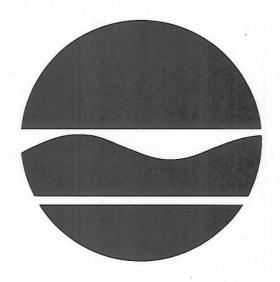
PROPOSED REMEDIAL ACTION PLAN Irwin Property

City of Oswego, Oswego County, New York Site No. 738010

February 2009



Prepared by:

Division of Environmental Remediation New York State Department of Environmental Conservation

PROPOSED REMEDIAL ACTION PLAN

Irwin Property
City of Oswego, Oswego County, New York
Site No. 738010
February 2009

SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the Irwin Property site. As more fully described in Sections 3 and 5 of this document, in the late 1970's, the property owner buried 150 to 250 drums from the Pollution Abatement Services operation located in Oswego which resulted in the disposal of hazardous wastes, including volatile organic compounds (VOCs). These wastes contaminated the soil at the site, and resulted in:

- a significant threat to human health associated with the potential exposure to the contents of buried drums containing VOCs.
- a significant environmental threat associated with the potential impacts of contaminants from buried drums to the soil and groundwater.

During the course of the investigation certain actions, known as interim remedial measures (IRMs), were undertaken at the Irwin Property in response to the threats identified above. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation/feasibility study (RI/FS). The IRM undertaken at this site included the removal of buried drums and related contaminated soil.

Based on the implementation of the above IRM, the findings of the investigation of this site indicate that the site no longer poses a significant threat to human health or the environment; therefore No Further Action is proposed as the remedy for this site.

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

This Proposed Remedial Action Plan (PRAP) identifies the preferred remedy and discusses the reasons for this preference. The Department will select a final remedy for the site only after careful consideration of all comments received during the public comment period.

The Department has issued this PRAP as a component of the Citizen Participation Plan developed pursuant to the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375. This document is a summary of the information that can be found in greater detail in the October 1992 "Phase II Investigation Report" (URS), the October 1998 "Site Investigation Report" (USEPA), the March 2008 "Site Investigation and Analytical Results Report" (USEPA) and the February 2009 "Final Report for the Drum Removal Action" (CRA) and other relevant documents. The public is encouraged to review the project documents, which are available at the following repositories:

New York State Department of Environmental Conservation Division of Environmental Remediation 12th Floor 625 Broadway Albany, NY 12233-7016 Attn: John Durnin, Project Manager, (518) 402-9774 (M-F 9:00 am to 4:00 pm)

New York State Department of Environmental Conservation Region 7 Office 615 Erie Boulevard West Syracuse, NY 13204-2400 Attn: Gregg Townsend, Remediation Engineer, (315) 426-7550 (M-F 9:00 am to 4:00 pm)

Oswego Public Library
140 E 2nd Street, #142
Oswego, NY 13126
(315) 341-5867
Attn: Reference Desk
M-Th 10:00 am to 8:00 pm
Friday 10:00 am to 5:00 pm
Sat -Sun noon to 5:00 pm 13 West Oneida Street

The Department seeks input from the community on all PRAPs. A public comment period has been set from February 20, 2009 to March 23, 2009 to provide an opportunity for public participation in the remedy selection process. A public meeting is scheduled for March 11, 2009 at the Oswego City Hall beginning at 6:30 PM.

At the meeting, the results of the Site Investigation (SI) and IRM will be presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period will be held, during which verbal or written comments may be submitted on the PRAP. Written comments may also be sent to Mr. Durnin at the above address through March 23, 2009.

The Department may modify the proposed remedy or select another based on new information or public comments. Therefore, the public is encouraged to review and comment on all of the alternatives identified here.

Comments will be summarized and addressed in the responsiveness summary section of the Record of Decision (ROD). The ROD is the Department's final selection of the remedy for this site.

SECTION 2: SITE LOCATION AND DESCRIPTION

The Irwin Property Site is a 4-acre construction and demolition (C&D) debris landfill located near the southwest limits of a rural portion of the City of Oswego, Oswego County, New York (see figure 1). The site is east of Johnson Road and bordered by Byer Road to the south with a residential property to the west, an open grass field to the north, wooded property to the south and a commercial storage facility to the east. There is also a commercial building on the site and public water serves the entire area.

The nearest surface water body is the un-named Lake Ontario Tributary, Ont.-66b (see figure 2). This intermittent stream flows within 120 feet of the northeastern portion of the C&D landfill and ultimately discharges 1.5 miles to the north into Lake Ontario. Groundwater generally flows radially from the northwest portion of the site (see figure 3) and is approximately 4 to 7 feet deep near the stream and 25 to 28 feet deep in the C&D landfill area. Groundwater does not flow readily through the naturally occurring soil at the site. However, lenses of sandier, more permeable soil also exist and groundwater in these lenses

might flow offsite at a higher rate. The nearest groundwater well users are believed to reside approximately 1,700 feet east-southeast of the site. Bedrock was encountered at 27 feet below the surface in well CW-5 and at a 13 foot depth in test pit TP-9.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

Between 1973-1976, Richard Irwin (former owner) filled in portions of his property with soil and various construction/demolition materials to level-out the terrain (see figure 4). During this time period, it was reported that Irwin also buried 150 to 250 drums from the Pollution Abatement Services operation in Oswego.

