 - 53,400	25.0	3 of 3
	Lead	484.0 - 13,600	53.0	3 of 3
	Mercury	1.5 - 8.1	0.1	3 of 3
	Nickel	140.0 - 288.0	18.0	3 of 3
	Silver	3.2 - 15.6	0.19	3 of 3
	Zinc	5,760 - 45,100	255.0	3 of 3

WASTE IN BUILDINGS	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	Benzo(a)anthracene	ND (28.0)	0.224	0 of 1
	Benzo(a)pyrene	ND (28.0)	0.061	0 of 1
	Benzo(b)fluoranthene	ND (28.0)	1.1	0 of 1
	Benzo(k)fluoranthene	ND (28.0)	1.1	0 of 1
	Chrysene	ND (28.0)	0.4	0 of 1
	Dibenzo(a,h)anthracene	ND (28.0)	0.014	0 of 1
	Di-n-butyl Phthalate	14.0	8.1	1 of 1
	Pentachlorophenol	250.0	1.0	1 of 1
PCB/Pesticides	PCB - 1242	6.3	1.0	1 of 1
	Dieldrin	1.4	0.044	1 of 1
Inorganic Compounds	Antimony	33.1	2.0	1 of 1
	Arsenic	3.2	7.5	0 of 1
	Barium	92.2	300.0	0 of 1

TABLE 1
Nature and Extent of Contamination (Continued)

WASTE IN BUILDINGS	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Inorganic Compounds (continued)	Chromium	27.0	14.0	1 of 1
	Copper	78.0	25.0	1 of 1
	Lead	586.0	53.0	1 of 1
	Mercury	1.3	0.1	1 of 1
	Nickel	7.2	18.0	0 of 1
	Silver	1.3	0.19	1 of 1
	Zinc	316.0	255.0	1 of 1

STANDING WATER IN BUILDINGS	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
PCB/Pesticides	PCB - 1248	0.6	0.09	1 of 1
	Dieldrin	0.1	0.004	1 of 1
Inorganic Compounds - Total	Antimony	ND	3.0	0 of 1
	Arsenic	ND	50.0	0 of 1
	Barium	46.2	1,000	0 of 1
	Chromium	3.9	50.0	0 of 1
	Copper	51.5	200.0	0 of 1
	Lead	5.8	50.0	0 of 1
	Mercury	0.1	0.7	0 of 1
	Nickel	8.2	100.0	0 of 1
	Silver	ND	50.0	0 of 1
	Zinc	268.0	2,000	0 of 1

[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;
[b] SCG = standards, criteria, and guidance values;
[c] ND = contaminant analyzed but not detected;
[d] TCLP = Toxicity Characteristic Leaching Procedure;
[e] human health bioaccumulation;
[f] NS = no standard or guidance value available;
[g] chronic toxicity to benthic aquatic life;

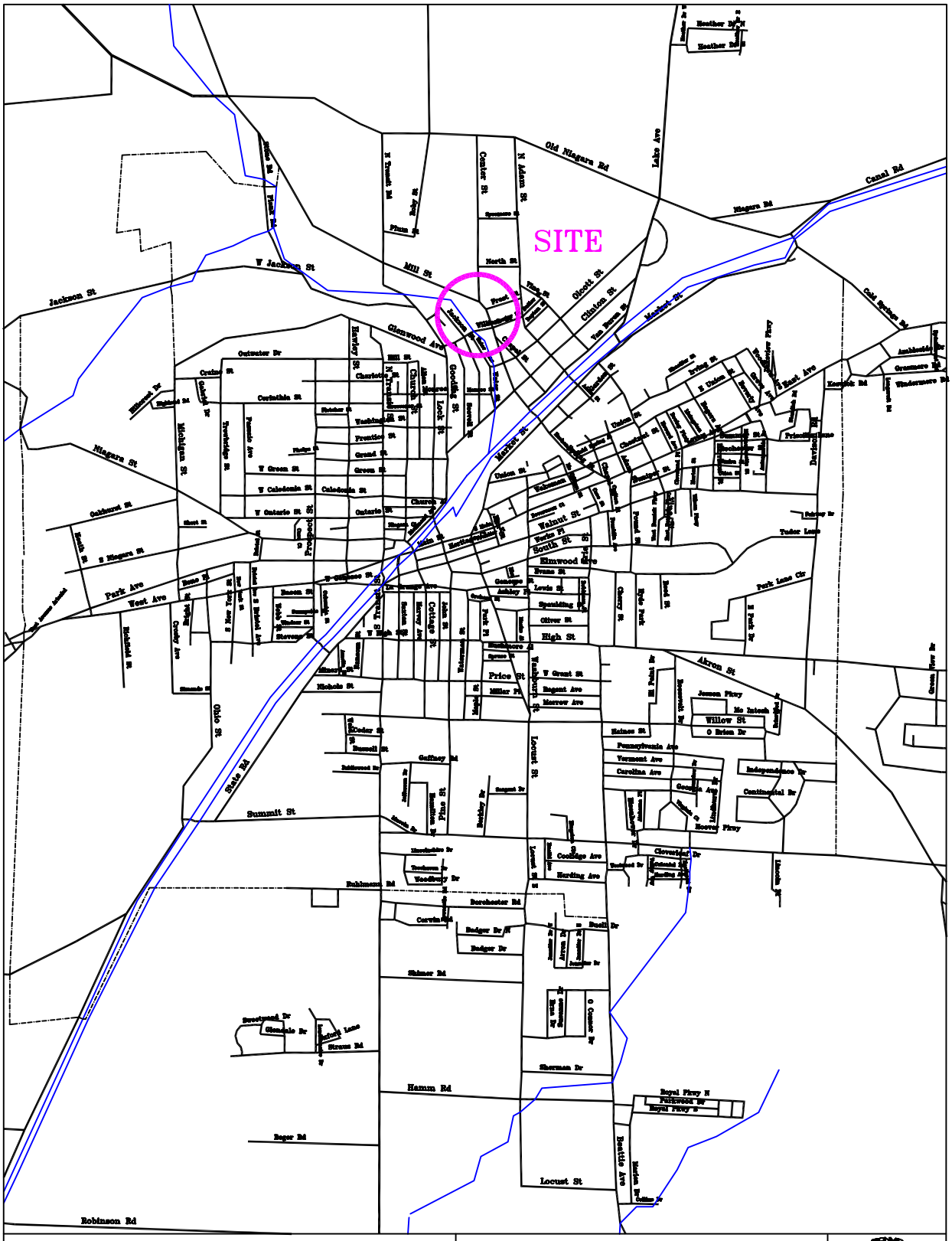
TABLE 1
Nature and Extent of Contamination (Continued)

