DECLARATION STATEMENT - RECORD OF DECISION

Alltift Landfill Inactive Hazardous Waste Site
Town of Buffalo, Erie County, New York
Site No. 9-15-054

Statement of Purpose and Basis

This Record of Decision (ROD) presents the selected remedial action for the Alltift Landfill inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40 CFR Part 300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Alltift Landfill Inactive Hazardous Waste Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix B.

Assessment of the Site

Actual or threatened releases of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, present a current or potential threat to public health and the environment.

Description of Selected Remedy

Based upon the results of the Remedial Investigation/Feasibility Study (RI/FS) for the Alltift Landfill Site and the criteria identified for evaluation of alternatives, the NYSDEC has selected a remedy consisting of excavation and consolidation of contaminated soil and sediment, capping of the landfill, pond and wetland restoration, construction of a groundwater collection trench, groundwater treatment system (as needed), monitoring of site conditions , and institutional controls. The major elements of the selected remedy include:

- A **remedial design** program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Uncertainties identified during the RI/FS will be resolved.

- **Excavation and consolidation** of soils and wastes not underlain by the natural clay layer which occurs under most of the site. Excavation, dewatering, and consolidation of contaminated sediments from the ponds and wetlands adjacent to the site.

- **Capping** of the landfill and consolidated materials with a synthetic membrane composite cap.

- **Restoration** of the wetlands and ponds adjacent to the site.

- Installation of a **groundwater collection system** consisting of a collection trench with pumps

and a treatment system, if needed, prior to discharge to the local POTW. The system operation would be contingent upon excedences of groundwater standards at the collection trench.

- **Institutional controls** including deed restrictions to ensure the integrity of the cap and prevent contact with wastes, water supply well restrictions, fence construction, maintenance, and monitoring.

- **Monitoring** the different elements of the remedy to determine its effectiveness and determine if it becomes necessary to operate the groundwater collection and treatment systems.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being 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. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the statutory preference for remedies that reduce toxicity, mobility, or volume as a principal element.

3/27/95
Date

Michael J. O'Toole, Jr., P.E.
Director
Division of Hazardous Waste Remediation

TABLE OF CONTENTS

Glossary of Acronyms

CERCLA:	Comprehensive Environmental Response, Compensation and Liability Act
DCA:	Dichloroethane
DCE:	Dichloroethene
ECL:	Environmental Conservation Law
FWIA:	Fish and Wildlife Impact Analysis
NA:	Not Available
NCP:	National Contingency Plan
ND:	Not Detected
NYCRR:	N.Y. Codes, Rules, and Regulations
NYSDEC:	N.Y. State Department of Environmental Conservation
NYSDOH:	N.Y. State Department of Health
O&M:	Operation and Maintenance
PCE:	Tetrachloroethene
ppb:	parts per billion
ppm:	parts per million
PRAP:	Proposed Remedial Action Plan
RI/FS:	Remedial Investigation and Feasibility Study
ROD:	Record of Decision
SCG:	Standards, Criteria, and Guidance
SPDES:	State Pollution Discharge Elimination System
TCA:	Trichloroethane
TCE:	Trichloroethene
TWA	Time-Weighted Average
VC:	Vinyl Chloride
VOC:	Volatile Organic Compound

Notice

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RECORD OF DECISION
ALTIFT LANDFILL SITE
SITE ID NO. 9-15-054

SECTION 1: INTRODUCTION

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has selected the following remedy for the Alltift Landfill inactive hazardous waste site: consolidation of landfill wastes; excavation and consolidation of contaminated sediments; capping of the consolidated materials; installation of a groundwater collection and treatment system; wetlands restoration; and appropriate institutional controls. This selected remedy is to address the threats to human health and the environment created by the presence of contaminated soils, sediments, and groundwater. These media are contaminated with a variety of materials including naphthalene, chlorobenzene, dye wastes, phenolic compounds, and metals.

This Record of Decision (ROD) identifies the selected remedy, summarizes the other alternatives considered, and discusses the rationale for this selection. The NYSDEC has selected this remedy for the site after careful consideration of all comments submitted during the public comment period.

SECTION 2: SITE LOCATION AND DESCRIPTION

The Alltift Landfill Site (No. 915054) is located in the southern portion of the City of Buffalo in Erie County. It is located south of Tifft Street approximately 1,300 feet west of Hopkins Street and 5,000 feet east of the intersection of Tifft Street and Route 5. The site is bounded on the north by Tifft Street, the west by a railroad right-of-way and tracks, the south by several ponds, and the east by the Skyway Auto Parts. There are also wetlands on the south and along the western edge of the site. The site is approximately 25 - 30 acres in size (Figure 1). Area land usage is generally industrial with large industrial facilities to the east and south.

The landfill is triangular in shape with the surface of the fill rising about 30 feet above the surrounding topography (Figure 2). Surface water, in the form of several small to moderate size ponds and marshes are present adjacent to the site on the north, west, and south sides. The pond on the south side of the site is referred to as the Ramco pond. This pond has historically received wastes from the adjacent Ramco inactive hazardous waste site (Site ID No. 9-15-046B). Removal of the sediments in this pond will result in the mitigation of a significant portion of the environmental problems at the Ramco site. The contamination in this water body is a combination of discharges from Ramco and migration of contaminants from the Alltift site. The site is approximately one mile east of Lake Erie (Buffalo Harbor). The site and its immediate surroundings are mostly covered by grasses, scrub brush, and small trees.

The site geology consists of glacial-lacustrine sediments. Near surface deposits are predominantly fine grained sand, silt, and clay. These are separated from bedrock by a thin layer of compacted glacial till. Bedrock, occurring below the till, consists of a sequence of shales and limestones. Two aquifers have been identified at the site. A shallow aquifer which is present in the surface fill and permeable silts and sands, and a deep aquifer in the bedrock. These two systems are separated by a clay layer across most of the site except the south end of the landfill, where the clay is not present. The overall groundwater flow direction is west in the shallow aquifer and west-northwest in the deep aquifer. The shallow flow directly under the landfill is radial due to groundwater mounding in the fill material.

Nearby inactive hazardous waste sites include, Ramco Steel (915046B), Republic Steel (915047), Hopkins Street Landfill (915011), Tifft Farms (915072), and the Marilla Street Landfill (915093).

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The Alltift Landfill was operated by various entities from the 1930s until 1984 when the then owner, Alltift Realty, Inc., ceased the operations at the site.

1930s-1950s- The site was used by the City of Buffalo as a municipal landfill.

1950s-1960s- The site received industrial wastes including sludges, naphthalene, monochlorobenzene, dye, oil sludges, and phenolic compounds.

1975-1984- The site received wastes including shredder waste (automobile based), fly ash, sand wastes, and demolition debris.

3.2: Previous Investigations

Prior to the start of the RI/FS, several investigations were conducted at the site.

1978 - RECRA and Wehran conducted a site hydrogeologic investigation as the basis for a Part 360 permit application.

1983 - Dames & Moore conducted the first phase of a site investigation in order to determine a hazard ranking for the site.

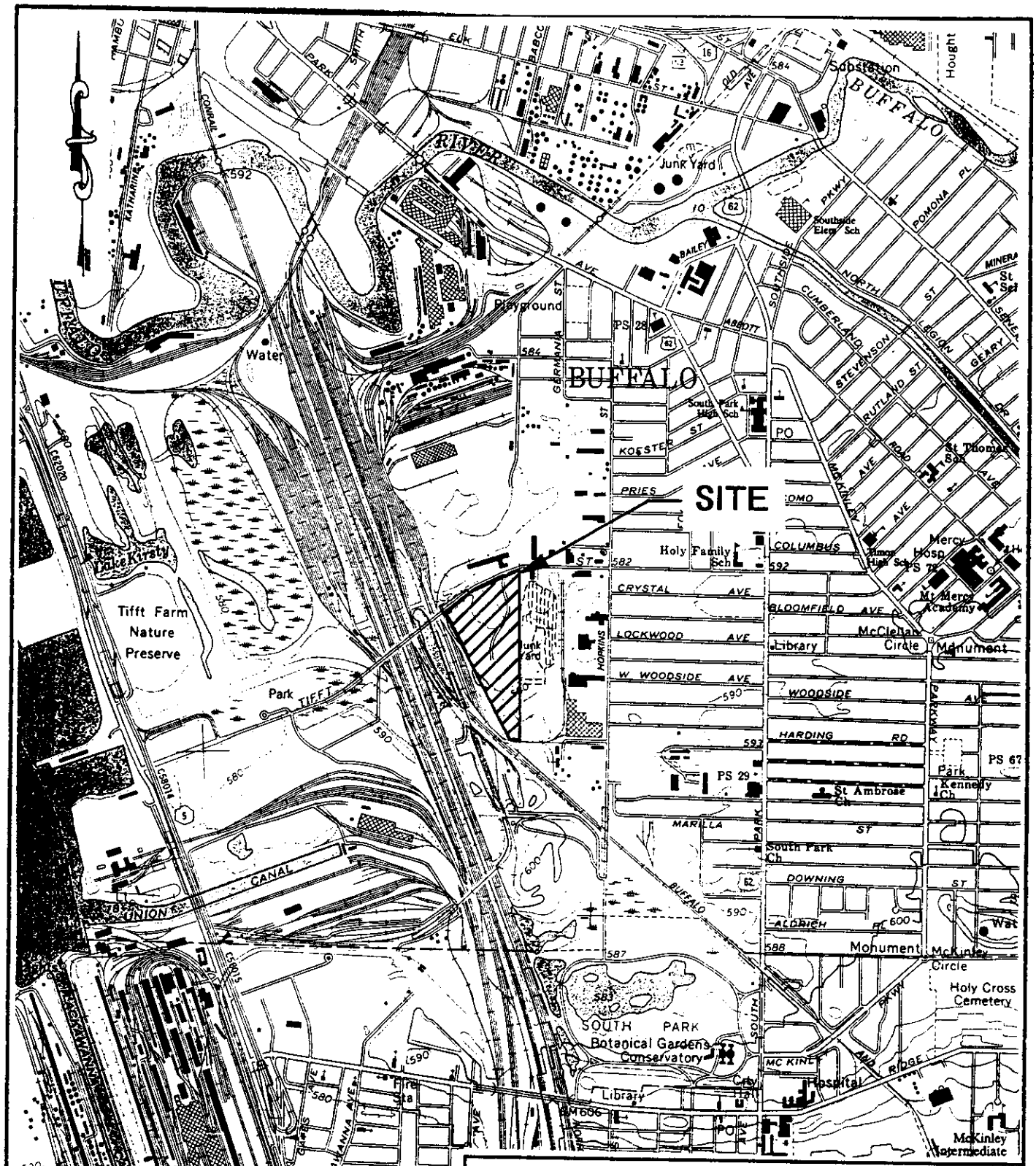
1985/1986 - Dames & Moore developed a Phase II Work Plan and produced a Phase II report which presented the results of site groundwater monitoring well installation and sampling.

These investigations concluded that:

- groundwater at the site occurs in two distinct aquifers, a shallow aquifer in the fill material and shallow subsurface, and a deep aquifer below a clay layer. (The clay layer is limited in area and is not present at the southernmost end of the site.);
- contamination is present in both of these aquifers in the form of elevated metal levels and various organic compounds;
- soils at the site are contaminated with many of the same compounds believed to have been disposed of at the site;
- surface water and sediments at the site are also contaminated; and,
- contamination is migrating off site in the form of contaminated surface water and groundwater.

3.3: 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.