3.2: Remedial History

In March 1991, the Department first listed the site as a Class 2a site in the Registry of Inactive Hazardous Waste Disposal Sites in New York (the Registry). Class 2a was a temporary classification assigned to a site that had inadequate and/or insufficient data for inclusion in any of the other classifications. In March 1994, the Department listed the site as a Class 2 site in the Registry of Inactive Hazardous Waste Disposal Sites in New York. A Class 2 site is a site where hazardous waste presents a significant threat to the public health or the environment and action is required.

Oswego County Health Department (OCHD) performed site inspections and environmental sampling at the Irwin property during various occasions as early as 1978.

Phase II Site Investigations were performed by the Department in 1986 and 1991 at the vacant Irwin Property, which contained construction and demolition (C&D) fill material. These investigations included groundwater sampling, surface water and sediment sampling, leachate sampling, subsurface soil sampling and test pitting.

The 1986 Phase II Report indicated that no contamination attributable to the site was found during the investigation. The report noted geophysical anomalies that might be buried drums (see figure 5).

The 1991 expanded Preliminary Site Assessment (PSA) Phase II effort included the installation and groundwater sampling of three down gradient monitoring wells. In addition, groundwater samples were collected from the four existing monitoring wells installed during the 1986 Phase II investigation. Four test pits (trenches) were performed (see figure 6) and six intact 55-gallon drums were exposed in one trench. One buried drum contained ignitable and inorganic wastes.

Samples from the site contained low concentrations of organic/inorganic contaminants in the leachate (trichloroethene at 4 ppb), groundwater (0.8 ppb of 1,2-dichloroethene), and subsurface soils (2 ppb of chlorobenzene). The low level groundwater contamination, which was not widespread, may have been derived in part from leaking drums and/or in part from buried C&D materials. The presence of buried drums and one drum containing ignitable and inorganic waste was the basis of the Class 2 designation.

SECTION 4: ENFORCEMENT STATUS

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

The PRPs for the site, documented to date, include: Ashland Inc., Bristol-Myers Squibb Company, General Electric Company, Honeywell International Inc., International Paper Company, Niagara Mohawk Power Corporation, Pharmacia Corporation and SI Group Incorporated. These eight responsible parties are represented by the PAS Irwin Joint Defense Group (the Group). Richard Irwin, a responsible party and the original owner of the site, was not able to be located. The Group took responsibility to implement an Interim Remedial Measure (IRM) at the site through an Order on Consent with the USEPA.

As part of the IRM, the USEPA and the Group entered into a Consent Order on July 7, 2008. The Order obligates the responsible parties to implement a drum removal action and address any associated contamination.

SECTION 5: SITE CONTAMINATION

A Site Investigation (SI) has been conducted to evaluate the alternatives for addressing the significant threats to human health and the environment.

5.1: Summary of the Remedial Investigation

The purpose of the SI was to define the nature and extent of any contamination resulting from previous activities at the site. The SI was conducted between April 1998 and December 2008. The field activities and findings of the investigation are described in the SI reports listed in Section I, page one.

The USEPA performed an investigation at the Irwin property in 1998 including 15 trench excavations throughout the site (see figure 7). Seven of the EPA trenches were performed in the area of the geophysical anomalies found during the 1986 magnetometer survey (see figure 5) and near the crushed drums protruding from the landfill scarp to the north. The other eight trenches were randomly excavated throughout the site. At that time, EPA failed to confirm the presence of any buried drums. As a result, the USEPA concluded that the site did not meet the criteria for a removal action under their program.

Concerned that the USEPA did not trench in the exact area where the Department found six intact drums in 1991, the Department directed an excavation project in late 1999. The presence of at least eleven drums was confirmed adjacent to the original 1991 trench. Again, a drum containing an ignitable waste was found. No visible signs of soil contamination were observed during these excavation activities.

On August 14, 2007, the Department requested the USEPA Removal Action Branch to evaluate the Irwin Property Site for eligibility for a drum removal IRM. The USEPA accepted the Department's request and began the IRM in November 2007 as summarized in Section 5.2.

5.1.1: Standards, Criteria, and Guidance (SCGs)

To determine whether the soil 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 the Department's "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.
- Soil SCGs are based on the Department's Cleanup Objectives (6NYCRR Part 375, Subpart 375-6, Remedial Program Soil Cleanup Objectives.)
- Sediment SCGs are based on the Department's "Technical Guidance for Screening Contaminated Sediments."

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

5.1.2: Nature and Extent of Contamination

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

As described in the reports, many soil, groundwater and sediment samples were collected to characterize the nature and extent of contamination. The main categories of contaminants detected above their SCGs are volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and inorganics (metals). For comparison purposes, where applicable, SCGs are provided for each medium.

Chemical concentrations are reported in parts per billion (ppb) for water and parts per million (ppm) for waste, soil, and sediment.

The following are the media which were investigated and a summary of the findings of the investigation.