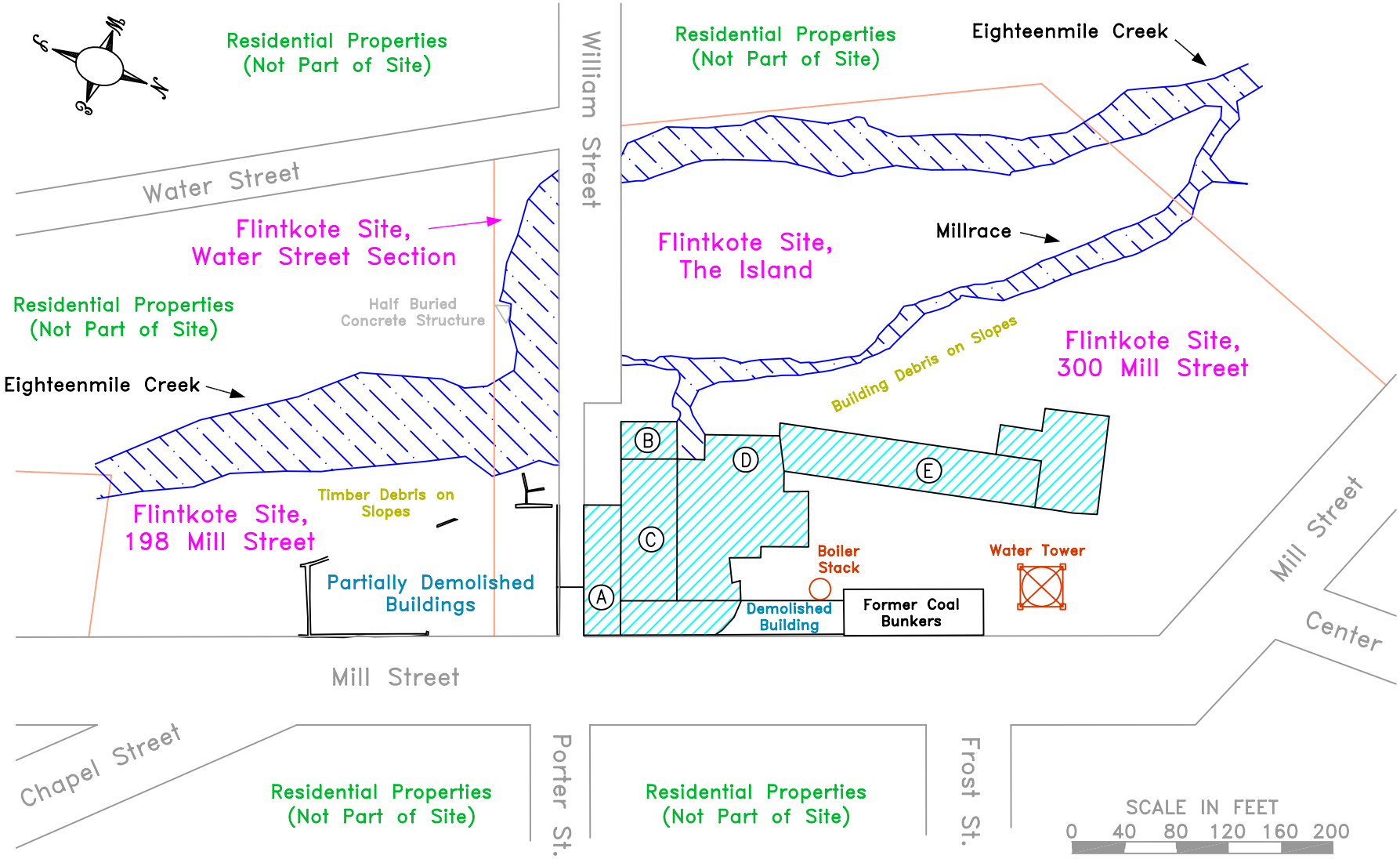
[h] TAGM 4046 surface soil SCG for PCBs; and
[i] LEL = Lowest Effects Level and SEL = Severe Effects Level. A sediment is considered to be contaminated if either of these criteria is exceeded. If both criteria are exceeded, the sediment is severely impacted. If only the LEL is exceeded, the impact is considered to be moderate.

Shaded SCGs represent site background values as determined during the SI.

TABLE 2
Remedial Alternative Costs

Remedial Alternative	Capital Cost	Annual OM&M	Total Present Worth
No Action	$0	$0	$0
Exposure Pathway Removal	$1,305,000	$6,800	$1,410,000
Containment with Limited Removal	$2,230,000	$6,800	$2,335,000
Excavation and Containment	$5,552,000	$4,000	$5,614,000
Complete Excavation	$8,653,000	$0	$8,653,000