SITE LOCATION MAP

ALLTIFT LANDFILL

SCALE: 1" = 2000' APPROX. ● PROJECT NO. H1005

AFI ENVIRONMENTAL
6101 ROBINSON ROAD
LOCKPORT, N.Y. 14094
(716) 625-8434

FIGURE 1

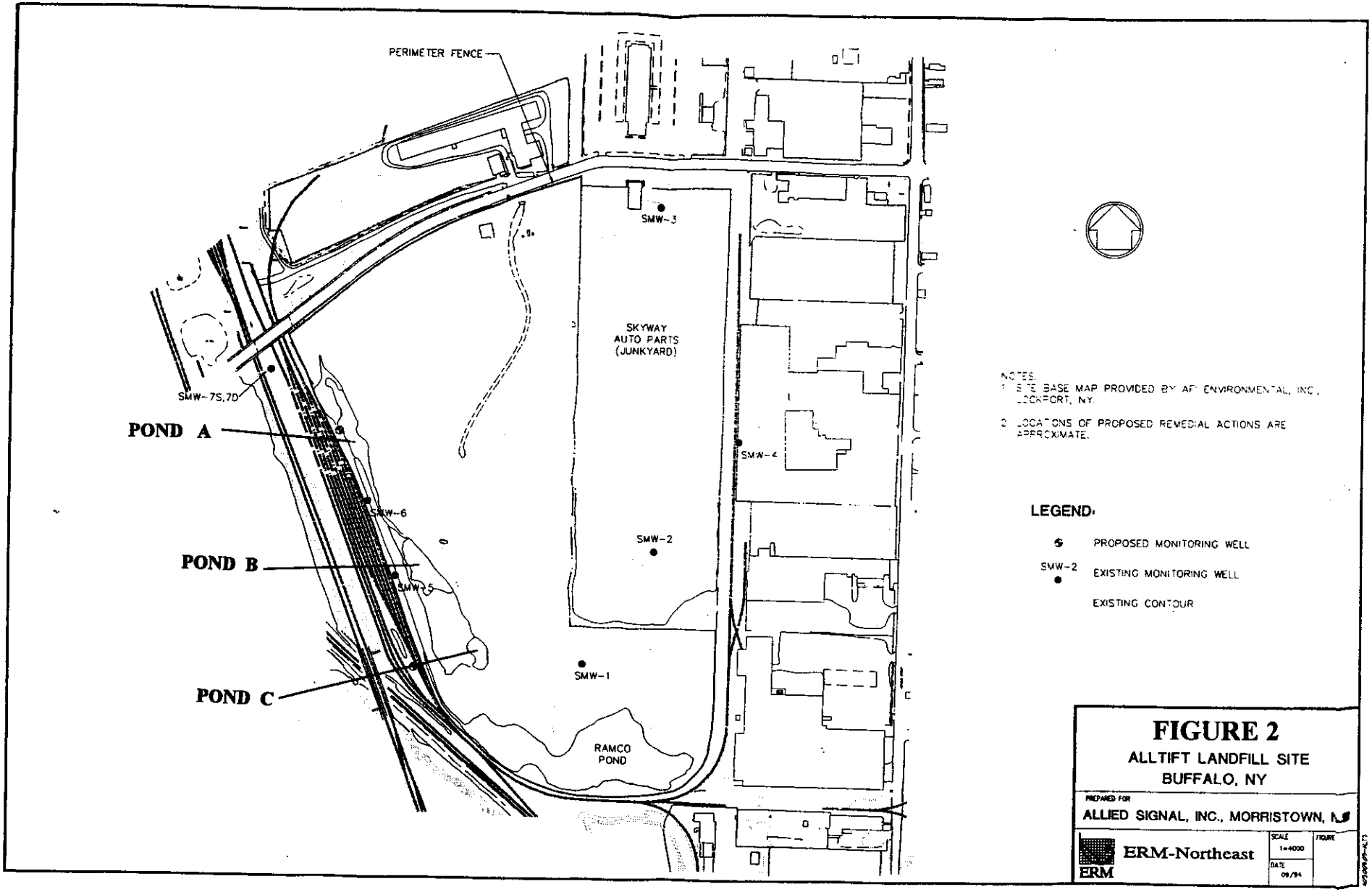


FIGURE 2

ALLTIFT LANDFILL SITE
BUFFALO, NY

PREPARED FOR
ALLIED SIGNAL, INC., MORRISTOWN, NJ

ERM-Northeast

SCALE 1=4000

DATE 09/94

FIGURE

The NYSDEC and Allied-Signal, Inc., entered into a Consent Order on June 12, 1991, Index No. B9-0194-87-07. The Order obligates Allied-Signal to carry out an RI/FS. Upon issuance of the Record of Decision, the NYSDEC will request that the PRPs implement the selected remedy under an Order on Consent.

There is an extensive list of entities and individuals who historically owned, operated, or otherwise contributed waste to the site.

SECTION 4: SUMMARY OF SITE CHARACTERISTICS

In response to a determination that the presence of hazardous waste at the site presents a significant threat to human health and the environment, a Remedial Investigation/Feasibility Study (RI/FS) has recently been completed.

4.1: Summary of Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site.

The RI was completed in two phases. The first phase was completed between September 1991 and September 1992. The second phase was carried out between March 1993 and May 1994. A report entitled "Remedial Investigation Report for the Alltift Landfill Site", dated August 1994 has been prepared describing the field activities and findings of the RI in detail. The RI activities consisted of the following:

- Installation of soil borings and monitoring wells for the analysis of soils and groundwater. This also provided samples for determining the physical properties of soil and the hydrogeologic conditions.
- Excavation of test pits to determine the extent of waste disposal and to collect samples for analysis.
- Installation of piezometers to determine groundwater levels and sample water.
- Slug tests were conducted to assess hydraulic characteristics at the site.
- Surface water and sediment were collected and analyzed.

To determine which media (soil, groundwater, etc.) are contaminated at levels of concern, the analytical data obtained from the RI were compared to environmental Standards, Criteria, and Guidance (SCGs, defined in Section 8 below). Groundwater, drinking water, and surface water SCGs identified for this site were based on NYSDEC Ambient Water Quality Standards and Guidance Values. For the evaluation and interpretation of soil and sediment analytical results, NYSDEC soil cleanup guidelines for the protection of groundwater, background conditions, and risk-based remediation criteria were used to develop remediation goals.

Based upon the results of the remedial investigation in comparison to the SCGs and potential public health and environmental exposure rates, certain areas and media of the site require remediation. These are summarized below. Complete information can be found in the RI Report.

Chemical concentrations are reported in parts per billion (ppb) and parts per million (ppm). For comparison purposes, SCGs are given for each medium.

4.2: Nature of Contamination

As described in the RI report, numerous soil, groundwater, surface water, and sediment samples were collected at the site to characterize the nature and extent of contamination. All sampled media at the site were found to be impacted. Soil, groundwater, surface water, and sediment each contained contaminants common to the waste disposed of at the site. The types of contamination found fall into the following general groups with specific examples cited:

- Volatile organics: benzene, toluene, xylene, 1,1,1-trichloroethane, trichloroethene, etc.
- Semi-volatile organics: naphthalene, anthracene, phthalates, phenols, dibenzofuran, etc.
- PCBs & pesticides: Aroclor 1254 & 1260, DDT, DDE, heptachlor, etc.
- Inorganics: arsenic, cadmium, chromium, lead, cyanide, etc.

During the site investigation, a wide range of compounds was detected in soils at the site. Due to the nature of the materials at the site, waste and soil are grouped together for analytical purposes. Four volatile organics (VOC), fourteen semi-volatile organics (SVOC), two types of PCBs, and sixteen different inorganics (metals) were detected at levels above regulatory standards in site soils/waste.
Section 5.1 below 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 health risks can be found in Section 7.0 of the RI Report.

4.3: Extent of Contamination

Table 1 summarizes the extent of contamination of the contaminants of concern in soil/waste, groundwater, surface water, and sediments and compares the data with the proposed cleanup goals for the site.

Concentrations and specific compounds found varied widely across the site. The highest levels of contamination were found in the waste materials and the immediately surrounding soils. Shallow groundwater was significantly more contaminated than was deep groundwater. Both surface water and sediments in the ponds adjacent to the site were contaminated, though surface water contamination was primarily limited to inorganic compounds. More detail regarding effected media is provided below.

Soils/Landfill Materials

Contaminants detected in landfill soils and waste materials consist primarily of semi-volatile organic compounds (S-VOCs) and metals with limited VOCs, PCBs, and pesticides. VOCs consisting of monocyclic aromatic hydrocarbons (MAHs) and chlorinated solvents were found throughout the landfill. Additionally, acetone and carbon disulfide were detected at depth within the landfill. S-VOCs, including MAHs, dibenzofuran PAHs, and phthalates, were detected throughout the landfill at various concentrations in both the surface and subsurface samples. A wide variety of metals was detected at elevated concentrations in most of the samples collected. These include antimony, arsenic, chromium, cadmium, lead, mercury and nickel. PCBs, ranging in concentration from 1.2 to 25.0 mg/kg, were detected in seven samples, while pesticides were observed only in one sample.

Skyway Property Subsurface Soils

On the Skyway property, east of the landfill, historical, visual, and analytical data indicate that waste materials (similar to those in the landfill) were deposited in the central portion of the Skyway property to fill in the drainage swale and other low lying areas. These areas were subsequently covered with C&D material to bring the property to the present grade. The surface is currently covered with junked cars which are used for parts by the operators of the property. A volume estimate indicates that wastes present beneath the Skyway property comprise

Table 1: Representative Contaminants - Alltift Landfill Site (9-15-054)

		Soils/Waste: Main Landfill				
	Concentration Range, ppb (* = ppm)			Cleanup	No. that	No. of
Contaminant	Minimum	Maximum	Average	Goal	Exceed	Samples
Benzene	10	740	29.8	60	1	41
Chlorobenzene	10	3500	96.6	1700	1	41
Benzo(a)anthracene	150	11000	1315.6	224	15	32
Benzo(a)pyrene	10	5200	707.8	61	14	32
PCB 1245	100	25000	1984.4	1000	6	32
Arsenic*	0.46	223	56.1	15	16	29
Cadmium*	0.25	44	9.0	10	8	29
Chromium*	1.2	63800	4802.1	20	24	29
Iron*	400	183000	63530.4	55000	13	29
Lead*	1.5	16400	1481.2	400	16	29
Mercury*	0.01	444	42.1	0.1	26	29
		Soils/Waste: Skyway				
	Concentration Range, ppb (* = ppm)			Cleanup	No. that	No. of
Contaminant	Minimum	Maximum	Average	Goal	Exceed	Samples
Benzene	10	190	40.5	60	2	11
Chlorobenzene	10	1900	386.6	1700	1	11
Xylene	7	3300	374.8	1200	1	11
Benzo(a)anthracene	150	32000	4375.3	224	15	19
Benzo(a)pyrene	150	9800	2246.8	61	19	19
Benzo(b)fluoranthene	150	31000	4397.4	1100	11	19
Chrysene	150	16000	3121.6	400	15	19
Arsenic*	9	80.2	28.0	15	7	12
Chromium*	25.7	1710	329.5	20	12	12
Lead*	80.1	45100	4311.4	400	6	12
Mercury*	0.14	8.4	2.1	0.1	12	12
		Shallow Groundwater				
	Concentration Range, ppb (* = ppm)			Cleanup	No. that	No. of
Contaminant	Minimum	Maximum	Average	Goal	Exceed	Samples
Benzene	0.3	120	7.0	0.7	8	39
Chlorobenzene	1	410	19.1	5	7	39
Ethylbenzene	1	14	1.3	5	1	39
Toluene	1	2	1.1	5	0	39
Xylene	1	39	2.9	5	2	39
Naphthalene	1	510	23.4	10	6	39
1,4-Dichlorobenzene	1	13	2.1	4.7	5	39
1,2-Dichlorobenzene	1	6	1.3	4.7	1	39
4-Chloroaniline	1	860	29.2	5	5	39
4,4-DDD	0.03	0.54	0.1	0.1	5	39
Antimony	1	98.9	18.1	3	8	18
Arsenic	1	682	48.4	25	15	39
Chromium	1	7610	368.4	50	11	36
Iron	110	181000	39465.8	300	33	36
Lead	1	4280	370.0	25	18	36
Manganese	1.7	6940	1926.0	300	34	36

For calculations, non-detects entered at approx. one-half of detection limit.

Table 1: Representative Contaminants - Alltift Landfill Site (9-15-054)

		Deep Groundwater				
	Concentration Range, ppb (* = ppm)			Cleanup	No. that	No. of
Contaminant	Minimum	Maximum	Average	Goal	Exceed	Samples
Benzene	0.2	120	12.0	0.7	6	21
Ethylbenzene	1	20	2.8	5	3	21
Toluene	1	140	8.7	5	2	21
Xylene	1	110	10.8	5	7	21
Arsenic	1	12.9	2.4	25	0	21
Chromium	1	10.8	2.6	50	0	21
Iron	150	22200	3819.5	300	9	21
Lead	1	11.4	2.4	25	0	21
Manganese	1	881	124.5	300	3	21
		Surface Water				
	Concentration Range, ppb (* = ppm)			Cleanup	No. that	No. of
Contaminant	Minimum	Maximum	Average	Goal	Exceed	Samples
Chromium +6	1	120	20.5	16	4	11
Iron	150	7350	1874.5	300	9	11
		Sediment				
	Concentration Range, ppb (* = ppm)			Cleanup	No. that	No. of
Contaminant	Minimum	Maximum	Average	Goal	Exceed	Samples
Chlorobenzene	1	730	49.6	160	1	20
Ethylbenzene	1	1200	61.0	33	1	20
Dibenzofuran	50	4500	602.0	230	7	20
Fluorene	50	6200	467.5	540	3	20
Phenanthrene	150	41000	3313.0	5450	2	20
Anthracene	150	5600	593.0	960	3	20
Pyrene	150	6000	1707.0	2600	5	20
Benzo(a)anthracene	150	20000	1730.5	1300	6	20
Chrysene	150	26000	2057.5	1400	6	20
Alpha BHC	1	110	6.5	2	1	20
Antimony	1	290	111.6	2	8	9
Arsenic*	18.5	338	65.1	6	9	9
Cadmium*	0.3	10.5	3.5	0.6	7	9
Chromium*	45.7	565	247.0	26	9	9
Iron*	15100	344000	102366.7	20000	8	9
Lead*	215	5580	1066.4	31	9	9
Manganese*	288	2250	1082.9	460	6	9
Mercury*	0.32	1.5	0.8	0.15	9	9

For calculations, non-detects entered at approx. one-half of detection limit.

less than ten percent (10%) of total wastes.