Waste Materials

The medium and area of concern for this Class 2 Inactive Hazardous Waste Disposal Site were the presence of buried drums in a localized portion of the site that was previously identified by the Department (see figure 2). Sample results of drum waste failed for ignitability making it a hazardous material. As a result of the IRM, the threat of the drum waste to the environment and the public health has been eliminated since all the drums and contents have been excavated and disposed off-site at permitted disposal facilities. Buried drum waste identified during the SI was addressed during the IRM described in Section 5.2.

Surface Soil

All the surface soil in the area of the buried drums has been excavated and disposed off-site at a permitted disposal facility under the IRM described in Section 5.2. The surface soil was replaced with six inches of clean topsoil over clean backfill material. In addition, surface soil samples (0-2 feet) were collected from soil borings made within the C&D landfill waste. No analytes were detected above the Part 375 SCGs for Unrestricted Use. No site-related surface soil contamination of concern was identified during the SI. Therefore, no remedial alternatives need to be evaluated for surface soil.

Subsurface Soil

After the drum removal, fifteen subsurface soil verification samples were collected from the bottom and sidewalls of the excavation pit (see figures 8 and 9). In addition, subsurface soil samples were collected from seven soil borings made within the C&D landfill waste (see figure 10). The results of all analyses were below the Part 375 SCGs for Unrestricted Use. Subsurface soil contamination identified during the SI was addressed during the drum removal IRM described in Section 5.2. Therefore, no remedial alternatives need to be evaluated for subsurface soil.

Groundwater

Between 1985 and 1991, nineteen groundwater samples were collected from seven monitoring wells installed at the site. The results of all analyses were below the SCG for VOCs, SVOCs, pesticides and PCBs except for a few minor and sporadic exceedances: benzene was detected once in upgradient well CW-4 in1985 (6.9 ppb vs. the 1 ppb SCG) and once in 1998 in MW-3 at 3 ppb; nitrobenzene was detected in 1998 in CW-4 at 1 ppb (SCG 0.4 ppb); and benzo(a)pyrene was detected in 1991 in MW-3 at 0.7 ppb (SCG "non-detect".) Many of the nineteen groundwater samples exceeded SCGs for the metals antimony, aluminum, iron, magnesium, manganese, sodium. However, the metals were detected at elevated levels both up and down gradient of the site, and do not appear to be site related.

One monitoring well, CW-5, was destroyed in the winter of 2005. Two additional groundwater monitoring wells (MW-4, MW-5) were installed within the C&D landfill waste in December 2008 for a total of eight wells (see figure 2). All eight wells were sampled in December 2008 and analyzed for VOCs, SVOCs, metals, PCBs and pesticides. No VOCs were detected above SCGs except for benzene, which was detected in MW-4 at 1.5 ppb. There were no SVOCs detected above SCGs.

All sample results were non-detect for PCBs and Pesticides. As with the previous sampling, the metals aluminum, iron, magnesium, manganese, and sodium were reported above SCGs in upgradient and down gradient wells.

Based upon the groundwater sampling results, no site-related groundwater contamination of concern was identified during the SI. Therefore, no remedial alternatives need to be evaluated for groundwater.

Surface Water

Between 1978 and 1991, surface water samples were collected from the un-named Lake Ontario Tributary, Ont.-66b adjacent to the C&D landfill area. All samples were non-detect or below the SCG. Therefore, no site-related surface water contamination of concern was identified during the SI no remedial alternatives need to be evaluated for surface water.

Sediments

In April 1985 and July 1991, sediment samples were collected from the un-named Lake Ontario Tributary, Ont.-66b located about 150 feet east of the Irwin Property Site. During both sampling events, samples were collected from upstream and downstream of the site (see figure 6). In 1985, there were no exceedances of any SCGs. In 1991, toluene was detected in the upstream sample (6 ppm) while the downstream sample was non-detect. Both 1991 samples detected elevated SVOCs and chromium (4.3 ppm and 7.9 ppm), both upstream and down stream of the Irwin Property Site. Although there is evidence of exceedances of the SCGs in the sediments, no site-related sediment contamination of concern was identified during the SI. Therefore, no remedial alternatives need to be evaluated for sediment.

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.

The Department requested the USEPA Removal Action Branch to evaluate the Irwin Property Site for eligibility for a drum removal IRM. The USEPA accepted the Department's request and began the IRM in November 2007. Approximately 150 drums and 200 cubic yards of contaminated soil were excavated and staged on site by December 2007. The USEPA contacted eight potential responsible parties (PRPs) to complete this drum removal work. On July 7, 2008 a Consent Order to do the work was signed by the PRPs.

The PRP's Work Plan for the drum removal was approved by the USEPA on September 12, 2008 and the site work for the drum removal began immediately (see figures 8 and 9). Soil samples within the C&D waste area were also collected and two new groundwater wells were installed within the C&D waste area. The groundwater from these new wells were sampled along with the existing six monitoring wells. All the drums, waste, contaminated soil and water from the excavation were removed by December 5, 2008.

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. More information relating to human exposure pathways can be found in Section 5 of the October 1992 "Phase II Investigation Report" (URS) which can be found at the document repository.

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.

There are no human exposures to contaminants expected at this site because the historic contamination in the soil and drums has been physically removed (soils were excavated and drums and their contents removed).

