

**ROD FACT SHEET**

**SITE**

Name: Johnstown City Landfill  
Location: Town of Johnstown, New York  
HRS Score: 48.36

**ROD**

Date Signed: March 31, 1993  
Remedy: Landfill Cap/Extension of City  
Water Supply Line/ and if needed,  
GW Collection/Treatment/Disposal  
Capital Cost: \$13,763,000 - \$16,454,000  
O & M Cost: \$174,000 - \$936,000  
Present Worth Cost: \$18,174,000 - \$32,580,000

**LEAD**

Agency: NYSDEC  
Primary Contact: Robert Nunes (212) 264-2723  
Secondary Contact: Joel Singerman (212) 264-1132  
Main PRPs: City of Johnstown

**WASTE**

Type: Volatiles, Semi-Volatiles,  
Inorganics  
Medium: Soil, groundwater, surface water  
Origin: Municipal and hazardous wastes  
Est. Quantity: Municipal Landfill Size: 68 acres

1000032



55491

## DECLARATION FOR THE RECORD OF DECISION

### Site Name and Location

Town of Johnstown, Johnstown City Landfill, Fulton County, New York

### Statement of Basis and Purpose

This decision document presents the selected remedial action for the Johnstown City Landfill site (the "Site"), located in the City of Johnstown, Fulton County, New York, which was chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601-9675, as amended (CERCLA), and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. This decision document explains the factual and legal basis for selecting the remedy for the Site. The information supporting this remedial action decision is contained in the administrative record for the Site. The administrative record index is attached (Appendix III).

The New York State Department of Environmental Conservation (NYSDEC) concurs with the selected remedy. NYSDEC will also concur with the contingent remedy, should future water quality data indicate that the ground-water remediation component of the contingent remedy is appropriate. (See Appendix IV.)

### Assessment of the Site

Actual or threatened releases of hazardous substances from the Site, if not addressed by implementing the response action selected in this Record of Decision (ROD), may present a significant and substantial endangerment to public health, welfare, or the environment.

### Description of the Selected Remedy

This operable unit represents the entire remedial action for the Site. It addresses the principal threats to human health and the environment at the Site by controlling the source of contamination and the generation of leachate.

The major components of the selected remedy include:

- Excavation of the LaGrange Gravel Pit sediments and placing the excavated materials on the existing landfill. The pit will be filled with clean fill, so that it may be used as an infiltration basin and/or stormwater collection basin;

- Regrading and compacting the landfill mound to provide a stable foundation for placement of the various layers of the cap and to promote rapid runoff;
- Construction of a multi-layer closure cap over the landfill mound and excavated sediments as per New York State 6 NYCRR Part 360 regulations. The cap, by reducing leachate generation, will act to improve the ground-water quality in the upper (overburden) and lower (bedrock) aquifers and surface-water quality in Mathew Creek through natural attenuation of contaminants;
- Expansion of the Johnstown City water-supply system to provide potable water to all private water supplies potentially impacted by the landfill. Providing city water will require the extension of the City's water lines and construction of a booster pump station; and
- Erection of approximately 6,800 feet of conventional chain-link fencing surrounding the entire landfill mound, with placement of appropriate warning signs.

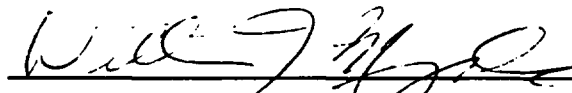
The effectiveness of the landfill cap will be evaluated through post-construction monitoring of ground-water and surface-water quality. The evaluation will be conducted within 5 years following initiation of construction of the landfill cap, and at any time as needed thereafter, during the long-term monitoring of the Site. Should the monitoring results indicate that either ground-water quality in the upper (overburden) aquifer or the lower (bedrock) aquifer, or surface-water quality in Mathew Creek, is not being restored to acceptable levels through natural attenuation as a result of reduced leachate generation, the following will be implemented:

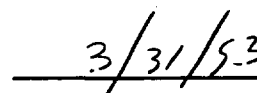
- Extraction of contaminated ground water from either of the aquifers, as necessary. The extraction system would utilize extraction wells which would induce flow to the wells through drawdown of the ground-water table. Operation of the ground-water extraction system would reduce the migration of contaminants away from the Site;
- Treatment of ground water by a treatment system located permanently on-Site that would use physical/chemical processes such as pH adjustment, chemical precipitation, and carbon adsorption, to remove inorganic and volatile organic contaminants; and
- Discharge of treated ground water by returning it to the aquifer via percolation ponds or injection wells, or by discharging it to a stream, the nearest being Mathew Creek. The discharge standards would be established by NYSDEC.

## Declaration

The selected remedy is protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable. In keeping with the statutory preference for treatment as a principal element of the remedy, the contaminated ground water will be collected and treated, if necessary. The landfill material, however, cannot be excavated and treated effectively, because of the size of the landfill and because there are no on-Site "hot spots" that represent the major sources of contamination.

A review of the Site will be conducted no later than five years after commencement of the remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment, because this remedy will result in hazardous substances remaining on-Site above health-based levels.

  
\_\_\_\_\_  
William J. Muszynski, P.E.  
Acting Regional Administrator

  
\_\_\_\_\_  
Date

**DECISION SUMMARY**  
**Johnstown City Landfill SITE**

**City of Johnstown**  
**Fulton County, New York**

**United States Environmental Protection Agency**  
**Region II**  
**New York, New York**  
**March 1993**

**1000036**

## TABLE OF CONTENTS

|                                                           | <u>PAGE</u> |
|-----------------------------------------------------------|-------------|
| SITE NAME, LOCATION AND DESCRIPTION . . . . .             | 1           |
| SITE HISTORY AND ENFORCEMENT ACTIVITIES . . . . .         | 1           |
| HIGHLIGHTS OF COMMUNITY PARTICIPATION . . . . .           | 2           |
| SCOPE AND ROLE OF OPERABLE UNIT . . . . .                 | 3           |
| SUMMARY OF SITE CHARACTERISTICS . . . . .                 | 3           |
| SUMMARY OF SITE RISKS . . . . .                           | 8           |
| DESCRIPTION OF REMEDIAL ALTERNATIVES . . . . .            | 12          |
| SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES . . . . . | 17          |
| SELECTED REMEDY . . . . .                                 | 24          |
| STATUTORY DETERMINATIONS . . . . .                        | 27          |
| DOCUMENTATION OF SIGNIFICANT CHANGES . . . . .            | 31          |

## ATTACHMENTS

|               |                              |
|---------------|------------------------------|
| APPENDIX I.   | FIGURES                      |
| APPENDIX II.  | TABLES                       |
| APPENDIX III. | ADMINISTRATIVE RECORD INDEX  |
| APPENDIX IV.  | NYSDEC LETTER OF CONCURRENCE |
| APPENDIX V.   | RESPONSIVENESS SUMMARY       |

1000037

## **SITE NAME, LOCATION AND DESCRIPTION**

The Johnstown City Landfill is a municipally operated, unlined landfill, situated in a 68-acre gravel pit in the Town of Johnstown, Fulton County, New York. The Site is located approximately 1.5 miles northwest of the City of Johnstown and 1.75 miles west of the City of Gloversville. (See Figure 1.)

The landfill consists of two, generally flat terraces filled into former borrow pits. A remnant of a pit once used as a demolition debris and metals disposal area, approximately 30 feet deep, exists on the westward side of the landfill at the base of a steep ridge. (See Figure 2.)

The surrounding area has a mixed residential, agricultural, and recreational land use. Approximately 10 homes are located within 1,000 feet of the Site, and an estimated 80 homes are located within one mile downgradient of the Site. (See Figure 3.) All of these homes have private wells with depths ranging from 10 to 208 feet. The population within a one-mile radius of the Site is approximately 1,000 persons.

The surface-water drainage in the vicinity of the landfill flows generally to the southeast. Surface waters flow from the upland areas, north of the Site, via intermittent drainage ways towards the south-southeast. The primary surface-water feature in the immediate vicinity of the landfill is Mathew Creek. The headwaters of the creek (LaGrange Springs) are located approximately 1,000 feet southeast of the Site. The creek flows southeasterly until it converges with Hall Creek prior to discharging into Cayadutta Creek. The flow of Mathew Creek is interrupted by a manmade pond (Hulbert's Pond) before it converges with Hall Creek. Cayadutta Creek ultimately discharges to the Mohawk River.

Due to differences in surface elevation, storm-water runoff and drainage from West Fulton Street Extension flow onto the surface of the landfill creating ponded water near its northeast corner. The water in this approximately one-acre pond either evaporates or infiltrates into the landfilled wastes. LaGrange Gravel Pit, located approximately 100 feet east of the eastern margin of the landfill, receives surface runoff from hill slopes in its immediate vicinity, minor flows from leachate seeps and occasional ephemeral runoff from the landfill surface. (See Figure 2.) Except for short-lived discharges to LaGrange Gravel Pit, there is no surface water runoff from the landfill. There is no surface water runoff from LaGrange Gravel Pit.

## **SITE HISTORY AND ENFORCEMENT ACTIVITIES**

### **Site History**

Thirty-four acres of the 68-acre Johnstown City Landfill were used as an open refuse disposal facility from 1947 to 1960 before being

converted to a sanitary landfill. The landfill accepted industrial wastes from local tanneries and textile plants until April 1979, and sludge from the Gloversville-Johnstown Joint Sewage Treatment Plant from 1973 to April 1979. Landfill operations ceased in June 1989. Much of the tannery wastes were disposed of as chromium-treated hide trimmings and other materials. Sewage sludge was disposed of in open piles at a rate of approximately 20,000 cubic yards per year. The sludge contained concentrations of chromium, iron, and lead. There are no records available which detail the amounts of industrial wastes accepted by the landfill.

On June 10, 1986, the Johnstown City Landfill site was placed on the Superfund National Priorities List.

### **Enforcement Activities**

On June 5, 1987, the state of New York filed suit under CERCLA and state common law against the City of Johnstown, the Gloversville/Johnstown Joint Sewer Board, Bruce Miller Trucking Company, and about a dozen waste generators. Several of the defendants subsequently impleaded approximately 52 third-party defendants, including additional generators, transporters and a number of area municipalities. When the defendants declined to fund an RI/FS, the State and the City of Johnstown entered into an interim consent order, which was approved by Federal Judge Con. G. Cholakis on October 4, 1988.

Under the interim order, the City agreed to conduct an RI/FS of the Site consistent with the NCP and state guidance, and agreed to close the Site by June 1, 1990, or within thirty days of the date a new solid waste management facility in Fulton County (the Mud Road Facility) was to accept refuse, whichever was sooner.

On February 12, 1988, EPA issued Special Notice Letters to 15 parties potentially responsible for contamination at the Site.

During the implementation of the RI/FS, the parties involved in the litigation have conducted extensive document discovery and the defendants have made initial attempts to allocate responsibility. It is NYSDEC's intention to have the responsible parties for the site undertake any remedial activities.

### **HIGHLIGHTS OF COMMUNITY PARTICIPATION**

On May 17, 1989, the City of Johnstown and NYSDEC conducted a public meeting in Johnstown, New York, to inform local officials and interested citizens of the upcoming RI and to respond to any questions from area residents and other attendees. A follow-up public meeting was held on June 13, 1990 to describe the results of the first phase of the RI and to present plans for the second phase of field work.

The RI report, FS report, and the Proposed Plan for the Site were released to the public for comment on January 21, 1993. These documents were made available to the public in the administrative record repositories at the EPA Docket Room in Region II, New York and at the Johnstown Public Library, Johnstown, New York. The documents were also made available at the information repositories at NYSDEC's Albany, New York office, at NYSDEC's Ray Brook, New York office, and at the City of Johnstown Attorney's Office. The public comment period on these documents ended on February 19, 1993.

During the public comment period, a public meeting was held at the Johnstown High School, Johnstown, New York on February 10, 1993 to present the RI/FS reports and the Proposed Plan, to answer questions, and to accept oral comments. At this meeting, representatives from the NYSDEC, the New York State Department of Health (NYSDOH), and EPA answered questions about problems at the Site and the remedial alternatives under consideration. A summary of the comments presented at the public meeting and their responses, as well as written comments received during the public comment period and their responses, are included in the Responsiveness Summary (see Appendix V.)

#### **SCOPE AND ROLE OF OPERABLE UNIT**

This response action applies a comprehensive approach, therefore only one operable unit is required to remediate the Site.

Remedial action objectives are specific goals to protect human health and the environment. These objectives are based on available information and standards such as applicable or relevant and appropriate requirements (ARARs) and risk-based levels established in the risk assessment.

The following remedial action objectives were established: 1) prevent human and animal contact with contaminated soil from the landfill surface; 2) prevent erosion of contaminated surface soil through surface-water runoff; 3) minimize the infiltration of rainfall or snow melt into the landfill, thus reducing the quantity of water percolating through the landfill materials and leaching out contaminants; 4) mitigate the off-Site migration of contaminated ground water; 5) prevent unacceptable exposure to off-Site contaminated ground water; 6) restore ground-water quality to levels which do not exceed state or federal drinking-water standards; 7) prevent ingestion of on-Site ground water; 8) control generation and prevent migration of subsurface landfill gas; and 9) prevent unacceptable exposure to vapors from the landfill.

NYSDEC is the lead agency for this project; EPA is the support agency.

1000040

100000

## SUMMARY OF SITE CHARACTERISTICS

The RI field work was carried out in two phases: Phase I, between June 1989 and June 1990; and Phase II, between July 1990 and March 1992. Media sampled during the RI included subsurface soil, ground water, surface water, sediments, and air. The frequency of detection, lowest and highest concentrations detected, and location of highest concentrations detected, are shown for all sampled on-Site and off-Site ground water, surface water, subsurface soils, and sediments in Tables 1a, 1b, 2a, 2b, 3a, and 3b. The RI also included ground-water flow studies to evaluate the hydrogeologic conditions at and in the vicinity of the landfill, a wetlands delineation in the vicinity of the Mathew Creek area, and ecological studies in Mathew Creek and Halls Brook.

Subsurface soil samples were collected for all ground-water monitoring wells shown on Figure 4, except for MW-15 and MW-19. Soils located directly beneath the landfill exhibited the majority of the soil contamination. Eight volatile organic compounds (VOCs), acetone, methylene chloride, xylene, benzene, ethylbenzene, 2-butanone, 4-methyl-2-pentanone, and toluene were detected in landfill subsurface soil samples (MW-16 through MW-18) at concentrations ranging from 3 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ) to 440  $\mu\text{g}/\text{kg}$ . Benzoic acid, phthalate, and polycyclic aromatic hydrocarbon (PAH) compounds comprised most of the semi-volatile organic compound (SVOC) contamination detected in landfill soil zones, with phthalate esters observed to have the highest range of concentrations (42  $\mu\text{g}/\text{kg}$  to 1,100  $\mu\text{g}/\text{kg}$ ). Eighteen metals were detected in subsurface soil samples collected within the landfill ranging in concentrations from 0.43 milligrams per kilogram ( $\text{mg}/\text{kg}$ ) to 72,000  $\text{mg}/\text{kg}$ . Eight of these (antimony, calcium, chromium, lead, magnesium, sodium, aluminum, and zinc) exceeded background values. Eleven pesticides were also detected in landfill subsurface soil samples at concentrations between 4.1  $\mu\text{g}/\text{kg}$  and 37  $\mu\text{g}/\text{kg}$ . Downgradient inorganic substances found in all of the 4 subsurface soil samples (MW-9 through MW-12) included aluminum, arsenic, barium, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, sodium, vanadium, and zinc, at concentrations ranging from 0.31  $\text{mg}/\text{kg}$  to 39,000  $\text{mg}/\text{kg}$ . Organic contaminants that were found in more than half of the 9 downgradient subsurface soil samples (MW-1 through MW-4, MW-8 through MW-12) included acetone, methylene chloride, toluene, and tetrachloroethylene at concentrations between 0.6  $\mu\text{g}/\text{kg}$  and 75  $\mu\text{g}/\text{kg}$ .

The volatile contamination detected in the shallow downgradient aquifer (MW-1 through MW-4, MW-8 through MW-12, and MW-15) included 13 VOCs. Concentrations of these contaminants ranged from 0.2 micrograms per liter ( $\mu\text{g}/\text{L}$ ) to 62.0  $\mu\text{g}/\text{L}$ , with the highest being toluene detected at MW-3S, which is located near the LaGrange Gravel Pit. Semi-volatile contamination in downgradient monitoring wells included phthalate ester compounds, polycyclic aromatics, methylphenol, and benzoic acid at concentrations between 0.3  $\mu\text{g}/\text{L}$  and 150  $\mu\text{g}/\text{L}$ . Twenty metals were detected in shallow wells downgradient of the landfill at levels often exceeding background

000000

1000041

levels. Eight metals (iron, manganese, sodium, arsenic, lead, chromium, copper, and zinc) exceeded EPA and/or NYSDEC standards in downgradient monitoring wells. Two pesticides were detected in downgradient monitoring wells, MW-9S and MW-11D, at 0.04  $\mu\text{g/L}$  (delta-BHC) and 0.05  $\mu\text{g/L}$  (Endosulfan 1), respectively.

Acetone and bis(2-ethylhexyl)phthalate were the primary contaminants detected within the bedrock ground-water aquifer at concentrations generally much greater than those found at the source (landfill) wells. The highest concentration of acetone (2,900  $\mu\text{g/L}$ ) was detected at MW-7D located northwest of the landfill. The highest concentration of bis(2-ethylhexyl)phthalate (150  $\mu\text{g/L}$ ) was detected at MW-3D located near the LaGrange Gravel Pit.

Five VOCs, acetone, methylene chloride, xylene, benzene, and ethylbenzene were detected in the ground-water sample collected from landfill well MW-16, at concentrations ranging from 9  $\mu\text{g/L}$  (benzene) to 230  $\mu\text{g/L}$  (xylene). Generally, the highest concentrations of inorganic contaminants in ground water were also detected at MW-16. Six pesticide compounds, none of which were found in downgradient ground-water samples, were detected at MW-16 at concentrations ranging from 0.01  $\mu\text{g/L}$  (4,4'-DDE) to 0.35  $\mu\text{g/L}$  (4,4'-DDD). Based on water-level data, these results may be characteristic of leachate. Benzene and ethylbenzene were detected in landfill well MW-19, at 0.9  $\mu\text{g/L}$  and 7  $\mu\text{g/L}$ , respectively. Eleven SVOCs were detected in landfill wells MW-16, MW-18, and MW-19 at concentrations ranging from 0.6  $\mu\text{g/L}$  (di-n-octylphthalate) to 24  $\mu\text{g/L}$  (bis(2-Ethylhexyl)phthalate). No VOCs or pesticides were detected in landfill monitoring well MW-18. No polychlorinated biphenyls (PCBs) were detected in any of the three sampled landfill monitoring wells.

No inorganic contaminants found in residential well samples exceeded New York State or EPA primary drinking water standards. Some compounds, such as iron, manganese, zinc, and total dissolved solids (TDS), were detected at concentrations which may affect aesthetic qualities of drinking water (e.g., taste, odor, and staining of fixtures). VOC compounds detected in residential well samples included acetone, carbon disulfide, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, and toluene, but were found at concentrations below state and federal drinking water standards. Acetone was detected in 6 of the 52 samples collected, at concentrations ranging from 3 to 6  $\mu\text{g/L}$ . Carbon disulfide was detected in 4 of the 52 samples, at concentrations ranging from 0.3 to 3  $\mu\text{g/L}$ . Methylene chloride was detected in 3 of the 52 samples at concentrations up to 2  $\mu\text{g/L}$ . Trichloroethylene, 1,1,1-trichloroethane, and toluene were each detected in one of the 52 samples collected, at 2, 3, and 2  $\mu\text{g/L}$ , respectively. Three phthalate esters were detected in residential well samples. Bis(2-ethylhexyl)phthalate was detected in 34 of the 39 residential wells sampled, at concentrations ranging from 2 to 66  $\mu\text{g/L}$ . In 4 of these samples, concentrations of bis(2-ethylhexyl)phthalate exceeded the NYSDEC ground-water standard of 50  $\mu\text{g/L}$ . (In all three sampling rounds, bis(2-ethylhexyl)phthalate was also detected in laboratory samples, indicating that its presence in collected

residential well samples may be attributed to contamination in the laboratory, and may not be representative of actual water quality.) Di-n-butylphthalate was detected in 6 of the 52 samples collected at concentrations ranging from 0.8 to 2  $\mu\text{g/L}$ . N-nitrosodiphenylamine was detected in one of the 52 samples at a concentration of 2  $\mu\text{g/L}$ . No pesticide or PCB compounds were detected in residential well samples.

Surface-water quality and sediment sampling locations are shown on Figures 5a and 5b. Inorganic compounds found in surface-water samples collected from Mathew Creek included aluminum, antimony, barium, chromium, cobalt, copper, iron, lead, magnesium, mercury, nickel, potassium, selenium, sodium, zinc, cyanide, sulfate, chloride, bicarbonate, and ammonia-nitrogen at concentrations ranging from 1.2  $\mu\text{g/L}$  (selenium) to 111,000  $\mu\text{g/L}$  (calcium). Concentrations were generally higher at the headwater springs than at other locations. However, several metals, including chromium, lead, iron, and zinc, were detected at the highest concentration at the furthest downstream sampling location (Station #4). Six VOCs, acetone, methylene chloride, toluene, trichloroethylene, tetrachloroethylene, and chlorobenzene were also detected in Mathew Creek samples at concentrations ranging from 0.7  $\mu\text{g/L}$  (chlorobenzene) to 24  $\mu\text{g/L}$  (acetone). Acetone, methylene chloride, and toluene were detected in more than one sample. Three phthalate ester compounds, diethylphthalate, di-n-butylphthalate, and bis(2-ethylhexyl)phthalate, were detected in Mathew Creek samples at concentrations ranging from 0.4  $\mu\text{g/L}$  (diethylphthalate) to 16  $\mu\text{g/L}$  (bis(2-ethylhexyl)phthalate). Seven of the 8 surface water samples collected in Mathew Creek had detectable concentrations of bis(2-ethylhexyl)phthalate that exceeded the NYSDEC surface water standard of 0.6  $\mu\text{g/L}$ . No pesticides or PCBs were detected in any surface-water samples from Mathew Creek.

Surface-water samples were collected from the LaGrange Gravel Pit (Sta #5 on Figure 5a) during the second and third rounds of on-Site water-quality sampling. The concentrations of inorganic compounds in the LaGrange Pit were typically consistent with those detected in the ground water around the landfill. The sample collected during Round 2 had detectable concentrations of 6 VOCs, namely, acetone, methylene chloride, benzene, 2-butanone, 4-methyl-2-pentanone, and toluene, at concentrations ranging from 2  $\mu\text{g/L}$  (benzene) to 250  $\mu\text{g/L}$  (2-butanone). The Round 2 water-quality sample also indicated the presence of 9 SVOCs from the LaGrange Gravel Pit at concentrations between 0.2  $\mu\text{g/L}$  (di-n-octylphthalate) and 190  $\mu\text{g/L}$  (benzoic acid). Five of these compounds are phthalate esters and were prevalent in both soil and ground-water samples. No pesticides or PCBs were detected in any surface-water samples from LaGrange Pit.

Sediment contamination in Mathew Creek included metals, ammonia-nitrogen, VOCs, SVOCs, and pesticides. Concentrations for arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, and nickel exceeded NYSDEC Sediment Criteria Guidance Values in one or more sediment samples from Mathew Creek. Eight VOCs, acetone, methylene chloride, trichloroethylene, chloroform, benzene, 2-

butanone, carbon disulfide, and toluene, were detected at concentrations ranging from 2  $\mu\text{g/kg}$  to 380  $\mu\text{g/kg}$  (acetone). Twenty-two SVOCs were detected in sediment samples at concentrations ranging from 4  $\mu\text{g/kg}$  (benzo(g,h,i)perylene) to 4,500  $\mu\text{g/kg}$  (benzoic acid). Two pesticides, delta-BHC and 4,4'-DDE, were detected at concentrations ranging from 2.1  $\mu\text{g/kg}$  (4,4'-DDE) to 13  $\mu\text{g/kg}$  (delta-BHC).