SITE
Old Niagara Rd
Canal Rd
Niagara St
Jackson St
W Jackson St
Mill St
North St
Glenwood Ave
Market St
Union St
Walnut St
South St
Elmwood Ave
High St
Price St
Akron St
Willow St
Park Ave
West Ave
Summit St
State Rd
Ohio St
Michigan St
Locust St
Hamm Rd
Robinson Rd
Lake Ave
Cold Springs Rd
Davison Rd
Tudor Lane
Park Lane Cir
Hoover Pkwy
Royal Pkwy N
Royal Pkwy S
Beattie Ave
Sherman Dr
Shimer Rd
Burchester Rd
Coolidge Ave
Harding Ave
Galfney Rd
Nichols St
Haines St
Pennsylvania Ave
Vermont Ave
Carolina Ave
Independence Dr
Continental Dr
Clovelly Dr
Lincoln St
Jessen Pkwy
Mc Intosh
O Brien Dr
Cortlandt St
Cortlandt Lane
Strauss Rd
Glenoak Dr
Sycamore Dr
Woodbury Dr
Bushell Dr
Badger Dr
Bagar Rd
Hillcrest Dr
Goldhurst St
Cruiser St
Outwater Dr
Corinthia St
Charlotte St
Hill St
Barclay St
Church St
Allen St
Monroe St
Goodrich St
Lock St
Center St
N Adam St
Clinton St
Van Buren St
Gloott St
Ellicott St
Pratt St
Pine St
Ridge St
N Transit St
Prospect St
Fletcher St
Vanburen St
Frontier St
Grand St
Green St
W Green St
W Caledonia St
Caledonia St
W Ontario St
Ontario St
Hodge St
Short St
Beech St
S Niagara St
Bates St
Bacon St
Hubbard St
Stevens St
Cedar Ave
Richard St
Ridge Rd
Cranes St
Stockbridge St
Pennsylvania Ave
Vanburen St
Bryant St
Lewis St
Spaulding St
Oliver St
Ashley Pl
Genesee St
Evans St
Porter Pl
Prospect St
Cherry St
Ryle Park
Reed St
Pearl St
Chestnut St
Cleveland St
Bruce St
Hawley St
Cottage St
Harvey Ave
Adam St
Pine St
Washburn St
Miller Pl
Regent Ave
Morrow Ave
V Grant St
Bunell St
Rodney St
Bunell Dr
Bakewell Dr
Regent Dr
Buckley Dr
Hamilton St
Hamilton Dr
Woodbury Dr
Sherman Dr
Bryan Dr
O Connor Dr
Lincoln St
Marion St
Lockport Dr
Lockport St
Lockport Dr
Tuscarora Dr
Tuscarora Dr
Tuscarora



FLINTKOTE SITE MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 05/11/00 | DRAWING: SITEMAP.DWG

SITE: FORMER FLINTKOTE PLANT SITE

FIGURE 2

LEGEND:

- PROPERTY LINE
- SURFACE SOIL SAMPLE LOCATION (NIAGARA COUNTY INVESTIGATION)
- BUILDING SAMPLE LOCATION (NIAGARA COUNTY INVESTIGATION)

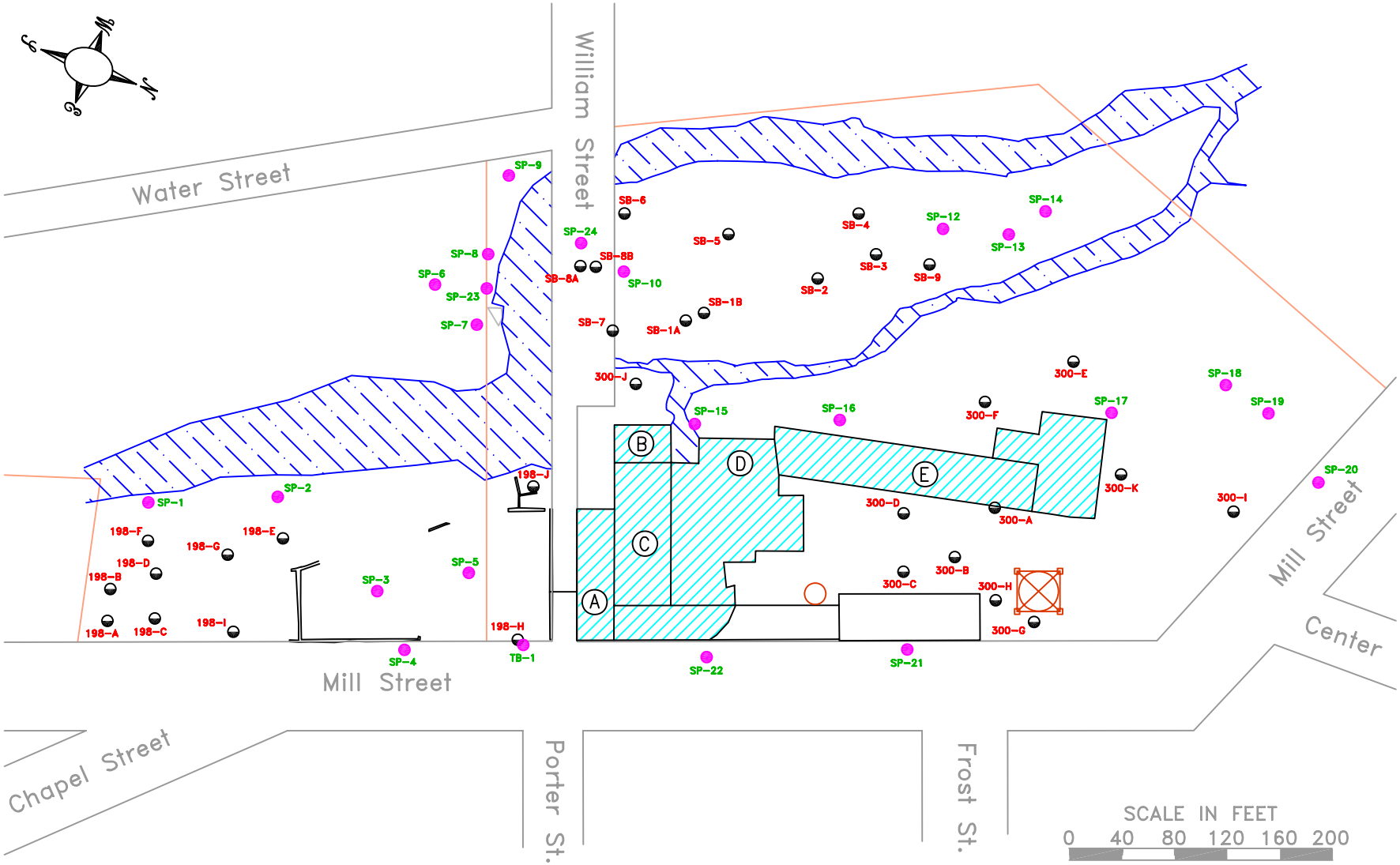
SURFACE SOIL & BUILDING SAMPLE LOCATION MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 05/11/00 | DRAWING: SITEMAP.DWG