Elevated levels of VOCs were detected in five of the test pits and included methylene chloride, acetone, xylene, benzene, and chlorobenzene. S-VOCs, consisting primarily of PAHs, were detected at levels above SCGs in 16 of the 21 test pits. Additionally, elevated levels of dibenzofuran, phenol, 2-methylphenol, 1,3-dichlorobenzene, and 4-chloroaniline were detected. Of the 23 metals analyzed, 13 exceeded the SCGs in at least one of the samples. No pesticides or PCBs were detected in any of the samples at levels above SCGs.

Shallow Groundwater

Data from the on-site monitoring wells indicates that the shallow aquifer is impacted in the vicinity of waste disposal activities (landfill and Skyway property). Elevated levels of VOCs/S-VOCs were observed in three of 18 wells. Pesticides occurred above detection limits in four of 18 wells. PCBs were detected in one well under the landfill (MW-4S). Metals were generally elevated in most samples. Groundwater contamination away from the waste materials is generally limited.

Deep Groundwater

The deep aquifer samples show levels of BTEX compounds which exceed groundwater standards. There is evidence that BTEX in local bedrock aquifers may be naturally occurring due to the petroliferous nature of some of the shales encountered beneath the site. Chlorobenzene was detected in one well in the southeast corner of the site where the clay layer is very thin or absent. The concentration was only slightly above groundwater standards. There appears to be limited migration between the two aquifers due to the clay layer and the absence of a significant vertical gradient.

Sediments

A number of VOCs including acetone, carbon disulfide, 2-butanone, 1,1,1-TCA, TCE and chlorobenzene were detected throughout the pond sediments. BTEX, 1,2-dichloroethane, 1,1-dichloroethane and cis-1,2-dichloroethene were also detected in Pond B sediment (See Figure 2). Additionally, 20 semi-volatiles, consisting mostly of PAHs, were detected at elevated levels in the sediments. Metals at elevated levels were also detected in all of the samples. Pesticides were detected in the pond sediments, as well as in soil and water both on site and off site. The contaminated sediment in the south or Ramco pond is the result of contaminant migration from the landfill and also the historical discharge of metals contaminated wastewater from the Ramco steel operation. The contaminated south pond constitutes the majority of the problem requiring remediation on the Ramco site.

Surface Water

No VOCs or S-VOCs were detected at concentrations above ambient surface water standards. Elevated metals included hexavalent chromium and iron.

SECTION 5: SUMMARY OF SITE RISKS

5.1: Summary of Human Exposure Pathways

An exposure pathway is the process by which an individual is exposed to a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media (e.g., soil, groundwater) and transport mechanisms; 3) the point of exposure; 4) the route of exposure (e.g., ingestion, inhalation); and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

Completed pathways known to or that may exist at the site include:

- ingestion of contaminated soil, surface water, or sediments by hunters, local residents, or others, including workers at the adjacent Skyway Auto Parts, who may from time to time visit the Alltift site.

- inhalation of volatile compounds or contaminated particulates by visitors to, or workers at or near, the site.

- dermal contact with contaminated soils, sediment, or surface water by visitors to the site, Skyway, or the ponds adjacent to the site.

- ingestion of contaminated groundwater through the use and consumption of water from shallow wells (Note: Currently, there is no indication that shallow groundwater is being used as a source of potable water; all local residents are served by public water).

5.2: Summary of Environmental Exposure Pathways

Currently a variety of wildlife may come in contact with contamination at the site. Some specific examples are:

- migratory birds which may use the ponds at the site as rest or feeding locations.

- any of a variety of mammals which may come into contact with contaminated site soils.

- aquatic life (benthic organisms) in the site pond which would be in direct contact with contaminated sediments.

- plants growing at the site may uptake contamination and incorporate it into the plant material; higher fauna may then be exposed to contamination through the ingestion of plant matter.

SECTION 6: REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR 375-1.10. These goals are established under the overall goal of protecting human health and the environment and meeting all Standards, Criteria, and Guidance (SCGs).

At a minimum, the remedy selected should eliminate or mitigate all significant threats to public health and the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The goals selected for this site are:

- Eliminate the threat to surface waters by eliminating any future contaminated surface run-off from the contaminated on-site soils and waste materials.

- Eliminate the potential for direct human or animal contact with the contaminated soils and waste materials on site.

- As necessary, mitigate the impacts of contaminated groundwater to the environment through the interception and treatment of contaminated groundwater.

- Prevent, to the extent practicable, migration of contaminants in the landfill to groundwater.

- To the extent practicable, provide for attainment of SCGs for groundwater quality at the limits of the area of concern (AOC).

Table 1 lists numerical cleanup goals for the different media at the site.

SECTION 7: DESCRIPTION OF THE REMEDIAL ALTERNATIVES

Potential remedial alternatives for the Alltift Landfill site were identified, screened and evaluated in a Feasibility Study. This evaluation is presented in the report entitled Feasibility Study Report, Alltift Landfill Site, Buffalo, New York, dated, September 1994. A summary of the detailed analysis follows.

The potential remedies are intended to address the contaminated soils and waste, groundwater, sediment, and through the remediation of the above, address surface water contamination at the site. Figures 3-11 provide a conceptual view of the alternatives.

Alternative 1 : No Action

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 is an unacceptable alternative as the site would remain in its present condition and the threat presented by waste materials and contaminated soils, groundwater, and sediments would remain.

Alternative 2: Institutional Actions (Fencing +Monitoring +Land Use Restrictions + Site Maintenance)

Present Worth:	$ 385,288
Capital Cost:	$ 175,160
Annual O&M:	$ 15,550
Time to Construct:	<6 months

The institutional actions included in this alternative are land use restrictions, supply well installation and usage restrictions, fencing of the site, general maintenance of the fence and site, and periodic monitoring of the level of contamination in monitoring wells.

The monitoring portion of the alternative would include the installation of two additional wells and the sampling of these wells along with seven existing site wells.

Alternative 3A: Capping of Landfill and Skyway Autoparts + Institutional Actions

Present Worth:	$ 12,096,103
Capital Cost:	$ 11,723,819
Annual O&M:	$ 27,550
Time to Construct:	12 months

This alternative includes gaining access to the Skyway property, regrading the entire site including Skyway, capping the regraded area, and the institutional controls described in Alternative 2.

Access to Skyway would be needed in order to remove the cars and parts to an outside location prior to grading and capping. The entire site, including Skyway (total of 58 acres), would then be graded and capped with a multi-layer cap consisting of a six inch subbase, a geotextile fabric, a 12 inch gas venting layer, a 60-mil HDPE

geomembrane, two feet of soil, and a 6 inch topsoil layer to support vegetation.

The cap would be constructed with an appropriate slope and drainage system to control runoff.

Alternative 3B: Excavation + Consolidation + Capping of Landfill + Groundwater Collection + Wetlands Restoration + Institutional Actions

Present Worth: ..... $ 9,616,403
Capital Cost: ..... $ 7,532,287
Annual O&M: ..... $ 154,230
Time to Construct: ..... 12 months

This alternative consists of the excavation and dewatering of contaminated sediments from the ponds south and west of the site and the consolidation of this material onto the landfill. The consolidation of the sediment from the Ramco pond would address the major environmental concern posed by the Ramco site. Also excavated would be the landfill materials which occur outside the margins of the natural clay layer which exists at the site. These would be consolidated onto the landfill over the clay. The consolidated material and the balance of the landfill would then be capped with the cap described in alternative 3A. After the excavation and consolidation was completed the wetlands would be restored. The element of wetland restoration is common to all of the remaining alternatives. Subsurface waste on the Skyway Property would not be consolidated.

A groundwater collection trench would be installed along the western and southern sides of the site in order to intercept shallow groundwater including water from Skyway. This collection system would provide protection against recontamination of the wetlands and ponds. A treatment system for the collected groundwater would, if needed, be constructed consisting of chemical precipitation and settling, air stripping for treatment of volatiles, and carbon polishing. This system would be required if contaminant levels exceeded sewer use limits. The treated water would then be discharged to the POTW.

The institutional controls would be similar to those in alternative 2.

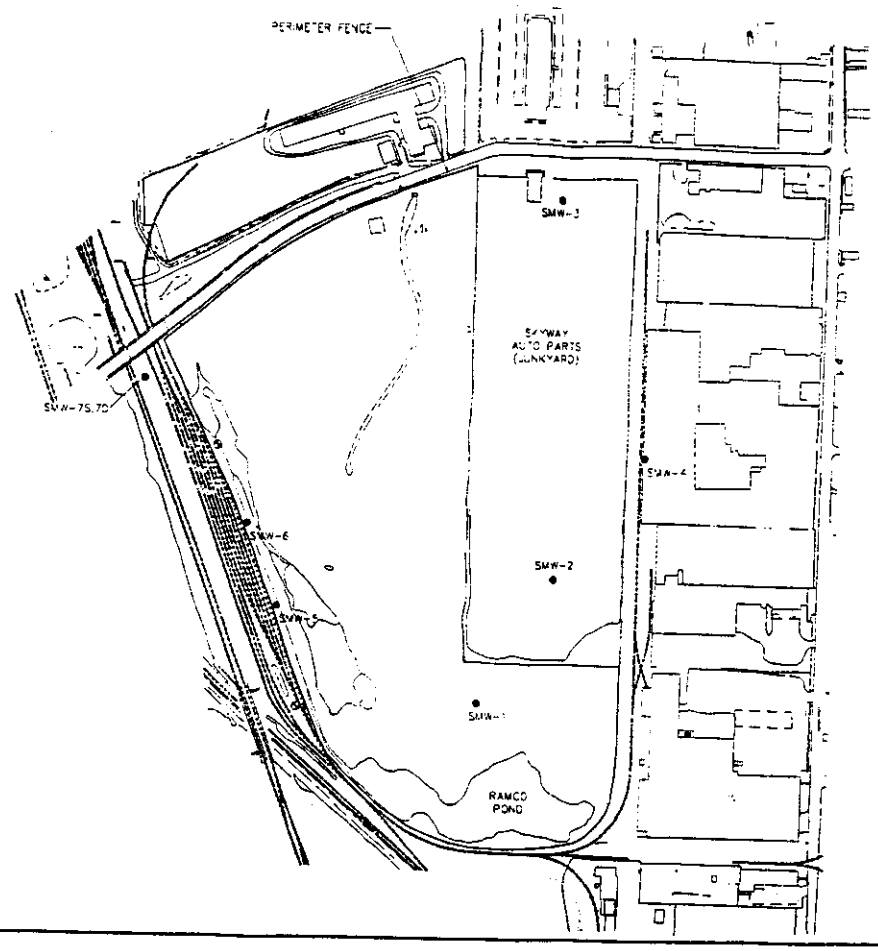
Alternative 3C: Excavation + Consolidation + Capping of Landfill and Skyway Property + Groundwater Collection + Wetlands Restoration + Institutional Actions

Present Worth: ..... $ 12,511,890
Capital Cost: ..... $ 10,400,208
Annual O&M: ..... $ 156,270
Time to Construct: ..... 12-15 months

This alternative is essentially a combination of alternatives 3A and 3B. It combines the elements in 3B of excavation, consolidation, groundwater collection, and institutional actions with the capping elements in 3A. The capping would include the landfill and the Skyway property.