Sediment contamination in the LaGrange Gravel Pit also included inorganic compounds, VOCs, SVOCs, and pesticides. Twenty-one metals were detected at concentrations ranging from 0.14 mg/kg (mercury) to 106,000 mg/kg (calcium). Six VOCs, acetone, methylene chloride, benzene, 2-butanone, 4-methyl-2-pentanone, and toluene at concentrations ranging from 2  $\mu\text{g/kg}$  (benzene) to 99  $\mu\text{g/kg}$  (acetone) were detected. Nineteen SVOCs were detected at concentrations ranging from 11  $\mu\text{g/kg}$  (fluorene) to 1,400  $\mu\text{g/kg}$  (naphthalene). Four pesticides, 4,4'-DDE, 4,4'-DDD, heptachlor, and aldrin were detected at concentrations ranging from 1.8  $\mu\text{g/kg}$  (aldrin) to 170  $\mu\text{g/kg}$  (4,4'-DDE).

Ambient air in the vicinity of the landfill was measured for VOCs and particulate chromium. Acetone, benzene, toluene, 2-butanone, 1,1,1-trichloroethane, and carbon tetrachloride were detected at concentrations ranging from 0.47 micrograms per cubic meter ( $\mu\text{g/m}^3$ ) (carbon tetrachloride) to 20.6  $\mu\text{g/m}^3$  (acetone). The highest total concentration of VOCs for any one sample was 23.2  $\mu\text{g/m}^3$ . Airborne chromium was detected at concentrations ranging from 0.002 to 0.005  $\mu\text{g/m}^3$ . All of the airborne VOCs and chromium detected during the RI are within the guideline values for both occupational values and New York State guidance criteria. (See Tables 4 and 5.)

The hydrogeological investigation determined that two aquifers exist beneath the Johnstown City Landfill. The upper (overburden) aquifer flows through till, sand and gravel, and flows generally towards the southeast and south from the landfill following surface drainage patterns. A geologic cross section from the northeastern boundary of the landfill to the LaGrange Springs area is shown in Figure 6. Ground water in the overburden and shallow bedrock aquifers appears to be hydraulically connected downgradient from the Site and to discharge into the wetlands area of LaGrange Springs and Mathew Creek located southeast of the Site. In contrast to the ground-water flow pattern in the shallow water table, deep (bedrock) ground water generally flows from west to east across the Site.

The immediate area of the landfill is underlain by the Canojoharie Shale, a mid-Ordovician age, calcareous shale with occasional pyrite lobes. The bedrock was found to be mildly fractured in the upper 20 feet of the unit. Depth to bedrock ranges across the site from about 30 feet to 120 feet.

Wetland areas associated with Mathew Creek were identified using aerial photography, the NYSDEC wetland map on the Johnstown area, and the U.S. Soil Conservation Service draft soils map of the area. Wetland boundaries were verified in the field in May 1990 by viewing vegetation and hydrology. (See Figure 7.) Wetland types

1000044

include palustrine forest, scrub-shrub, emergent, and open water. A wetland assessment using the Hollands and Magee (1985) method indicated above-average scores for the biological, hydrological, and socio-economic functions of the wetlands.

## **SUMMARY OF SITE RISKS**

### **Human Health Risk Assessment**

A baseline risk assessment was conducted to evaluate the potential risks to human health and the environment associated with the Site in its current state. The baseline risk assessment focused on contaminants in the soil, ground water, and air which are likely to pose significant risks to human health and the environment. A list of the contaminants of potential concern in ground water, soil, and air is found in Table 6.

The baseline risk assessment evaluated the health effects which could result from exposure to contamination as a result of ten basic exposure pathways. These pathways included: 1) ingestion of soil; 2) dermal contact with soil; 3) inhalation of fugitive dust from the landfill; 4) ingestion of Mathew Creek surface water; 5) dermal contact with Mathew Creek surface water; 6) ingestion of Mathew Creek sediments; 7) dermal contact with Mathew Creek sediments; 8) ingestion of ground water; 9) inhalation of outdoor air; and 10) inhalation of ground-water contaminants while showering. The exposure pathways were evaluated under both current and potential future land-use conditions, except for exposures to landfill soil, for which only current conditions were considered. Three potential receptors were identified: young (ages 6-18) trespassers; adult, young (ages 6-18) and child (ages 0-6) residents living downgradient and off-Site; and young (ages 6-18) and adult users of Mathew Creek. These exposure pathways were evaluated separately for adults and children and are listed in Table 7. Exposure intakes (doses) were calculated for each receptor for all exposure pathways considered.

Under current EPA guidelines, the likelihood of carcinogenic (cancer causing) and noncarcinogenic effects due to exposure to site chemicals are considered separately. It was assumed that the toxic effects of the Site-related chemicals would be additive. Thus, carcinogenic and noncarcinogenic risks associated with exposures to individual compounds of concern were summed to indicate the potential risks associated with mixtures of potential carcinogens and noncarcinogens, respectively.

Noncarcinogenic risks were assessed using a hazard index (HI) approach, based on a comparison of expected contaminant intakes and safe levels of intake (Reference Doses). Reference doses (RfDs) have been developed by EPA for indicating the potential for adverse health effects. RfDs, which are expressed in units of mg/kg-day, are estimates of daily exposure levels for humans which are thought to be safe over a lifetime (including sensitive individuals). Estimated intakes of chemicals from environmental media (e.g., the

10.00045

amount of a chemical ingested from contaminated drinking water) are compared with the RfD to derive the hazard quotient for the contaminant in the particular medium. The reference doses for the compounds of concern at the Site are presented in Table 8.

The hazard index is obtained by adding the hazard quotients for all compounds across all media. A hazard index greater than 1 indicates that the potential exists for noncarcinogenic health effects to occur as a result of Site-related exposures. The HI provides a useful reference point for gauging the potential significance of multiple contaminant exposures within a single medium or across media.

The HI was significant (i.e., greater than 1.0) for all age groups ingesting ground water under current land use. The HI for ingesting ground water was estimated to be 6.5, 3.3, and 2.5 for children, youths, and adults, respectively. In the case of residents ingesting ground water, the major contribution to noncancer health risk is attributable to ingestion of antimony and thallium in drinking water by nearby residents. A summary of the noncarcinogenic risks associated with the chemicals evaluated across various exposure pathways is found in Table 9. It should be noted that antimony was not detected in any of the 51 water quality samples collected in downgradient ground-water monitoring wells, and thallium was detected in only 2 of the 51 monitoring well samples. Among the 52 residential wells sampled, antimony and thallium were detected in 8 and 6 of the water-quality samples, respectively. Therefore, these compounds may originate from the native soils and not from the landfill waste mass. Without antimony and thallium, the HI for residents ingesting ground water for current land use is below 1.0 for all age groups. Under future land use conditions, which assumes that the contaminated ground water beneath the landfill migrates to a residential receptor, the HI for adults and children ingesting ground water was estimated to be 1.5 and 1.0, respectively. The major contributor to these risks is arsenic.

The HI was also significant for youths and adults wading and fishing in Mathew Creek. The HI was 1.2 and 1.1 for youths and adults, respectively. The major contributors to these risks are lead and mercury.

Potential carcinogenic risks were evaluated using the cancer slope factors developed by EPA for the contaminants of concern. Cancer slope factors (SFs) have been developed by EPA's Carcinogenic Risk Assessment Verification Endeavor for estimating excess lifetime cancer risks associated with exposure to potentially carcinogenic chemicals. SFs, which are expressed in units of  $(\text{mg/kg-day})^{-1}$ , are multiplied by the estimated intake of a potential carcinogen, in  $\text{mg/kg-day}$ , to generate an upper-bound estimate of the excess lifetime cancer risk associated with exposure to the compound at that intake level. The term "upper bound" reflects the conservative estimate of the risks calculated from the SF. Use of this approach makes the underestimation of the risk highly unlikely. The SF for the compounds of concern are presented in Table 10.

10.00046

For known or suspected carcinogens, EPA considers excess upper bound individual lifetime cancer risks of between  $10^{-4}$  to  $10^{-6}$  to be acceptable. This level indicates that an individual has not greater than a one in ten thousand to one in a million chance of developing cancer as a result of site-related exposure to a carcinogen over a 70-year period under specific exposure conditions at the Site. Under the current land-use conditions, the cumulative cancer risk for all receptors evaluated (i.e., adults, youths, children) was  $6 \times 10^{-5}$ . The overwhelming contribution to this risk is attributable to residents ingesting contaminated ground water. This risk is within EPA's acceptable cancer risk range of  $10^{-4}$  to  $10^{-6}$ . However, under future land-use conditions, which assumes that the contaminated ground water beneath the landfill migrates to a residential receptor, a cancer risk of  $2 \times 10^{-4}$  was found for the adult receptor. This risk, which slightly exceeds the acceptable cancer range, is attributable to the ingestion of ground water, with beryllium accounting for most of the risk. A summary of the carcinogenic risks for the chemicals evaluated across various current exposure pathways is found on Table 11.

The calculations were based on the contaminants detected in soils, on-Site monitoring wells, and air. It was assumed that in the future case, on-Site monitoring wells would be used for residential purposes. Risk estimates were developed by taking into account various conservative assumptions about the likelihood of a person being exposed to the various contaminated media. It should be noted too, that the carcinogenic and noncarcinogenic risks attributable to lead, which was detected in 44 of 54 on-Site samples at an average concentration of  $38.6 \mu\text{g/L}$ , cannot be quantified because cancer and noncancer toxicity factors have not been developed for this compound. However, EPA considers lead to be a probable carcinogen, and is known to interfere with the central nervous system as a noncarcinogen. An action level of  $15 \mu\text{g/L}$  was established by EPA for this compound, meaning that some remedial measures should be implemented, if the concentration of lead in drinking water exceeds this level.

### Uncertainties

The procedures and inputs used to assess risks in this evaluation, as in all such assessments, are subject to a wide variety of uncertainties. In general, the main sources of uncertainty include:

- environmental chemistry sampling and analysis
- environmental parameter measurement
- fate and transport modeling
- exposure parameter estimation
- toxicological data

Uncertainty in environmental sampling arises in part from the potentially uneven distribution of chemicals in the media sampled. Consequently, there is significant uncertainty as to the actual levels present. Environmental chemistry analysis error can stem from several sources including the errors inherent in the analyti-

cal methods and characteristics of the matrix being sampled.

Uncertainties in the exposure assessment are related to estimates of how often an individual would actually come in contact with the chemicals of concern, the period of time over which such exposure would occur, and in the models used to estimate the concentrations of the chemicals of concern at the point of exposure.

Uncertainties in toxicological data occur in extrapolating both from animals to humans and from high to low doses of exposure, as well as from the difficulties in assessing the toxicity of a mixture of chemicals. These uncertainties are addressed by making conservative assumptions concerning risk and exposure parameters throughout the assessment. As a result, the baseline risk assessment provides upper bound estimates of the risks to populations near the Landfill, and is highly unlikely to underestimate actual risks related to the Site.

More specific information concerning public health risks, including a quantitative evaluation of the degree of risk associated with various exposure pathways, is presented in the RI report.

### Ecological Risk Assessment

A four-step process is utilized for assessing site-related ecological risks for a reasonable maximum exposure scenario: Problem Formulation -- a qualitative evaluation of contaminant release, migration, and fate; identification of contaminants of concern, receptors, exposure pathways, and known ecological effects of the contaminants; and selection of endpoints for further study. Exposure Assessment -- a quantitative evaluation of contaminant release, migration, and fate; characterization of exposure pathways and receptors; and measurement or estimation of exposure point concentrations. Ecological Effects Assessment -- literature reviews, field studies, and toxicity tests, linking contaminant concentrations to effects on ecological receptors. Risk Characterization -- measurement or estimation of both current and future adverse effects.

Sediment, surface water, vegetation, wildlife, fish, and macroinvertebrates were assessed along Mathew Creek and a nearby reference stream, Halls Brook. Fish tissue was collected and analyzed for the presence of heavy metals and pesticides. In-situ and laboratory bioassays were performed to evaluate the toxicity of Mathew Creek surface water to aquatic life.

The contaminants in Mathew Creek sediments appear to be adversely affecting the aquatic communities, and may potentially affect wildlife species such as beaver, muskrat, and waterfowl, which are dependent on food resources from the stream. Arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, and nickel were all present in stream sediments at concentrations that exceeded criteria established by NYSDEC. Exceeding these criteria suggests that a given metal has reached a concentration that can possibly result in chronic, sublethal effects that can include inhibition of

100000

1000048

reproduction, inefficient metabolism of food items, alteration of an organism's ability to compete, etc. The Mathew Creek biota most likely at risk of exposure to metal contaminated sediments (other than mercury) are benthic macroinvertebrates such as worms, beetles, and midges.

Free-swimming aquatic organisms in Mathew Creek may also be adversely affected by creek contamination, particularly high ammonia concentrations in surface water. Water quality samples collected in Mathew Creek, over three sampling rounds, indicated the presence of 8 inorganic substances, namely, aluminum, iron, lead, manganese, selenium, cyanide, zinc, and ammonia-nitrogen, at concentrations above NYSDEC surface-water standards and/or EPA Ambient Water Quality freshwater toxicity criteria. Concentrations of aluminum, iron, and cyanide were also above EPA acute freshwater toxicity criteria. Aluminum and cyanide exceeded the EPA acute fresh water toxicity criteria at downstream stations in Mathew Creek. Ammonia-nitrogen exceeded the EPA acute fresh water toxicity criterion at the headwater springs and just downstream of Hulbert pond. Vegetation does not appear to be adversely affected by contaminants in Mathew Creek.

In summary, actual or threatened releases of hazardous substances from the Site, if not addressed by the preferred alternative or one of the other active measures considered, may present a current or potential threat to public health, welfare or the environment.

#### **DESCRIPTION OF REMEDIAL ALTERNATIVES**

CERCLA requires that each selected site remedy be protective of human health and the environment, be cost-effective, comply with other statutory laws, and utilize permanent solutions, alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. In addition, the statute includes a preference for the use of treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

This Record of Decision evaluates in detail, 7 remedial alternatives for addressing the contamination associated with the Site. The time to implement reflects only the time required to construct or implement the remedy and does not include the time required to design the remedy, negotiate with the responsible parties, or procure contracts for design and construction. These alternatives are described below.

#### **Alternative SC-1: No Action**

|                                 |             |
|---------------------------------|-------------|
| Capital Cost:                   | \$14,000    |
| Operation and Maintenance Cost: | \$119,000   |
| Present-Worth Cost:             | \$1,860,000 |
| Time to Implement:              | 3 months    |

The Superfund program requires that the "no-action" alternative be considered as a baseline for comparison with the other alternatives. The no-action remedial alternative does not include any physical remedial measures that address the problem of contamination at the Site. However, this response action does include the implementation of a long-term ground-water, surface-water and sediment-monitoring program. Water quality samples would be collected on a quarterly basis from upgradient, on-Site and downgradient ground-water monitoring wells and from locations on Mathew Creek. Sediment samples would be collected from the creek bed. Parameters to be sampled and analyzed would be in accordance with 6 NYCRR Part 360 baseline and routine parameters.

The no-action response also includes the development and implementation of a public awareness and education program for the residents in the area surrounding the Site. This program would include the preparation and distribution of informational press releases and circulars and convening public meetings. These activities would serve to enhance the public's knowledge of the conditions existing at the Site. The capital cost for the public awareness program is approximately \$14,000. This alternative would also require the involvement of local government, various health departments and environmental agencies.

Because this alternative would result in contaminants remaining on-Site above health-based levels, CERCLA requires that the Site be reviewed every five years. If justified by the review, remedial actions may be implemented to remove or treat the wastes.

#### **Alternative SC-2: Limited Action, Residential Water Replacement**

|                                 |              |
|---------------------------------|--------------|
| Capital Cost:                   | \$8,343,000  |
| Operation and Maintenance Cost: | \$174,000    |
| Present-Worth Cost:             | \$11,034,000 |
| Time to Implement:              | 3 years      |

This alternative includes a Site access restriction which would consist of surrounding the entire landfill mound with approximately 6,800 feet of conventional chain-link fencing and placing appropriate warning signs. In addition to the access restriction, institutional controls would be implemented to restrict the use of the land because of the threat of contamination. This may occur in the form of local ordinances or deed restrictions. As part of the limited action alternative, the landfill would be regraded to prevent stormwater from ponding on the landfill mound, and to allow rapid runoff from the Site, while minimizing soil erosion. The regrading would include excavation of the LaGrange Gravel Pit sediments, placing the excavated material on the existing landfill, and covering them. The pit would then be filled with clean fill so that it may be used as an infiltration basin, and/or an area to collect stormwater.

The limited-action alternative also calls for the expansion of the Johnstown City water supply system to provide potable water to all

100000

1000050

downgradient private water supplies potentially impacted by the landfill. Providing city water would require the extension of the City's water lines and a booster pump station requiring major construction. Under this alternative, at least 24,600 feet of water line would be constructed.

Similar to Alternative SC-1, this alternative would also include long-term monitoring of ground water, surface water and sediments, and the implementation of a public awareness program to ensure that the nearby residents are familiar with all aspects of this response action.

Because this alternative would result in contaminants remaining on-Site above health-based levels, CERCLA requires that the Site be reviewed every five years. If justified by the review, remedial actions may be implemented to remove or treat the wastes.

**Alternative SC-3: Installation of 6 NYCRR Part 360 Landfill Cap, Residential Water Replacement**

|                                 |              |
|---------------------------------|--------------|
| Capital Cost:                   | \$13,763,000 |
| Operation and Maintenance Cost: | \$174,000    |
| Present-Worth Cost:             | \$16,454,000 |
| Time to Implement:              | 3 years      |

The major features of this alternative include constructing a multi-layer closure cap over the landfill mound, supplying city water to replace existing private wells, and erecting a security fence. The replacement of private water sources with Johnstown City water, land use restrictions, and fencing components are identical to those described in Alternative SC-2. Prior to the construction of the cap, the landfill mound would have to be regraded and compacted to provide a stable foundation for placement of the various layers of the cap and to provide rapid runoff as described in Alternative SC-2. The landfill cap would be designed and constructed as per New York State 6 NYCRR Part 360 regulations. A landfill cap meeting these requirements would consist of a filter fabric, 12 inches for a gas venting layer, a 40 mil geomembrane (or 18 inches of clay), 24 inches of drainage material and six inches of topsoil. Capping the landfill would minimize the release of the additional leachate into ground water and would be expected to allow reduction of ground-water contaminants by processes of natural attenuation which may include dilution, biodegradation and sorption. Landfill gases would be monitored and vented into the atmosphere or controlled as needed.

Similar to Alternative SC-1, this alternative would also include long-term monitoring of ground water, surface water, and sediments, and the implementation of a public awareness program to ensure that the nearby residents are familiar with all aspects of this response action.

Because this alternative would result in contaminants remaining on-Site above health-based levels, CERCLA requires that the Site be

1000051

reviewed every five years. If justified by the review, remedial actions may be implemented to remove or treat the wastes.

**Alternative SC-4: Installation of RCRA Landfill Cap, Residential Water Replacement**

|                                 |              |
|---------------------------------|--------------|
| Capital Cost:                   | \$19,729,000 |
| Operation and Maintenance Cost: | \$174,000    |
| Present-Worth Cost:             | \$22,420,000 |
| Time to Implement:              | 3 years      |

The major features of this alternative include constructing a multi-layer closure cap over the landfill mound, supplying city water to residences, and erecting a security fence. This alternative is identical to Alternative SC-3 except that a RCRA capping system would be used instead of the 6 NYCRR Part 360 cap that would be implemented under Alternative SC-3. The RCRA cap system differs from the NYCRR cap by requiring a 24-inch thick soil barrier layer (NYCRR requires 18 inches, if soil is used) and a 40 mil geomembrane (NYCRR requires either the membrane or the soil barrier layer), a 12-inch thick drainage layer (NYCRR requires 24 inches) and a 24-inch thick topsoil layer (NYCRR requires 6-inch thick topsoil). Capping the landfill would minimize the release of the additional leachate into ground water and would be expected to allow reduction of ground-water contaminants by processes of natural attenuation which may include dilution, biodegradation and sorption. Landfill gases would be vented into the atmosphere or controlled, as needed.

Similar to Alternative SC-1, this alternative would also include long-term monitoring of ground water, surface water, and sediments, and the implementation of a public awareness program to ensure that the nearby residents are familiar with all aspects of this response action.

Because this alternative would result in contaminants remaining on-Site above health-based levels, CERCLA requires that the Site be reviewed every five years. If justified by the review, remedial actions may be implemented to remove or treat the wastes.

**Alternative SC-5: Ground Water Collection/Treatment/Discharge, Residential Water Replacement**

|                                 |              |
|---------------------------------|--------------|
| Capital Cost:                   | \$12,754,000 |
| Operation and Maintenance Cost: | \$936,000    |
| Present-Worth Cost:             | \$27,160,000 |
| Time to Implement:              | 3 years      |

This remedial alternative includes the collection of contaminated ground water in the upper (overburden) aquifer and/or the lower (bedrock) aquifer, followed by its treatment and discharge via percolation ponds or injection wells. Ground water would be extracted utilizing extraction wells which would induce ground-

water flow to the wells by drawdown development. Ground-water flow leaving the Site would be collected by the creation of overlapping zones of influence of the extraction wells. The ground-water treatment system would be located permanently at the Johnstown City Landfill site and would utilize physical-chemical processes, such as pH adjustment, chemical precipitation, and carbon adsorption, to remove inorganic and volatile organic contaminants. Treated ground water would be discharged by returning it to the aquifer, or by discharging to a stream, the nearest being Mathew Creek. The discharge standards would be established by NYSDEC.

The other major features of this alternative include regrading with a two-foot soil cover, residential water replacement with Johnstown City public water, security fencing, and deed restrictions as described in Alternative SC-2.

Similar to Alternative SC-1, this alternative would also include long-term monitoring of ground water, surface water, and sediments, and the implementation of a public awareness program to ensure that the nearby residents are familiar with all aspects of this response action.

Because this alternative would result in contaminants remaining on-site above health-based levels, CERCLA requires that the Site be reviewed every five years. If justified by the review, remedial actions may be implemented to remove or treat the wastes.

**Alternative SC-6: 6 NYCRR Part 360 Cap, Residential Water Replacement, Ground Water Collection/Treatment/Discharge**

|                                 |              |
|---------------------------------|--------------|
| Capital Cost:                   | \$18,174,000 |
| Operation and Maintenance Cost: | \$936,000    |
| Present-Worth Cost:             | \$32,580,000 |
| Time to Implement:              | 3 years      |

This alternative consists of the following: constructing a multi-layer NYCRR closure cap over the landfill mound as in Alternative SC-3; treating extracted ground water with discharge to the aquifer or surface water as in Alternative SC-5; supplying city water to local residents; erecting a security fence around the landfill; and implementing institutional controls as in Alternative SC-2.

Similar to Alternative SC-1, this alternative would also include long-term monitoring of the ground water, surface water, and sediments, and the implementation of a public awareness program to ensure that the nearby residents are familiar with all aspects of this response action.

Because this alternative would result in contaminants remaining on-site above health-based levels, CERCLA requires that the Site be reviewed every five years. If justified by the review, remedial actions may be implemented to remove or treat the wastes.

# **Alternative SC-7: RCRA Cap, Residential Water Replacement, Ground Water Collection/Treatment/Discharge**

|                                 |              |
|---------------------------------|--------------|
| Capital Cost:                   | \$24,139,000 |
| Operation and Maintenance Cost: | \$936,000    |
| Present-Worth Cost:             | \$38,545,000 |
| Time to Implement:              | 3 years      |

This alternative consists of the construction of a multi-layer RCRA closure cap over the landfill mound as in Alternative SC-4; treatment of extracted ground water followed by discharge to surface water, as in Alternative SC-5; supplying city water to local residents; implementing ground water and landfill gas monitoring programs; erecting a security fence around the landfill; and implementing institutional controls, as in Alternative SC-2.

Similar to Alternative SC-1, this alternative would also include long-term monitoring of ground water, surface water and sediments, and the implementation of a public awareness program to ensure that the nearby residents are familiar with all aspects of this response action.

Because this alternative would result in contaminants remaining on-site above health-based levels, CERCLA requires that the Site be reviewed every five years. If justified by the review, remedial actions may be implemented to remove or treat the wastes.

## **SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES**

During the detailed evaluation of remedial alternatives, each alternative was assessed utilizing nine evaluation criteria as set forth in the NCP and OSWER Directive 9355.3-01. These criteria were developed to address the requirements of Section 121 of CERCLA to ensure all important considerations are factored into remedy selection decisions.

The following "threshold" criteria are the most important, and must be satisfied by any alternative in order to be eligible for selection:

1. Overall protection of human health and the environment addresses whether or not a remedy provides adequate protection and describes how risks posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.
2. Compliance with ARARs addresses whether or not a remedy would meet all of the applicable or relevant and appropriate requirements of federal and state environmental statutes and requirements or provide grounds for invoking a waiver.