SITE: FORMER FLINTKOTE PLANT SITE

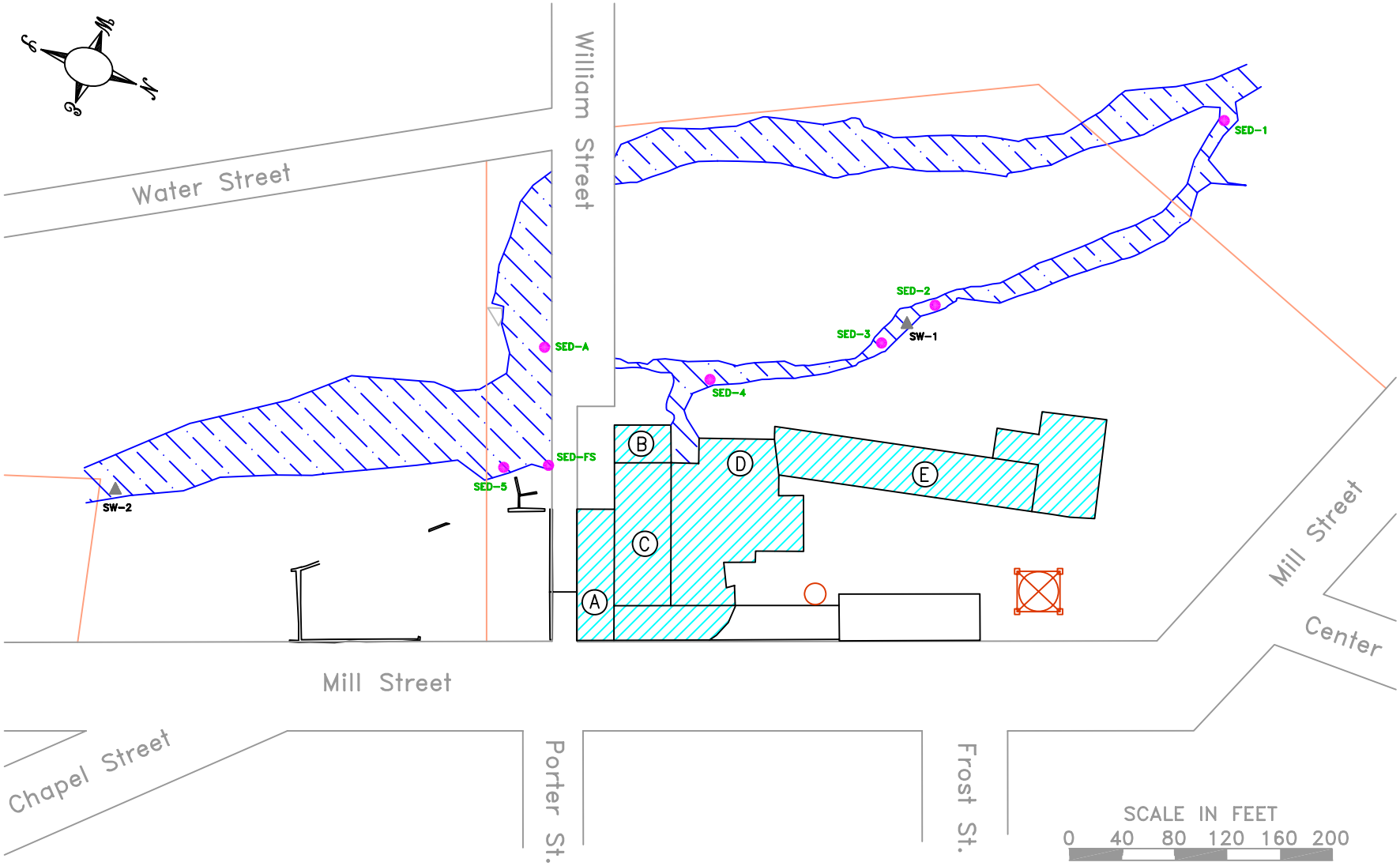
FIGURE 3



LEGEND:

- PROPERTY LINE
- SOIL BORING LOCATION (NYSDEC INVESTIGATION)
- SOIL BORING LOCATION (NIAGARA COUNTY INVESTIGATION)

SOIL BORING LOCATION MAP	
DIVISION OF ENVIRONMENTAL REMEDIATION	
DATE: 05/11/00	DRAWING: SITEMAP.DWG
SITE: FORMER FLINTKOTE PLANT SITE	FIGURE 4



LEGEND:

- PROPERTY LINE
- ▲ SURFACE WATER SAMPLE LOCATION (NYSDEC INVESTIGATION)
- ● SEDIMENT SAMPLE LOCATION (NYSDEC & NIAGARA COUNTY INVESTIGATION)