5.4: Summary of Environmental Assessment

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

The following environmental exposure pathways and ecological risks have been identified:

- Concern with direct contact by fish and wildlife receptors to the waste on site; and
- Concern that contamination may migrate from the site to the bordering unnamed tributary.

Samples from the creek receiving drainage from the site did not contain elevated levels of contaminants, therefore a completed exposure pathway to fish and wildlife receptors was not apparent prior to the IRM. The completed IRM eliminated any potential future risk.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS AND PROPOSED REMEDY

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

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

- exposures of persons at or around the site to waste from buried drums and related contaminated soil;
- the release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards; and
- the release of contaminants from buried drums into the subsurface soil through the degradation of the buried drums.

The main SCGs applicable to this project are as follows:

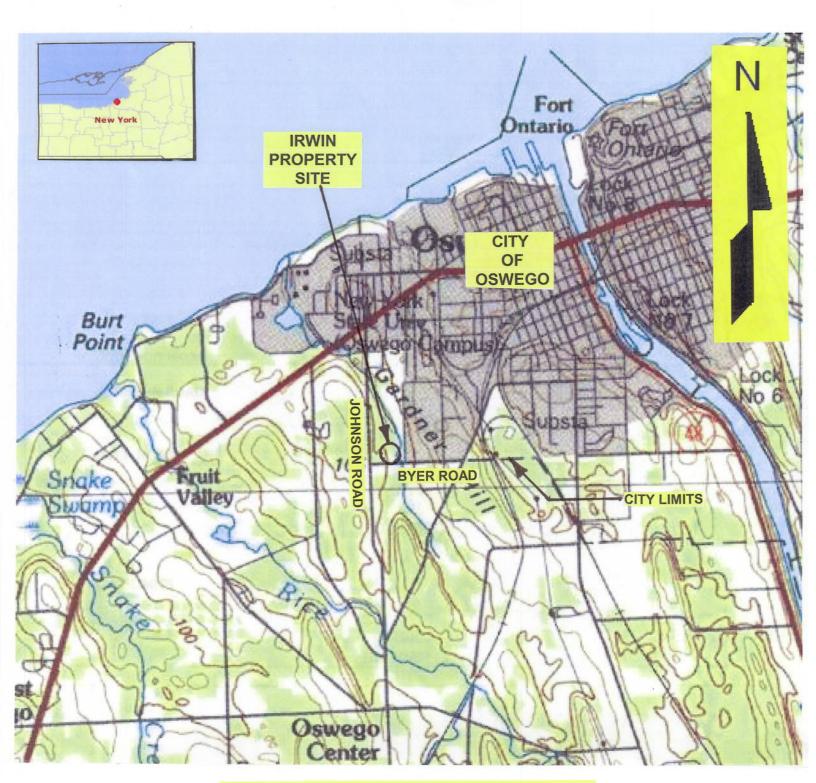
- Ambient Groundwater Quality Standards
- 6NYCRR Part 375, Subpart 375-6, Remedial Program Soil Cleanup Objectives

All drums and drum waste material, including surrounding soil, has been removed from the site. In addition, no significant groundwater contamination was detected. Therefore, the Department believes that the IRM has accomplished the remediation goals and satisfied the SCGs for the site.

Based on the results of the investigations at the site, the IRM that has been performed, and the evaluation presented here, the Department is proposing No Further Action as the preferred alternative for the site. The Department believes that this alternative would be protective of human health and the environment and would satisfy all SCGs as described above. Further, the Department intends to remove the Irwin Property Site from the New York State Registry of Inactive Hazardous Waste Disposal Sites if this proposed No Further Action remedy is determined to be the final accepted remedy. Overall protectiveness is achieved through meeting the remediation goals listed above.

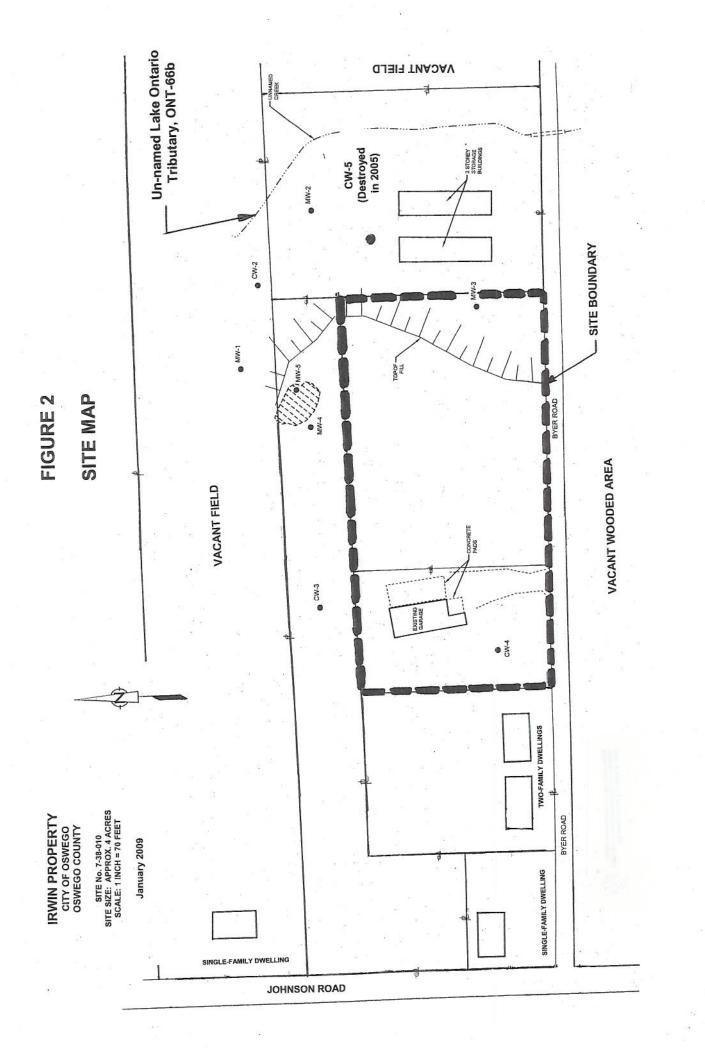
Therefore, the Department concludes that No Further Action is needed. The elements of the IRM already completed are listed below:

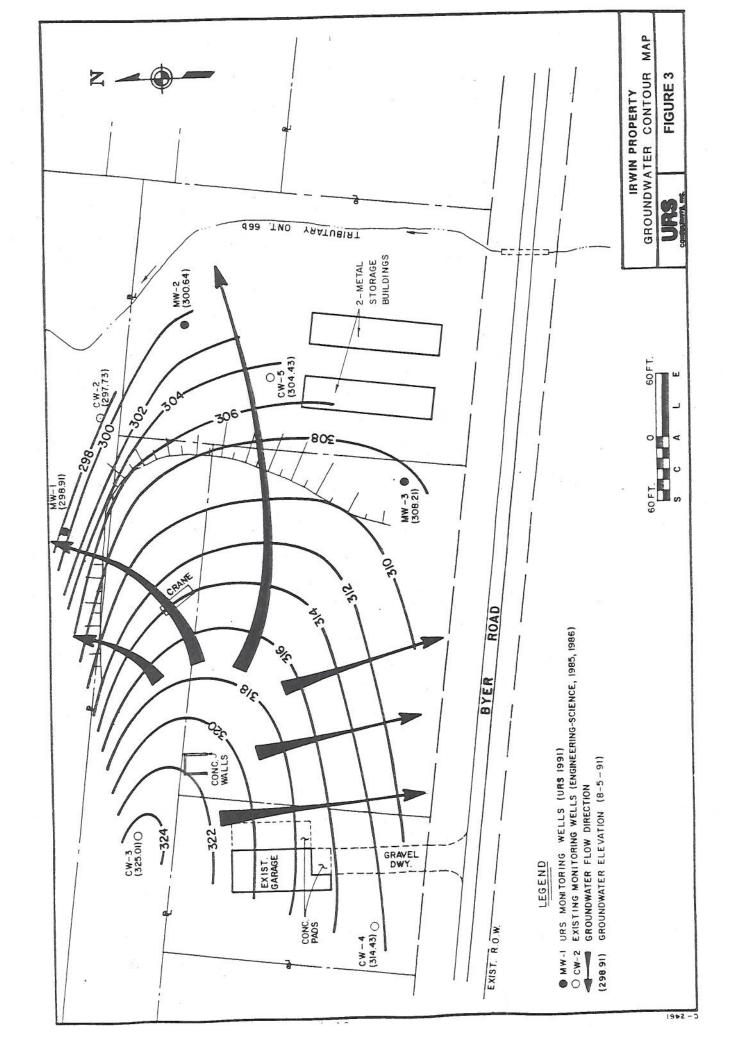
- 1.
- Drum and drum waste removal (182 drums)
 Drum related contaminated soil removal (931 cubic yards)
 Post-excavation soil verification sampling (21 samples)
 Concrete foundation removal (5.9 tons)
 Contaminated construction water removal (51,280 gallons)
 Groundwater well installation (2 new wells) 2.
- 3.
- 4.
- 5.
- 6.
- Post-drum removal groundwater sampling (8 wells) 7.