The following "primary balancing" criteria are used to make comparisons and to identify the major trade-offs between alterna-

tives:

3. Long-term effectiveness and permanence refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment residuals and/or untreated wastes.
4. Reduction of toxicity, mobility, or volume through treatment is the anticipated performance of a remedial technology, with respect to these parameters, that a remedy may employ.
5. Short-term effectiveness addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation periods until cleanup goals are achieved.
6. Implementability is the technical and administrative feasibility of a remedy, including the availability of materials and services needed.
7. Cost includes estimated capital and operation and maintenance costs, and the present worth costs.

The following "modifying" criteria are considered fully after the formal public comment period on the Proposed Plan is complete:

8. State acceptance indicates whether, based on its review of the RI/FS and the Proposed Plan, the State supports, opposes, and/or has identified any reservations with the preferred alternative.
9. Community acceptance refers to the public's general response to the alternatives described in the Proposed Plan and the RI/FS reports. Factors of community acceptance to be discussed include support, reservation, and opposition by the community.

A comparative analysis of the remedial alternatives based upon the evaluation criteria noted above follows.

#### Overall Protection of Human Health and the Environment

The no-action alternative, Alternative SC-1, would be the least protective of human health and the environment since it does not address any of the remedial action objectives established for the Site. Alternative SC-2 would be more effective than Alternative SC-1 in protecting human health and the environment by reducing risks attributed to direct exposure and from ingestion of contaminated drinking water. Direct exposure would be reduced somewhat by constructing fences, posting signs, and implementing institutional controls which would limit access to the Site by trespassers and children. Risks from ingestion of contaminated ground water would be reduced since the landfill would be regraded to prevent

stormwater from ponding on the landfill mound and to allow for rapid runoff from the Site while minimizing soil erosion. It is estimated that this would limit infiltration of precipitation into the landfill and reduce the generation of landfill leachate by 36 percent. Also, extension of city water services proposed in Alternative SC-2 would reduce the risk associated with ingestion and exposure to contaminated ground water.

The closure cap systems of Alternatives SC-3 and SC-4, which include an impermeable layer, would further reduce run-on and infiltration of rainfall and snow melt into the landfill, thus reducing the quantity of water percolating through the landfill materials and leaching out contaminants. It is estimated that Alternative SC-3 (NYCRR impermeable cap) would provide a 94 to 99 percent reduction in leachate production and Alternative SC-4 (RCRA impermeable cap) would provide greater than 99 percent reduction in leachate production. Alternative SC-4 would therefore be more protective than Alternative SC-3. But both Alternatives SC-3 and SC-4 would be significantly more protective than Alternative SC-2. None of these alternatives include any direct ground-water control or remediation measures; therefore, the contaminated ground water would remain unaffected except for reduced leachate production allowing ground-water contaminant levels to decline. Although the rate of contaminant decrease cannot be predicted with certainty, mathematical modelling results indicate that Site ground-water contamination levels may continue to exceed ARARs for a period of about 3 to 12 years following installation of the cap, if there is no control or direct remediation of ground water.

The extraction and treatment system of Alternative SC-5 would reduce the movement and toxicity of the contaminated landfill leachate and ground water by pumping and treating this water and preventing its downgradient migration. Under Alternative SC-5 the landfill would be regraded and a soil cover would be placed as described under Alternative SC-2. Alternative SC-5 would be more protective in remediating contaminated ground water than Alternative SC-2. However, Alternative SC-5 would be less effective in limiting leachate production than Alternatives SC-3 and SC-4.

Alternatives SC-6 and SC-7 include the closure cap systems of Alternatives SC-3 and SC-4 respectively, ground water extraction and treatment as in Alternative SC-5, and city water service as in Alternative SC-2. Alternatives SC-6 and SC-7 would thereby further reduce the volume of ground water coming into contact with the contaminant source, reducing the remediation time in comparison with Alternative SC-5. Alternatives SC-7 and SC-6 would be the most protective and second most protective alternatives, respectively, of human health and the environment.

#### Compliance with ARARs

The New York State Part 360 landfill cap is an action-specific ARAR for landfill closure. Alternatives SC-1, SC-2, and SC-5 would not meet this ARAR, since they do not include any provisions for a

120000

1000056

landfill cap. Alternatives SC-3, SC-4, SC-6, and SC-7 include provisions for a landfill cap which would meet or exceed the Part 360 requirement for an impermeable cap.

Alternatives SC-6 and SC-7 would be the most effective in reducing ground water contaminant concentrations below maximum contaminant levels (MCLs), because of the lower infiltration rate of precipitation associated with placing an impermeable cap over the landfill, and because they include collection and on-site treatment of contaminated ground water. Alternative SC-5 may be nearly as effective as Alternatives SC-6 and SC-7 in reducing ground water contamination, provided that the collection system was designed and operated to capture all the contaminated ground water. However, without an impermeable cap there would be more leachate generated and additional contaminated ground water requiring collection and treatment under Alternative SC-5 than under Alternatives SC-6 and SC-7. Alternatives SC-1, SC-2, SC-3, and SC-4 do not provide for any direct remediation of ground water. However, under Alternatives SC-2, SC-3, and SC-4 less leachate would be generated and introduced into the ground water. This would facilitate the reduction of contaminant levels in ground water to ARARs by natural attenuation.

#### Long-Term Effectiveness and Permanence

Alternative SC-1 provides no long-term controls for handling the on-site contamination or the ground-water contamination. Alternative SC-2 would minimally reduce the rate of leachate production, thereby limiting direct contact with the contamination. Under Alternative SC-2, the replacement of residential water supplies and the erection of a security fence would be permanent actions which would reduce potential exposure to contaminated ground water and to contaminated waste. However, it is doubtful that ground-water quality would be restored to acceptable levels, since significant quantities of leachate would be generated as a result of continued infiltration of precipitation through the soil cover. Alternatives SC-3 and SC-4 would provide much greater reduction of leachate production than Alternative SC-2, resulting in ground-water remediation by natural attenuation. Alternative SC-5 would provide an equivalent reduction in leachate generation as would Alternative SC-2 due to the soil cover. In addition, ground-water contaminants would be contained by the ground-water collection and treatment system proposed under Alternative SC-5. The collection and treatment system would be operated until contaminant concentration levels in ground water are reduced to acceptable levels. Alternative SC-6 would combine the capping and ground-water remediation components of Alternatives SC-3 and SC-5, and Alternative SC-7 would combine the capping and ground-water remediation components of Alternatives SC-4 and SC-5, thus reducing the period of treatment necessary. The closure cap is a permanent technology that must be maintained at regular intervals to ensure its structural integrity and impermeability.

10.00057

000000

### Reduction in Toxicity, Mobility, or Volume Through Treatment

The no-action alternative (Alternative SC-1) does not contain any remedial measures which would reduce the toxicity, mobility, or volume of the ground-water contamination. The limited action alternative (Alternative SC-2) provides some limited reduction of leachate and leachate seeps through regrading.

Alternatives SC-3 and SC-4 provide further reduction of the volume of contaminated ground water by further reducing the amount of water infiltrating the landfill. These alternatives also eliminate the formation of contaminated leachate seeps.

Implementation of Alternative SC-5, SC-6, or SC-7 would reduce the toxicity, mobility, and volume of the contaminated ground water by extracting and treating the ground water. These alternatives would remove the contaminated ground water from the aquifer and reduce contaminant concentrations in ground water to acceptable levels, which would reduce downgradient migration of the contaminated ground water.

Alternative SC-5 would reduce the leachate production using a soil cover. Alternatives SC-6 and SC-7 would further reduce leachate generation with an impermeable cap. Alternative SC-5 would leach some contaminants from the landfill mound but at a rate slower than is occurring now. Therefore, dilution would be achieved and treatment could probably end after a relatively short period. Alternatives SC-6 and SC-7 would result in the elimination of the production of almost all leachate and, thereby, provide the shortest treatment period. However, leachate production would restart, if the impermeable cap were to fail. Data is not presently available concerning the effective life of a landfill cap.

None of the alternatives proposed reduces the toxicity or volume of waste present in the landfill.

### Short-Term Effectiveness

Alternative SC-1 does not include any physical construction measures and, therefore, does not present a risk to the community as a result of its implementation.

The remaining alternatives involve major construction activities at the Site and the use of heavy earth-moving equipment. All of the potential impacts associated with implementation of Alternatives SC-2, SC-3, SC-4, SC-5, SC-6, and SC-7 could be mitigated in part by using proper construction techniques and operational procedures. The potential for on-Site accidents and worker exposure to contaminated media would increase as the number of construction activities increases. These risks would be minimized with proper health and safety training and personal protective equipment. Potential hazards to the surrounding community and environment would include adverse traffic conditions, airborne dust and

1000058

particulate emissions, an increase in noise levels, and adverse impacts to the wetlands area. Mitigative measures would be implemented to minimize the impacts from these hazards.

The ground-water treatment systems of Alternatives SC-5, SC-6 and SC-7 would require storage and handling of possibly dangerous materials, such as process reagents and residuals. These activities may be accomplished with minimal risks to workers, by the development and implementation of safe operating and maintenance practices. Compliance with applicable regulations would ensure proper hazardous waste transportation and disposal of drummed process sludge at an appropriate off-Site treatment and disposal facility.

### Implementability

Alternative SC-1, the no-action alternative, would be the easiest of the alternatives to implement because it requires only minimal on-Site activity. Public information programs and ground-water monitoring are easily implemented.

The construction procedures, materials and earth-moving equipment required for the implementation of Alternatives SC-2, SC-3, SC-4, SC-5, SC-6, and SC-7 are conventional and are used extensively in standard commercial and industrial applications. Supplying city water to nearby residents is readily achievable.

Alternatives SC-3, SC-4, SC-6, and SC-7, which involve capping the landfill, may be somewhat more difficult to implement. Construction methods for capping are well established, although some technical problems, such as those attributed to meeting the required specifications for the impermeable layer, may be encountered. The treatment systems of Alternatives SC-5, SC-6 and SC-7 utilize standard unit operations and water treatment equipment that are well suited for this application and are technically reliable. Transportation and disposal of the dewatered process sludge involves easily implementable practices and the use of commercially available facilities.

All of the alternatives involve some degree of institutional management. Alternative SC-1 requires administrative coordination of the ground-water monitoring program and the five-year site status reviews, along with the development of the public education program. Alternative SC-2 requires a similar level of control for those activities and also for maintenance of the security fence and administrative issues related to extension of the city water system to residents.

The administrative requirements of Alternatives SC-3, SC-4, SC-5, SC-6, and SC-7 include the ground-water, surface-water and sediment monitoring programs, the extension of the city water system, and the security fence inspection. In addition to these activities, the structural integrity and impermeability of the closure cap and cover must be maintained through a program of periodic surveillance

00000

1000059

and necessary repairs. Because of the large land area of the landfill, this item could be fairly substantial.

Alternatives SC-5, SC-6, and SC-7 also require an extensive monitoring program for the operation and maintenance of the ground-water treatment facility. The administrative elements of this program are extensive because they include equipment maintenance schedules and transportation and disposal of hazardous process residuals in compliance with regulations. Also, should treated leachate and ground water be discharged to surface water, system effluent monitoring to meet surface-water discharge standards would be necessary.

Most services and materials required for implementation of any of these potential remedial alternatives are readily available. Standard construction equipment and practices can be employed for the fence installation and the extensive Site work activities of Alternatives SC-2, SC-3, SC-4, SC-5, SC-6, and SC-7. Most of the materials and equipment required for these alternatives may be obtained locally.

Contractors to provide the construction services are also available in the Fulton County area. Because the work will be taking place at a Superfund site, all on-Site personnel must have approved health and safety training. Many companies are available to provide this training to contractors. The engineering and design services required for implementation of Alternatives SC-2, SC-3, SC-4, SC-5, SC-6 and SC-7 may be obtained from many companies. Hazardous waste transportation and disposal for treatment residuals required for Alternatives SC-5, SC-6, and SC-7 are also commercially available.

### Cost

Cost estimates were developed for each of the potential remedial alternatives. The present-worth costs are calculated using a discount rate of 5 percent and a 30-year time interval. The estimated capital, annual operation and maintenance, and present worth costs for each of the alternatives are as follows:

| <u>Alternative</u> | <u>Capital Cost</u> | <u>Annual Cost</u> | <u>Present Worth Cost</u> |
|--------------------|---------------------|--------------------|---------------------------|
| SC-1               | \$14,000            | \$119,000          | \$1,859,000               |
| SC-2               | \$8,343,000         | \$174,000          | \$11,034,000              |
| SC-3               | \$13,763,000        | \$174,000          | \$16,454,000              |
| SC-4               | \$19,729,000        | \$174,000          | \$22,420,000              |
| SC-5               | \$12,754,000        | \$936,000          | \$27,160,000              |
| SC-6               | \$18,174,000        | \$936,000          | \$32,580,000              |
| SC-7               | \$24,139,000        | \$936,000          | \$38,545,000              |

The capital cost and annual cost for Alternative SC-1, the no-action alternative, includes the cost for the public awareness program and for long-term monitoring, respectively. The capital cost for Alternative SC-2 includes costs for clearing and regrading

1800000

10.00060

the landfill and for construction of the water-line extension. The capital cost for Alternatives SC-3 and SC-4 are for construction of the 6 NYCRR Part 360 cap and RCRA cap, respectively, in addition to necessary clearing and regrading of the landfill and construction of the water-line extension. The annual cost for Alternatives SC-2, SC-3, and SC-4 includes operation and maintenance of the landfill cover and surface-water drainage systems, in addition to long-term monitoring. The capital costs for Alternatives SC-5, SC-6, and SC-7 includes the construction of the ground-water collection, treatment, and discharge system, in addition to those capital costs specified for Alternatives SC-2, SC-3, and SC-4, respectively. The annual cost for Alternatives SC-5, SC-6, and SC-7 include operation and maintenance of the ground-water extraction, treatment, and discharge system, in addition to operation and maintenance of the landfill cover and surface-water drainage systems, and for long-term monitoring.

### State Acceptance

NYSDEC concurs with the selected alternative. NYSDEC also concurs with the contingent remedy, should future water-quality data indicate that the ground-water remediation component of the contingent remedy is appropriate.

### Community Acceptance

The community's comments and concerns identified during the public comment period are summarized and addressed in the Responsiveness Summary, which is attached as Appendix V to this document. While several residents expressed concerns at the February 10, 1993 public meeting related to the costs of water use and water district taxes associated with extending the Johnstown City water-supply system, it appears that the majority of the community is supportive of the water line. This is evidenced from Resolution No. 110 adopted by the Town Board of Johnstown at its meeting on October 19, 1992 and from statements made at a Town Board meeting on March 4, 1993.

### **SELECTED REMEDY**

Based upon consideration of the requirements of CERCLA, the detailed analysis of the alternatives, and public comments, both NYSDEC and EPA have determined that Alternative SC-3 is the appropriate remedy, with Alternative SC-6 as a contingent remedy for the Site.

Alternative SC-3, as the selected remedy, and Alternative SC-6, as the contingent remedy, are effective in protecting human health and the environment and in meeting ARARs for landfill closure and ground-water quality, since they include an impermeable landfill cap and ground-water remediation, if it is needed. Although Alternative SC-6 would be more protective in that it includes

collection and treatment of contaminated ground water, NYSDEC and EPA believe that Alternative SC-3 is more cost-effective than Alternative SC-6. Under Alternative SC-6, ground-water collection and treatment would raise the capital cost of the remedy by more than \$4 million and would raise the present-worth cost of the remedy by about \$16 million. Given that the levels of ground-water contamination are generally only slightly above ARARs, that the cancerous risk is only slightly above the acceptable risk range, and that the noncancerous risk posed by ground-water ingestion is only slightly above the significant level, ground water remediation does not appear to be warranted unless ground-water contamination levels and surface-water contamination in Mathew Creek do not improve through natural attenuation. It is estimated that as a result of reduced leachate generation, ground-water and surface-water contamination would begin to naturally attenuate within 5 years following initiation of construction of the cap.

NYSDEC and EPA consider Alternative SC-3 (with Alternative SC-6 as the contingent alternative) to be preferable to Alternative SC-4 (with Alternative SC-7 as the contingent alternative), since Alternative SC-3 provides a comparable degree of protection as Alternative SC-4, but is more cost-effective. The RCRA cap required under Alternative SC-4 (and Alternative SC-7) would cost approximately \$6 million more to construct than the NYSDEC Part 360 cap under Alternative SC-3 (and Alternative SC-6), but would only, at most, marginally reduce infiltration of precipitation through the cap. Unlike Alternatives SC-2 and SC-5, which do not include an impermeable cap, Alternatives SC-3 and SC-6 will be designed to meet New York State landfill closure ARARs and thereby reduce the volume of contaminated ground water. Although Alternative SC-1 is significantly lower in cost than the other alternatives, including the preferred alternative, it would not attain remedial action objectives for this site, since it would not reduce leachate generation, prevent human and animal contact with contaminated soil from the landfill surface, prevent erosion of contaminated surface soil, nor provide a means of treating landfill gas emissions.

The major components of the selected remedy are as follows:

- Excavation of the LaGrange Gravel Pit sediments and placing the excavated materials on the existing landfill. The pit will then be filled with clean fill, so that it may be used as an infiltration basin and/or stormwater collection basin;
- Regrading and compacting the landfill mound to provide a stable foundation for placement of the various layers of the cap and to promote rapid runoff;
- Construction of a multi-layer closure cap over the landfill mound and excavated sediments as per New York State 6 NYCRR Part 360 regulations. The cap, by reducing leachate generation, will act to improve the ground-water quality in the upper (overburden) and lower (bedrock) aquifers and surface-water quality in Mathew Creek through natural attenuation of contaminants;

000000

1000062

- Expansion of the Johnstown City water-supply system to provide potable water to all private water supplies potentially impacted by the landfill. Providing city water will require the extension of the City's water lines and construction of a booster pump station;
- Erection of approximately 6,800 feet of conventional chain-link fencing surrounding the entire landfill mound, with placement of appropriate warning signs;
- Performance of air monitoring prior to, during, and following construction at the Site to ensure that air emissions resulting from the cap construction meet applicable or relevant and appropriate requirements. Perimeter subsurface gas monitoring between the landfill and the adjacent properties will be performed. The gas-monitoring wells will be monitored quarterly for explosive gas concentrations;
- Performance of air dispersion modeling to estimate ambient air concentrations of contaminants. Landfill gas emissions will be vented into the atmosphere, or if necessary, controlled;
- Imposition of property deed restrictions by the appropriate state or local authorities. The deed restrictions will include measures to prevent the installation of drinking water wells at the Site, and restrict activities which could affect the integrity of the cap;
- Performance of a maintenance and sampling program upon completion of closure activities. The monitoring program will fulfill the requirements of 6 NYCRR Part 360 for post-closure landfill monitoring in addition to monitoring parameters of concern found at the Site;
- Development and implementation of a dust control plan. The plan will contain all possible sources of fugitive dust emissions which exceed action levels including intrusive field activities such as excavation or regrading of waste. Normal dust suppression techniques for handling of soils and road materials will be addressed in the plan. The plan will also include how each of these potential dust sources will be controlled by addressing the control methods that will be conducted. The plan will prohibit the use of environmentally unacceptable products such as halides or petroleum products;
- Performance of a Stage IA cultural resources survey (CRS) as early as possible in the Remedial Design phase for both on-Site and off-Site areas to evaluate the sensitivity of the site for cultural resources. The results of the Stage IA survey will be used to assist in determining if additional CRS work will be required.

The effectiveness of the landfill cap will be evaluated through

post-construction monitoring of ground-water and surface-water quality. The evaluation will be conducted within 5 years following initiation of construction of the landfill cap, and at any time as needed thereafter, during the long-term monitoring of the Site. Should the monitoring results indicate that either ground-water quality in the upper (overburden) aquifer or the lower (bedrock) aquifer, or surface-water quality in Mathew Creek, is not being restored to acceptable levels through natural attenuation as a result of reduced leachate generation, the ground-water remediation component of the contingent remedy, Alternative SC-6, will be implemented. This would include:

- Extraction of contaminated ground water from either of the aquifers as necessary. The extraction system would utilize extraction wells which would induce flow to the wells through drawdown of the ground-water table. Operation of the ground-water extraction system would reduce the migration of contaminants away from the Site;
- Treatment of ground water by a treatment system located permanently on-Site that would use physical/chemical processes such as pH adjustment, chemical precipitation, and carbon adsorption, to remove inorganic and volatile organic contaminants; and
- Discharge of treated ground water by returning it to the aquifer via percolation ponds or injection wells, or by discharging it to a stream, the nearest being Mathew Creek. The discharge standards would be established by NYSDEC.

The purpose of this response action is to reduce the present risk to human health and the environment due to contaminants leaching from the landfill mound. The capping of the landfill will minimize the infiltration of rainfall and snow melt into the landfill, thereby reducing the potential for contaminants leaching from the landfill and negatively impacting the wetlands habitat and ground-water quality. Capping will prevent direct contact exposure to contaminated soils, and as such, will result in risks which are less than EPA's target levels of  $10^{-4}$  and 1 for carcinogenic risks and the noncarcinogenic HI, respectively. The extension of the City of Johnstown's municipal water lines supply to residents living near the landfill will ensure that the residents have a potable supply of drinking water. The goal of pumping and treating the ground water, if implemented, would be to facilitate the natural attenuation processes in restoring ground water and Mathew Creek surface water to applicable or relevant and appropriate state and federal standards.

#### **STATUTORY DETERMINATIONS**

Under its legal authorities, EPA's primary responsibilities at Superfund sites are to undertake remedial actions that achieve protection of human health and the environment. In addition, Section 121 of CERCLA establishes several other statutory require-

ments and preferences. These specify that when complete, the selected remedial action for the Site must comply with applicable or relevant and appropriate environmental standards established under federal and state environmental laws unless a statutory waiver is justified. The selected remedy also must be cost-effective and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Finally, the statute includes a preference for remedies that employ treatment that permanently and significantly reduce the volume, toxicity, or mobility of hazardous wastes, as available. The following sections discuss how the selected remedy meets these statutory requirements. The contingent remedy will also meet these requirements.

### Protection of Human Health and the Environment

Alternative SC-3 and Alternative SC-6 are fully responsive to this criterion and to the remedial response objectives. Capping the landfill will protect human health and the environment by reducing the mobility of contaminated materials, in that the leaching of contaminants into the aquifers will be significantly reduced. In addition, capping the landfill will eliminate threats posed to adults, children, trespassers, and wildlife who come in contact with the Site. The extension of the Johnstown City water supply system to all private water supplies potentially impacted by the Site, will ensure that the community continues to have a potable supply of drinking water.

### Compliance with ARARs

The multi-layer closure cap over the landfill mound will be designed and constructed as per New York State 6 NYCRR Part 360 regulations.

Attainment of chemical-specific ARARs for ground water and surface water will be hastened due to reduced leaching following construction of the cap. Should monitoring results show that ground-water quality or surface-water quality in Mathew Creek is not being restored to acceptable levels through natural attenuation as a result of reduced leaching, ground water will be extracted and treated as described in the contingent alternative. Action- and location-specific ARARs will be complied with during implementation.

#### **Action-specific ARARs:**

- New York State Solid Waste Management Facilities 6 NYCRR Part 360
- National Emissions Standards for Hazardous Air Pollutants (NESHAPs)
- 6 NYCRR Part 257 Air Quality Standards

- 6 NYCRR Part 212 Air Emission Standards
- 6 NYCRR Part 373 Fugitive Dusts
- 40 CFR 50 Air Quality Standards
- SPDES - Discharge
- Resource Conservation and Recovery Act (RCRA)

**Chemical-specific ARARs:**

- SDWA MCLs
- 6 NYCRR Parts 700-705 Ground Water and Surface Water Quality Regulations
- 10 NYCRR Part 5 State Sanitary Code

**Location-specific ARARs:**

- Clean Water Act Section 404, 33 USC 1344
- Fish and Wildlife Coordination Act, 16 USC 661
- National Historic Preservation Act, 16 USC 470
- New York State Freshwater Wetlands Law ECL, Article 24, 71 in Title 23
- New York State Freshwater Wetlands Permit Requirements and Classification, 6 NYCRR 663 and 664
- New York State Endangered and Threatened Species of Fish and Wildlife Requirements, 6 NYCRR 182

**Other Criteria, Advisories, or Guidance To Be Considered:**

- Executive Order 11990 (Protection of Wetlands)
- Executive Order 11988 (Floodplain Management)
- EPA Statement of Policy on Floodplains and Wetlands Assessments for CERCLA Actions
- New York Guidelines for Soil Erosion and Sediment Control
- New York State Sediment Criteria, December 1989
- New York State Air Cleanup Criteria, January 1990
- SDWA Proposed Maximum Contaminant Levels (PMCLs) and Maximum Contaminant Level Goals (MCLGs)
- NYSDEC Technical and Operational Guidance Series 1.1.1,

100000

1000066

November 1991

### Cost-Effectiveness

The selected remedy and the contingent remedy provide overall effectiveness proportional to their costs. The total capital and present-worth costs for the selected remedy are estimated to be \$13,763,000, and \$16,454,000, respectively. For the contingent remedy, which includes active ground-water remediation, the total capital and present-worth costs are \$18,174,000 and \$32,580,000, respectively.

### Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable

Given the size of the landfill and the absence of isolated hot spots, containment of the waste mass is the only practical means to remediate the Site. By constructing a multi-media cap over the landfill in accordance with New York State's 6 NYCRR Part 360 for landfill closure, hazardous wastes in the landfill will be isolated from the environment and their mobility will be minimized. The closure cap is a permanent technology that must be maintained at regular intervals to ensure its structural integrity and impermeability. The installation of a water line to supply potable water to affected residents is a permanent solution to meeting their drinking water needs. If needed, ground water will be collected via ground-water extraction wells, and treated using a ground-water treatment system located permanently at the Site. Thus, the selected remedy and contingent remedy which require the construction of the Part 360 cap, installation of a water to supply residents with municipal water, and if needed, ground-water collection and treatment, utilize permanent solutions and alternative treatment technologies to the maximum extent practicable. The selected remedy and the contingent remedy represent the best balance of trade-offs among the alternatives with respect to the evaluation criteria.

Ground-water and surface-water monitoring will be performed to demonstrate that the selected remedy meets all remedial action objectives. If the monitoring results indicate that the selected remedy is not effective in meeting remedial action objectives, then the contingent remedy will be implemented. The extraction and subsequent treatment of ground water, if implemented, will permanently and significantly reduce the toxicity, mobility, and volume of contaminants in the ground water.

The selected remedy will require construction of a landfill cap. No technological problems should arise since the technologies and materials needed for capping the landfill are readily available. With the construction of the landfill cap, the direct contact risk to the landfill surface will be eliminated.

000000

1000067

**Preference for Treatment as a Principal Element**

The statutory preference for remedies that employ treatment as a principal element cannot be satisfied for the landfill itself, since treatment of the landfill material is not practicable. The size of the landfill and the fact that there are no identified on-Site hot spots that represent the major sources of contamination preclude a remedy in which contaminants could be excavated and treated effectively. However, the contingent remedy calls for the treatment of contaminated ground water at the Site and, hence, would satisfy the preference for treatment for this portion of the remedy, if needed.

**DOCUMENTATION OF SIGNIFICANT CHANGES**

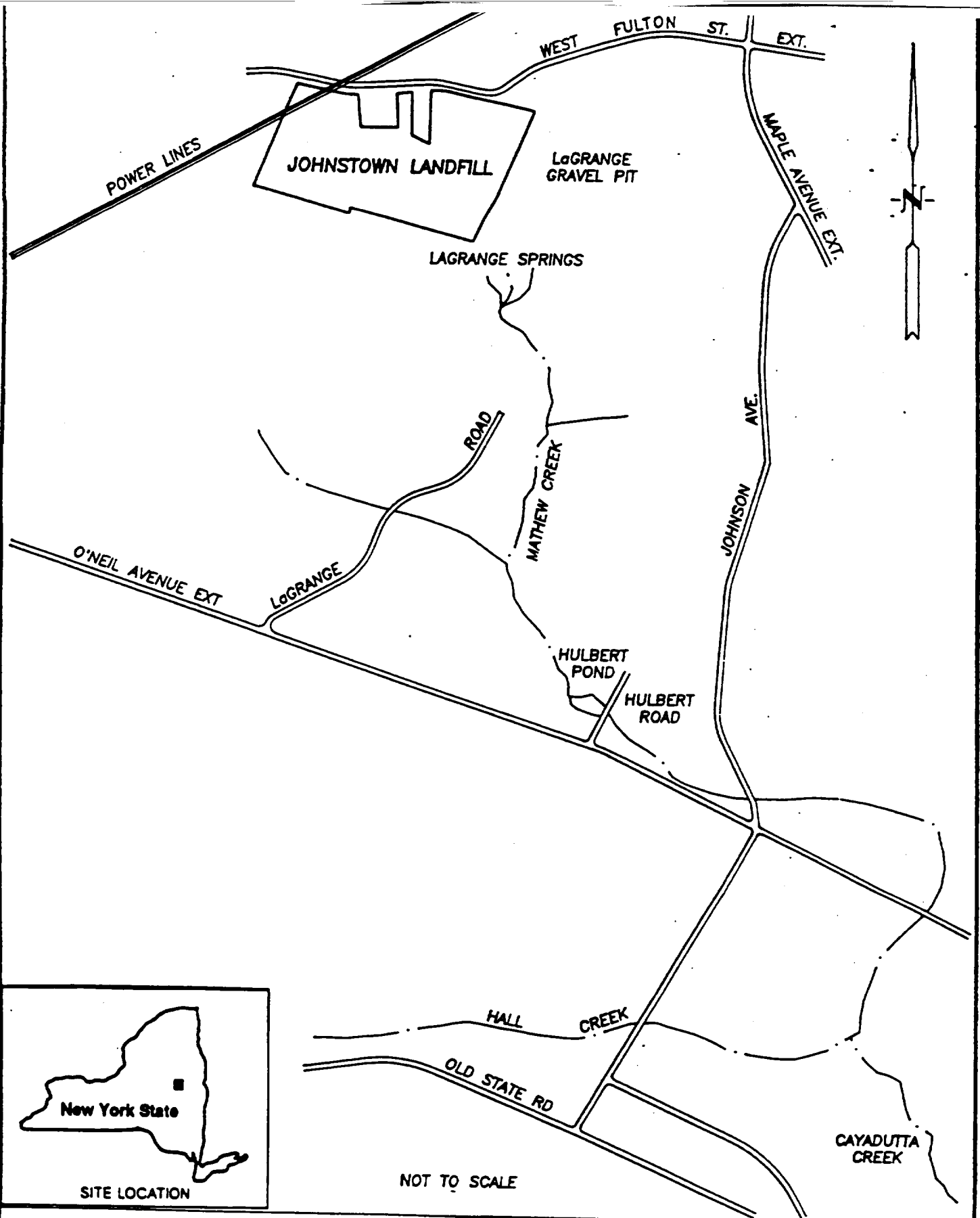
There are no significant changes from the preferred alternative presented in the Proposed Plan.

1000068

APPENDIX I

FIGURES

1000069



JOHNSTOWN LANDFILL  
JOHNSTOWN, NEW YORK



**Thermo Consulting Engineers**  
(formerly Normandeau Engineers)

FIGURE 1  
GENERAL LOCATION MAP SHOWING SURFACE WATER FEATURES  
LaGRANGE SPRINGS, HULBERT'S POND, MATHEW CREEK,  
HALL CREEK AND CAYADUTTA CREEK.