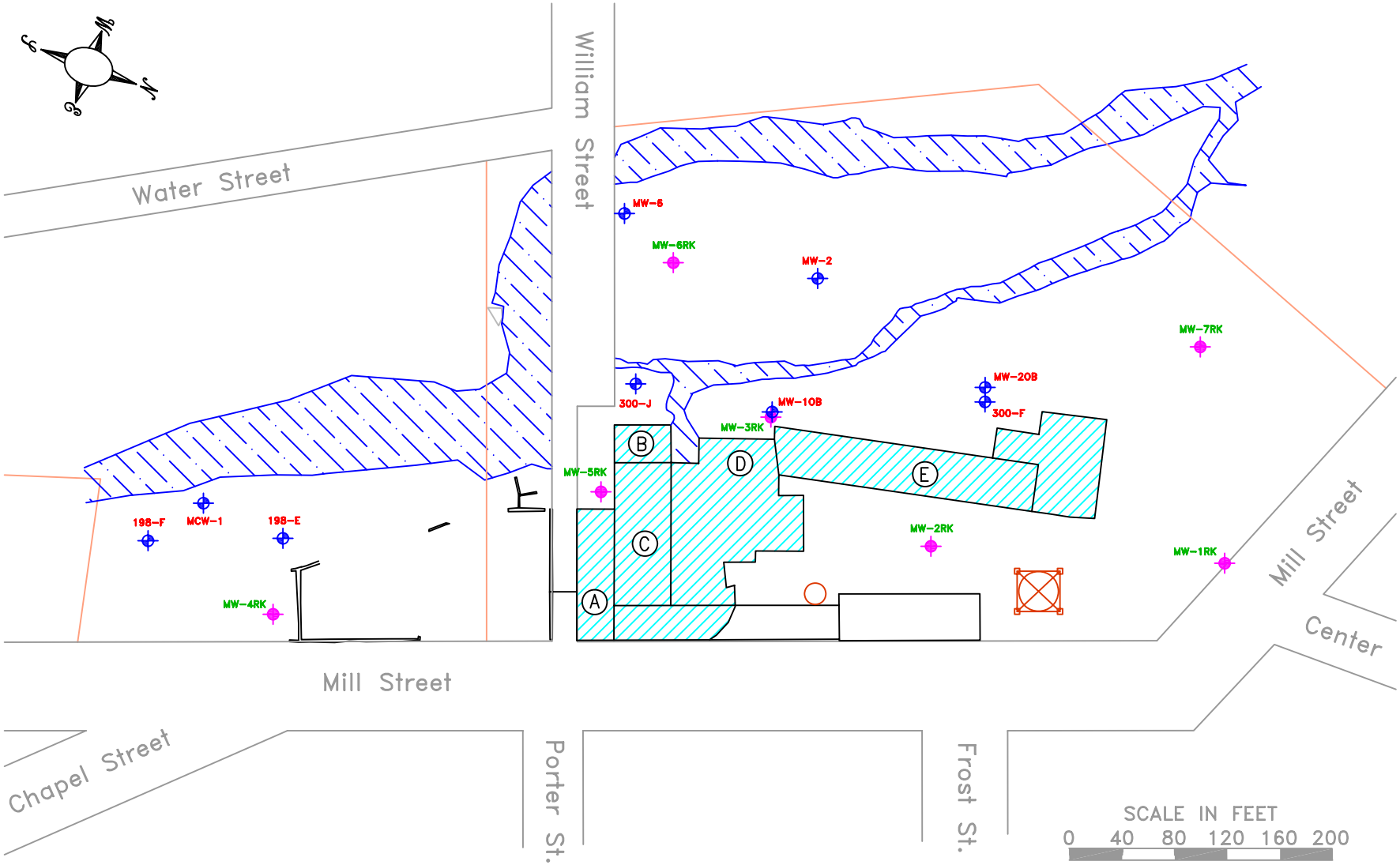
SEDIMENT & SURFACE WATER SAMPLE LOCATION MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 05/11/00 | DRAWING: SITEMAP.DWG

SITE: FORMER FLINTKOTE PLANT SITE

FIGURE 5



LEGEND:

- PROPERTY LINE
- OVERBURDEN MONITORING WELL LOCATION
- BEDROCK MONITORING WELL LOCATION

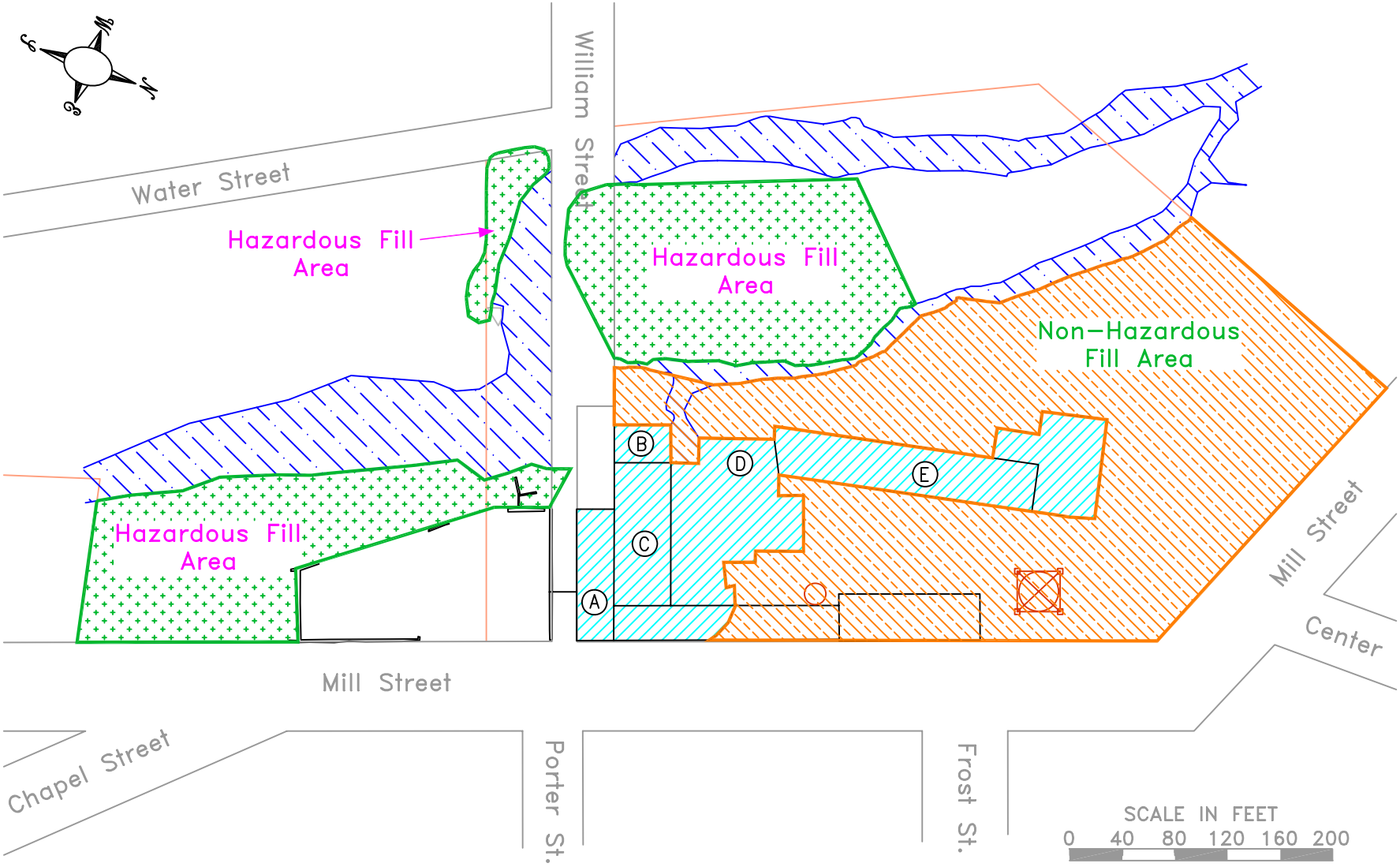
MONITORING WELL LOCATION MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 05/11/00 | DRAWING: SITEMAP.DWG