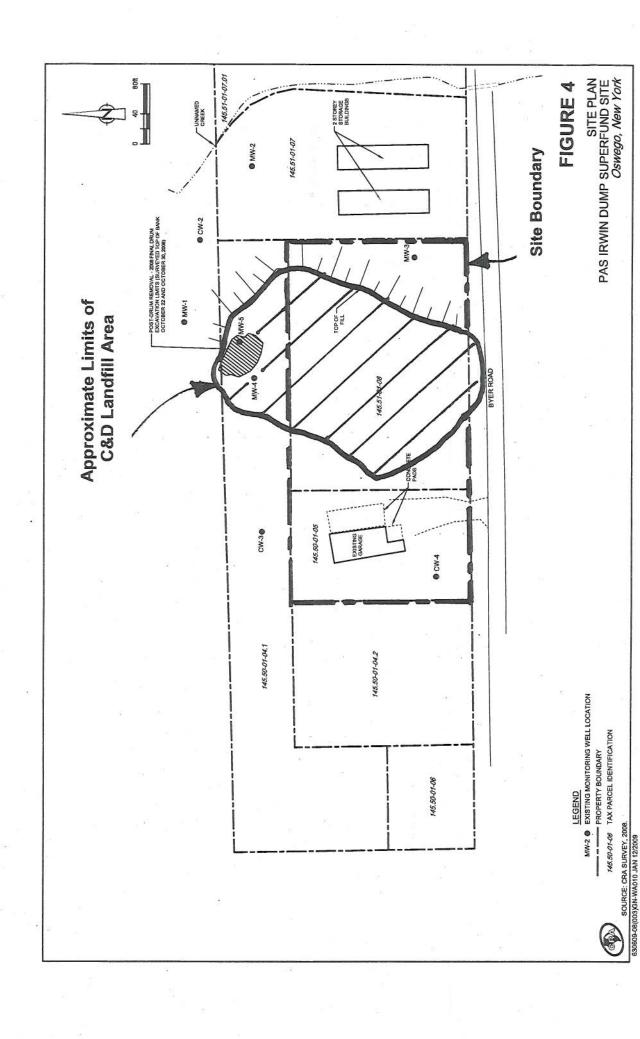


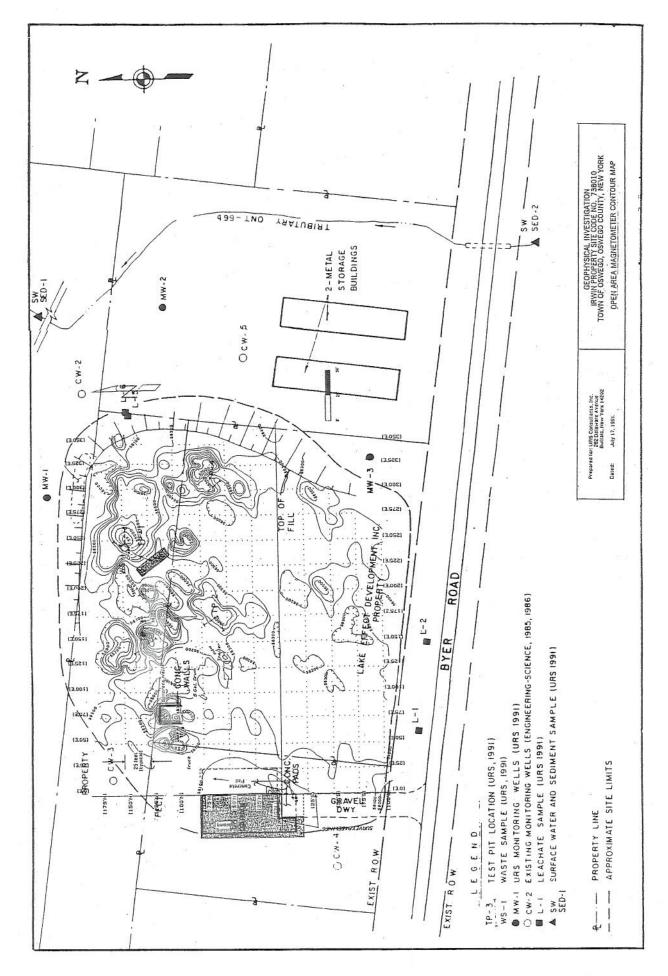
SITE LOCATION MAP
IRWIN PROPERTY SITE NO. 738010
CITY OF OSWEGO
OSWEGO COUNTY, NEW YORK