NOVEMBER 1991

1000070

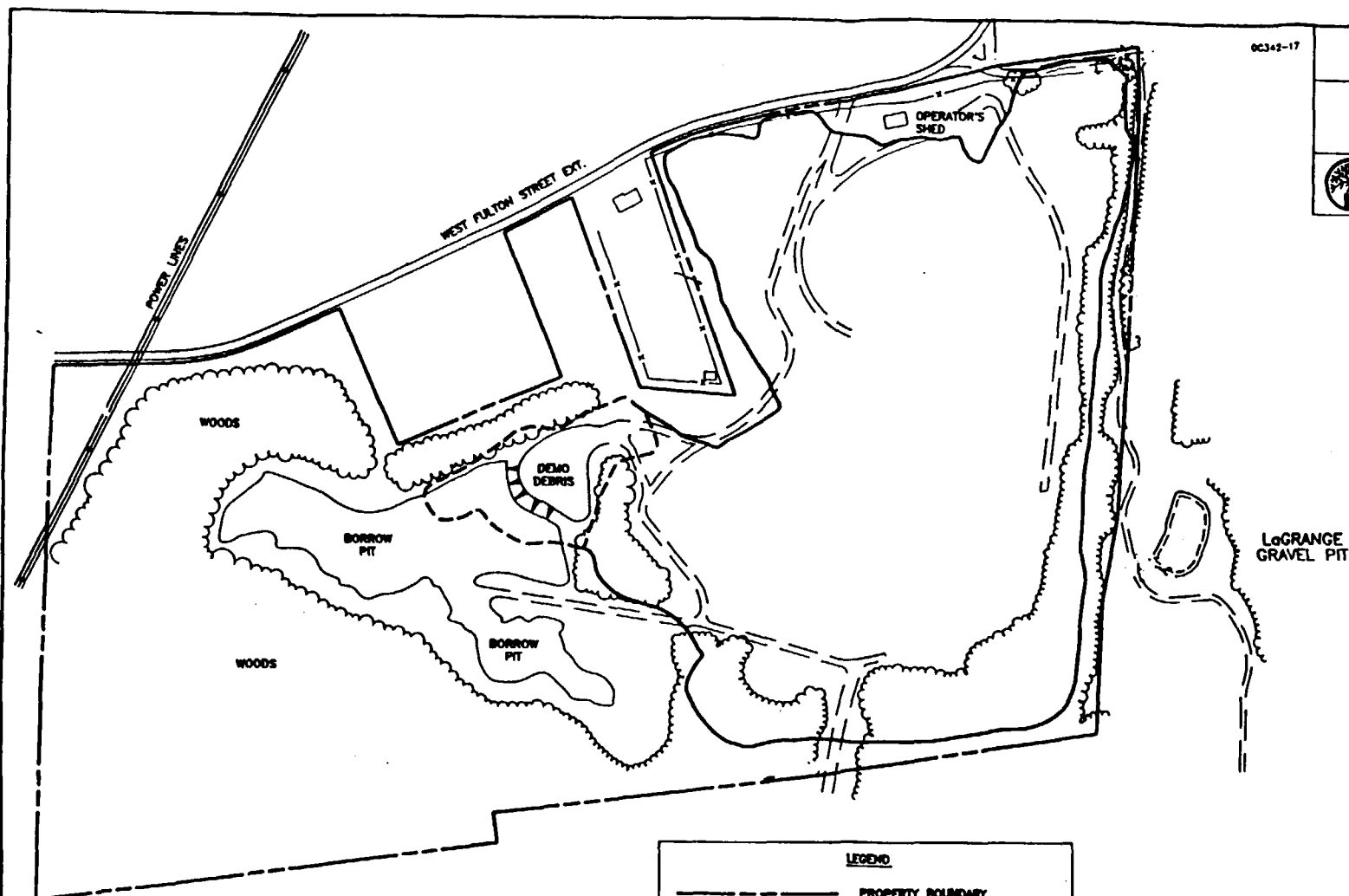
0C342-17

JOHNSTOWN LANDFILL  
JOHNSTOWN, NEW YORK

FIGURE 2  
Site Plan  
NOVEMBER 1991



**Thermo Consulting Engineers**  
(formerly Normandeau Engineers)



0 250 500  
APPROXIMATE SCALE IN FEET

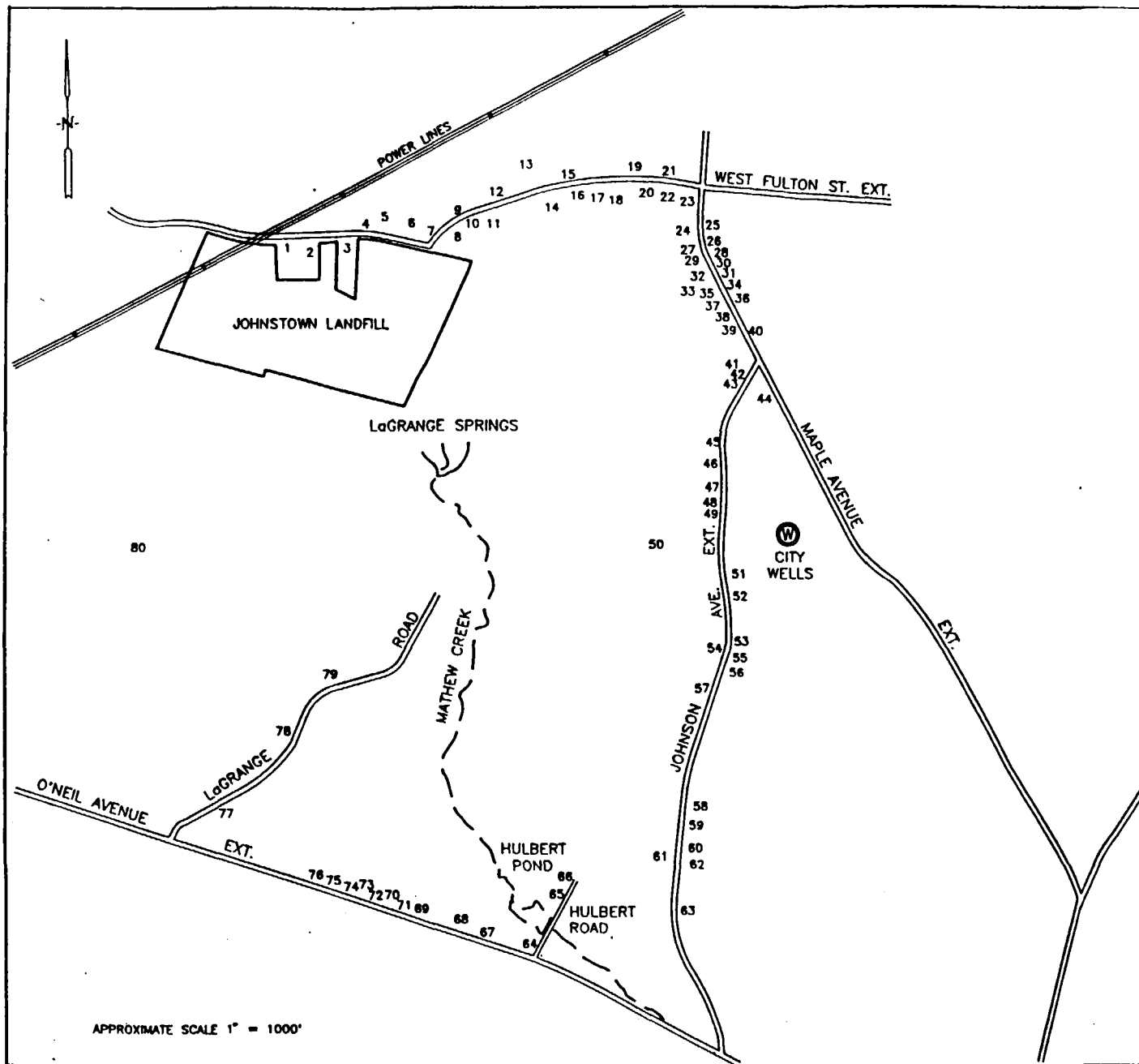
**LEGEND**

- PROPERTY BOUNDARY
- ◆ MW-35 MONITORING WELL LOCATION
- == GRAVEL ACCESS ROAD
- FENCE
- ~~~~ TREELINE
- - - - - APPROXIMATE BOUNDARY OF CONSTRUCTION DEBRIS DISPOSAL
- \_\_\_\_\_ APPROXIMATE BOUNDARY OF WASTE DISPOSAL

LaGRANGE  
SPRINGS

000006

1000071



JOHNSTOWN LANDFILL  
JOHNSTOWN, NEW YORK

FIGURE 3  
APPROXIMATE LOCATIONS OF RESIDENCE  
CANVASSED DURING DOMESTIC WELL INVENT  
NOVEMBER 1991

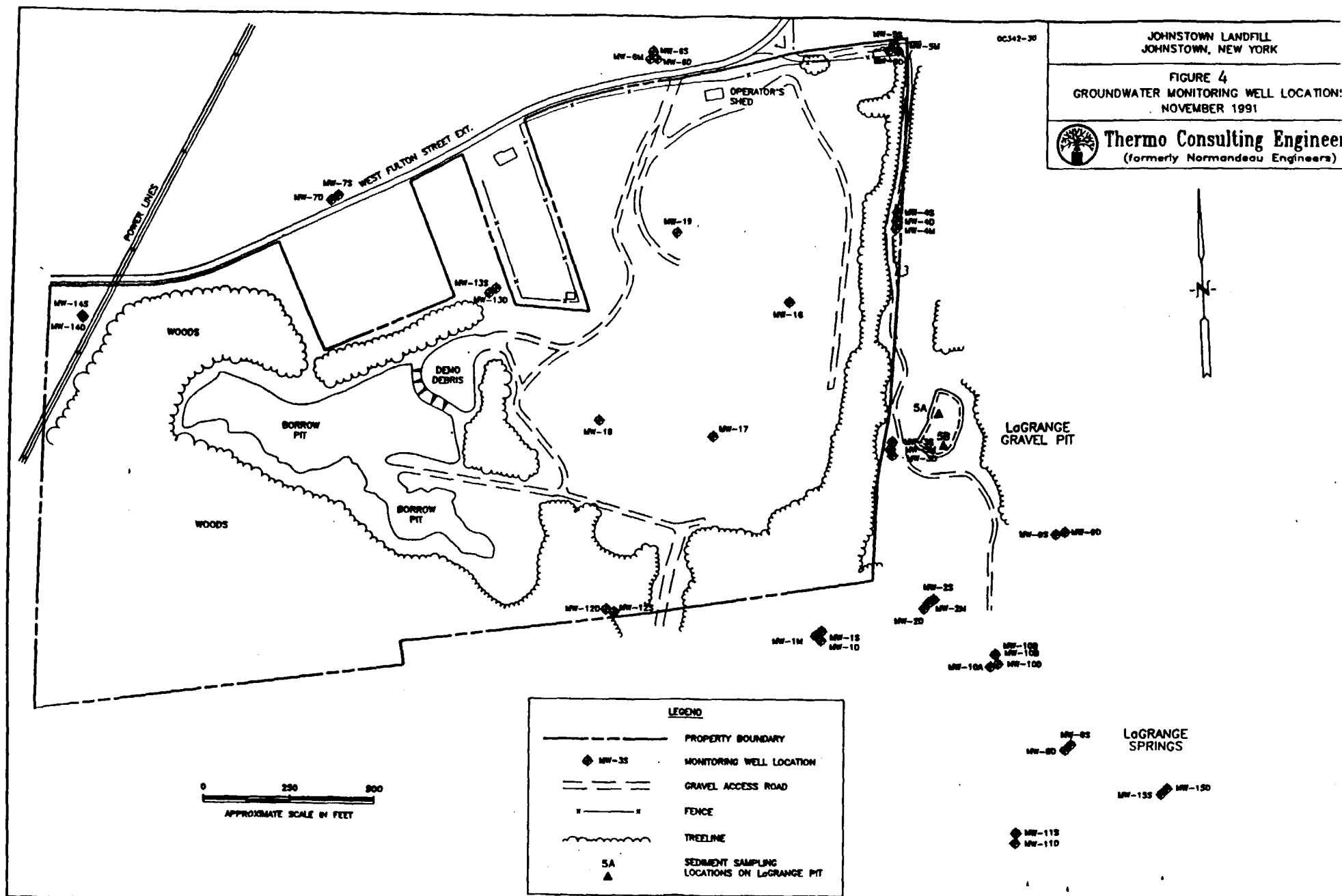
 **Thermo Consulting Engine**  
(formerly Normandeau Engineers)

0C342319

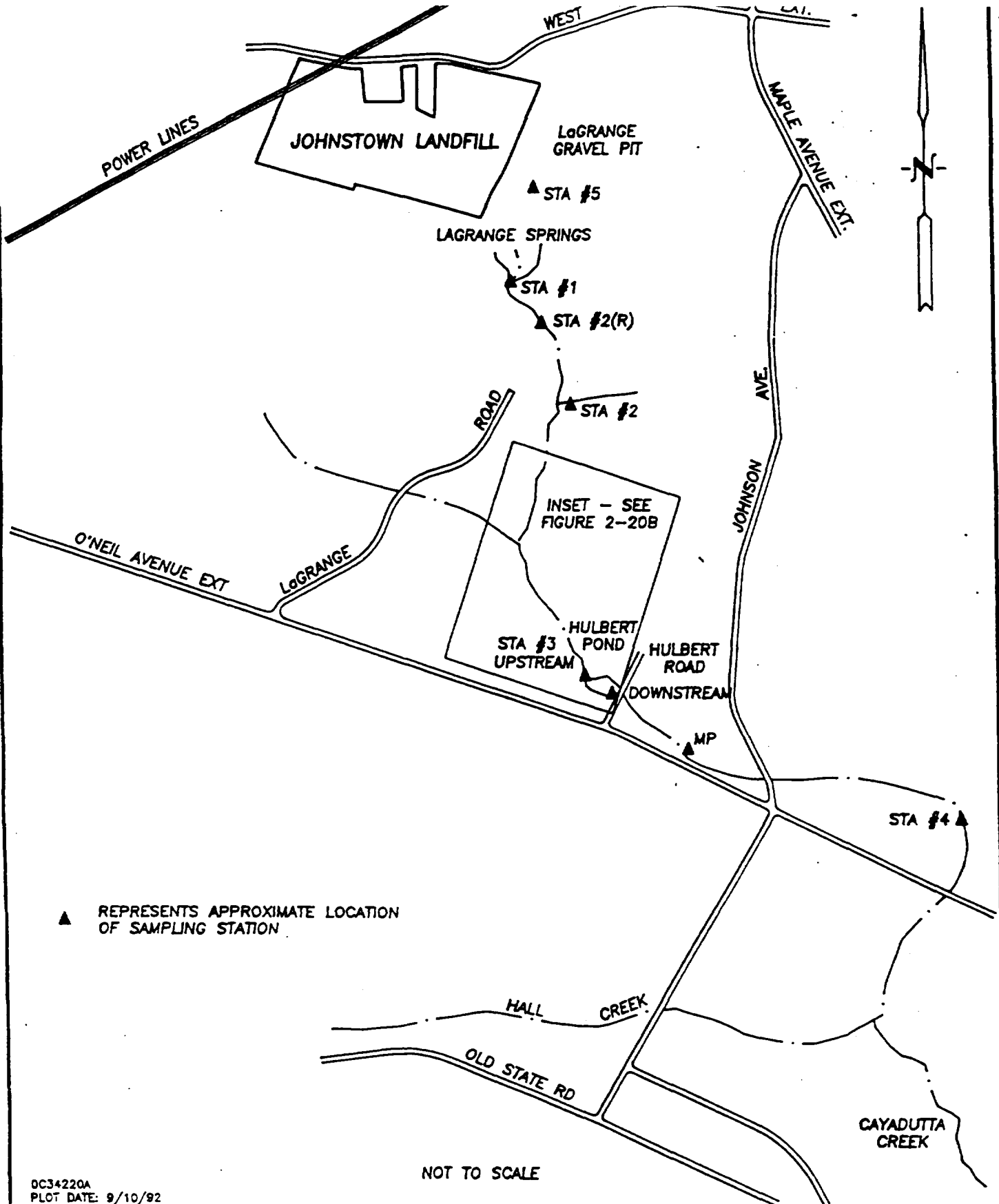
1000072

FIGURE 4  
GROUNDWATER MONITORING WELL LOCATION:  
NOVEMBER 1991

**Thermo Consulting Engineers**  
(formerly Normandeau Engineers)



1000073



DC34220A  
PLOT DATE: 9/10/92

JOHNSTOWN LANDFILL  
JOHNSTOWN, NEW YORK



**Thermo Consulting Engineers**  
(formerly Normandeau Engineers)

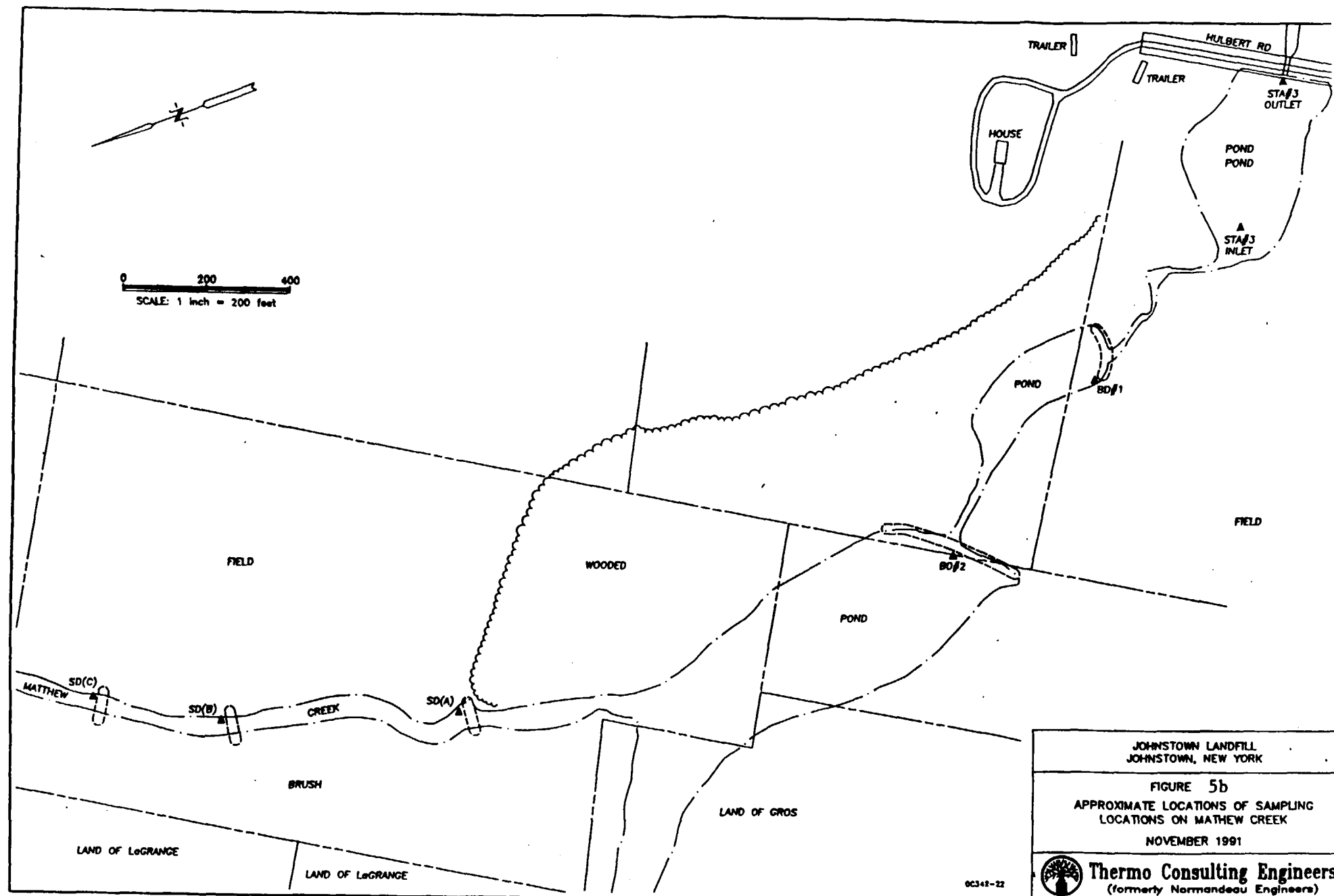
FIGURE 5a

APPROXIMATE LOCATIONS OF SAMPLING STATIONS  
ON LaGRANGE SPRINGS AND MATHEW CREEK

NOVEMBER 1991

1000074

1000075



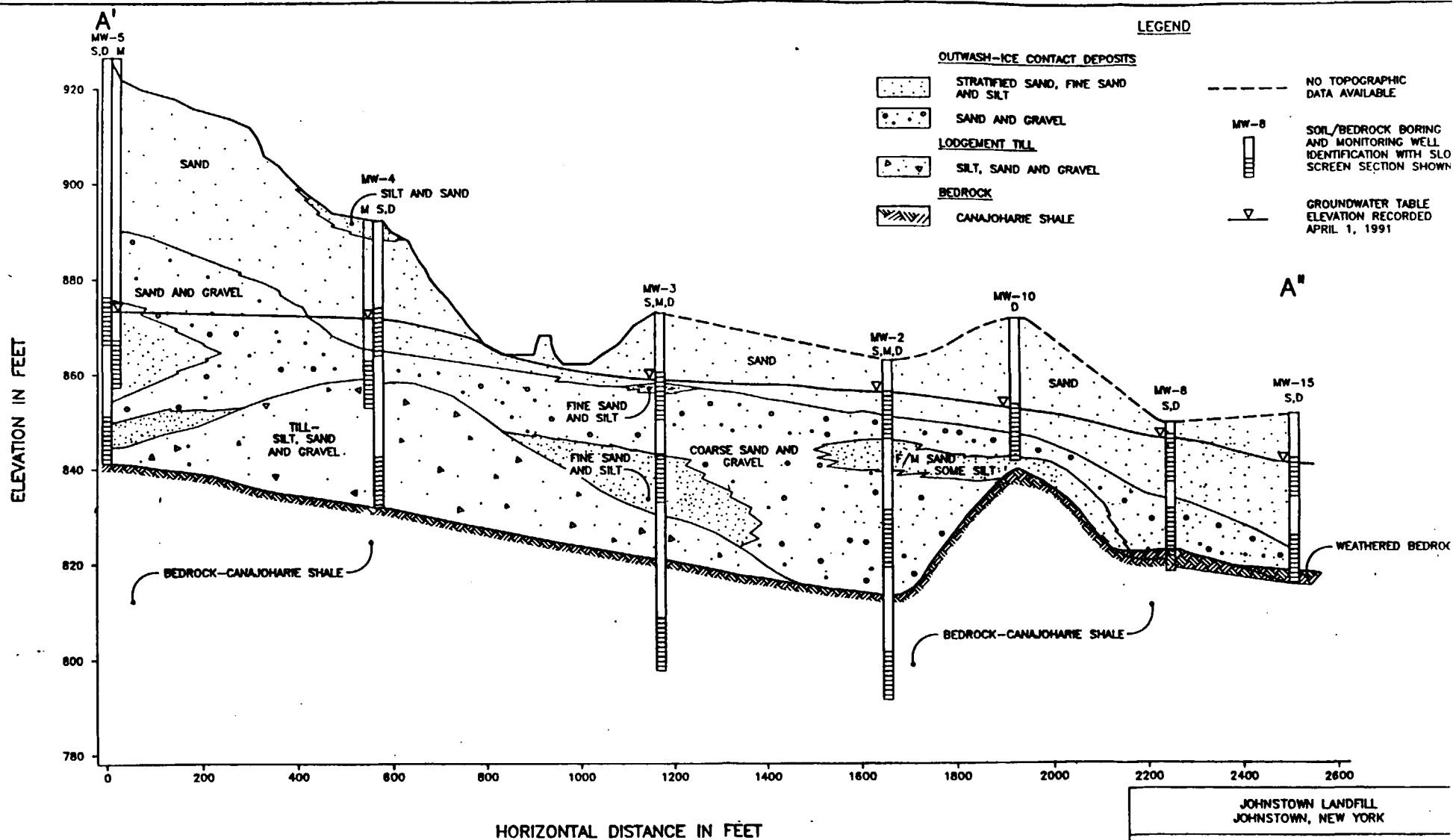
JOHNSTOWN LANDFILL  
JOHNSTOWN, NEW YORK

FIGURE 5b  
APPROXIMATE LOCATIONS OF SAMPLING  
LOCATIONS ON MATHEW CREEK  
NOVEMBER 1991



**Thermo Consulting Engineers**  
(formerly Normandeau Engineers)

0C342-22



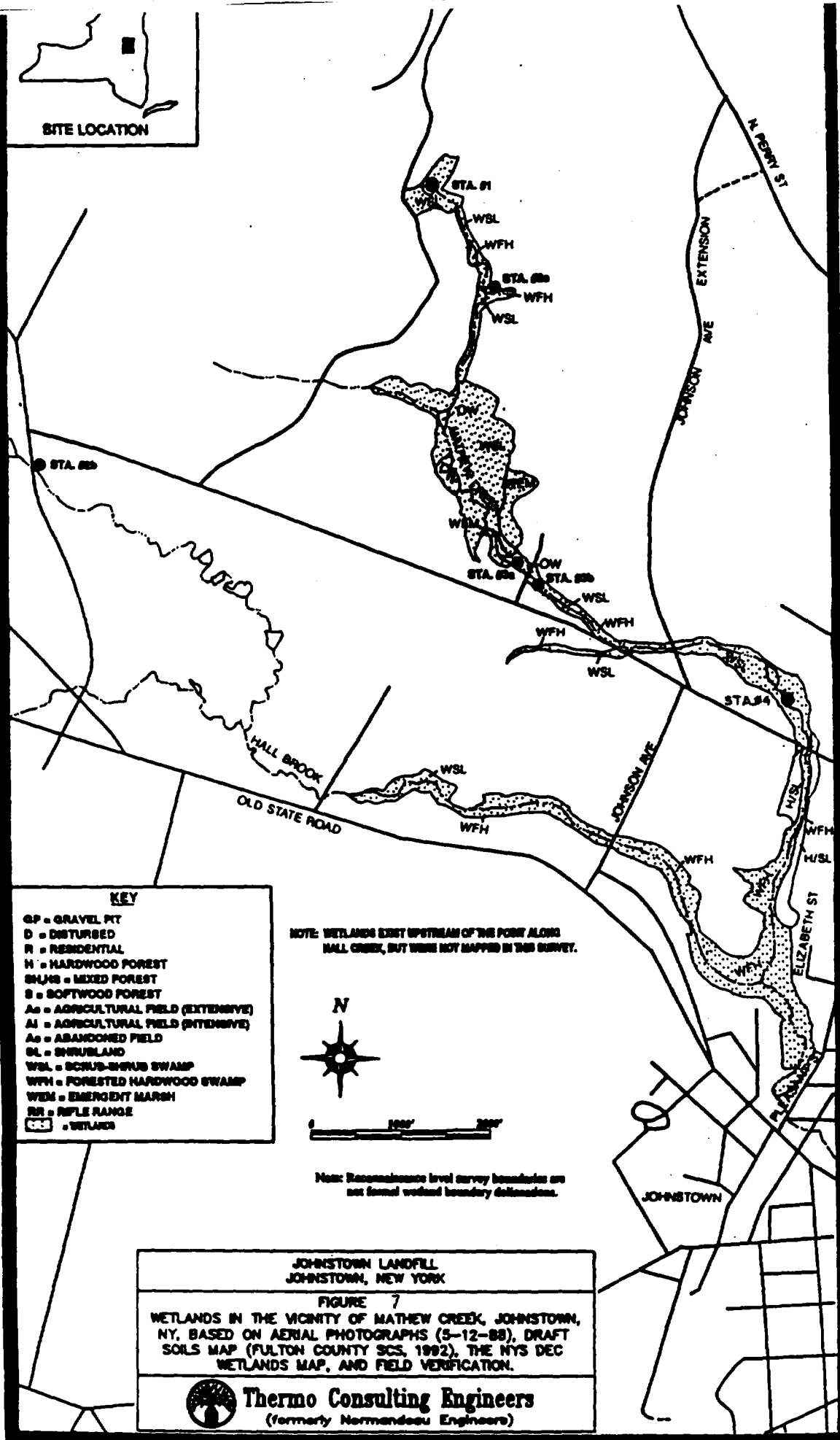
JOHNSTOWN LANDFILL  
JOHNSTOWN, NEW YORK

**FIGURE 6**  
GEOLOGIC CROSS SECTION OF SURFICIAL DEPOSITS AND BEDROCK ALONG TRANSECT A' - A'' LOCATED EAST OF THE JOHNSTOWN LANDFILL  
FEBRUARY 1992

**Thermo Consulting Engineers**  
(formerly Normandeau Engineers)

6C3424-2

1000076



1000077

APPENDIX II

TABLES

10,00078

## Tables

|          |                                                            |
|----------|------------------------------------------------------------|
| Table 1a | - Summary of Inorganic Ground Water and Surface Water Data |
| Table 1b | - Summary of Inorganic Soil Boring and Sediment Data       |
| Table 2a | - Summary of TCL VOC Ground Water and Surface Water Data   |
| Table 2b | - Summary of TCL VOC Soil Boring and Sediment Data         |
| Table 3a | - Summary of TCL SVOC Ground Water and Surface Water Data  |
| Table 3b | - Summary of TCL SVOC Soil Boring and Sediment Data        |
| Table 4  | - Summary of 3-Hour Air Quality Data for VOCs              |
| Table 5  | - Summary of Airborne Chromium Data                        |
| Table 6  | - Chemicals of Potential Concern                           |
| Table 7  | - Potential Exposure Pathways                              |
| Table 8  | - Noncarcinogenic Toxicity Values                          |
| Table 9  | - Summary of Noncancer Risks                               |
| Table 10 | - Carcinogenic Toxicity Values                             |
| Table 11 | - Summary of Cancer Risks                                  |

Table 1A: Nature and Source of Contaminants Profile  
Metals and Miscellaneous Inorganics  
Groundwater and Surface Water  
Johnstown Landfill, Johnstown, New York

| Parameter            | GROUND WATER<br>UPGRADIENT WELLS |        |         |       | GROUND WATER<br>LANDFILL WELLS |         |           |    | GROUND WATER<br>DOWNGRADIENT WELLS |        |           |         | GROUND WATER<br>RESIDENTIAL WELLS |       |         |             | SURFACE WATER<br>MATHEW CREEK |        |         |       | SURFACE WATER<br>LaGRANGE PIT |        |        |
|----------------------|----------------------------------|--------|---------|-------|--------------------------------|---------|-----------|----|------------------------------------|--------|-----------|---------|-----------------------------------|-------|---------|-------------|-------------------------------|--------|---------|-------|-------------------------------|--------|--------|
|                      | FREQ                             | LOW    | HIGH    | MW    | FREQ                           | LOW     | HIGH      | MW | FREQ                               | LOW    | HIGH      | MW      | FREQ                              | LOW   | HIGH    | RESIDENT    | FREQ                          | LOW    | HIGH    | STAT# | FREQ                          | LOW    | HIGH   |
| <b>METALS (µg/L)</b> |                                  |        |         |       |                                |         |           |    |                                    |        |           |         |                                   |       |         |             |                               |        |         |       |                               |        |        |
| Aluminum             | 27/27                            | 67     | 43,200  | 5S    | 3/3                            | 13,300  | 55,800    | 16 | 51/51                              | 83.8   | 104,000   | 11S     | 34/52                             | 16.0  | 1,410   | Gunnison    | 11/12                         | 34.9   | 363     | #2R   | 2/2                           | 192    | 357    |
| Antimony             | 2/27                             | 15.8   | 26.3    | 14D   | 0/3                            |         |           |    | 0/51                               |        |           |         | 8/52                              | 13.6  | 21.4    | Palmeteer   | 1/12                          |        | 13.9    | #1    | 1/2                           |        | 17     |
| Arsenic              | 22/27                            | 1.1    | 16.0    | 5S    | 3/3                            | 11.8    | 35.7      | 16 | 44/51                              | 0.8    | 49.5      | 3S      | 11/52                             | 0.30  | 1.8     | LaGrange    | 0/12                          |        |         |       | 1/2                           |        | 1.8    |
| Barium               | 26/27                            | 18.4   | 425     | 13D   | 3/3                            | 17.7    | 1,080     | 16 | 51/51                              | 41.6   | 694       | 15S     | 41/52                             | 2.1   | 555     | Gunnison    | 12/12                         | 27     | 72.8    | #1    | 2/2                           | 22.9   | 32.4   |
| Beryllium            | 7/27                             | 0.23   | 3.3     | 13D   | 3/3                            | 2.4     | 6.0       | 16 | 51/51                              | 0.37   | 9.2       | 11S     | 4/52                              | 0.21  | 0.45    | Hulbert     | 0/12                          |        |         |       | 0/2                           |        |        |
| Cadmium              | 16/27                            | 1.3    | 63.0    | 7D    | 3/3                            | 2.5     | 77.6      | 16 | 22/51                              | 1.1    | 11.4      | 3D      | 0/52                              |       |         |             | 0/12                          |        |         |       | 0/2                           |        |        |
| Calcium              | 27/27                            | 42,700 | 798,000 | 13D   | 3/3                            | 327,000 | 1,430,000 | 16 | 51/51                              | 35,300 | 1,610,000 | 3S      | 51/52                             | 87.8  | 121,000 | Pine Tree   | 12/12                         | 48,900 | 111,000 | #1    | 2/2                           | 64,800 | 86,200 |
| Chromium(T)          | 25/27                            | 3.5    | 187     | 13D   | 3/3                            | 145     | 2,330     | 16 | 46/51                              | 2.6    | 229       | 15S     | 1/52                              |       | 3.4     | Blanket     | 4/12                          | 3.7    | 7.2     | #4    | 2/2                           | 34     | 40.6   |
| Cobalt               | 13/27                            | 2.4    | 66      | 5S    | 3/3                            | 20.6    | 61.2      | 16 | 29/51                              | 2.2    | 121       | 1S      | 0/52                              |       |         |             | 1/12                          |        | 3.7     | #1    | 0/2                           |        |        |
| Copper               | 19/27                            | 3.5    | 266     | 13D   | 3/3                            | 104     | 259       | 16 | 30/51                              | 6.8    | 266       | 3S      | 22/52                             | 3.1   | 30.5    | Gunnison    | 0/12                          |        |         |       | 0/2                           |        |        |
| Iron                 | 27/27                            | 651    | 124,000 | 5S    | 3/3                            | 45,800  | 130,000   | 16 | 51/51                              | 58.0   | 202,000   | 3S      | 43/52                             | 53.0  | 6,840   | Gunnison    | 12/12                         | 63.7   | 4,940   | #4    | 2/2                           | 1,410  | 6,330  |
| Lead                 | 26/27                            | 1.0    | 65.3    | 5S    | 3/3                            | 34.0    | 487       | 16 | 45/51                              | 1.0    | 454       | 2S      | 18/52                             | 0.4   | 5.6     | Pine Tree   | 1/12                          |        | 5.9     | #4    | 1/2                           |        | 2.2    |
| Magnesium            | 27/27                            | 5,210  | 66,800  | 5S    | 3/3                            | 39,800  | 82,800    | 16 | 51/51                              | 4,900  | 80,400    | 2S      | 51/52                             | 33.9  | 26,100  | LaGrange    | 12/12                         | 6,480  | 15,000  | #2    | 2/2                           | 8,070  | 11,100 |
| Manganese            | 27/27                            | 24     | 4,630   | 5S    | 3/3                            | 1,350   | 2,570     | 16 | 51/51                              | 7.9    | 57,300    | 1S      | 46/52                             | 0.72  | 7,980   | Gunnison    | 12/12                         | 29.3   | 567     | #1    | 2/2                           | 63.9   | 944    |
| Mercury              | 2/27                             | 0.20   | 0.40    | 5S    | 3/3                            | 0.21    | 10.6      | 16 | 8/51                               | 0.25   | 0.49      | 1S      | 0/52                              |       |         |             | 0/12                          |        |         |       | 0/2                           |        |        |
| Nickel               | 18/27                            | 6.8    | 247     | 13D   | 3/3                            | 91.7    | 445       | 16 | 48/51                              | 7.6    | 332       | 3S      | 6/52                              | 6.6   | 13.6    | Pine Tree   | 3/12                          | 6.2    | 12      | #4    | 1/2                           |        | 12.6   |
| Potassium            | 27/27                            | 701    | 13,100  | 5S    | 3/3                            | 7,100   | 206,000   | 16 | 50/51                              | 1,070  | 19,500    | 3S      | 43/52                             | 818   | 13,500  | Blanket     | 12/12                         | 2,880  | 5,420   | #1    | 2/2                           | 9,780  | 23,000 |
| Selenium             | 0/27                             |        |         |       | 0/3                            |         |           |    | 0/51                               |        |           |         | 10/52                             | 0.5   | 1.4     | Forrester   | 2/12                          | 1.2    | 1.4     | #2R   | 0/2                           |        |        |
| Silver               | 0/27                             |        |         |       | 0/3                            |         |           |    | 0/51                               |        |           |         | 1/52                              |       | 2.5     | Wintersmute | 6/12                          |        |         |       | 0/2                           |        |        |
| Sodium               | 27/27                            | 1,800  | 98,800  | 6D    | 3/3                            | 13,300  | 423,000   | 16 | 51/51                              | 1,780  | 168,000   | 1S      | 62/52                             | 2,200 | 256,000 | Hannon      | 12/12                         | 14,700 | 70,800  | #2    | 2/2                           | 33,000 | 87,300 |
| Thallium             | 0/27                             |        |         |       | 1/3                            |         | 1.9       | 16 | 2/51                               | 1.0    | 2.7       | 1S      | 6/52                              | 0.7   | 1.6     | Schreppel   | 0/12                          |        |         |       | 0/2                           |        |        |
| Vanadium             | 21/27                            | 3.7    | 168     | 13D   | 2/3                            | 48.9    | 131       | 16 | 36/51                              | 4      | 270       | 15S     | 2/52                              | 6.5   | 7.2     | Wheeler     | 0/12                          |        |         |       | 2/2                           | 5.9    | 8      |
| Zinc                 | 27/27                            | 10.8   | 796     | 13D   | 3/3                            | 215     | 2,730     | 16 | 50/51                              | 3.6    | 479       | 15,3S   | 38/52                             | 4.2   | 750     | Pine Tree   | 3/12                          | 3.5    | 20.4    | #4    | 2/2                           | 16.8   | 263    |
| Cyanide              | 0/27                             |        |         |       | 1/3                            |         | 73        | 16 | 1/51                               |        | 10.2      | 1D      | 2/52                              | 16.0  | 29.2    | Wager       | 2/12                          | 34.8   | 41.0    | #3    | 0/2                           |        |        |
| Hexachrome           | 2/27                             | 30     | 30      | 6S, M | 0/3                            |         |           |    | 3/51                               | 20     | 40        | 1S      | 0/52                              |       |         |             | 0/12                          |        |         |       | 0/2                           |        |        |
| <b>INORG. (mg/L)</b> |                                  |        |         |       |                                |         |           |    |                                    |        |           |         |                                   |       |         |             |                               |        |         |       |                               |        |        |
| Sulfate              | 20/27                            | 7.41   | 103     | 5M    | 3/3                            | 11.5    | 13.2      | 16 | 38/51                              | 11.9   | 51.8      | 3D      | 45/52                             | 10.3  | 57.9    | Wager       | 10/12                         | 11.1   | 58.9    | #1    | 2/2                           | 18.9   | 29.2   |
| Chloride             | 25/27                            | 6.30   | 112     | 6D    | 3/3                            | 25.3    | 889       | 16 | 48/51                              | 3.17   | 215       | 3S      | 34/52                             | 3.1   | 164     | Pine Tree   | 12/12                         | 22.2   | 88.8    | #2    | 2/2                           | 40.3   | 136    |
| COO                  | 14/27                            | 11.2   | 968     | 13D   | 3/3                            | 19.3    | 652       | 16 | 29/51                              | 19.3   | 672       | 10S     | 5/52                              | 12.7  | 36.7    | Hulbert     | 0/12                          | 10.4   | 41      | #3    | 2/2                           | 25.2   | 219    |
| TDS                  | 27/27                            | 101    | 634     | 5S    | 3/3                            | 298     | 2,100     | 16 | 51/51                              | 134    | 1,330     | 3S      | 52/52                             | 82.0  | 1,180   | Wheeler     | 12/12                         | 202    | 463     | #1    | 2/2                           | 322    | 736    |
| Bicarbonate          | 27/27                            | 64.4   | 522     | 5S    | 3/3                            | 411     | 2,890     | 16 | 51/51                              | 74.4   | 760       | 3S      | 52/52                             | 67.5  | 560     | Pine Tree   | 12/12                         | 140    | 409     | #1    | 2/2                           | 245    | 315    |
| Carbonate            | 0/11                             |        |         |       | 0/3                            |         |           |    | 0/23                               |        |           |         | 12/36                             | 0.02  | 2.4     | LaGrange    | 0/4                           |        |         |       | 0/1                           |        |        |
| TOC                  | 11/11                            | 1.4    | 106     | 7D    | 3/3                            | 16.1    | 178       | 16 | 22/23                              | 0.64   | 68.7      | 1SD     |                                   |       |         |             | 4/4                           | 4.70   | 11.2    | #3    | 1/1                           |        | 6.15   |
| Hardness             | 11/11                            | 81.0   | 550     | 5S    | 3/3                            | 251     | 700       | 16 | 23/23                              | 106    | 448       | 4S      | 17/17                             | 74    | 328     | Pine Tree   | 4/4                           | 198    | 279     | #1    | 1/1                           |        | 197    |
| Ammonia-N            | 10/11                            | 0.05   | 15.9    | 5M    | 3/3                            | 33.8    | 472       | 16 | 23/23                              | 0.06   | 64.5      | 15S, 6D | 6/8                               | 0.010 | 5.5     | Pine Tree   | 4/4                           | 2.72   | 33.5    | #1    | 1/1                           |        | 11.2   |

Notes:

FREQ = Frequency of analyte detected above sample detection limits

LOW = Lowest concentration detected in each sampling category

HIGH = Highest concentration detected in each sampling category

MW, RESIDENCE, STAT# = Sample location where highest concentration of analyte was detected

UPGRADIENT WELLS:

DOWNGRADIENT WELLS:

LANDFILL WELLS:

CLUSTER MWs 5, 6, 7, 13, 14

CLUSTER MWs 1, 2, 3, 4, 8, 9, 10, 11, 12, 15

MW 16, 18, 19

1000030

Table 1B: Nature and Source of Contaminants Profile  
Metals and Miscellaneous Inorganics  
Soil Boring and Sediment Samples  
Johnstown Landfill, Johnstown, New York

|                | SOIL SAMPLES<br>UPGRADIENT BORINGS |        |        |     | SOIL SAMPLES<br>LANDFILL BORINGS |        |        |    | SOIL SAMPLES<br>DOWNGRADIENT BORINGS |       |        |     | SEDIMENT-ROUNDS 1 & 2<br>MATHEW CREEK |       |         |          | SEDIMENT-ROUND 3<br>MATHEW CREEK |        |         |            | SEDIMENT-ROUNDS 2 & 3<br>LaGRANGE PIT |        |         |
|----------------|------------------------------------|--------|--------|-----|----------------------------------|--------|--------|----|--------------------------------------|-------|--------|-----|---------------------------------------|-------|---------|----------|----------------------------------|--------|---------|------------|---------------------------------------|--------|---------|
| Parameter      | FREQ                               | LOW    | HIGH   | MW  | FREQ                             | LOW    | HIGH   | MW | FREQ                                 | LOW   | HIGH   | MW  | FREQ                                  | LOW   | HIGH    | STATION  | FREQ                             | LOW    | HIGH    | STATION    | FREQ                                  | LOW    | HIGH    |
| METALS (mg/Kg) |                                    |        |        |     |                                  |        |        |    |                                      |       |        |     |                                       |       |         |          |                                  |        |         |            |                                       |        |         |
| Aluminum       | 2/2                                | 3,800  | 5,710  | 14D | 3/3                              | 4,000  | 8,480  | 18 | 4/4                                  | 3,050 | 11,200 | 11D | 18/18                                 | 1,940 | 18,100  | #1,0-8"  | 18/18                            | 1,580  | 20,200  | BD#2,0-12" | 8/8                                   | 2,800  | 3,800   |
| Antimony       | 0/2                                |        |        |     | 1/3                              |        | 4.2    | 17 | 0/4                                  |       |        |     | 0/18                                  |       |         |          | 0/18                             |        |         |            | 0/8                                   |        |         |
| Arsenic        | 2/2                                | 0.7    | 1.4    | 14D | 3/3                              | 0.43   | 1.1    | 18 | 4/4                                  | 0.5   | 1.0    | 12D | 18/18                                 | 0.58  | 12.2    | #1,0-12" | 18/18                            | 0.78   | 91.0    | 2R,0-8"    | 8/8                                   | 0.30   | 2.2     |
| Barium         | 2/2                                | 14.4   | 21.3   | 14D | 3/3                              | 16.6   | 23.9   | 18 | 4/4                                  | 11.3  | 21.6   | 8D  | 18/18                                 | 12    | 316     | #1,0-8"  | 18/18                            | 19.3   | 198     | 2R,0-8"    | 8/8                                   | 8.9    | 25.4    |
| Beryllium      | 2/2                                | 0.38   | 0.53   | 14D | 3/3                              | 0.23   | 0.38   | 17 | 4/4                                  | 0.31  | 0.43   | 8D  | 13/18                                 | 0.08  | 0.63    | #3INLET  | 5/18                             | 0.17   | 0.58    | 2R,0-8"    | 3/8                                   | 0.21   | 0.29    |
| Cadmium        | 0/2                                |        |        |     | 0/3                              |        |        |    | 0/4                                  |       |        |     | 3/18                                  | 0.93  | 3.7     | #1,0-8"  | 18/18                            | 0.80   | 2.7     | BD#2,0-12" | 8/8                                   | 0.28   | 0.84    |
| Calcium        | 2/2                                | 12,800 | 63,400 | 13D | 3/3                              | 18,900 | 72,000 | 18 | 4/4                                  | 1,230 | 38,200 | 10D | 18/18                                 | 1,740 | 56,300  | #1,0-8"  | 18/18                            | 3,020  | 22,800  | BD(A),0-8" | 8/8                                   | 17,400 | 108,000 |
| Chromium(T)    | 2/2                                | 5.9    | 11.8   | 14D | 3/3                              | 6.3    | 30.0   | 18 | 4/4                                  | 5.2   | 11.5   | 11D | 18/18                                 | 1.9   | 33.6    | #1,0-8"  | 18/18                            | 2.8    | 18.5    | #3IN,0-8"  | 8/8                                   | 29.3   | 1,820   |
| Cobalt         | 2/2                                | 1.9    | 3.0    | 14D | 3/3                              | 2.2    | 3.0    | 18 | 4/4                                  | 1.8   | 4.0    | 11D | 14/18                                 | 2.5   | 39.3    | #1,0-8"  | 18/18                            | 1.7    | 13.1    | 2R,0-8"    | 8/8                                   | 2.2    | 8.5     |
| Copper         | 2/2                                | 4.5    | 10.1   | 14D | 3/3                              | 5.0    | 7.1    | 17 | 4/4                                  | 4.3   | 9.1    | 10D | 15/18                                 | 1.4   | 43.2    | #3INLET  | 18/18                            | 9.81   | 29.4    | #3IN,0-8"  | 8/8                                   | 5.4    | 17.2    |
| Iron           | 2/2                                | 4,880  | 9,710  | 14D | 3/3                              | 6,280  | 9,280  | 18 | 4/4                                  | 4,880 | 11,100 | 8D  | 18/18                                 | 8,100 | 121,000 | #1,0-8"  | 18/18                            | 5,280  | 39,700  | 2R,0-8"    | 8/8                                   | 5,840  | 8,840   |
| Lead           | 2/2                                | 1.7    | 3.8    | 14D | 3/3                              | 2.8    | 7.8    | 18 | 4/4                                  | 1.7   | 3.8    | 12D | 18/18                                 | 2.7   | 17.8    | #1,0-8"  | 18/18                            | 2.8    | 62.4    | #4,0-12"   | 8/8                                   | 3.3    | 63.4    |
| Magnesium      | 2/2                                | 3,100  | 6,780  | 14D | 3/3                              | 1,800  | 8,880  | 17 | 4/4                                  | 704   | 2,080  | 10D | 18/18                                 | 602   | 3,910   | #1,0-8"  | 18/18                            | 838    | 3,510   | MP,0-8"    | 8/8                                   | 1,980  | 2,580   |
| Manganese      | 2/2                                | 108    | 188    | 14D | 3/3                              | 120    | 188    | 17 | 4/4                                  | 78.5  | 224    | 12D | 18/18                                 | 41.8  | 4,220   | #1,0-12" | 18/18                            | 79.4   | 2,840   | 2R,0-8"    | 8/8                                   | 71.5   | 188     |
| Mercury        | 0/2                                |        |        |     | 0/3                              |        |        |    | 0/4                                  |       |        |     | 0/18                                  |       |         |          | 0/18                             | 0.10   | 0.43    | #3IN,0-8"  | 2/8                                   | 0.14   | 0.22    |
| Nickel         | 2/2                                | 4.4    | 10.9   | 14D | 3/3                              | 4.5    | 7.1    | 18 | 4/4                                  | 4.0   | 6.8    | 8D  | 14/18                                 | 1.9   | 60.6    | #1,0-8"  | 18/18                            | 3.0    | 21.9    | #1,0-12"   | 8/8                                   | 4.4    | 8.2     |
| Potassium      | 2/2                                | 1,880  | 1,810  | 14D | 3/3                              | 884    | 1,030  | 18 | 4/4                                  | 303   | 788    | 11D | 18/18                                 | 278   | 1,780   | #1,0-8"  | 18/18                            | 180    | 817     | BD(A),0-8" | 8/8                                   | 278    | 884     |
| Selenium       | 0/2                                |        |        |     | 0/3                              |        |        |    | 0/4                                  |       |        |     | 0/18                                  | 0.43  | 1.8     | #1,0-12" | 1/18                             |        | 0.71    | #1,0-12"   | 1/8                                   |        | 0.33    |
| Silver         | 0/2                                |        |        |     | 0/3                              |        |        |    | 0/4                                  |       |        |     | 0/18                                  |       |         |          | 2/18                             | 0.38   | 2.2     | BD(A),0-8" | 0/8                                   |        |         |
| Sodium         | 2/2                                | 348    | 385    | 14D | 3/3                              | 343    | 807    | 17 | 4/4                                  | 239   | 385    | 10D | 18/18                                 | 106   | 888     | #1,0-8"  | 18/18                            | 83.4   | 386     | BD(A),0-8" | 8/8                                   | 82.2   | 289     |
| Thallium       | 1/2                                |        | 0.21   | 14D | 0/3                              |        |        |    | 2/4                                  | 0.23  | 0.26   | 10D | 1/18                                  |       | 0.3     | #1,0-12" | 0/18                             |        |         |            | 1/8                                   |        | 0.24    |
| Vanadium       | 2/2                                | 7.1    | 17.3   | 14D | 3/3                              | 10.3   | 18.1   | 18 | 4/4                                  | 8.6   | 16.2   | 11D | 18/18                                 | 7.1   | 48.7    | #1,0-8"  | 18/18                            | 4.9    | 29.8    | BD#2,0-12" | 8/8                                   | 4.9    | 10.9    |
| Zinc           | 2/2                                | 12.5   | 18.9   | 14D | 3/3                              | 13.5   | 22.8   | 18 | 4/4                                  | 11.3  | 22.3   | 8D  | 18/18                                 | 13.1  | 86.7    | #1,0-8"  | 18/18                            | 12     | 180     | BD#2,0-12" | 8/8                                   | 24.7   | 108     |
| Cyanide        | NT                                 |        |        |     | 0/3                              |        |        |    | NT                                   |       |        |     | 3/18                                  | 1.1   | 1.4     | #2,0-8"  | 1/18                             |        | 8.7     | #3IN,0-8"  | 0/8                                   |        |         |
| Hexachrome     | 0/2                                |        |        |     | 0/3                              |        |        |    | 0/4                                  |       |        |     | 2/18                                  | 0.08  | 0.88    | #1,0-8"  | 1/18                             |        | 0.71    | #1,0-8"    | 0/8                                   |        |         |
| INORG. (mg/Kg) |                                    |        |        |     |                                  |        |        |    |                                      |       |        |     |                                       |       |         |          |                                  |        |         |            |                                       |        |         |
| Sulfate        | NT                                 |        |        |     | 1/3                              |        | 290    | 17 | 0/4                                  |       |        |     | 12/18                                 | 81.8  | 577     | #2,0-12" | 0/18                             |        |         |            | 3/8                                   | 274    | 337     |
| COD            | NT                                 |        |        |     | 2/3                              | 5,420  | 80,800 | 17 | 4/4                                  | 2,810 | 11,000 | 12D | 18/18                                 | 8,380 | 347,000 | #1,0-8"  | 18/18                            | 10,700 | 458,000 | BD#2,0-8"  | 8/8                                   | 2,000  | 62,500  |
| TOC            | NT                                 |        |        |     | NT                               |        |        |    |                                      |       |        |     | NT                                    |       |         |          | 11/18                            | 7,370  | >80,000 | BD,SD      | 4/4                                   | 6,740  | 58,890  |
| Ammonia-N      | NT                                 |        |        |     | NT                               |        |        |    |                                      |       |        |     | NT                                    |       |         |          | 18/18                            | 18.8   | 987     | 2R,0-8"    | 4/4                                   | 23.8   | 38.3    |

Notes:

FREQ = Frequency of analyte detected above sample detection limits

LOW = Lowest concentration detected in each sampling category

HIGH = Highest concentration detected in each sampling category

MW,STATION = Sample location where highest concentration of analyte was detected