SITE: FORMER FLINTKOTE PLANT SITE

FIGURE 6



LEGEND:

HAZARDOUS FILL AREAS

NON-HAZARDOUS FILL AREAS

LOCATION OF HAZARDOUS AND NON-HAZARDOUS FILL AREAS

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 05/11/00 | DRAWING: SITEMAP.DWG

SITE: FORMER FLINTKOTE PLANT SITE

FIGURE 7

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Former Flintkote Plant Environmental Restoration Site
City of Lockport, Niagara County, New York
Site No. B-00161-9

The Proposed Remedial Action Plan (PRAP) for the Former Flintkote Plant site, was prepared by the New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 7, 2006. The PRAP outlined the remedial measure proposed for the contaminated soils and sediment at the Former Flintkote Plant 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 February 27, 2006, 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 March 23, 2006.

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

COMMENT 1: How long will it be before remediation at this site is complete?

RESPONSE 1: It typically takes 1 to 1½ years to complete the required design activities and prepare construction specifications. At the end of this process, the project will go out to bid and a remediation contractor will be hired to implement the selected remedy. The actual remediation should take 1 or 2 years to complete depending upon weather conditions and actual field conditions encountered.

COMMENT 2: Has there been some type of dialogue with Niagara County about this ERP project? Is the county ready to contribute its 10%?

RESPONSE 2: Formal discussions with Niagara County about implementing the selected remedy have not yet taken place, although there have been regular discussions with the county during the Site Investigation phase. Once the Record of Decision (ROD) is issued by the NYSDEC, a letter will be sent to Niagara County asking the county if it wishes to remain in the Environmental Restoration Program (ERP). The county has 60 days to respond. For the

selected remedy, the County's share of the project is estimated to be approximately $600,000. New York State will provide the remaining 90% of the funding. The NYSDEC is not aware of the County's position on providing the 10% portion of the remedial costs.

COMMENT 3: Where does the buck stop on the 90% that New York State will contribute to the cleanup? Will it cover site improvements such as the addition of a baseball field or things like that?

RESPONSE 3: New York State's 90% share of the remediation costs only covers the actual remediation of the site. Any costs necessary to make site improvements to accommodate future recreational use will be the responsibility of Niagara County. As part of the remediation, however, some basic elements of the proposed recreational area can be incorporated into the remedial design (e.g., site grades, pathways, berms, etc).

COMMENT 4: I am concerned that Niagara County will not remain in the ERP. What happens then?

RESPONSE 4: If Niagara County decides not to remain in the Environmental Restoration Program, the NYSDEC will remediate the site through use of the State Superfund Program. Before this can happen, however, the site will need to be listed as a Class 2 hazardous waste site in the NYSDEC's Registry of Inactive Hazardous Waste Disposal Sites in New York State (Registry). A Class 2 site is one that presents a significant threat to human health and/or the environment.

COMMENT 5: How will the cleanup schedule for the site be affected if the site becomes a Superfund site? Will it take longer to remediate than if the site remained under the ERP?

RESPONSE 5: Remediation of the site under the Superfund Program will be similar to the remediation under the ERP and follow essentially the same process discussed in Response 1. The only difference in the process is that the site must first be listed in the Registry (see Response 4) and then a referral made to utilize State Superfund monies. This process can take up to 9 months to complete. Following listing, the time frame to complete remediation will be similar to that discussed in Response 1.

COMMENT 6: Is the only difference between the Superfund Program and the ERP the monetary percentage that the municipality will have to contribute?

RESPONSE 6: Under the ERP, Niagara County's share of the remediation costs would be 10%. Under the State Superfund Program, the state would pay for the remediation. As the owner of the 300 Mill Street parcel, however, the

County may be liable for remedial costs under Superfund cost recovery requirements.

COMMENT 7: The possible 3½ to 4 year time line for this project is concerning. In the meantime, what are the real risks for human exposure?

RESPONSE 7: Currently, there is no risk unless someone trespasses on the site. Potential exposure pathways associated with this site include: (1) dermal contact, incidental ingestion and inhalation of contaminated surface and subsurface soil/fill to site trespassers; and (2) inhalation of asbestos fibers released from damaged and friable asbestos containing materials in the buildings.

COMMENT 8: What is the health risk to trespassers? In twenty years, will children that play on this site develop cancer as a result?

RESPONSE 8: The health risk to trespassers is considered low because potential exposures to site contaminants would be expected to be only occasional and of short duration. We can't predict the exact impact playing at the site will have on the children involved. Development of cancer usually results from the interaction of multiple factors, including lifestyle choices, genetics, and exposure to carcinogens. While there is no conclusive proof that lead, the major contaminant of concern at the site, causes cancer in humans, polycyclic aromatic hydrocarbons (PAHs), also found on the site at levels substantially above background, may reasonably be expected to cause cancer. The difficulty in evaluating any change in cancer risk comes in part from not having enough information about the childrens' exposure while playing at the site. However, given the likely short duration and inconsistency of playing episodes, we expect the potential for exposures to site contaminants to be low, and thus do not expect increases in future cancer incidence from this playing activity.

The most effective means of protecting children from site related contaminants is to talk to your children about trespassing on the site.

COMMENT 9: Many children trespass on this site and it is difficult to enforce no trespassing. As a result, the health risks to trespassers are a reality and need to be considered.