Alternative 3D: Excavation + Consolidation + Capping of Landfill + Excavation and Consolidation of Skyway Wastes + Groundwater Collection + Wetlands Restoration + Institutional Actions

Present Worth: ..... $ 13,472,866
Capital Cost: ..... $ 11,375,237
Annual O&M: ..... $ 155,230
Time to Construct: ..... 12-18 months



NOTES
1. SITE BASE MAP PROVIDED BY AF ENVIRONMENTAL, INC., LOCKPORT, NY
2. LOCATIONS OF PROPOSED REMEDIAL ACTIONS ARE APPROXIMATE

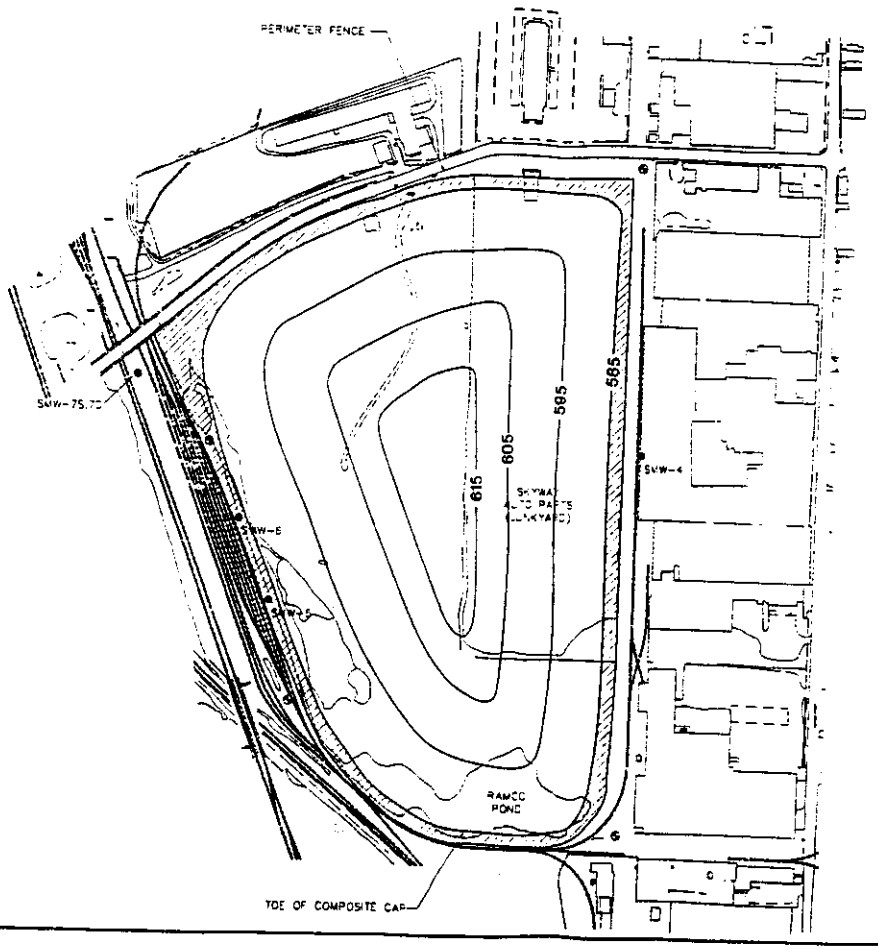
LEGEND:

- PROPOSED MONITORING WELL
- SMW-2 EXISTING MONITORING WELL
- EXISTING CONTOUR

ALTERNATIVE 2
FEASIBILITY STUDY, PHASE 3
ALLTIFT LANDFILL SITE
BUFFALO, NY

PREPARED FOR
ALLIED SIGNAL, INC., MORRISTOWN, NJ

FIGURE 3



NOTES
1. SITE BASE MAP PROVIDED BY AF ENVIRONMENTAL, INC., LOCKPORT, NY
2. LOCATIONS OF PROPOSED REMEDIAL ACTIONS ARE APPROXIMATE
3. FINAL TOPOGRAPHY OF LANDFILL CAP MAY VARY

LEGEND:

- PROPOSED MONITORING WELL
- SMW-2 EXISTING MONITORING WELL
- EXISTING CONTOUR
- PROPOSED FINAL CONTOUR
- AREA FOR ACCESS ROAD, SURFACE WATER COLLECTION CHANNEL(S), AND MISCELLANEOUS STRUCTURES

ALTERNATIVE 3A
FEASIBILITY STUDY, PHASE 3
ALLTIFT LANDFILL SITE
BUFFALO, NY

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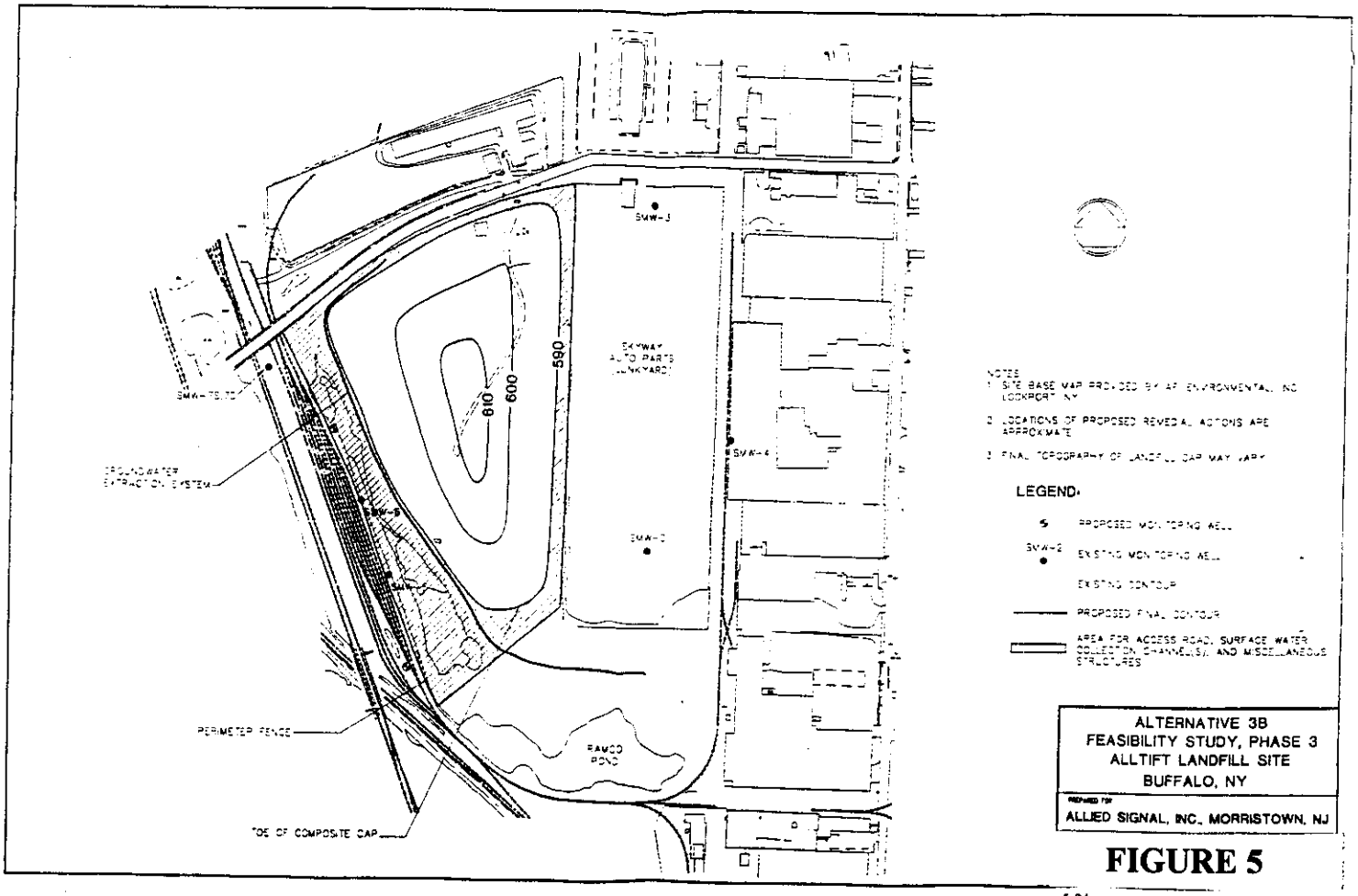
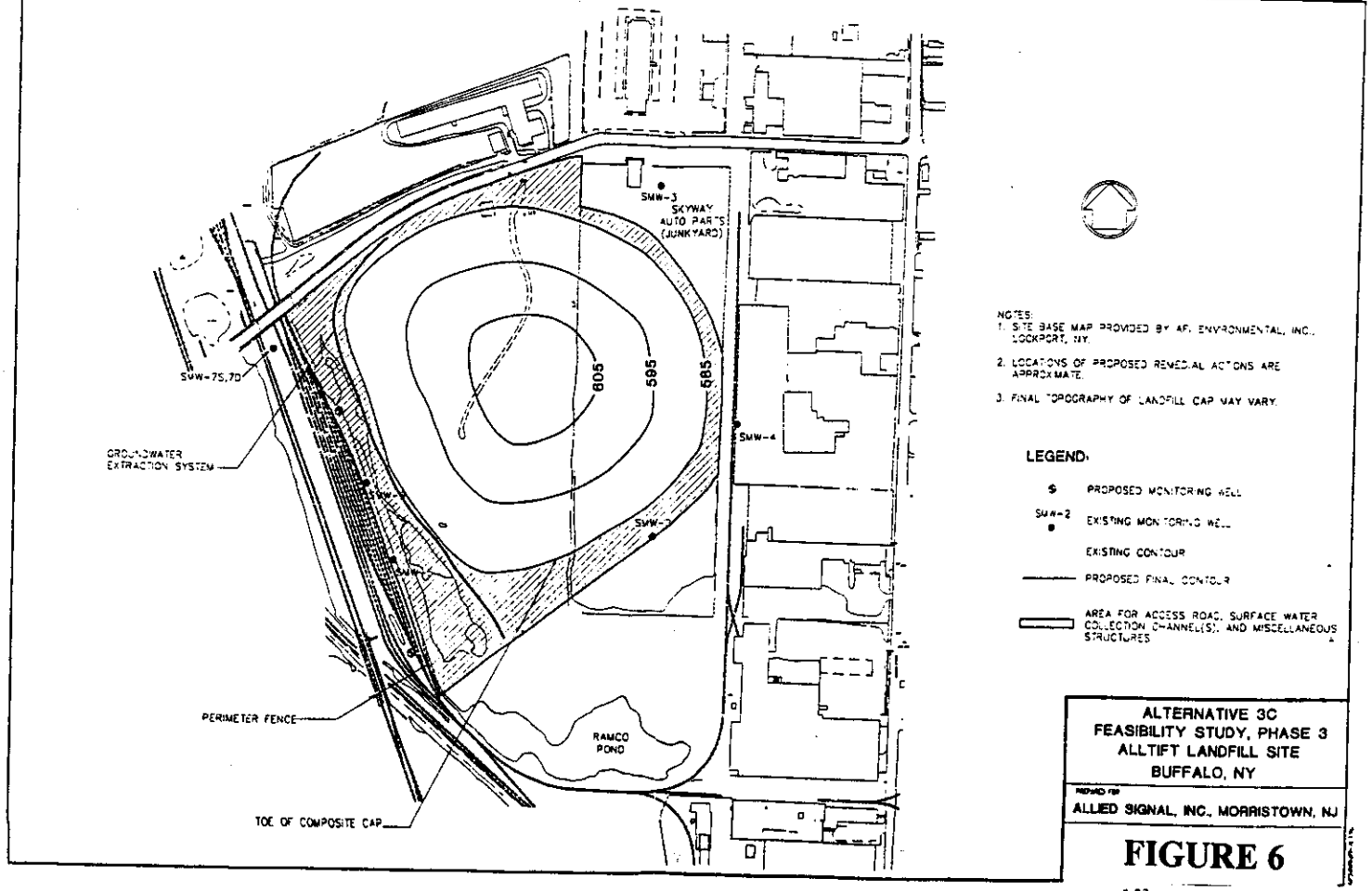
FIGURE 4