NT = Not tested

UPGRADIENT BORINGS: MWs 5,6,7,13,14

DOWNGRADIENT BORINGS: MWs 1,2,3,4,5,9,10,11,12

LANDFILL BORINGS: MWs 18,17,18

1000081

Table 2A: Nature and Source of Contaminants Profile  
TCL Volatile Organic Compounds  
Groundwater and Surface Water  
Johnstown Landfill, Johnstown, New York

|                       | GROUND WATER<br>UPGRADIENT WELLS |     |       |    | GROUND WATER<br>LANDFILL WELLS |     |      |    | GROUND WATER<br>DOWNGRADIENT WELLS |     |       |        | GROUND WATER<br>RESIDENTIAL WELLS |     |      |                | SURFACE WATER<br>MATHEW CREEK |     |      |       | SURFACE WATER<br>LaGRANGE PIT |     |      |
|-----------------------|----------------------------------|-----|-------|----|--------------------------------|-----|------|----|------------------------------------|-----|-------|--------|-----------------------------------|-----|------|----------------|-------------------------------|-----|------|-------|-------------------------------|-----|------|
| Parameter             | FREQ                             | LOW | HIGH  | MW | FREQ                           | LOW | HIGH | MW | FREQ                               | LOW | HIGH  | MW     | FREQ                              | LOW | HIGH | RESIDENCE      | FREQ                          | LOW | HIGH | STAT# | FREQ                          | LOW | HIGH |
| VOC's (µg/L)          |                                  |     |       |    |                                |     |      |    |                                    |     |       |        |                                   |     |      |                |                               |     |      |       |                               |     |      |
| Acetone               | 12/27(B)                         | 2   | 2,800 | 7D | 1/3                            |     | 130  | 16 | 22/51(B)                           | 2   | 1,700 | 1D     | 6/52(B)                           | 3   | 6    | Gunnison       | 4/12(B)                       | 12  | 24   | #2    | 1/2                           |     | 12C  |
| Methylene Chloride    | 6/27(B)                          | 2   | 75    | 7D | 1/3                            |     | 26   | 16 | 14/51(B)                           | 0.8 | 44    | 2D     | 3/52(B)                           | 1   | 2    | PTIC, Gunnison | 3/12(B)                       | 2   | 3    | #1    | 1/2(B)                        |     | 8    |
| Trichloroethylene     | 6/27                             |     |       |    | 0/3                            |     |      |    | 0/51                               |     |       |        | 1/52                              |     | 2    | LaGrange       | 1/12                          |     | 1    | #3    | 0/2                           |     |      |
| 1,1,1 Trichloroethane | 1/27                             |     | 3     | 6S | 0/3                            |     |      |    | 0/51                               |     |       |        | 1/52                              |     | 3    | Schreppel      | 0/12                          |     |      |       | 0/2                           |     |      |
| Chloroform            | 4/27(B)                          | 0.6 | 3     | 7D | 0/3                            |     |      |    | 6/51(B)                            | 0.5 | 70    | 1M     | 0/52                              |     |      |                | 0/12                          |     |      |       | 0/2                           |     |      |
| Vinyl Chloride        | 1/27                             |     | 30    | 7S | 0/3                            |     |      |    | 1/51                               |     | 3     | 2D     | 0/52                              |     |      |                | 0/12                          |     |      |       | 0/2                           |     |      |
| Xylene                | 2/27                             | 2   | 12    | 6D | 2/3                            | 5   | 230  | 16 | 6/51                               | 0.3 | 4     | 3S     | 0/52                              |     |      |                | 0/12                          |     |      |       | 0/2                           |     |      |
| Benzene               | 1/27                             |     | 0.8   | 6D | 2/3                            | 0.9 | 8    | 16 | 7/51                               | 0.2 | 2     | 28,6D  | 0/52                              |     |      |                | 0/12                          |     |      |       | 1/2                           |     | 2    |
| Ethylbenzene          | 2/27                             | 0.7 | 2     | 6D | 2/3                            | 7   | 110  | 16 | 4/51                               | 0.6 | 2     | 3S     | 0/52                              |     |      |                | 0/12                          |     |      |       | 0/2                           |     |      |
| Chlorobenzene         | 1/27                             |     | 1     | 6D | 0/3                            |     |      |    | 2/51                               | 0.7 | 2     | 3S     | 0/52                              |     |      |                | 1/12                          |     | 0.7  | #4    | 0/2                           |     |      |
| 2-Butanone            | 6/27                             |     |       |    | 0/3                            |     |      |    | 1/51                               |     | 41    | 1D     | 0/52                              |     |      |                | 0/12                          |     |      |       | 1/2                           |     | 25C  |
| 4-Methyl-2-Pentanone  | 6/27                             |     |       |    | 0/3                            |     |      |    | 1/51                               |     | 7     | 3S     | 0/52                              |     |      |                | 0/12                          |     |      |       | 1/2                           |     | 46   |
| Vinyl Acetate         | 1/27                             |     | 0.7   | 6D | 0/3                            |     |      |    | 0/51                               |     |       |        | 0/52                              |     |      |                | 0/12                          |     |      |       | 0/2                           |     |      |
| 1,1-Dichloroethane    | 6/27                             |     |       |    | 0/3                            |     |      |    | 2/51                               |     | 0.2   | 18D,3S | 0/52                              |     |      |                | 0/12                          |     |      |       | 0/2                           |     |      |
| Styrene               | 6/27                             |     |       |    | 0/3                            |     |      |    | 2/51                               | 1   | 2     | 3M     | 0/52                              |     |      |                | 0/12                          |     |      |       | 0/2                           |     |      |
| Carbon Disulfide      | 1/27                             |     | 2     | 6D | 0/3                            |     |      |    | 6/51                               | 0.1 | 2     | 3M,D   | 4/52                              | 0.3 | 3    | LaGrange       | 0/12                          |     |      |       | 0/2                           |     |      |
| Toluene               | 4/27                             | 0.6 | 6     | 6D | 0/3                            |     |      |    | 5/51                               | 0.7 | 62    | 3S     | 1/52                              |     | 2    | Schreppel      | 4/12(B)                       | 1   | 2    | #1,2A | 1/2                           |     | 11   |
| Tetrachloroethylene   | 6/27                             |     |       |    | 0/3                            |     |      |    | 0/51                               |     |       |        | 0/52                              |     |      |                | 1/12                          |     | 7    | #3    | 0/2                           |     |      |
| 1,1-Dichloroethylene  | 6/27                             |     |       |    | 0/3                            |     |      |    | 0/51                               |     |       |        | 0/52                              |     |      |                | 0/12                          |     |      |       | 0/2                           |     |      |
| 1,2-Dichloroethylene  | 1/27                             |     | 2     | 6S | 0/3                            |     |      |    | 0/51                               |     |       |        | 0/52                              |     |      |                | 0/12                          |     |      |       | 0/2                           |     |      |

Notes:

FREQ = Frequency of analyte detected above sample detection limits  
LOW = Lowest concentration detected in each sampling category  
HIGH = Highest concentration detected in each sampling category  
MW, RESIDENCE, STAT# = Sample location where highest concentration of analyte was detected  
(B) = Flag indicates analyte was detected in method blanks for one or more of the samples

UPGRADIENT WELLS:  
DOWNGRADIENT WELLS:  
LANDFILL WELLS:

CLUSTER MWs 8,9,7,13,14  
CLUSTER MWs 1,2,3,4,6,9,10,11,12,15  
MWs 10,16,19

1000082

1000082

Table 2B: Nature and Source of Contaminants Profile  
TCL Volatile Organic Compounds  
Soil and Sediment Samples  
Johnstown Landfill, Johnstown, New York

|                       | SOIL BORINGS<br>UPGRADIENT WELLS |     |      |       | SOIL BORINGS<br>LANDFILL WELLS |     |      |    | SOIL BORINGS<br>DOWNGRADIENT WELLS |     |      |        | SEDIMENT<br>MATHEW CREEK<br>ROUNDS 1 & 2 |     |      |          | SEDIMENT<br>MATHEW CREEK<br>ROUND 3 |     |      |             | SEDIMENT<br>LaGRANGE PIT<br>ROUNDS 2 & 3 |     |      |
|-----------------------|----------------------------------|-----|------|-------|--------------------------------|-----|------|----|------------------------------------|-----|------|--------|------------------------------------------|-----|------|----------|-------------------------------------|-----|------|-------------|------------------------------------------|-----|------|
| Parameter             | FREQ                             | LOW | HIGH | MW    | FREQ                           | LOW | HIGH | MW | FREQ                               | LOW | HIGH | MW     | FREQ                                     | LOW | HIGH | STATION  | FREQ                                | LOW | HIGH | STATION     | FREQ                                     | LOW | HIGH |
| VOC's (µg/Kg)         |                                  |     |      |       |                                |     |      |    |                                    |     |      |        |                                          |     |      |          |                                     |     |      |             |                                          |     |      |
| Acetone               | 5/5(B)                           | 5   | 180  | 78    | 3/3(B)                         | 13  | 440  | 18 | 9/9(B)                             | 7   | 75   | 1D     | 18/18(B)                                 | 14  | 380  | #1,0-8"  | 18/18(B)                            | 18  | 130  | #3INLET     | 8/8(B)                                   | 18  | 90   |
| Methylene Chloride    | 3/5(B)                           | 2   | 8    | 130   | 3/3(B)                         | 4   | 7    | 18 | 7/7(B)                             | 2   | 5    | 2D     | 15/15(B)                                 | 2   | 28   | #1,0-8"  | 15/15(B)                            | 8   | 23   | #3INLET     | 5/5(B)                                   | 4   | 8    |
| Trichloroethylene     | 0/5                              |     |      |       | 0/3                            |     |      |    | 2/5                                | 7   | 9    | 12D    | 0/16                                     |     |      |          | 1/16                                |     | 18   | SD(5),0-12" | 0/5                                      |     |      |
| 1,1,1 Trichloroethane | 0/5                              |     |      |       | 0/3                            |     |      |    | 2/5                                | 4   | 5    | 10D    | 0/16                                     |     |      |          | 0/16                                |     |      |             | 0/5                                      |     |      |
| Chloroform            | 3/5                              | 1   | 1    | 5,6,7 | 0/3                            |     |      |    | 1/5                                |     | 1    | 1D     | 4/16(B)                                  | 0.8 | 2    | #1,8-12" | 0/16                                |     |      |             | 0/5                                      |     |      |
| Vinyl Chloride        | 0/5                              |     |      |       | 0/3                            |     |      |    | 0/5                                |     |      |        | 0/16                                     |     |      |          | 0/16                                |     |      |             | 0/5                                      |     |      |
| Xylene                | 0/5                              |     |      |       | 2/3                            | 10  | 15   | 18 | 2/5                                | 3   | 9    | 12D    | 0/16                                     |     |      |          | 0/16                                |     |      |             | 0/5                                      |     |      |
| Benzene               | 0/5                              |     |      |       | 1/3                            |     | 13   | 18 | 1/5                                |     | 0.8  | 12D    | 1/16                                     |     | 3    | #2,0-8"  | 0/16                                |     |      |             | 0/5                                      |     | 2    |
| Ethylbenzene          | 0/5                              |     |      |       | 2/3                            | 3   | 5    | 17 | 2/5                                | 1   | 2    | 12D    | 0/16                                     |     |      |          | 0/16                                |     |      |             | 0/5                                      |     |      |
| Chlorobenzene         | 0/5                              |     |      |       | 0/3                            |     |      |    | 0/5                                |     |      |        | 0/16                                     |     |      |          | 0/16                                |     |      |             | 0/5                                      |     |      |
| 2-Butanone            | 3/5(B)                           | 2   | 4    | 8D    | 2/3(B)                         | 7   | 350  | 18 | 3/5(B)                             | 2   | 3    | 12D    | 3/16                                     | 8   | 100  | #3 INLET | 11/16(B)                            | 2   | 32   | #3INLET     | 3/5(B)                                   | 3   | 90   |
| 4-Methyl-2-Pentanone  | 0/5                              |     |      |       | 1/3(B)                         |     | 14   | 18 | 0/5                                |     |      |        | 0/16                                     |     |      |          | 0/16                                |     |      |             | 1/5                                      |     | 15   |
| Vinyl Acetate         | 0/5                              |     |      |       | 0/3                            |     |      |    | 0/5                                |     |      |        | 0/16                                     |     |      |          | 0/16                                |     |      |             | 0/5                                      |     |      |
| 1,1-Dichloroethane    | 0/5                              |     |      |       | 0/3                            |     |      |    | 0/5                                |     |      |        | 0/16                                     |     |      |          | 0/16                                |     |      |             | 0/5                                      |     |      |
| Styrene               | 0/5                              |     |      |       | 0/3                            |     |      |    | 0/5                                |     |      |        | 0/16                                     |     |      |          | 0/16                                |     |      |             | 0/5                                      |     |      |
| Carbon Disulfide      | 0/5                              |     |      |       | 0/3                            |     |      |    | 0/5                                |     |      |        | 1/16                                     |     | 31   | #3 INLET | 1/16                                |     |      |             | 0/5                                      |     |      |
| Toluene               | 3/5(B)                           | 0.5 | 2    | 14D   | 2/3                            | 19  | 51   | 18 | 5/5                                | 0.8 | 2    | 3D     | 3/16                                     | 2   | 3    | #1,3IN.  | 3/16                                | 4   | 8    | #4,0-8"     | 2/5                                      | 3   | 23   |
| Tetrachloroethylene   | 1/5                              |     | 3    | 78    | 0/3                            |     |      |    | 5/5                                | 0.7 | 2    | 1D,3D  | 0/16                                     |     |      |          | 0/16                                |     |      |             | 0/5                                      |     |      |
| 1,1-Dichloroethylene  | 0/5                              |     |      |       | 0/3                            |     |      |    | 2/5                                |     | 0.9  | 3D,11D | 0/16                                     |     |      |          | 0/16                                |     |      |             | 0/5                                      |     |      |
| 1,2-Dichloroethylene  | 0/5                              |     |      |       | 0/3                            |     |      |    | 0/5                                |     |      |        | 0/16                                     |     |      |          | 0/16                                |     |      |             | 0/5                                      |     |      |

Notes:

FREQ = Frequency of analyte detected above sample detection limits

LOW = Lowest concentration detected in each sampling category

HIGH = Highest concentration detected in each sampling category

MW, STATION = Sample location where highest concentration of analyte was detected

(B) = Flag indicates analyte was detected in method blanks for one or more of the samples

UPGRADIENT BORINGS: MWs 5,6,7,13,14

DOWNGRADIENT BORINGS: MWs 1,2,3,4,8,9,10,11,12

LANDFILL BORINGS: MWs 16,17,18

1000083

Table 3A: Nature and Source of Contaminants Profile  
TCL Semi-Volatile Organics and Pesticides  
Groundwater and Surface Water  
Johnstown Landfill, Johnstown, New York

| Parameter                  | GROUND WATER<br>UPGRADIENT WELLS |     |      |      | GROUND WATER<br>LANDFILL WELLS |     |      |    | GROUND WATER<br>DOWNGRADIENT WELLS |     |      |       | GROUND WATER<br>RESIDENTIAL WELLS |     |      |           | SURFACE WATER<br>MATHEW CREEK |     |      |       | SURFACE WATER<br>LaGRANGE PIT |     |      |
|----------------------------|----------------------------------|-----|------|------|--------------------------------|-----|------|----|------------------------------------|-----|------|-------|-----------------------------------|-----|------|-----------|-------------------------------|-----|------|-------|-------------------------------|-----|------|
|                            | FREQ                             | LOW | HIGH | MW   | FREQ                           | LOW | HIGH | MW | FREQ                               | LOW | HIGH | MW    | FREQ                              | LOW | HIGH | RESIDENCE | FREQ                          | LOW | HIGH | STAT# | FREQ                          | LOW | HIGH |
| SVOC's (µg/L)              |                                  |     |      |      |                                |     |      |    |                                    |     |      |       |                                   |     |      |           |                               |     |      |       |                               |     |      |
| Phenol                     | 0/19                             |     |      |      | 0/3                            |     |      |    | 0/37                               |     |      |       | 0/39                              |     |      |           | 0/8                           |     |      |       | 1/1                           |     | 4    |
| Benzyl alcohol             | 0/19                             |     |      |      | 0/3                            |     |      |    | 0/37                               |     |      |       | 0/39                              |     |      |           | 0/8                           |     |      |       | 1/1                           |     |      |
| 1,2-Dichlorobenzene        | 0/19                             |     |      |      | 1/3                            |     | 2    | 16 | 0/37                               |     |      |       | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| 4-Methylphenol             | 0/19                             |     |      |      | 0/3                            |     |      |    | 1/37                               |     | 4    | 3S    | 0/39                              |     |      |           | 0/8                           |     |      |       | 1/1                           |     | 1    |
| Benzoic acid               | 0/19                             |     |      |      | 2/3                            | 2   | 8    | 19 | 7/37                               | 2   | 4    | 155,8 | 0/39                              |     |      |           | 0/8                           |     |      |       | 1/1                           |     | 19   |
| Naphthalene                | 1/19                             |     | 0.6  | 6D   | 2/3                            | 1   | 21   | 16 | 0/37                               |     |      |       | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| 2-Methylnaphthalene        | 0/19                             |     |      |      | 1/3                            |     | 2    | 18 | 0/37                               |     |      |       | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Dimethylphthalate          | 1/19                             |     | 0.7  | 6S   | 0/3                            |     |      |    | 1/37                               |     | 0.4  | 2S    | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Diethylphthalate           | 0/19(B)                          | 0.8 | 2    | 6S,D | 1/3                            |     | 2    | 19 | 15/37(B)                           | 0.6 | 8    | 11D   | 1/39                              |     | 2    | Forester  | 7/8(B)                        | 0.4 | 1    | #1,3  | 1/1(B)                        |     | 2    |
| N-Nitrosodiphenylamine(1)  | 0/19                             |     |      |      | 0/3                            |     |      |    | 1/37                               |     | 4    | 11D   | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Phenanthrene               | 0/19                             |     |      |      | 1/3                            |     | 1    | 18 | 2/37                               | 0.5 | 3    | 11D   | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Anthracene                 | 0/19                             |     |      |      | 0/3                            |     |      |    | 2/37                               | 0.6 | 3    | 11D   | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Di-n-butylphthalate        | 0/19(B)                          | 0.5 | 3    | 6D   | 2/3                            | 1   | 2    | 18 | 16/37(B)                           | 0.4 | 11   | 11D   | 6/39(B)                           | 0.8 | 2    | Forester  | 5/8(B)                        | 0.4 | 0.7  | #4    | 1/1(B)                        |     | 2    |
| Fluoranthene               | 0/19                             |     |      |      | 1/3                            |     | 2    | 18 | 2/37                               | 0.7 | 7    | 11D   | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Pyrene                     | 0/19                             |     |      |      | 1/3                            |     | 2    | 18 | 2/37(B)                            | 1   | 7    | 11D   | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Butylbenzylphthalate       | 2/19                             | 0.2 | 0.4  | 6D   | 0/3                            |     |      |    | 4/37(B)                            | 0.3 | 7    | 11D   | 0/39                              |     |      |           | 0/8                           |     |      |       | 1/1                           |     | 0    |
| 3,3'-Dichlorobenzidine     | 0/19                             |     |      |      | 0/3                            |     |      |    | 1/37                               |     | 7    | 11D   | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Benzo(a)anthracene         | 0/19                             |     |      |      | 0/3                            |     |      |    | 2/37                               | 0.8 | 4    | 11D   | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Chrysene                   | 0/19                             |     |      |      | 0/3                            |     |      |    | 2/37                               | 1   | 2    | 11D   | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| bis(2-Ethylhexyl)phthalate | 18/19(B)                         | 2   | 33   | 6S   | 3/3(B)                         | 8   | 24   | 18 | 37/37(B)                           | 2   | 188  | 3D    | 34/39(B)                          | 2   | 88   | Palmer    | 7/8(B)                        | 0.7 | 18   | #1    | 1/1(B)                        |     | 1    |
| Di-n-octylphthalate        | 4/19                             | 0.3 | 4    | 6M   | 1/3                            |     | 0.8  | 19 | 8/37(B)                            | 0.3 | 8    | 11D   | 5/39                              | 3   | 18   | Paul      | 0/8                           |     |      |       | 1/1                           |     | 0    |
| Benzo(b)fluoranthene       | 0/19                             |     |      |      | 0/3                            |     |      |    | 2/37(B)                            | 0.6 | 6    | 11D   | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Benzo(k)fluoranthene       | 0/19                             |     |      |      | 0/3                            |     |      |    | 1/37(B)                            |     | 0.8  | 18S   | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Benzo(a)pyrene             | 0/19                             |     |      |      | 0/3                            |     |      |    | 2/37(B)                            | 0.7 | 4    | 11D   | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Indeno(1,2,3-cd)pyrene     | 0/19                             |     |      |      | 0/3                            |     |      |    | 1/37(B)                            |     |      | 11D   | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| PESTICIDES (µg/L)          |                                  |     |      |      |                                |     |      |    |                                    |     |      |       |                                   |     |      |           |                               |     |      |       |                               |     |      |
| delta-BHC                  | 0/19                             |     |      |      | 0/3                            |     |      |    | 1/37                               |     | 0.04 | 8S    | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Endosulfan I               | 0/19                             |     |      |      | 0/3                            |     |      |    | 1/37                               |     | 0.06 | 11D   | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Dieldrin                   | 0/19                             |     |      |      | 1/3                            |     | 0.01 | 18 | 0/37                               |     |      |       | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| 4,4'-DDE                   | 0/19                             |     |      |      | 1/3                            |     | 0.19 | 18 | 0/37                               |     |      |       | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| 4,4'-DDD                   | 0/19                             |     |      |      | 1/3                            |     | 0.36 | 18 | 0/37                               |     |      |       | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| 4,4'-DDT                   | 0/19                             |     |      |      | 1/3                            |     | 0.03 | 18 | 0/37                               |     |      |       | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| alpha-Chlordane            | 0/19                             |     |      |      | 1/3                            |     | 0.06 | 18 | 0/37                               |     |      |       | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| gamma-Chlordane            | 0/19                             |     |      |      | 1/3                            |     | 0.05 | 18 | 0/37                               |     |      |       | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| gamma-BHC                  | 0/19                             |     |      |      | 0/3                            |     |      |    | 0/37                               |     |      |       | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Heptachlor                 | 0/19                             |     |      |      | 0/3                            |     |      |    | 0/37                               |     |      |       | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Aldrin                     | 0/19                             |     |      |      | 0/3                            |     |      |    | 0/37                               |     |      |       | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Heptachlor Epoxide         | 0/19                             |     |      |      | 0/3                            |     |      |    | 0/37                               |     |      |       | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |
| Endrin                     | 0/19                             |     |      |      | 0/3                            |     |      |    | 0/37                               |     |      |       | 0/39                              |     |      |           | 0/8                           |     |      |       | 0/1                           |     |      |

Notes:

FREQ = Frequency of analyte detected above sample detection limits

LOW = Lowest concentration detected in each sampling category

HIGH = Highest concentration detected in each sampling category

MW, RESIDENCE, STAT# = Sample location where highest concentration of analyte was detected

(B) = Flag indicates analyte was detected in method blanks for one or more of the samples

UPGRADIENT WELLS:

DOWNGRADIENT WELLS:

LANDFILL WELLS:

CLUSTER MWs 5, 6, 7, 13, 14

CLUSTER MWs 1, 2, 3, 4, 8, 9, 10, 11, 12, 15

MWs 16, 18, 19

1000084

Table 38: Nature and Source of Contaminants Profile  
TCL Semi-Volatile Organics and Pesticides  
Soil and Sediment Samples  
Johnstown Landfill, Johnstown, New York

| Parameter                  | SOIL BORINGS<br>LANDFILL WELLS |     |       |    | SEDIMENT SAMPLES<br>MATHEW CREEK<br>ROUND 1 |     |       |         | SEDIMENT SAMPLES<br>MATHEW CREEK<br>ROUND 2 |     |      |         | SEDIMENT SAMPLES<br>L-GRANGE PIT<br>ROUNDS 1 & 2 |     |       |
|----------------------------|--------------------------------|-----|-------|----|---------------------------------------------|-----|-------|---------|---------------------------------------------|-----|------|---------|--------------------------------------------------|-----|-------|