RESPONSE 9: Niagara County has acknowledged this concern and completed efforts in the past to repair fencing around the site, board up openings in the buildings, and place fencing across William Street near Mill Street to deter trespassers. The United States Environmental Protection Agency also installed a metal barricade across William Street near Water Street to block access to the site. These efforts to limit access will continue; however, we also acknowledge that these efforts have been only partly successful.

COMMENT 10: You mentioned the word "friable" in your presentation when discussing asbestos containing material. What does that mean?

RESPONSE 10: Asbestos containing material is friable if it can be crumbled, pulverized, or reduced to dust by hand pressure, or if it is a non-friable material that is worn, weathered, shattered, or mishandled.

COMMENT 11: You mentioned that the outfall pipe will be capped. Will the pipe itself be removed? What is in the pipe? Any contaminants?

RESPONSE 11: Sediment in an outfall pipe to Eighteenmile Creek was sampled and analyzed during the Site Investigation. The contaminants of concern in the sediment include PAHs and metals. The full extent of the sediment within the pipe is unknown due to the limited understanding of the site's drainage system. During remediation of the site, this sediment will be removed from the pipe and the pipe will be closed in place.

COMMENT 12: The 46,500 number that you mentioned in Alternative 4 regarding excavation...can you explain that further? What will the excavation involve?

RESPONSE 12: The Site Investigation determined that the Former Flintkote Plant Site contains approximately 46,500 cubic yards of ash fill. Under Alternative 4, approximately 17,100 cubic yards of ash fill on the Island, 198 Parcel and Water Street Section of the site will be excavated to native soil or bedrock (where native soil is absent) and properly disposed off-site. Following excavation, clean fill will be brought to the site and the site will be re-graded to promote positive drainage. The remaining ash fill (300 Parcel of the site) will be covered with a minimum 2 foot thick, clean soil cover with a grass cover established.

COMMENT 13: About the non-hazardous area that won't be capped, can it eventually be turned back into residential use?

RESPONSE 13: One of the elements of the selected remedy is the imposition of an institutional control in the form of an environmental easement. The environmental easement, in part, will limit the use and development of the property to recreational uses only.

COMMENT 14: You mentioned five alternatives for cleaning up this site. Residents would like to see complete excavation (Alternative 5) as the selected alternative.

RESPONSE 14: Alternative 4 (Excavation and Containment) was selected because it satisfies the threshold criteria (Protection of Human Health and the Environment, and Compliance with New York State Standards, Criteria, and Guidance) and provides the best balance of the primary balancing criteria (Short-term Effectiveness, Long-term Effectiveness and Permanence, Reduction of

Toxicity, Mobility or Volume, Implementability and Cost). Alternative 5 has the greatest cost because all contaminated materials would be removed from the site. The additional cost of this alternative compared to Alternative 4 (approximately $3,000,000) makes this alternative less favorable.

COMMENT 15: How long after the project is completed will this site be monitored? Will a consultant be hired to continue monitoring it after remediation work is completed?

RESPONSE 15: Following remediation, long-term monitoring of the soil cover will be required to ensure the effectiveness of the cover. It will be the property owners' responsibility to perform any long term monitoring that may be required with periodic certification to the NYSDEC that the cover is in place and functioning as designed.

COMMENT 16: Will the William Street Bridge be demolished or restored as part of the plan? What can residents expect for the bridge's future?

RESPONSE 16: The William Street bridge and the portion of William Street across the Island will most likely need to be removed during remediation of the site. The selected remedy does not include the replacement of this bridge and road. Since hazardous fill materials will be excavated from the Island, the completed remedy does not preclude the replacement of the bridge and road by the City of Lockport or Niagara County. The NYSDEC will work closely with City and County officials during any work associated with the Bridge.

COMMENT 17: I live on Chapel Street. I am concerned about what happens during remediation. Realistically, will there be a threat to residents that are close to the site? How will residents be protected from dust and contaminants during the cleanup? The amount of soil that you are removing is significant, and it seems likely that there would be some potential threat. Should I be staying inside during the cleanup? Not planting a garden that year? Not hanging clothes outside to dry? Vacating my home?

RESPONSE 17: There will be short term exposure risks to construction workers and the surrounding community (e.g., dust generation, noise, etc.) during the implementation of Alternative 4 (Excavation and Containment). Potential impacts, however, will be mitigated through standard construction practices (e.g., dust suppression, such as water misting). The application of common health and safety procedures (e.g., air monitoring, not working on extremely windy days) will also minimize potential health risks to remedial contractors and the surrounding community during the implementation of this alternative. A NYSDOH Community Air Monitoring Program (CAMP) will be enforced during all site-intrusive activities. This CAMP includes provisions for air monitoring of downwind communities and subsequent actions that must be taken if air guidance values are exceeded. These issues

will be evaluated during the design phase of the project and will be incorporated into the final design specifications. As a result, you will not need to vacate your home or stay indoors. Everyday life should proceed as normal. Information will be distributed to residence as plans proceed to keep them updated on issues such as this.

COMMENT 18: What about the school right down the road? Will they be protected from any potential exposure during cleanup?

RESPONSE 18: The standard construction practices and health and safety procedures discussed in Response 17 will also protect children at the nearby school. Furthermore, the school is not close enough to the site to be directly effected by site activities.

COMMENT 19: What route will the trucks take when hauling away contaminated soil during the cleanup?

RESPONSE 19: The exact truck route will be determined during the design phase of this project once a landfill has been selected. Access to the site, however, will be from Mill Street.

COMMENT 20: Mill Street is a busy road and is not kept up well. There are many potholes and bumps that could cause contaminated material being hauled away to jostle out of the trucks. Please take that into consideration when you are designing cleanup routes and techniques.

RESPONSE 20: Any truck that leaves the site with contaminated material will be covered. This is a routine practice when hauling contaminated material to keep it from jostling out of the trucks.

COMMENT 21: Regarding the ash material that you found, were there contaminants present within the ash? I ask because in the old days, everyone (residents) in this area used that ash for their driveways and parking areas. The cinders were everywhere in the neighborhood.