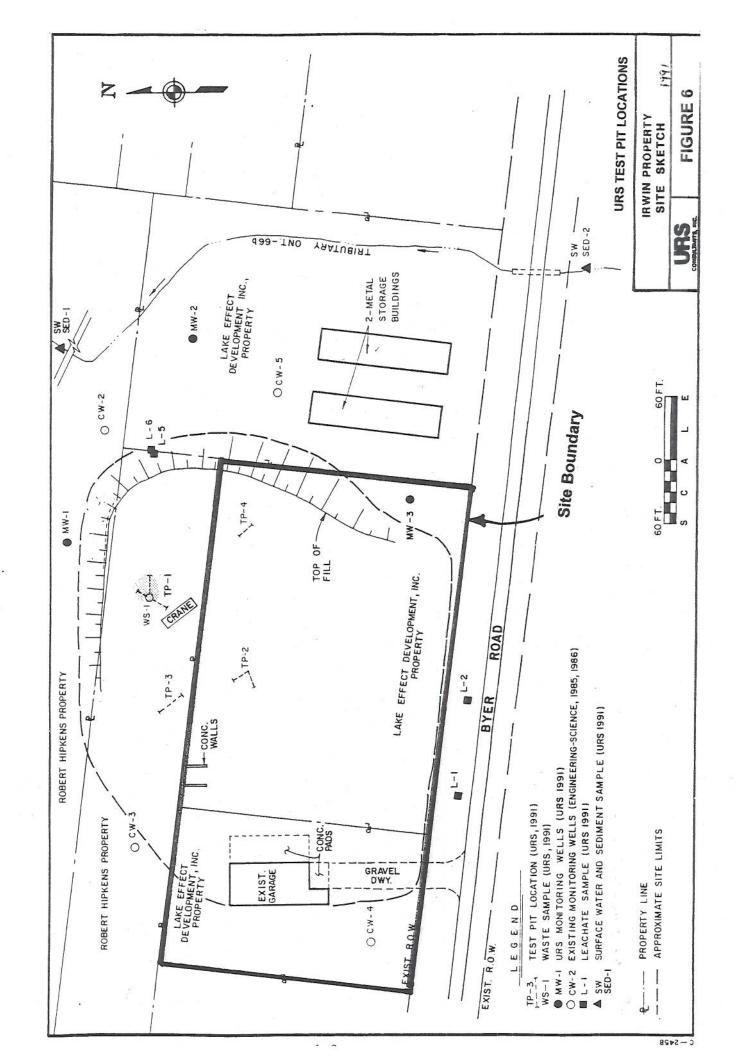
FIGURE 1

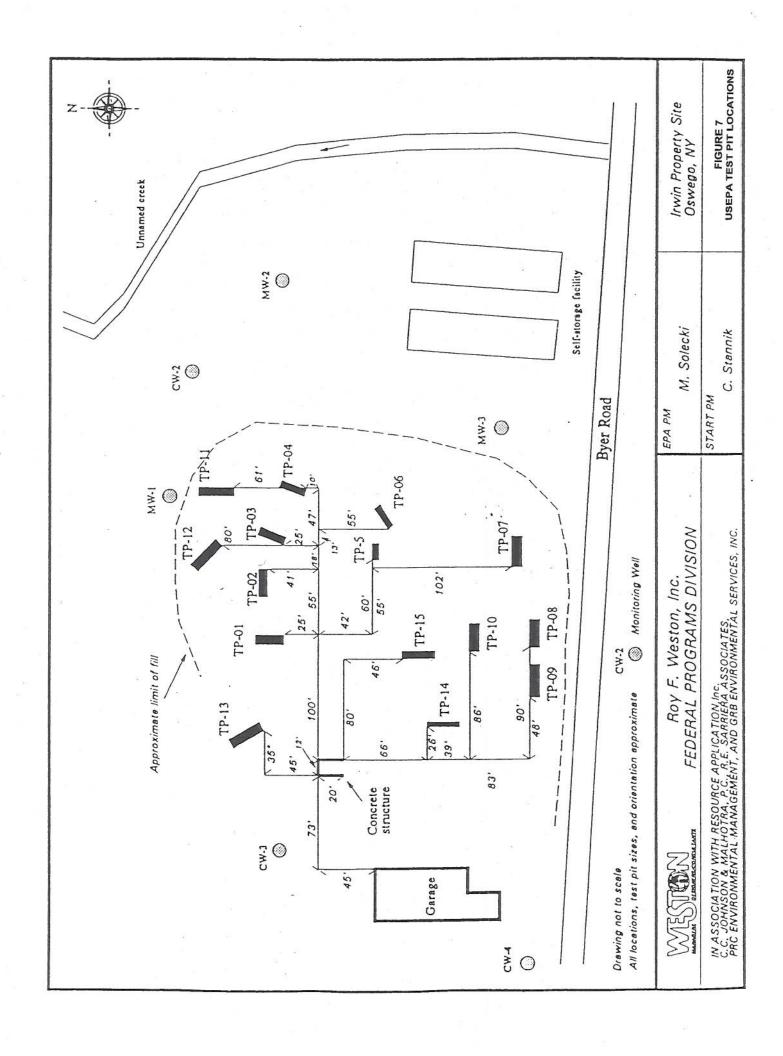


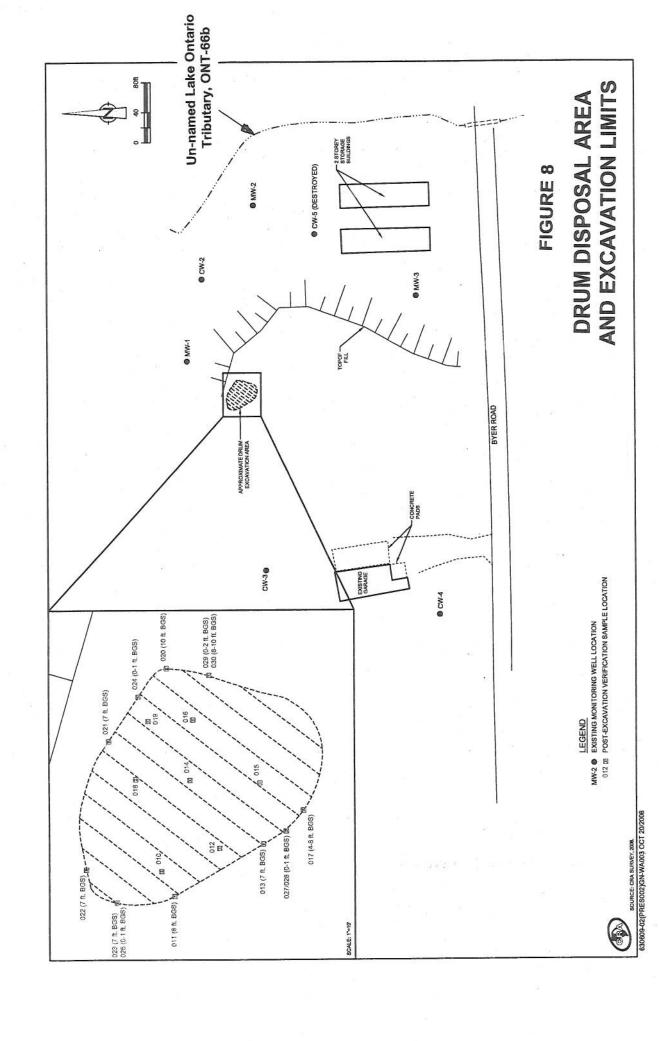


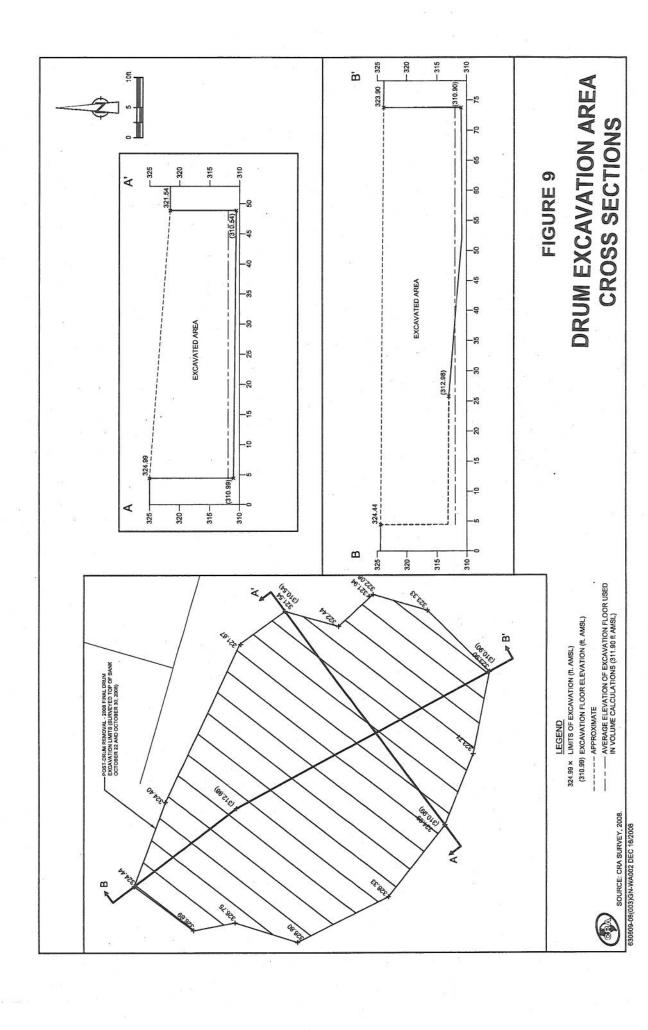