|                            | FREQ                           | LOW | HIGH  | MW | FREQ                                        | LOW | HIGH  | STAT    | FREQ                                        | LOW | HIGH | STAT    | FREQ                                             | LOW | HIGH  |
| SVOC's (µg/Kg)             |                                |     |       |    |                                             |     |       |         |                                             |     |      |         |                                                  |     |       |
| Acenaphthene               | 0/3                            |     |       |    | 0/3                                         |     |       |         | 0/3                                         |     |      |         | 1/2                                              |     | 44    |
| Dibenzofuran               | 0/3                            |     |       |    | 0/3                                         |     |       |         | 0/3                                         |     |      |         | 1/2                                              |     | 48    |
| Fluorene                   | 0/3                            |     |       |    | 0/3                                         |     |       |         | 0/3                                         |     |      |         | 2/2                                              | 15  | 81    |
| Acenaphthylene             | 0/3                            |     |       |    | 0/3                                         |     |       |         | 1/8                                         |     | 12   | #4,8-12 | 2/2                                              | 11  | 42    |
| Benzoic acid               | 2/3                            | 120 | 380   | 18 | 6/8                                         | 32  | 4,500 | #1,6-8  | 7/8                                         | 28  | 480  | #1,6-12 | 0/2                                              |     |       |
| Naphthalene                | 1/3                            |     | 410   | 18 | 0/3                                         |     |       |         | 1/8                                         |     | 15   | #4,8-12 | 2/2                                              | 170 | 1,400 |
| 2-Methylnaphthalene        | 0/3                            |     |       |    | 0/3                                         |     |       |         | 1/8                                         |     | 8    | #4,8-12 | 2/2                                              | 40  | 320   |
| Dimethylphthalate          | 0/3                            |     |       |    | 0/3                                         |     |       |         | 1/8                                         |     | 18   | #3,OUT  | 0/2                                              |     |       |
| Diethylphthalate           | 1/3                            |     | 700   | 18 | 2/8                                         | 80  | 82    | #4,8-12 | 6/8(B)                                      | 18  | 88   | #1,6-8  | 2/2(B)                                           | 52  | 71    |
| N-Nitrosodiphenylamine(1)  | 0/3                            |     |       |    | 0/3                                         |     |       |         | 0/3                                         |     |      |         | 0/2                                              |     |       |
| Phenanthrene               | 0/3                            |     |       |    | 2/8(B)                                      | 31  | 180   | #1,6-8  | 4/8                                         | 37  | 220  | #4,8-12 | 2/2                                              | 88  | 170   |
| Anthracene                 | 0/3                            |     |       |    | 0/3                                         |     |       |         | 3/8                                         | 20  | 81   | #4,8-12 | 2/2                                              | 18  | 81    |
| Di-n-butylphthalate        | 1/3                            |     | 700   | 18 | 1/8(B)                                      |     | 87    | #4,8-12 | 8/8(B)                                      | 23  | 80   | #1,6-8  | 1/2(B)                                           |     | 41    |
| Fluoranthene               | 0/3                            |     |       |    | 3/8(B)                                      | 40  | 370   | #1,6-8  | 8/8                                         | 18  | 280  | #4,8-12 | 2/2                                              | 88  | 150   |
| Pyrene                     | 0/3                            |     |       |    | 4/8(B)                                      | 21  | 210   | #1,6-8  | 6/8(B)                                      | 18  | 210  | #4,8-12 | 2/2                                              | 71  | 150   |
| Butylbenzylphthalate       | 1/3                            |     | 700   | 17 | 0/8                                         |     |       |         | 2/8(B)                                      | 8   | 36   | #3,IN   | 0/2                                              |     |       |
| 3,3'-Dichlorobenzidine     | 0/3                            |     |       |    | 0/8                                         |     |       |         | 0/8                                         |     |      |         | 0/2                                              |     |       |
| Benzo(a)anthracene         | 0/3                            |     |       |    | 1/8(B)                                      |     | 170   | #1,6-8  | 4/8                                         | 22  | 83   | #4,8-12 | 2/2                                              | 48  | 84    |
| Chrysene                   | 0/3                            |     |       |    | 1/8(B)                                      |     | 170   | #1,6-8  | 4/8                                         | 22  | 118  | #4,8-12 | 2/2                                              | 48  | 88    |
| bis(2-Ethylhexyl)phthalate | 3/3(B)                         | 408 | 1,160 | 18 | 8/8(B)                                      | 44  | 180   | #4,8-12 | 8/8(B)                                      | 88  | 148  | #3,IN   | 2/2(B)                                           | 430 | 880   |
| Di-n-octylphthalate        | 1/3                            |     | 42    | 18 | 1/8                                         |     | 15    | #4,8-12 | 8/8                                         | 12  | 180  | #3,IN   | 2/2(B)                                           | 45  | 270   |
| Benzo(b)fluoranthene       | 0/3                            |     |       |    | 2/8(B)                                      | 18  | 160   | #1,6-8  | 3/8                                         | 48  | 75   | #4,8-8  | 2/2                                              | 43  | 240   |
| Benzo(k)fluoranthene       | 0/3                            |     |       |    | 0/8                                         |     |       |         | 2/8                                         | 88  | 88   | #3,OUT  | 1/2                                              |     | 180   |
| Benzo(a)pyrene             | 0/3                            |     |       |    | 1/8                                         |     | 18    | #4,8-12 | 3/8                                         | 48  | 70   | #4,8-12 | 1/2                                              |     | 43    |
| Indeno(1,2,3-cd)pyrene     | 0/3                            |     |       |    | 0/8                                         |     | 8     | #4,8-12 | 0/8                                         |     |      |         | 0/2                                              |     |       |
| Benzo(g,h,i)perylene       | 0/3                            |     |       |    | 0/8                                         |     |       |         | 1/8                                         |     | 4    | #4,8-12 | 0/2                                              |     |       |
| Isothorone                 | 0/3                            |     |       |    | 0/8                                         |     |       |         | 2/8                                         | 7   | 8    | #3,OUT  | 0/2                                              |     |       |
| PESTICIDES (µg/Kg)         |                                |     |       |    |                                             |     |       |         |                                             |     |      |         |                                                  |     |       |
| gamma-BHC                  | 1/3                            |     | 4.1   | 18 | 0/8                                         |     |       |         | 0/8                                         |     |      |         | 0/2                                              |     |       |
| delta-BHC                  | 1/3                            |     | 4.5   | 18 | 1/8                                         |     | 13    | #3,IN   | 0/8                                         |     |      |         | 0/2                                              |     |       |
| Endosulfan 1               | 1/3                            |     | 14    | 18 | 0/8                                         |     |       |         | 0/8                                         |     |      |         | 0/2                                              |     |       |
| Dieldrin                   | 1/3                            |     | 17    | 18 | 0/8                                         |     |       |         | 0/8                                         |     |      |         | 0/2                                              |     |       |
| 4,4'-DDE                   | 2/3                            | 11  | 25    | 18 | 4/8                                         | 2.1 | 8.8   | #1,6-8  | 4/8                                         | 2.8 | 12   | #1,6-8  | 2/2                                              | 38  | 170   |
| 4,4'-DDD                   | 1/3                            |     | 37    | 18 | 0/8                                         |     |       |         | 0/8                                         |     |      |         | 2/2                                              | 13  | 88    |
| 4,4'-DDT                   | 2/3                            | 14  | 18    | 18 | 0/8                                         |     |       |         | 0/8                                         |     |      |         | 0/2                                              |     |       |
| alpha-Chlordane            | 0/3                            |     |       |    | 0/8                                         |     |       |         | 0/8                                         |     |      |         | 0/2                                              |     |       |
| gamma-Chlordane            | 0/3                            |     |       |    | 0/8                                         |     |       |         | 0/8                                         |     |      |         | 0/2                                              |     |       |
| Heptachlor                 | 1/3                            |     | 4.4   | 18 | 0/8                                         |     |       |         | 0/8                                         |     |      |         | 1/2                                              |     | 3.7   |
| Aldrin                     | 1/3                            |     | 8.8   | 18 | 0/8                                         |     |       |         | 0/8                                         |     |      |         | 1/2                                              |     | 1.8   |
| Heptachlor Epoxide         | 1/3                            |     | 14    | 18 | 0/8                                         |     |       |         | 0/8                                         |     |      |         | 0/2                                              |     |       |
| Endrin                     | 1/3                            |     | 21    | 18 | 0/8                                         |     |       |         | 0/8                                         |     |      |         | 0/2                                              |     |       |

Notes:

FREQ = Frequency of analyte detected above sample detection limits  
LOW = Lowest concentration detected in each sampling category  
HIGH = Highest concentration detected in each sampling category  
MW, STAT# = Sample location where highest concentration of analyte was detected

UPGRADIENT BORING : MWs 8,9,7,13,14  
DOWNGRADIENT BORING : MWs 1,2,3,4,8,9,10,11,12  
LANDFILL BORING : MWs 18,17,18  
(B) = Flag indicates analyte was detected in method blanks for one or more of the samples

1000085

Table 4 : Summary Results of 3-Hour Air Quality Sampling For VOCs  
Johnstown Landfill, Johnstown, New York, September, 1989.

|                        | Station<br>No. ST-1 |       |       |       | Station<br>No. ST-2 |       |       |       | Station<br>No. ST-3 |       |       |       | Occupat.<br>Value*<br>(24-HR) | AGC**<br>(annual) |
|------------------------|---------------------|-------|-------|-------|---------------------|-------|-------|-------|---------------------|-------|-------|-------|-------------------------------|-------------------|
| Date Sampled           | 9/13                | 9/13  | 9/21  | 9/21  | 9/13                | 9/13  | 9/21  | 9/21  | 9/13                | 9/13  | 9/21  | 9/21  |                               |                   |
| Sample Number          | T-2                 | T-3   | T-8   | T-9   | T-4                 | T-5   | T-10  | T-11  | T-6                 | T-7   | T-12  | T-13  |                               |                   |
| Pump Flow Rate (L/min) | 0.104               | 0.251 | 0.100 | 0.251 | 0.100               | 0.253 | 0.102 | 0.253 | 0.102               | 0.252 | 0.104 | 0.252 |                               |                   |
| Parameter              |                     |       |       |       |                     |       |       |       |                     |       |       |       |                               |                   |
| Acetone                | 3.05                | 2.44  | 6.11  | ND    | ND                  | 1.00  | 1.22  | ND    | 4.44                | 20.56 | ND    | ND    | 1.78E6                        | 35,000(c)         |
| Benzene                | 1.84                | 1.02  | 1.11  | 0.64  | 1.89                | 0.74  | ND    | ND    | 0.69                | 1.44  | 1.53  | 0.62  | 30,000                        | 100(a)            |
| Toluene                | 1.26                | 1.00  | ND    | 0.49  | 1.17                | 0.61  | 1.22  | 0.57  | 0.62                | ND    | ND    | 0.62  | 375,000                       | 7,500(c)          |
| 2-Butanone             | ND                  | ND    | ND    | ND    | 1.61                | 0.63  | ND    | ND    | ND                  | ND    | ND    | ND    | 590,000                       | 1,967(b)          |
| 1,1,1-Trichloroethane  | 1.05                | 0.84  | ND    | 0.69  | 1.39                | 0.83  | 1.50  | 0.98  | 0.69                | 1.22  | ND    | 0.62  | 1.90E6                        | 38,000(c)         |
| Carbon Tetrachloride   | ND                  | ND    | ND    | 0.47  | ND                  | ND    | ND    | ND    | ND                  | ND    | ND    | ND    | 30,000                        | 100(a)            |
| Totals                 | 7.20                | 6.30  | 7.22  | 2.29  | 6.06                | 3.81  | 3.94  | 1.57  | 6.44                | 23.22 | 1.53  | 1.86  |                               |                   |

Notes :

All concentration values expressed in micrograms per cubic meter (ug/cu. m)

(a) = High Toxicity Air Contaminants

(b) = Moderate Toxicity Air Contaminants

(c) = Low Toxicity Air Contaminants

\* = Short Term 1989 ACGIH TWA-TLV

\*\* = Long Term Ambient Guideline Concentration - (derived from ACGIH TWA-TLV)

ND = Not Detectable

1000086

Table 5: Summary Results of Airborne Chromium Sampling  
Johnstown Landfill, Johnstown, New York  
September and October, 1989.

| Station Number | Date    | Filter Number | Total Chromium ( $\mu\text{g}$ ) | Total Flow (cu. m) | Chromium Concentration ( $\mu\text{g}/\text{cu. m}$ ) | Average Chromium Concentration ( $\mu\text{g}/\text{cu. m}$ ) | AGC* ( $\mu\text{g}/\text{cu. m}$ ) | Occupational Value** ( $\mu\text{g}/\text{cu. m}$ ) |
|----------------|---------|---------------|----------------------------------|--------------------|-------------------------------------------------------|---------------------------------------------------------------|-------------------------------------|-----------------------------------------------------|
| HV-1-P         | 9/14/89 | 2872          | 6.0                              | 1,898.9            | 0.003                                                 | 0.004                                                         | 0.167                               | 50                                                  |
|                | 10/1/89 | 2881          | 9.9                              | 1,929.3            | 0.005                                                 |                                                               |                                     |                                                     |
|                | 10/6/89 | 2885          | 6.9                              | 1,937.6            | 0.004                                                 |                                                               |                                     |                                                     |
| HV-1-C         | 9/14/89 | 2873          | 5.9                              | 1,815.1            | 0.003                                                 | 0.004                                                         | 0.167                               | 50                                                  |
|                | 10/1/89 | 2882          | 9.2                              | 1,875.4            | 0.005                                                 |                                                               |                                     |                                                     |
|                | 10/6/89 | 2886          | 6.4                              | 1,821.3            | 0.004                                                 |                                                               |                                     |                                                     |
| HV-2           | 9/14/89 | 2875          | 4.6                              | 1,592.3            | 0.003                                                 | 0.003                                                         | 0.167                               | 50                                                  |
|                | 10/1/89 | 2883          | 4.6                              | 1,672.2            | 0.003                                                 |                                                               |                                     |                                                     |
|                | 10/6/89 | 2887          | 5.5                              | 1,670.7            | 0.003                                                 |                                                               |                                     |                                                     |
| HV-3           | 9/14/89 | 2874          | 5.3                              | 1,569.9            | 0.003                                                 | 0.003                                                         | 0.167                               | 50                                                  |
|                | 10/1/89 | 2884          | 3.5                              | 1,705.3            | 0.002                                                 |                                                               |                                     |                                                     |
|                | 10/6/89 | 2889          | 6.8                              | 1,692.7            | 0.004                                                 |                                                               |                                     |                                                     |

Notes :

\* = Ambient Guideline Concentration - Annual Average - derived from 1989 ACGIH TWA-TLV

\*\* = 1989 ACGIH Short Term TWA-TLV

1000087

Table 6  
Study Chemicals, with Abbreviations and Common Synonyms  
Johnstown Landfill, Johnstown, NY

| <u>Chemical</u>                        | <u>Abbreviation</u> | <u>Synonym 1</u>                         | <u>Synonym 2</u>  | <u>CAS Number</u> |
|----------------------------------------|---------------------|------------------------------------------|-------------------|-------------------|
| <b>Metals and Cyanide</b>              |                     |                                          |                   |                   |
| aluminum                               | Al                  |                                          |                   | 7429-90-5         |
| antimony                               | Sb                  |                                          |                   | 7440-36-0         |
| arsenic                                | As                  |                                          |                   | 7440-38-2         |
| barium                                 | Ba                  |                                          |                   | 7440-39-3         |
| beryllium                              | Be                  |                                          |                   | 7440-41-7         |
| cadmium                                | Cd                  |                                          |                   | 7440-43-9         |
| chromium                               | Cr (III)            |                                          |                   |                   |
| chromium VI                            | Cr (VI)             |                                          |                   | 18540-29-9        |
| cobalt                                 | Co                  |                                          |                   | 7440-48-4         |
| copper                                 | Cu                  |                                          |                   | 7440-50-8         |
| lead                                   | Pb                  |                                          |                   | 7439-92-1         |
| mercury                                | Hg                  |                                          |                   | 7439-97-6         |
| nickel                                 | Ni                  |                                          |                   | 7440-02-0         |
| selenium                               | Se                  |                                          |                   | 7782-49-2         |
| silver                                 | Ag                  |                                          |                   | 7440-22-4         |
| strontium                              | Sr                  |                                          |                   | 7440-24-6         |
| thallium                               | Tl                  |                                          |                   | 7440-28-0         |
| titanium                               | Ti                  |                                          |                   | 7440-32-6         |
| vanadium                               | V                   |                                          |                   | 7440-62-2         |
| zinc                                   | Zn                  |                                          |                   | 7440-66-6         |
| cyanide                                |                     |                                          |                   | 57-12-5           |
| <b>Volatile Organic Compounds</b>      |                     |                                          |                   |                   |
| methylene chloride                     | DCM                 | dichloromethane                          |                   | 75-09-2           |
| chloroform                             |                     | trichloromethane                         |                   | 67-66-3           |
| carbon tetrachloride                   |                     | perchloromethane                         |                   | 56-23-5           |
| carbon disulfide                       |                     |                                          |                   | 75-15-0           |
| 1,1,1-trichloroethane                  | 1,1,1-TCA           | methyl chloroform                        |                   | 71-55-6           |
| vinyl chloride                         |                     | chloroethene                             | chloroethylene    | 75-01-4           |
| trichloroethylene                      | TCE                 | trichloroethene                          |                   | 79-01-6           |
| tetrachloroethylene                    | PCE                 | tetrachloroethene                        | perchloroethylene | 127-18-4          |
| acetone                                |                     | dimethyl ketone                          | 2-propanone       | 67-64-1           |
| 2-butanone                             | MEK                 | methyl ethyl ketone                      |                   | 78-93-3           |
| 4-methyl-2-pentanone                   | MIBK                | methyl isobutyl ketone                   |                   | 108-10-1          |
| benzene                                |                     | benzol                                   |                   | 71-43-2           |
| ethylbenzene                           |                     | phenylethane                             |                   | 100-41-4          |
| toluene                                |                     | methylbenzene                            |                   | 108-88-3          |
| xylene (total)                         |                     | xylene, mixed                            | xylene (total)    | 1330-20-7         |
| styrene                                |                     | vinylbenzene                             |                   | 100-42-5          |
| <b>Semi-Volatile Organic Compounds</b> |                     |                                          |                   |                   |
| benzoic acid                           |                     | benzene carboxylic acid                  |                   | 65-85-0           |
| phenol                                 |                     | carbolic acid                            |                   | 108-95-2          |
| 4-methylphenol                         |                     | p-cresol                                 | 4-cresol          | 106-44-5          |
| di-n-butylphthalate                    |                     |                                          |                   | 84-74-2           |
| di-n-octylphthalate                    |                     |                                          |                   | 117-84-0          |
| bis(2-ethylhexyl)phthalate             | DEHP                | di(2-ethylhexyl)phthalate                |                   | 117-81-7          |
| butylbenzylphthalate                   |                     |                                          |                   | 85-68-7           |
| naphthalene                            |                     |                                          |                   | 91-20-3           |
| <b>Pesticides and PCBs</b>             |                     |                                          |                   |                   |
| ΣDDTR                                  |                     | Total DDT Residue (sum of DDT, DDD, DDE) |                   |                   |

1000088

**Scenario 3: Nearby Residents  
Future Conditions  
(Landfill Capped and Fenced,  
with Ground Water  
Interception and Treatment)**

Incidental Ingestion of Soil on Landfill

Dermal Contact with Soil on Landfill

Inhalation of Fugitive Dust on Landfill

| 1a                                | 1b                                     | 1c                |
|-----------------------------------|----------------------------------------|-------------------|
| Trespassing<br>on the<br>Landfill | Wading/<br>Fishing in<br>Matthew Creek | Living<br>at Home |

| 2a                                | 2b                                     | 2c                |
|-----------------------------------|----------------------------------------|-------------------|
| Trespassing<br>on the<br>Landfill | Wading/<br>Fishing in<br>Matthew Creek | Living<br>at Home |

| 3a                                | 3b                                     | 3c                |
|-----------------------------------|----------------------------------------|-------------------|
| Trespassing<br>on the<br>Landfill | Wading/<br>Fishing in<br>Matthew Creek | Living<br>at Home |

Incidental Ingestion of Sediments

Dermal Contact with Sediments

Incidental Ingestion of Surface Water

Dermal Contact with Surface Water

Ingestion of Fish

|    |     |    |
|----|-----|----|
| No | Yes | No |
| No | Yes | No |
| No | Yes | No |
| No | Yes | No |
| No | Yes | No |

|    |     |    |
|----|-----|----|
| No | Yes | No |
| No | Yes | No |
| No | Yes | No |
| No | Yes | No |
| No | Yes | No |

[illegible]

### Use of Ground Water as Household Water

|    |    |            |
|----|----|------------|
| No | No | <b>Yes</b> |
|----|----|------------|

|    |    |     |
|----|----|-----|
| No | No | Yes |
|----|----|-----|

|    |    |     |
|----|----|-----|
| No | No | Yes |
|----|----|-----|

### Inhalation of Outdoor Air

|     |     |     |
|-----|-----|-----|
| Yes | Yes | Yes |
|-----|-----|-----|

|     |     |     |
|-----|-----|-----|
| Yes | Yes | Yes |
|-----|-----|-----|

|     |     |     |
|-----|-----|-----|
| Yes | Yes | Yes |
|-----|-----|-----|

Table 8  
Summary of Key Toxicological Properties of Study Chemicals  
Johnstown Landfill, Johnstown, NY

| Chemical                               | Chronic Noncarcinogenic Toxicity by Ingestion |                      |                                        | Chronic Noncarcinogenic Toxicity by Inhalation |                                             |                      |                                        |
|----------------------------------------|-----------------------------------------------|----------------------|----------------------------------------|------------------------------------------------|---------------------------------------------|----------------------|----------------------------------------|
|                                        | Reference Dose<br>(RfD)<br>(mg/(kg-day))      | Confidence<br>in RfD | Species Tested<br>in Critical<br>Study | Reference<br>Concentration<br>(RfC)<br>(mg/m3) | Reference<br>Dose<br>(RfD)<br>(mg/(kg-day)) | Confidence<br>in RfD | Species Tested<br>in Critical<br>Study |
| <b>Metals and Cyanide</b>              |                                               |                      |                                        |                                                |                                             |                      |                                        |
| aluminum                               |                                               |                      |                                        |                                                |                                             |                      |                                        |
| antimony                               | 4E-04                                         | low                  | rat                                    |                                                |                                             |                      |                                        |
| arsenic                                | 3E-04                                         | med                  | human                                  |                                                |                                             |                      |                                        |