RESPONSE 21: The contaminants of concern in the ash material include semivolatile organic compounds (SVOCs), metals, and to a lesser degree PCBs. The SVOCs detected consisted primarily of polycyclic aromatic hydrocarbons (PAHs), which are produced during incomplete combustion of coal, petroleum products or organic materials. Of these compounds, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and dibenzo(a,h)anthracene were detected at concentrations that most frequently exceeded the TAGM 4046 soil cleanup objectives. Of the metals detected, antimony, arsenic, chromium, copper, lead, mercury, nickel, silver and zinc were detected at concentrations that most frequently exceeded the TAGM 4046 soil cleanup objectives. Although PCBs were detected in the ash, none

of the concentrations exceeded the TAGM 4046 subsurface soil cleanup objective for PCBs (10.0 ppm).

During completion of the Site Investigation at the Eighteenmile Creek Corridor Site (Site No. 932121), the NYSDEC encountered various fill materials on property adjacent to the creek. These materials were sampled and analyzed, and will be discussed in the Site Investigation report that is being prepared.

COMMENT 22: You mentioned that the Eighteenmile Creek Corridor Site contains contaminated sediments and that levels of mercury were found around the island area. That is concerning to residents. What is the State's plan to take care of this problem? Is there any way that at least mercury cleanup of this area could be expedited?

RESPONSE 22: Remediation of the Island will be completed as part of the selected remedy for the Former Flintkote Plant Site. Creek sediment will not be part of this remedy because contaminated sediments are know to exist upstream of the site. An investigation to determine the nature and extent of sediment contamination was conducted by the NYSDEC in 2005. Preparation of the Site Investigation Report for the Eighteenmile Creek Corridor Site is nearing completion. Once this report is issued, a Focused Feasibility Study will be completed that will evaluate remedial options for the creek. A PRAP will be issued at that time and a public meeting held to discuss the alternatives. The remedial process will be similar to that discussed in Response 5.

COMMENT 23: There are a lot of children that play and people that fish in the Eighteenmile Creek. If the creek is contaminated, it is a serious public health risk to those people. Are there any cleanup plans for the overall contamination in Eighteenmile Creek?

RESPONSE 23: The NYSDEC's Division of Water issued a Remedial Action Plan (RAP) for Eighteenmile Creek in August 1997. The goal of the RAP is to restore the chemical, physical and biological integrity of the ecosystem in the Eighteenmile Creek Area of Concern, which extends from Burt Dam to Lake Ontario. Contaminated sediment in Eighteenmile Creek, inflow of contaminants from the New York State Barge Canal, and an unidentified source of PCBs between Olcott Street and North Transit Road are sources of pollutants. These sources need to be investigated and remediated before the RAP goal can be achieved. The investigation of the Former Flintkote Plant Site and the Eighteenmile Creek Corridor Site are part of the overall process to cleanup Eighteenmile Creek. In addition, the NYSDOH issues advisories on eating sportfish because some of fish contain chemicals at levels that may be harmful to your health. Eighteenmile Creek is currently on the advisory list due to the levels of PCBs in fish in the Creek. Signs designating this "Eat None" advisory are posted along the Eighteenmile Creek corridor.

COMMENT 24: The old power plant that falls under private ownership at this time, does the NYSDEC have any plans to remediate that area too?

RESPONSE 24: At this time the NYSDEC does not have any plans to remediate the old power plant on Mill Street. This property was not investigated as part of the Former Flintkote Plant Site nor the Eighteenmile Creek Corridor Site. The City or County, however, are encouraged to submit an application to the NYSDEC to enter into the Environmental Restoration Program to investigate this property.

COMMENT 25: When do you anticipate having another public meeting for this site?

RESPONSE 25: The NYSDEC will hold either a public meeting or availability session when the design specifications are nearing completion. At that time the remediation plans will be discussed in more detail and the NYSDEC will solicit comments and concerns from the public such as those raised during the PRAP public meeting (see Comments 16 thru 20 above).

COMMENT 27: It seems like the NYSDEC is the main source of work and funding in this cleanup effort. As a resident, I am glad that you are doing this project. Thank you.

RESPONSE 27: Comment is noted.

APPENDIX B

Administrative Record

ADMINISTRATIVE RECORD

Former Flintkote Plant Environmental Restoration Site
City of Lockport, Niagara County, New York
Site No. B-00161-9

1. "Proposed Remedial Action Plan" for the Former Flintkote Plant site, dated February 2006, prepared by the NYSDEC.

2. "Preliminary Investigation of the Flintkote Site, Phase I Summary Report", December 1983, prepared by Ecological Analysts, Inc.

3. "Scope of Work for a Site Investigation at the Former Flintkote Plant Site", August 1999, prepared by the NYSDEC.

4. "Site Investigation Report, Former Flintkote Plant Site", September 2000 prepared by the NYSDEC.

5. Fact Sheet summarizing the results of the Site Investigation completed by the NYSDEC, March 2001, prepared by the NYSDEC.

6. Information Sheet announcing the beginning of asbestos removal at the Former Flintkote Site, September 2001, prepared by the United States Environmental Protection Agency.

7. "Structural Investigation Report", September 2001, prepared by Delta Engineers, P.C.

8. Fact Sheet providing an update on the asbestos removal at the Former Flintkote Site, January 2002, prepared by the United States Environmental Protection Agency.

9. Fact Sheet announcing the completion of the asbestos removal at the Former Flintkote Site, March 2002, prepared by the United States Environmental Protection Agency.

10. "Proposal for a Site Investigation/Remedial Alternatives Study of the Former Flintkote Site", May 2002, prepared by TVGA Engineering, Surveying, P.C.

11. "Draft Site Investigation/Remedial Alternatives Report Work Plan for the Former Flintkote Site", February 2003, prepared by TVGA Consultants.

12. "Addendum to the February 2003 Draft Site Investigation/Remedial Alternatives Report Work Plan for the Former Flintkote Site", June 2003, prepared by TVGA Consultants.

13. Fact Sheet announcing the beginning of the Site Investigation, August 2003, prepared by Niagara County.

14. "Site Investigation Report for the Former Flintkote Site", July 2005, prepared by TVGA Consultants.

15. "Remedial Alternatives Report, Former Flintkote Site", October 2005, prepared by TVGA Consultants.

16. Fact Sheet announcing the public meeting on the PRAP, February 2006, prepared by the NYSDEC.