ALTERNATIVE 3B
FEASIBILITY STUDY, PHASE 3
ALLTIFT LANDFILL SITE
BUFFALO, NY

PREPARED FOR
ALLIED SIGNAL, INC., MORRISTOWN, NJ

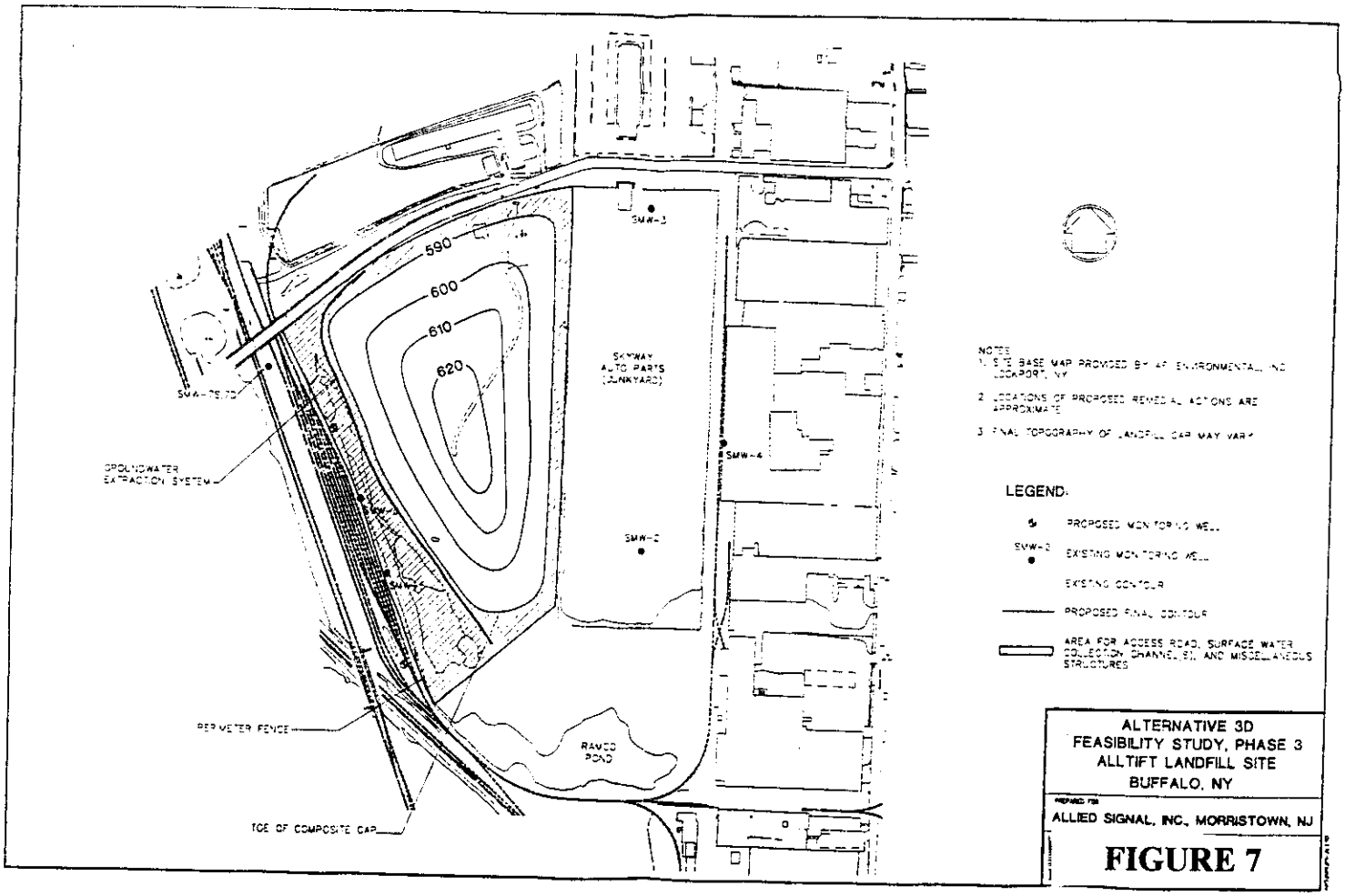
FIGURE 5

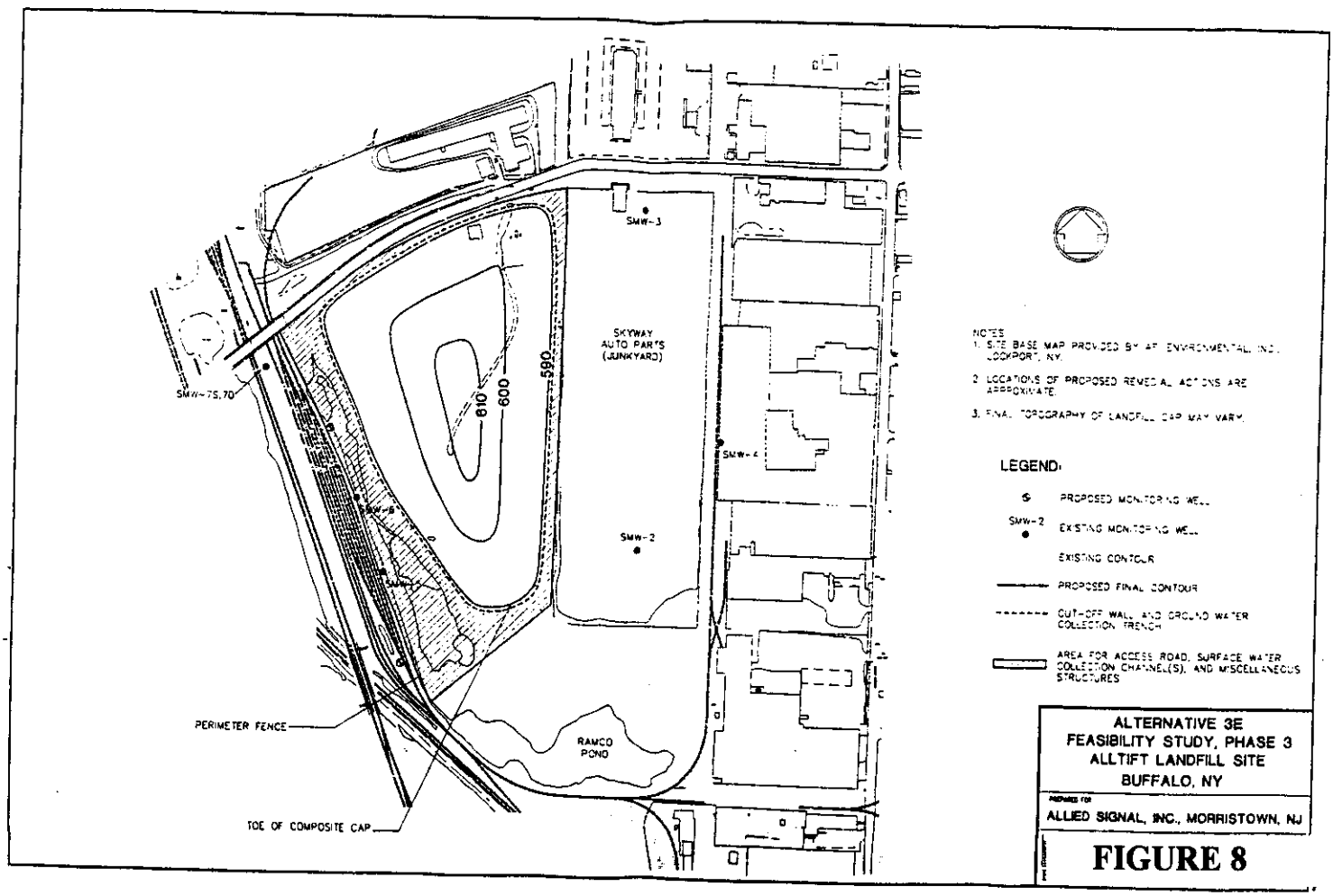


ALTERNATIVE 3C
FEASIBILITY STUDY, PHASE 3
ALLTIFT LANDFILL SITE
BUFFALO, NY

PREPARED FOR
ALLIED SIGNAL, INC., MORRISTOWN, NJ

FIGURE 6


590
600
610
620
SMW-3
SKYWAY
AUTO PARTS
(JUNKYARD)
SMW-4
SMW-2
SMW-5
SMW-7S,7D
GROUNDWATER
EXTRACTION SYSTEM
PERIMETER FENCE
RAMCO
POND
TOE OF COMPOSITE CAP
NOTES
1. SITE BASE MAP PROVIDED BY AF ENVIRONMENTAL INC. LOCKPORT, NY.
2. LOCATIONS OF PROPOSED REMEDIAL ACTIONS ARE APPROXIMATE.
3. FINAL TOPOGRAPHY OF LANDFILL CAP MAY VARY.
LEGEND:
PROPOSED MONITORING WELL
SMW-2 EXISTING MONITORING WELL
EXISTING CONTOUR
PROPOSED FINAL CONTOUR
AREA FOR ACCESS ROAD, SURFACE WATER COLLECTION CHANNEL(S), AND MISCELLANEOUS STRUCTURES
ALTERNATIVE 3D
FEASIBILITY STUDY, PHASE 3
ALLTIFT LANDFILL SITE
BUFFALO, NY
PREPARED FOR
ALLIED SIGNAL, INC., MORRISTOWN, NJ
FIGURE 7


590
600
610
SMW-3
SKYWAY
AUTO PARTS
(JUNKYARD)
SMW-4
SMW-2
SMW-5
SMW-7S,7D
PERIMETER FENCE
RAMCO
POND
TOE OF COMPOSITE CAP
NOTES
1. SITE BASE MAP PROVIDED BY AF ENVIRONMENTAL INC. LOCKPORT, NY.
2. LOCATIONS OF PROPOSED REMEDIAL ACTIONS ARE APPROXIMATE.
3. FINAL TOPOGRAPHY OF LANDFILL CAP MAY VARY.
LEGEND:
PROPOSED MONITORING WELL
SMW-2 EXISTING MONITORING WELL
EXISTING CONTOUR
PROPOSED FINAL CONTOUR
CUT-OFF WALL AND GROUND WATER COLLECTION TRENCH
AREA FOR ACCESS ROAD, SURFACE WATER COLLECTION CHANNEL(S), AND MISCELLANEOUS STRUCTURES
ALTERNATIVE 3E
FEASIBILITY STUDY, PHASE 3
ALLTIFT LANDFILL SITE
BUFFALO, NY
PREPARED FOR
ALLIED SIGNAL, INC., MORRISTOWN, NJ
FIGURE 8

This alternative includes excavation and consolidation of sediments, and consolidation of waste material not underlain by clay, capping of the landfill, groundwater collection and treatment, and institutional controls. This alternative differs from alternative 3B in that it incorporates the excavation and consolidation onto the landfill of waste material from beneath the Skyway property which can be attributed to the historical activities at the landfill.

Alternative 3E: Excavation + Consolidation + Capping of Landfill + Fully Surrounding Groundwater Collection + Fully Surrounding Groundwater Cut-off Wall + Wetlands Restoration + Institutional Actions

Present Worth: ..... $ 10,105,924
Capital Cost: ..... $ 9,502,837
Annual O&M: ..... $ 44,630
Time to Construct: ..... 12-15 months

Alternative 3E has the same excavation, consolidation, capping, and institutional control elements as alternative 3B. This alternative includes the additional elements of a fully surrounding cut-off wall and groundwater collection system.

The cut-off wall would consist of a soil bentonite wall constructed along the toe of the consolidated landfill with the collection system located inside of the wall.

Alternative 3F: Excavation + Consolidation + Capping of Landfill and Skyway Property + Fully Surrounding Groundwater Collection + Fully Surrounding Groundwater Cut-off Wall + Wetlands Restoration + Institutional Actions

Present Worth: ..... $ 13,528,538
Capital Cost: ..... $ 12,762,754
Annual O&M: ..... $ 56,670
Time to Construct: ..... 12-15 months

The elements of this alternative are similar to those in alternative 3C. Excavation, consolidation, capping of the landfill and Skyway property, and institutional controls are the same. The difference is that a cut-off wall and collection system would surround the entire capped area, including the landfill and Skyway.

Alternative 3G: Excavation + Consolidation + Capping of Landfill + Excavation and Consolidation of Skyway Wastes + Fully Surrounding Groundwater Collection + Fully Surrounding Groundwater Cut-off Wall + Wetlands Restoration + Institutional Actions

Present Worth: ..... $ 13,962,387
Capital Cost: ..... $ 13,345,787
Annual O&M: ..... $ 45,630
Time to Construct: ..... 12-18 months

This alternative is essentially the same as alternative 3D, with the addition of a fully surrounding cut-off wall and interior collection system.

Alternative 4: Excavation + Off-site Disposal + Wetlands Restoration + Institutional Actions

Present Worth: ..... $ 88,093,084
Capital Cost: ..... $ 87,692,693
Annual O&M: ..... $ 29,630
Time to Construct: ..... 18-24 months

This alternative consists of the excavation and off-site disposal of all materials at the site which exceed soil or sediment SCGs for the site. This would include an estimated 200,000 cubic yards of soil, waste, and sediment.

The institutional actions included in this alternative, as well as alternatives 2-3G, are land use restrictions, supply well installation and usage restrictions, fencing of the site, general maintenance of the fence and site, and periodic monitoring of the level of contamination in monitoring wells.