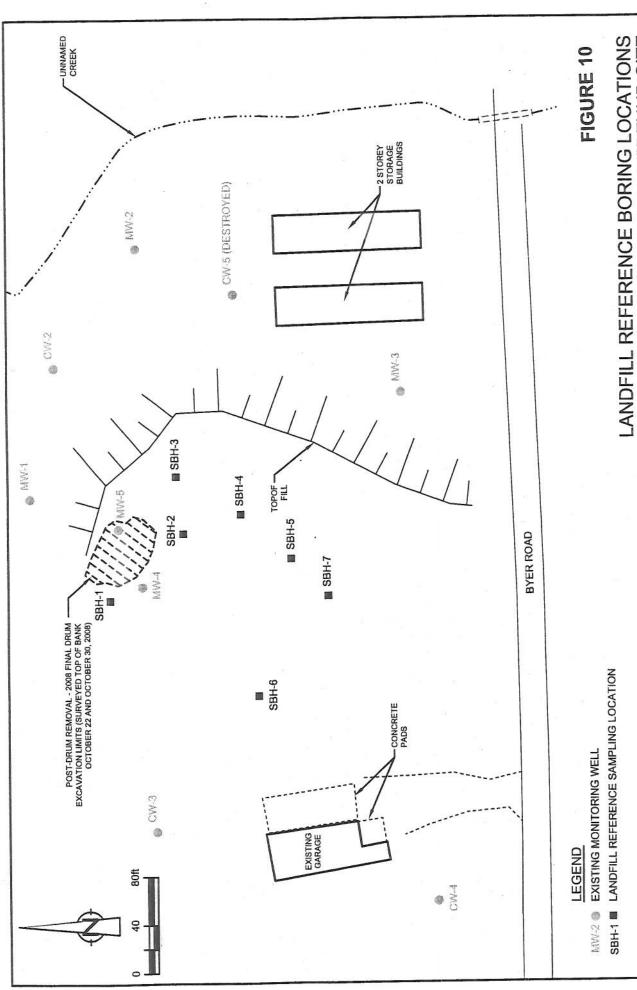












LANDFILL REFERENCE BORING LOCATIONS PAS IRWIN DUMP SUPERFUND SITE Oswego, New York

SOURCE: CRA SURVEY, 2008.

630609-08(003)GN-WA006 DEC 16/2008