SECTION 8: SUMMARY OF THE COMPARATIVE ANALYSIS OF THE ALTERNATIVES

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6 NYCRR Part 375). For each criterion, a brief description is provided followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is contained in the Feasibility Study.

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 the health and environmental impacts to assess whether each alternative is protective.

   Alternative 1 would not be protective of human health or the environment. It would contain no actions to alter current conditions at the site therefore, all current risks would remain.

   Alternative 2 would not achieve an acceptable level of protection for human health and the environment. It would provide greater protection than alternative 1 because it would mitigate direct exposure to landfill materials through the implementation of land use restrictions and the construction of fences around the site. Contact with contamination found in groundwater would also be limited through restrictions on future well construction and use. This alternative would fail to address the waste materials located under the Skyway property. This alternative would not be permanent, nor would it result in the achievement of RAOs in a reasonable amount of time. It would provide for a limited level of protection in that it would include a program of site maintenance and groundwater contamination monitoring.

   Alternative 3A would provide for protection of human health and the environment through the total capping of the landfill, Skyway Autoparts property, and the southern and western ponds adjacent to the site. While this would contain waste material and limit direct exposure to waste material, it would result in the destruction of the wildlife habitat currently provided by the ponds adjacent to the site. It would also limit leachate production but would not collect residual leachate or shallow contaminated groundwater. This remedy would not treat contaminated media at the site. It is a control and isolation technology. It may eventually allow for the attainment of RAOs for groundwater through attenuation of contamination, but this would require a great deal of time, and would by no means be a certainty.

   Alternative 3B would mitigate human and environmental exposures to contaminated landfill materials, pond sediments, and shallow groundwater through consolidation of materials onto the landfill, capping, and a

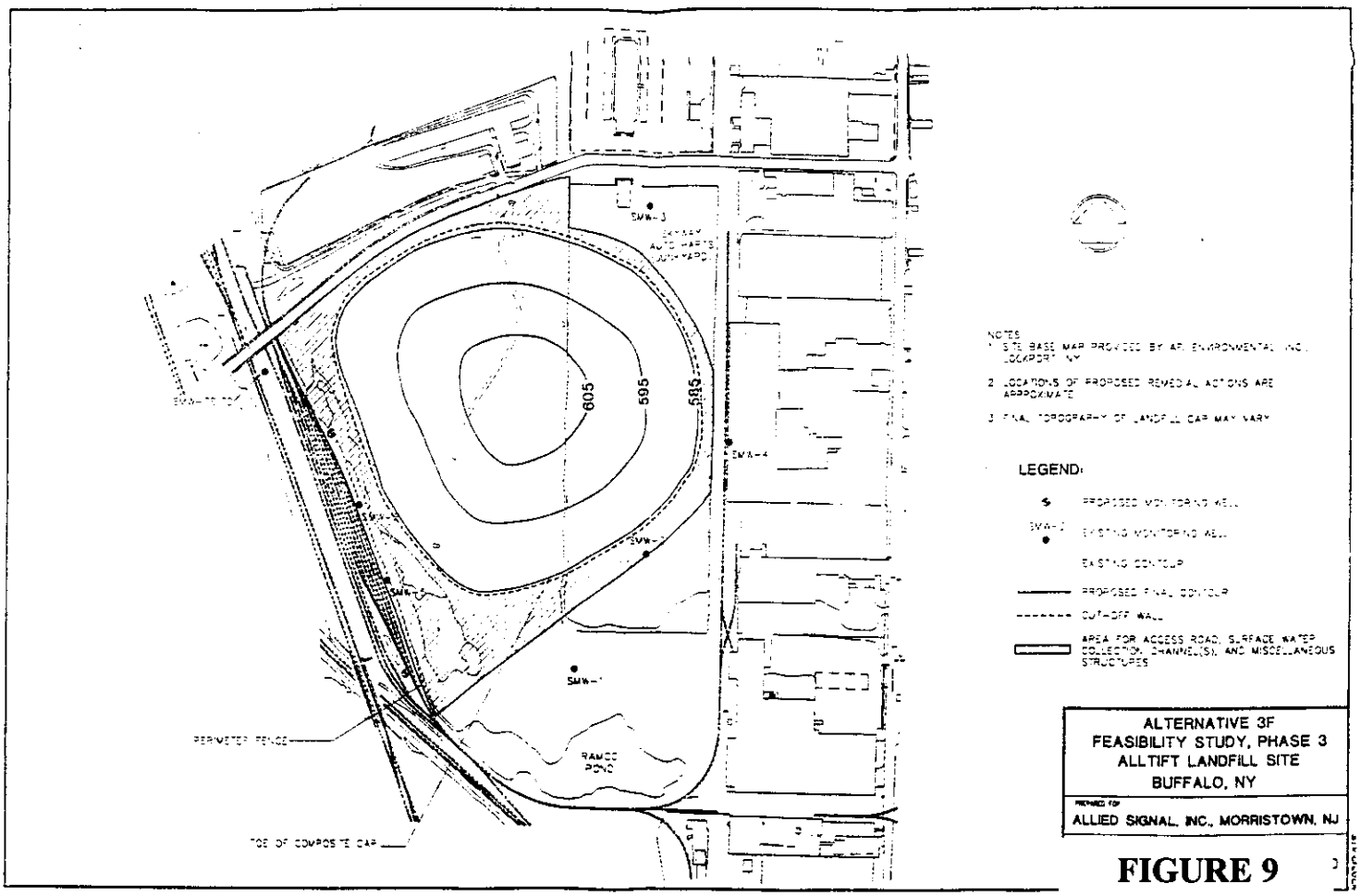


FIGURE 9

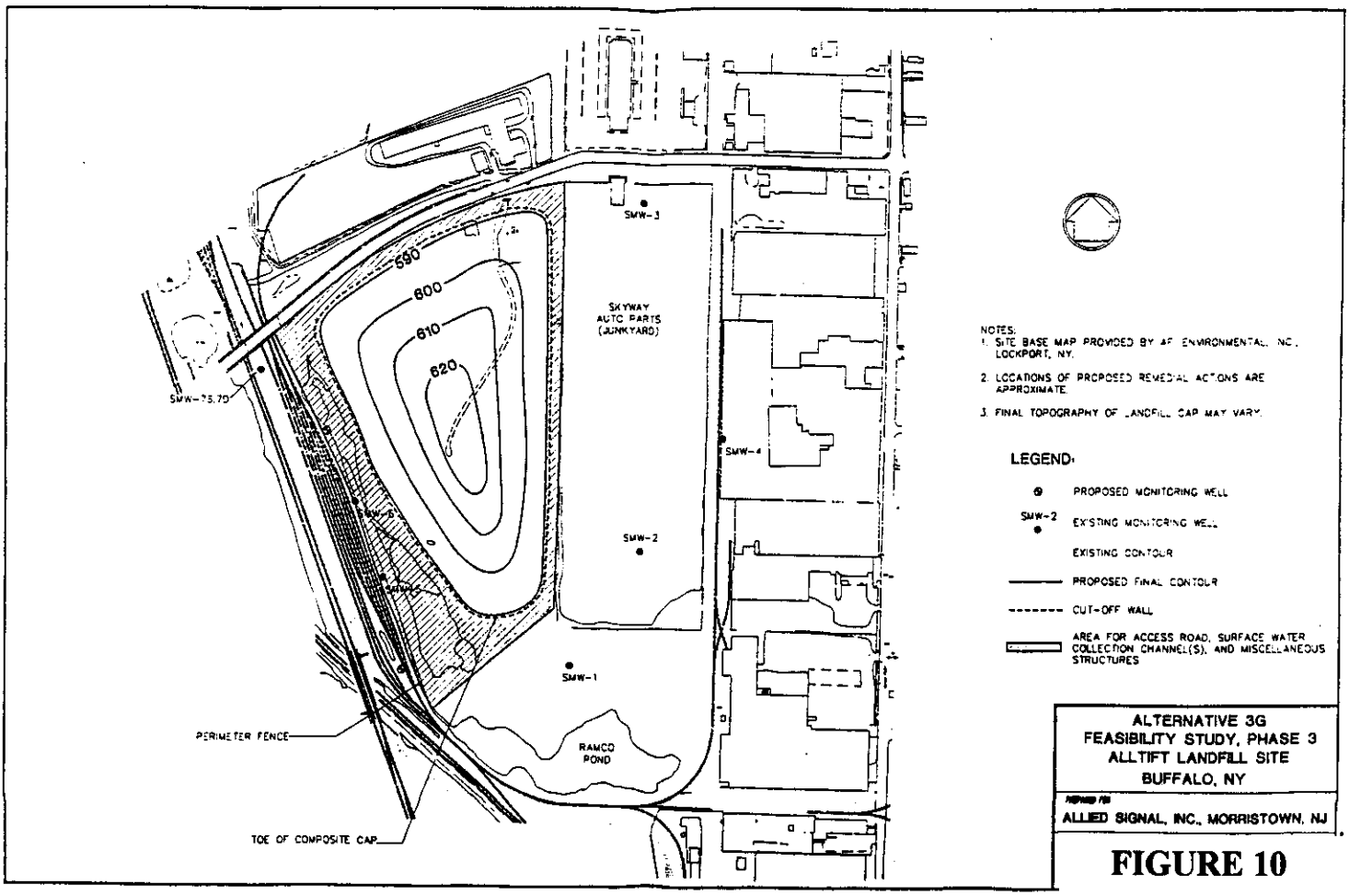


FIGURE 10

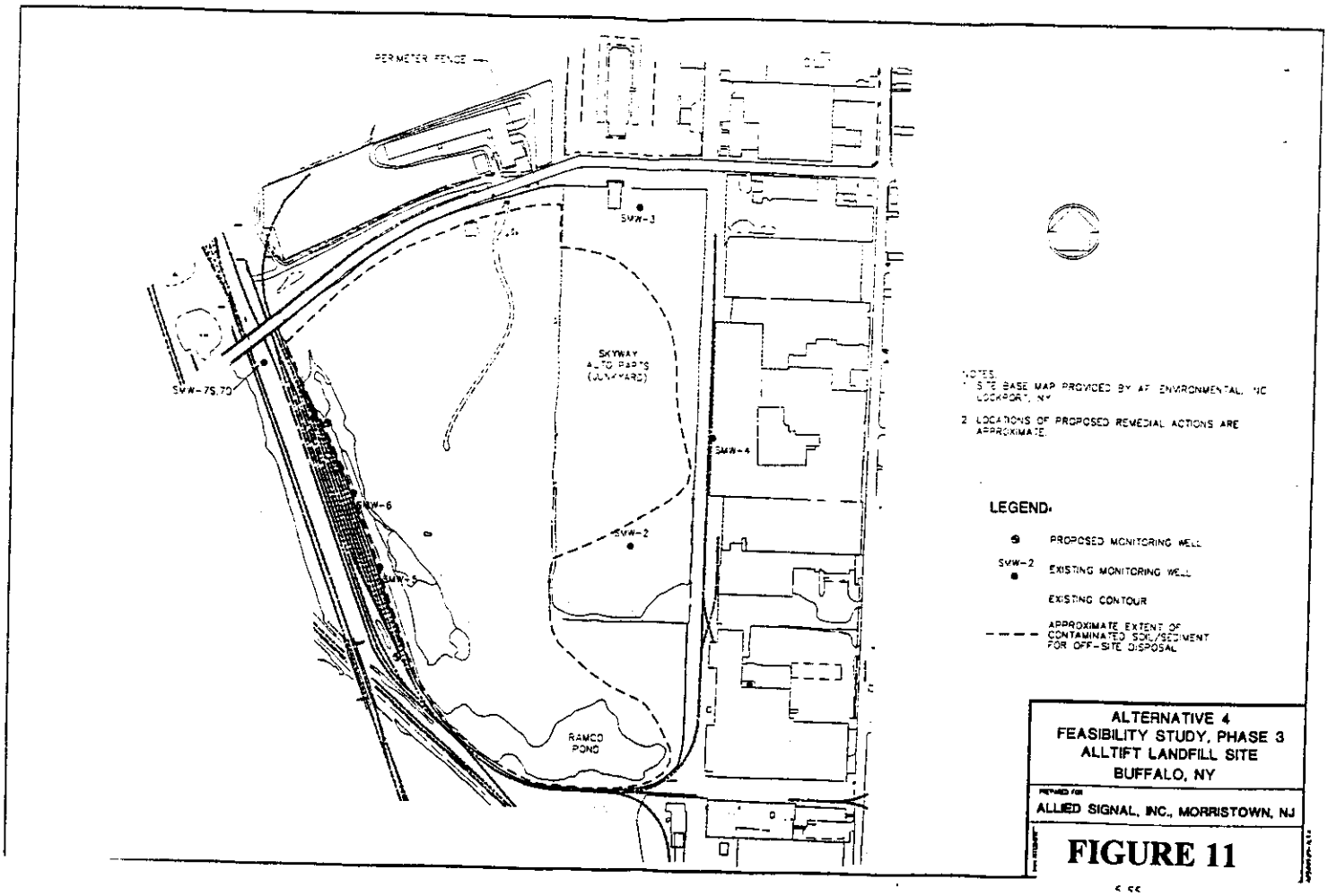

PERIMETER FENCE
SMW-3
SKYWAY
A-TO PARTS
(JUNKYARD)
SMW-4
SMW-75,70
SMW-6
SMW-2
SMW-5
RAMCO
POND
NOTES:
1. SITE BASE MAP PROVIDED BY AT ENVIRONMENTAL, INC LOCKPORT, NY
2. LOCATIONS OF PROPOSED REMEDIAL ACTIONS ARE APPROXIMATE.
LEGEND:
PROPOSED MONITORING WELL
SMW-2
EXISTING MONITORING WELL
EXISTING CONTOUR
APPROXIMATE EXTENT OF CONTAMINATED SOIL/SEDIMENT FOR OFF-SITE DISPOSAL
ALTERNATIVE 4
FEASIBILITY STUDY, PHASE 3
ALLTIFT LANDFILL SITE
BUFFALO, NY
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FIGURE 11

groundwater collection system. This alternative would also provide for wetlands restoration and the groundwater collection system would reduce the likelihood of recontamination. This alternative does not address materials located beneath Skyway. This alternative utilizes control/isolation techniques with the only treatment/reduction of contamination coming through the collection and treatment of shallow groundwater.

Alternative 3C would provide the same level of protection and treatment as 3B, with the added element being the capping of contamination on the Skyway property.

Alternative 3D also would provide a similar level of protection as alternative 3B except that instead of capping the Skyway wastes in place, this alternative involves the excavation and consolidation of these wastes to the landfill for capping.

Alternative 3E would be similar to 3B with the addition of a barrier wall and a collection trench around the entire landfill. These would cut off shallow groundwater flow into and out of the landfill as well as collecting contaminated water from inside the landfill. This would be more protective of groundwater than the alternatives which provide for partial groundwater collection. This alternative would not address contamination on the Skyway property.

Alternative 3F would be similar to 3C with the addition of the fully surrounding cut-off wall and collection system described in alternative 3E.

Alternative 3G would provide the same benefits as alternative 3D with the addition of a fully surrounding cut-off wall and collection system.

Alternative 4 would mitigate most exposure pathways and potential exposure pathways at the site through the complete excavation and removal to an industrial landfill of all soils and sediments which exceed SCGs. The only impacted media which would not be addressed is groundwater. This remedy would not reduce the quantity or volume of contamination, but would isolate the contaminants in a landfill. It is not anticipated that this remedy would achieve groundwater RAOs except through natural attenuation over a very long period.

2. <u>Compliance with New York State Standards, Criteria, and Guidance (SCGs)</u>. Compliance with SCGs addresses whether a remedy would meet applicable environmental laws, regulations, standards, and guidance. The RI/FS report lists the SCGs for the site. The most significant of the SCGs include the following:

- 6 NYCRR Part 375 - Regulation directing the investigation/cleanup of inactive hazardous waste sites.
- 6 NYCRR Parts 700-705 - Water Quality Regulations for surface water and groundwater.
- TAGM HWR-92-4046 - Guidance regarding soil cleanup objectives and cleanup levels.
- 6 NYCRR Part 373 - Regulation governing the management of hazardous waste.
- 6 NYCRR Part 376 - Land Disposal Regulation.
- 6 NYCRR Part 360 - Landfill Closure Requirements.
- Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites (FWIA).
- ECL Article 24 & Article 71, Title 23 - Freshwater Wetlands Act.
- TAGM HWR-89-4031 Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites.

Alternative 1, No Action, would not meet SCGs for the site. No action would be taken to alter current conditions at the site. Soils, sediments, and groundwater which a contaminated to levels above state standards or guidance levels would not be addressed.

Alternative 2, Limited Action, would not meet SCGs for the site. The institutional controls which would be enacted would reduce contact with contaminants in soil, waste, and groundwater, they would not, however, directly address the respective contaminants.

Alternative 3A, Capping of Landfill and Skyway Property, would meet SCGs with regard to the soil and waste contamination. It would address landfill and Skyway wastes. This alternative would not address existing groundwater contamination and therefore would not achieve groundwater SCGs. It would also result in the elimination of the ponds and wetlands at the site which would not comply with SCGs for wetland protection and clean-up.

Alternatives 3B and 3E would address landfill wastes, contaminated sediments, and groundwater contamination. They would not address waste materials found beneath the Skyway property. Groundwater contaminated by this waste would be collected by the proposed system in alternative 3B, but not by alternative 3E. Both alternatives would provide for sediment remediation and wetland restoration.

Alternatives 3C and 3F would comply with most site SCGs by capping both the landfill and the adjacent Skyway property. It is anticipated that alternative 3C would collect contaminated groundwater from both areas while 3F would only address groundwater from the landfill. Both alternatives would provide for sediment remediation and wetlands restoration.

Alternative 3D and 3G would address wastes on the landfill and Skyway property through excavation, consolidation, and capping. Both alternatives would collect contaminated groundwater and would meet groundwater related SCGs. Both alternatives would provide for sediment remediation and wetland restoration.

Alternative 4 would remove all wastes, soils, and sediments contaminated to above standards. This alternative would meet all site SCGs with the possible exception of groundwater, since the remedy would do nothing to contain current groundwater contamination. If wastes were excavated and disposed of at another facility, Land Disposal Restrictions would be pertinent if contamination levels in some of the excavated waste exceeded established limits.

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

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

   Alternatives 1 and 2 would pose no incremental risks to the community. The only additional risks to site workers would be incurred in alternative 2 during the installation of the two new monitoring wells proposed as part of the institutional controls. These risks could be easily controlled.

   Alternative 3A would cap the landfill, the Skyway property, and the adjacent wetlands. The capping process would involve the use of heavy earth moving equipment to contour the land surface and bring in the

required fill and cap materials. The risks posed by this process would be the dangers to site workers which are inherent in construction activities. Adding to the risks in this operation would be the need to move all of the cars, car parts, and scrap currently located on the Skyway property. Some of these risks could be managed through the use of properly trained equipment operators. There would be limited risk of exposure to hazardous materials since most of the construction would not involve the excavation of landfill wastes. Monitoring and standard dust suppression techniques would mitigate these risks. This alternative could be implemented in one year. RAOs for soil would be achieved upon completion of the alternative; groundwater RAOs would not be achieved in a reasonable amount of time.

Alternatives 3B and 3E would pose similar risks to workers and the community. Excavation and consolidation of pond sediment and landfill wastes may result in the release of volatiles and particulates to the environment. Monitoring and dust suppression methods would mitigate these problems. Sediment transport in the ponds and wetlands would be addressed by the use of sediment barriers. The construction of the groundwater collection system, and the cut-off wall in 3E would expose workers to the risks inherent in earthmoving/excavation activities. The capping elements in these alternatives would pose the risks previously described with the one difference being that no activities would be conducted on the Skyway property. This alternative could be implemented in less than one year. RAOs for soils would be achieved upon completion of the remedy. Groundwater RAOs would be achieved in a fairly short time in alternative 3B but may not be achieved in 3E.

Alternatives 3C, 3D, 3F, and 3G would all require the relocation of the Skyway parts operation for either the capping or excavation of wastes located there. These remedies would therefore result in the same risks identified for capping in alternative 3A. Additional risks resulting from excavation and consolidation of wastes include particulate and volatile contaminant releases. These would be managed through established dust suppression methods and monitoring. Each of these alternatives would meet RAOs for soils and sediments at the landfill and Skyway. RAOs for groundwater would be met in alternatives 3C, 3D, and 3G. Alternative 3F would not address groundwater contamination from beneath the Skyway property. The groundwater RAOs consist of containing and isolating contaminated groundwater and would be expected to achieve those upon the completion of each alternative, with the exception of 3F which would not collect groundwater from the Skyway property.

Alternative 4, excavation and removal, would have the highest degree of risk to workers and the community because the volumes of materials to be disturbed would be the greatest. Transportation of the wastes would also cause additional risks. These risks would be managed as described above. RAOs for soils and sediments would be achieved upon completion of the alternative. Groundwater contamination would not be addressed except that no further contributions to groundwater contamination would be made by site materials.

4. **Long-term Effectiveness and Permanence**. This criterion evaluates the long-term effectiveness of alternatives after implementation of the response actions. 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 controls intended to limit the risk, and 3) the reliability of these controls.

Alternative 1, No Action, provides no long-term or permanent benefits.

Alternative 2, Limited Action, involves only institutional actions such as deed restrictions, groundwater monitoring, fencing of the site, and maintenance of the site. These would have no effect on the contaminants at the site but would reduce direct contact by the public.

Alternative 3A, comprehensive capping, would mitigate most exposure pathways. Groundwater use restrictions would reduce the likelihood of contact through this exposure route. Waste would remain at the site. Long-term site maintenance would be required to assure the effectiveness of this remedy.

Alternatives 3B-3G all reduce the area covered by contaminated waste material through excavation and consolidation. Each of these alternatives would restore the ponds through the removal of contaminated sediments and subsequent wetlands restoration. The consolidated materials would be capped on the landfill. Contamination would remain on the site, but risk from this would be manageable through maintenance and monitoring activities. Groundwater would be collected and treated. This would be the only treatment element of the remedy, the majority of the remedy would be classified as control and isolation.

Alternative 4 involves the complete excavation of soils and sediment at the site and subsequent disposal in an appropriate landfill. This remedy would eliminate the threat posed by waste at the site. It would not address currently contaminated groundwater, but would prevent future additional contamination.

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.

   Alternatives 1-3A would do nothing to reduce the total volume or toxicity of waste at the site. Alternative 3 would reduce mobility through capping which would be expected to limit the infiltration of water through the waste materials.

   Alternatives 3B-3G would limit mobility through capping and groundwater collection or barriers. Sediment would be removed from the ponds and capped on site taking it out of contact with surface water. This should provide a reduction in contaminant mobility. Toxicity would be reduced through the treatment of collected groundwater prior to discharge to the POTW. The volume of waste at the site would not be significantly reduced.

   Alternative 4 would reduce mobility and volume at the site through the removal of all contaminated media, except groundwater, to an appropriate landfill. Groundwater contamination would remain unaddressed. Groundwater standards may eventually be achieved through attenuation after the source is removed.

6. **Implementability**. The technical and administrative feasibility of implementing each alternative is evaluated. Technically, this includes the difficulties associated with the construction, the reliability of the technology, and the ability to monitor the effectiveness of the remedy. Administratively, the availability of the necessary personnel and equipment is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.

   Alternative 1 would not have any implementability problems.

   Alternative 2 would not pose significant technical problems because the proposed actions would be easily implemented (fencing, groundwater monitoring, maintenance activities). The deed restrictions and water supply well restrictions, common to alternatives 2-4, would provide some degree of administrative difficulty.

   Alternatives 3A-4 would all be technically feasible to construct. All of the proposed technologies and equipment are readily available with the possible exception of landfill capacity for alternative 4. A large block of appropriate landfill space would be required to accommodate the excavated wastes from the Alltift site.

   Alternatives 3B and 3E would pose no special technical implementation problems.

Alternatives 3A, 3C, 3D, 3F, and 3G, would pose technical implementability problems because of the need to move a large amount of cars, car parts, and scrap from the Skyway property prior to capping or excavation and consolidation of buried waste materials.

Alternatives 3B and 3E would pose no additional administrative implementation problems. Alternatives 3D and 3G would require short-term access to Skyway for excavation work. Alternatives 3A, 3C, and 3F would pose the administrative difficulties of obtaining long-term access to Skyway.

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

Alt.	Capital Cost	Annual O&M	Total
1	$ 0	$ 0	$ 0
2	$ 175,160	$ 15,500	$ 385,288
3A	$ 11,723,819	$ 27,550	$12,096,103
3B	$ 7,532,287	$ 154,230	$ 9,616,403
3C	$10,400,208	$ 156,270	$12,511,890
3D	$11,375,237	$ 155,230	$13,472,866
3E	$ 9,502,837	$ 44,630	$10,105,924
3F	$12,762,754	$ 56,670	$13,528,538
3G	$13,345,787	$ 45,630	$13,962,387
4	$87,692,693	$ 29,630	$88,093,084

This final criterion is considered a modifying criterion and is considered after evaluating those above. It is focused upon after public comments on the Proposed Remedial Action Plan have been received.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan were evaluated. A "Responsiveness Summary" has been prepared that describes public comments received and how the Department will address the concerns raised. This is included as Appendix A.

SECTION 9: SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 8, the NYSDEC has selected **Alternative 3B** as the remedy for this site (excavation, consolidation, and capping [not including Skyway] with groundwater collection / treatment and institutional controls).

This selection is based upon the conclusion that this remedy will meet all of the remedial goals for the site and best achieves the threshold and balancing criteria described above. The remedy will be protective of human health and the environment through the consolidation and capping of most contaminated media including landfill

materials, sediments, and soils. It will further provide for the capture and treatment of contaminated shallow groundwater, as needed. It is anticipated that this remedy will meet site SCGs. While this remedy will not be as comprehensive in its scope as several of the other alternatives, it will serve to minimize the short-term risks to construction workers and the local community. While the groundwater collection system proposed in this remedy might not, *prima facia*, appear as attractive as the circumferential wall and collection trench in alternative 3E, it will have the added benefit of collecting groundwater from outside the capped area (i.e.: from Skyway), since the barrier in 3E would deflect groundwater from outside the perimeter of the cap. Long-term effectiveness of this remedy will be as good as for any other alternative except 4, total removal. Alternative 4 would not address groundwater in the short-term, and would cost nearly ten times as much as alternative 3B.

This remedy will remove contaminated sediment from the Ramco pond which is located south of the landfill. The contamination in the Ramco pond constitutes the majority of the environmental problems identified in the remedial study of the Ramco site. Alternative 3B will address this contamination.

Alternative 3B does not directly address the wastes located beneath the Skyway property. These wastes are not being excavated and consolidated for the following reasons:

- the estimated volume of Alltift waste beneath Skyway is less than ten percent of the total waste;
- wastes are below grade and, with appropriate institutional controls, do not pose a contact threat;
- groundwater contamination in this area is not severe and can be controlled by the extended groundwater collection trench to the south;
- significant logistical problems would be encountered in shutting down and relocating the auto parts operation; and,
- the large amount of scrap metal, junk cars, and C&D waste at the surface would present additional significant logistical difficulties.

The estimated present worth cost to carry out the remedy is $ 9,616,403. The cost to construct the remedy is estimated to be $ 7,532,287 and the estimated average annual operation and maintenance cost for 30 years is $ 154,230.

The elements of the selected remedy are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Uncertainties identified during the RI/FS would be resolved. These uncertainties include the extent of contamination of the wetlands and ponds located to the west of the railroad tracks.

2. Excavation of the soil/subsurface landfill materials which are not currently underlain by the clay layer and consolidation of this material into the landfill. The excavation will not include wastes under the Skyway Auto Parts property.

3. Excavation and dewatering of the sediment from the ponds. Consolidation of this material into the landfill.

4. Capping of the landfill with a synthetic membrane cap.

5. Restoration of the ponds and wetlands adjacent to the site.

6. Installation of a groundwater extraction system utilizing a collection trench.

7. Operation, if necessary, of a groundwater collection system with discharge of groundwater to the local POTW. If necessary the collected water will be treated prior to discharge.

8. On-site institutional controls including deed restrictions, water supply well restrictions, groundwater monitoring, fence construction, and maintenance activities.

9. Efforts will be made to negotiate deed restrictions with Skyway to prevent future inappropriate land use.

10. Environmental monitoring will be conducted in order to confirm the effectiveness of the remedy and to monitor site conditions.

SECTION 10: HIGHLIGHTS OF CITIZEN PARTICIPATION

Citizen Participation (CP) Activities were implemented to provide concerned citizens and organizations with opportunities to learn about and comment upon the investigations and studies pertaining to the Alltift Landfill Site. All major reports were placed in a document repository in the vicinity of the site and made available for public review. A public contact list was developed and used to distribute fact sheets and meeting announcements.

On February 14, 1995 a public meeting was held at the New York State Department of Environmental Conservation Region 9 Offices, Buffalo, New York to describe the Proposed Accelerated Remedial Action Plan. Prior to the meeting, an invitation/fact sheet was mailed to those persons on the contact list. The public comment period extended from February 3, 1995 until March 6, 1995. Comments received regarding the Proposed Remedial Action Plan have been addressed and are documented in the Responsiveness Summary (Appendix A).

APPENDIX A
RESPONSIVENESS SUMMARY
Alltift Landfill Site
Erie County
9-15-054

This document summarizes the comments and questions received by the New York State Department of Environmental Conservation (NYSDEC) regarding the Proposed Remedial Action Plan (PRAP) for the subject site. A public comment period was held between February 3, 1995 and March 6, 1995 to receive comments on the proposal. A public meeting was held on February 14, 1995 at the NYSDEC Region 9 Offices in Buffalo, New York to present the results of the investigations performed at the site and to describe the PRAP. The information below summarizes the comments and questions received and the Department's responses to those comments.

DESCRIPTION OF THE SELECTED REMEDY

The selected remedy is the same as was proposed in the PRAP. The major elements of the selected remedy include:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Uncertainties identified during the RI/FS would be resolved. These uncertainties include the extent of contamination of the wetlands and ponds located to the west of the railroad tracks.

2. Excavation of the soil/subsurface landfill materials which are not currently underlain by the clay layer and consolidation of this material into the landfill. The excavation will not include wastes under the Skyway Auto Parts property.

3. Excavation and dewatering of the sediment from the ponds. Consolidation of this material into the landfill.

4. Capping of the landfill with a synthetic membrane cap.

5. Restoration of the ponds and wetlands adjacent to the site.

6. Installation of a groundwater extraction system utilizing a collection trench.

7. Operation, if necessary, of a groundwater collection system with discharge of groundwater to the local POTW. If necessary the collected water will be treated prior to discharge.

8. On-site institutional controls including deed restrictions, water supply well restrictions, groundwater monitoring, fence construction, and maintenance activities.

9. Efforts will be made to negotiate deed restrictions with Skyway to prevent future inappropriate land use.

10. Environmental monitoring will be conducted in order to confirm the effectiveness of the remedy and to monitor site conditions.

The information given below is summarized from the February 14, 1995 public meeting and letters received during the comment period.

I. Questions/Comments Raised During the Public Meeting

1. **Issue:** The PRAP does not mention consolidating soils from Skyway Auto Parts property. Is there any reason why this will not be done? The owners of Skyway are concerned about their future, regarding their ability to sell the property or potential deed restrictions. Is there something (contamination) unique on the Skyway property that will not allow inclusion in the chosen remedy?

   Response: The PRAP indicates the reasons why wastes under the Skyway property are not being addressed. The following is the rationale for not addressing these buried wastes:

   - the estimated volume of Alltift waste beneath Skyway is less than ten percent of the total waste;
   - wastes are below grade and, with appropriate institutional controls, do not pose a contact threat;
   - groundwater contamination in this area is not severe and can be controlled by the extended groundwater collection trench to the south;
   - significant logistical problems would be encountered in shutting down and relocating the auto parts operation; and,
   - the large amount of scrap metal, junk cars, and C&D waste at the surface would present additional significant logistical difficulties.

2. **Issue:** For the most part, they are in agreement with the PRAP. They do have a question about the monitoring wells. One overhead showed an access road -- will that road be on Skyway property for access to the monitoring wells there? Would there be any maintenance required on the part of Skyway for the monitoring wells on their property?

   Response: No actual maintenance road will be on the Skyway property. Access to existing monitoring wells can be achieved without a road. As far as required maintenance of wells is concerned, the only requirement for Skyway would be that appropriate care be taken in everyday operations to not destroy the wells while moving materials and equipment around the site.

3. **Issue:** Is operation of a groundwater collection system compatible with the ponds? Will the ponds be impacted, ie: dewatered?

   Response: No, the ponds will not be dewatered by the collection system. As part of the Remedial Design (RD), appropriate hydrologic tests and modeling will be conducted in order to assess the compatibility of the collection system with the ponds. Flow rates will be selected based upon the results of this testing.

4. **Issue:** Will there be any deed restrictions placed on the Skyway property?

   Response: The PRPs will need to negotiate deed restrictions with the owners of Skyway. These restrictions need to be designed to prevent future contact with buried waste materials under the Skyway property.

5. **Issue:** Has testing done to date been adequate to delineate the exact locations on the Skyway property that have to be left alone in the future?

   Response: The delineation of wastes on the Skyway property was thorough (see response #6).

6. **Issue:** Why were all the test pits and soil samples only done of the Skyway property and not on the landfill property?

   Response: The use of test pits on the Skyway property allowed a more precise delineation of waste materials through visual identification. The reason test pits were not used on the landfill is that it was accepted that waste was continuous across the landfill.

7. **Issue:** What are the estimates (tonnage) of soil and sediment that will be handled?

   Response: The amount of soil and waste which is located outside the margin of the underground clay layer and will be consolidated onto the landfill is estimated to be 14,500 cubic yards. The volume of sediment located in the ponds which will be excavated and consolidated onto the landfill is estimated to be 15,500 cubic yards. For purpose of comparison, a cubic yard of soil may be roughly equated with a ton of soil.

8. **Issue:** When will the ROD be issued, and will the public be notified?

   Response: Yes, the public will be notified and all those who commented on the PRAP will receive copies of the Responsiveness Summary.

II. Written Comments Received

9. **Issue:** The owners and operators of the Skyway Autoparts property object to the any remedy which restricts future use of their property. They do not want wastes to remain under their property and want to be reimbursed by the PRPs for any loss of value or use of their property. They acknowledge that the alternatives which would provide for the removal of wastes from their property would, perhaps irreparably, disrupt their operations.

   Response: Response number 1 provides the technical rationale for not removing the wastes located beneath Skyway. As was provided in the comment letter from the Skyway owners, the remediation of these wastes would cause a serious, and possibly permanent, disruption of the autoparts operation. Any reimbursement or other compensation which Skyway would seek should be handled in direct communication between Skyway and the PRPs.

APPENDIX B
ADMINISTRATIVE RECORD
Alltift Landfill Site
Site No. 9-15-054

1) Record of Decision ..... (3/95)

2) Proposed Remedial Action Plan ..... (1/95)

3) Consent Order B9-0194-87-07 ..... (6/26/91)

4) Alltift Landfill Site Phase I Report ..... (6/83)

5) Alltift Landfill Site Phase II Report ..... (9/86)

6) RI/FS Workplan ..... (4/91)

7) Citizen Participation Plan ..... (1/95)

8) Alltift Landfill Site RI Report (M&E) ..... (9/1/92)

9) Alltift Landfill Site RI Report (AFI) Vol I, II, III ..... (12/94)

10) Alltift Landfill Site FS Report (ERM) ..... (1/95)

11) Relevant Correspondence .....

- G. A. Carlson to M. J. O'Toole, NYSDOH concurrence letter, 3/20/95.

- D. Paley (Allied-Signal) to M. DiPietro (DEC), FS comments response, 12/19/94.

- D. Paley to M. DiPietro, RI comments reponse, 12/19/94.

- M. DiPietro to D. Paley, Sediment criteria comment letter, 12/13/94.

- M. DiPietro to D. Paley, FS comments, 11/22/94.

- M. DiPietro to D. Paley, Draft RI comments, 10/18/94.

- D. Paley to M. Ladiana (DEC), Response to comment letter, 3/23/94.

- M. Ladiana to D. Paley, Meeting comment letter, 2/18/94.

- M. Ladiana to D. Paley, Workplan comments, 5/28/93.

- M. Ladiana to D. Paley, Supplemental Workplan comments, 4/30/93.

- M. Ladiana to D. Paley, Comment letter, 3/24/93.

- M. Ladiana to D. Paley, Comment letter, 3/2/93.

- D. Paley to M. Ladiana, Response to 12/10/92 comment letter, 2/2/93.

- M. Ladiana to D. Paley, Draft RI (M&E) comments, 12/10/92.

- D. Paley to M. Ladiana, Sampling plan letter, 10/22/92.

- D. Paley to M. Ladiana, Response to 6/15/92 letter, 7/1/92.

- M. Ladiana to D. Paley, Draft RI (M&E) comments, 6/15/92.

- M. Ladiana to D. Paley, Data validation comments, 6/9/92.

- M. Ladiana to R. Predale (Allied-Signal), Sampling letter, 3/20/91.

- R. Predale to M. Ladiana, Response to comment, 2/28/91.

- M. Ladiana to R. Predale, Workplan comments, 2/8/91.

- D. Flynn , esq., to M. Desmond, Letter from PRP group, 6/23/89.

- M. Desmond (DEE) to L. Bloom, Esq., Reclassification notice, 12/3/87.