| barium                                 | 7E-02                                         | med                  | human                                  |                                                |                                             |                      |                                        |
| beryllium                              | 5E-03                                         | low                  | rat                                    | 5E-04                                          | 1E-04                                       |                      | rat                                    |
| cadmium                                | 5E-04                                         | high                 | human                                  |                                                |                                             |                      |                                        |
| chromium III                           | 1E+00                                         | low                  | rat                                    | 2E-06                                          | 6E-07                                       |                      | human                                  |
| chromium VI                            | 5E-03                                         | low                  | rat                                    | 2E-06                                          | 6E-07                                       |                      | human                                  |
| cobalt                                 |                                               |                      |                                        |                                                |                                             |                      |                                        |
| copper                                 | 4E-02                                         |                      | human                                  |                                                |                                             |                      |                                        |
| lead                                   | 5E-04                                         |                      |                                        |                                                |                                             |                      |                                        |
| mercury                                | 3E-04                                         |                      |                                        |                                                |                                             |                      |                                        |
| nickel                                 | 2E-02                                         | med                  | rat                                    | 3E-04                                          | 9E-05                                       |                      | human                                  |
| selenium                               | 5E-03                                         | high                 | human                                  |                                                |                                             |                      |                                        |
| silver                                 | 5E-03                                         | low                  | human                                  |                                                |                                             |                      |                                        |
| strontium                              |                                               |                      |                                        |                                                |                                             |                      |                                        |
| thallium                               | 7E-05                                         |                      | rat                                    |                                                |                                             |                      |                                        |
| titanium                               |                                               |                      |                                        |                                                |                                             |                      |                                        |
| vanadium                               | 7E-03                                         |                      | rat                                    |                                                |                                             |                      |                                        |
| zinc                                   | 2E-01                                         |                      | human                                  |                                                |                                             |                      |                                        |
| cyanide                                | 2E-02                                         | med                  | rat                                    |                                                |                                             |                      |                                        |
| <b>Volatile Organic Compounds</b>      |                                               |                      |                                        |                                                |                                             |                      |                                        |
| methylene chloride                     | 6E-02                                         | med                  | rat                                    | 3E+00                                          | 9E-01                                       |                      | rat                                    |
| chloroform                             | 1E-02                                         | med                  | dog                                    |                                                | 1E-02                                       |                      |                                        |
| carbon tetrachloride                   | 7E-04                                         | med                  | rat                                    |                                                | 7E-04                                       |                      |                                        |
| carbon disulfide                       | 1E-01                                         | med                  | rabbit                                 | 1E-02                                          | 3E-03                                       |                      | rat                                    |
| 1,1,1-trichloroethane                  | 9E-02                                         |                      | guinea pig                             | 1E+00                                          | 3E-01                                       |                      | guinea pig                             |
| vinyl chloride                         |                                               |                      |                                        |                                                |                                             |                      |                                        |
| trichloroethylene                      |                                               |                      |                                        |                                                |                                             |                      |                                        |
| tetrachloroethylene                    | 1E-02                                         | med                  | mouse; rat                             |                                                | 1E-02                                       |                      |                                        |
| acetone                                | 1E-01                                         | low                  | rat                                    |                                                | 1E-01                                       |                      |                                        |
| 2-butanone                             |                                               |                      |                                        |                                                |                                             |                      |                                        |
| 4-methyl-2-pentanone                   |                                               |                      |                                        |                                                |                                             |                      |                                        |
| benzene                                |                                               |                      |                                        |                                                |                                             |                      |                                        |
| ethylbenzene                           | 1E-01                                         | low                  | rat                                    | 1E+00                                          | 3E-01                                       | low                  | rat, rabbit                            |
| toluene                                | 2E-01                                         | med                  | rat                                    | 2E+00                                          | 6E-01                                       |                      | human                                  |
| xylenes (total)                        | 2E+00                                         | med                  | rat                                    | 3E-01                                          | 9E-02                                       |                      | human                                  |
| styrene                                | 2E-01                                         | med                  | dog                                    |                                                | 2E-01                                       |                      |                                        |
| <b>Semi-Volatile Organic Compounds</b> |                                               |                      |                                        |                                                |                                             |                      |                                        |
| benzoic acid                           | 4E+00                                         | med                  | human                                  |                                                | 4E+00                                       |                      |                                        |
| phenol                                 | 6E-01                                         | low                  | rat                                    |                                                | 6E-01                                       |                      |                                        |
| 4-methylphenol                         |                                               |                      |                                        |                                                |                                             |                      |                                        |
| di-n-butylphthalate                    | 1E-01                                         | low                  | rat                                    |                                                | 1E-01                                       |                      |                                        |
| di-n-octylphthalate                    |                                               |                      |                                        |                                                |                                             |                      |                                        |
| bis(2-ethylhexyl)phthalate             | 2E-02                                         | med                  | guinea pig                             |                                                | 2E-02                                       |                      |                                        |
| butylbenzylphthalate                   | 2E-01                                         |                      | rat                                    |                                                | 2E-01                                       |                      |                                        |
| naphthalene                            | 4E-03                                         |                      | rat                                    |                                                | 4E-03                                       |                      |                                        |
| <b>Pesticides and PCBs</b>             |                                               |                      |                                        |                                                |                                             |                      |                                        |
| ΣDDTR                                  | 5E-04                                         |                      |                                        |                                                | 5E-04                                       |                      |                                        |
| 4,4'-DDD                               |                                               |                      |                                        |                                                |                                             |                      |                                        |
| 4,4'-DDE                               |                                               |                      |                                        |                                                |                                             |                      |                                        |
| 4,4'-DDT                               | 5E-04                                         | med                  | rat                                    |                                                | 5E-04                                       |                      |                                        |

10.00090

Table 9  
Summary of Noncancer Risks  
Current Land Use Scenario

| Chemical                               | Total HI<br>as a Child | Total HI as a Youth |                  |                | Total HI as an Adult |                |
|----------------------------------------|------------------------|---------------------|------------------|----------------|----------------------|----------------|
|                                        | Living at Home         | Trespassing         | Wading / Fishing | Living at Home | Wading / Fishing     | Living at Home |
|                                        | (ratio)                | (ratio)             | (ratio)          | (ratio)        | (ratio)              | (ratio)        |
| <b>Metals and Cyanide</b>              |                        |                     |                  |                |                      |                |
| aluminum                               |                        |                     |                  |                |                      |                |
| antimony                               | 2.4E+00                |                     | 4.5E-04          | 1.2E+00        | 2.7E-04              | 9.5E-01        |
| arsenic                                | 2.1E-01                | 3.2E-04             | 2.1E-03          | 1.1E-01        | 1.3E-03              | 8.6E-02        |
| barium                                 | 1.6E-01                | 6.0E-05             | 5.1E-02          | 7.9E-02        | 4.5E-02              | 6.3E-02        |
| beryllium                              | 4.3E-03                | 1.8E-06             | 7.1E-06          | 2.1E-03        | 4.3E-06              | 1.7E-03        |
| cadmium                                |                        | 6.2E-05             | 2.5E-04          |                | 1.5E-04              |                |
| chromium                               |                        | 7.3E-01             | 6.7E-04          | 5.3E-05        | 6.0E-04              | 4.3E-05        |
| chromium VI                            | 1.1E-04                |                     | 3.9E-05          |                | 2.4E-05              |                |
| cobalt                                 |                        |                     |                  |                |                      |                |
| copper                                 | 1.5E-02                | 1.6E-05             | 1.1E-02          | 7.6E-03        | 1.0E-02              | 6.1E-03        |
| lead                                   | 2.2E-01                | 2.8E-03             | 8.6E-01          | 1.1E-01        | 7.7E-01              | 8.7E-02        |
| mercury                                |                        | 2.0E-05             | 1.3E-01          |                | 1.2E-01              |                |
| nickel                                 | 1.5E-02                | 1.6E-05             | 6.4E-05          | 7.3E-03        | 3.9E-05              | 5.9E-03        |
| selenium                               | 1.2E-02                | 2.5E-06             | 1.3E-05          | 6.0E-03        | 8.1E-06              | 4.8E-03        |
| silver                                 | 2.3E-02                |                     |                  | 1.2E-02        |                      | 9.4E-03        |
| strontium                              |                        |                     |                  |                |                      |                |
| thallium                               | 2.5E+00                |                     |                  | 1.3E+00        |                      | 1.0E+00        |
| titanium                               |                        |                     |                  |                |                      |                |
| vanadium                               | 2.8E-02                | 5.1E-05             | 2.9E-04          | 1.4E-02        | 1.7E-04              | 1.1E-02        |
| zinc                                   | 4.0E-02                | 1.9E-05             | 4.4E-02          | 2.0E-02        | 3.9E-02              | 1.6E-02        |
| cyanide                                | 2.2E-02                |                     | 2.7E-05          | 1.1E-02        | 1.6E-05              | 8.9E-03        |
| <b>Volatile Organic Compounds</b>      |                        |                     |                  |                |                      |                |
| methylene chloride                     |                        | 1.5E-07             | 3.7E-07          |                | 2.6E-07              |                |
| chloroform                             |                        |                     |                  |                |                      |                |
| carbon tetrachloride                   | 6.8E-01                | 2.9E-03             | 1.3E-04          | 3.8E-01        | 6.7E-05              | 1.9E-01        |
| carbon disulfide                       | 5.3E-02                |                     | 1.7E-07          | 2.6E-02        | 1.2E-07              | 2.1E-02        |
| 1,1,1-trichloroethane                  | 3.5E-03                | 1.5E-05             | 6.9E-07          | 1.9E-03        | 3.5E-07              | 9.7E-04        |
| vinyl chloride                         |                        |                     |                  |                |                      |                |
| trichloroethylene                      |                        |                     |                  |                |                      |                |
| tetrachloroethylene                    | 3.0E-02                |                     | 9.3E-06          | 1.5E-02        | 6.1E-06              | 1.2E-02        |
| acetone                                | 6.0E-02                | 2.6E-04             | 1.3E-05          | 3.3E-02        | 7.0E-06              | 1.7E-02        |
| 2-butanone                             |                        |                     |                  |                |                      |                |
| 4-methyl-2-pentanone                   |                        |                     |                  |                |                      |                |
| benzene                                |                        |                     |                  |                |                      |                |
| ethylbenzene                           |                        |                     |                  |                |                      |                |
| toluene                                | 1.6E-03                | 6.8E-06             | 3.8E-07          | 8.7E-04        | 2.1E-07              | 4.3E-04        |
| xylenes (total)                        |                        |                     |                  |                |                      |                |
| styrene                                |                        |                     |                  |                |                      |                |
| <b>Semi-Volatile Organic Compounds</b> |                        |                     |                  |                |                      |                |
| benzoic acid                           |                        |                     | 1.5E-07          |                | 1.0E-07              |                |
| phenol                                 |                        |                     |                  |                |                      |                |
| 4-methylphenol                         |                        |                     |                  |                |                      |                |
| di-n-butylphthalate                    |                        |                     |                  |                |                      |                |
| di-n-octylphthalate                    |                        |                     |                  |                |                      |                |
| bis(2-ethylhexyl)phthalate             |                        |                     | 3.9E-04          |                | 2.7E-04              |                |
| butylbenzylphthalate                   |                        |                     |                  |                |                      |                |
| naphthalene                            |                        | 5.0E-05             |                  |                |                      |                |
| <b>Pesticides and PCBs</b>             |                        |                     |                  |                |                      |                |
| ΣDDT                                   |                        | 6.6E-05             | 1.4E-01          |                | 1.2E-01              |                |
|                                        | 6.5E+00                | 7.3E-01             | 1.2E+00          | 3.3E+00        | 1.1E+00              | 2.5E+00        |

1000091

Table 10  
Carcinogenic Toxicity Values

| Chemical                               | Carcinogenicity by Ingestion      |                                                  |                                             | Carcinogenicity by Inhalation     |                                                |                                             |
|----------------------------------------|-----------------------------------|--------------------------------------------------|---------------------------------------------|-----------------------------------|------------------------------------------------|---------------------------------------------|
|                                        | Weight-of-Evidence Classification | Drinking Water Unit Risk (( $\mu\text{g/l}$ )-1) | Cancer Potency Factor (CPF) (mg/(kg-day))-1 | Weight-of-Evidence Classification | Inhalation Unit Risk (( $\mu\text{g/m}^3$ )-1) | Cancer Potency Factor (CPF) (mg/(kg-day))-1 |
| <b>Metals and Cyanide</b>              |                                   |                                                  |                                             |                                   |                                                |                                             |
| aluminum                               |                                   |                                                  |                                             |                                   |                                                |                                             |
| antimony                               |                                   |                                                  |                                             |                                   |                                                |                                             |
| arsenic                                | A                                 |                                                  |                                             | A                                 | 4.3E-03                                        | 5.0E+01                                     |
| barium                                 |                                   |                                                  |                                             |                                   |                                                |                                             |
| beryllium                              | B2                                | 1.2E-04                                          | 4.3E+00                                     | B2                                | 2.4E-03                                        | 8.4E+00                                     |
| cadmium                                |                                   |                                                  |                                             | B1                                | 1.8E-03                                        | 6.3E+00                                     |
| chromium III                           |                                   |                                                  |                                             |                                   |                                                |                                             |
| chromium VI                            |                                   |                                                  |                                             | A                                 | 1.2E-02                                        | 4.1E+01                                     |
| cobalt                                 |                                   |                                                  |                                             |                                   |                                                |                                             |
| copper                                 | D                                 |                                                  |                                             | D                                 |                                                |                                             |
| lead                                   | B2                                |                                                  |                                             | B2                                |                                                |                                             |
| mercury                                | D                                 |                                                  |                                             | D                                 |                                                |                                             |
| nickel                                 |                                   |                                                  |                                             | A                                 | 2.4E-04                                        | 8.4E-01                                     |
| selenium                               | D                                 |                                                  |                                             | D                                 |                                                |                                             |
| silver                                 | D                                 |                                                  |                                             | D                                 |                                                |                                             |
| strontium                              |                                   |                                                  |                                             |                                   |                                                |                                             |
| thallium                               |                                   |                                                  |                                             |                                   |                                                |                                             |
| titanium                               |                                   |                                                  |                                             |                                   |                                                |                                             |
| vanadium                               |                                   |                                                  |                                             |                                   |                                                |                                             |
| zinc                                   | D                                 |                                                  |                                             | D                                 |                                                |                                             |
| cyanide                                | D                                 |                                                  |                                             | D                                 |                                                |                                             |
| <b>Volatile Organic Compounds</b>      |                                   |                                                  |                                             |                                   |                                                |                                             |
| methylene chloride                     | B2                                | 2.1E-07                                          | 7.5E-03                                     | B2                                | 4.7E-07                                        | 1.6E-03                                     |
| chloroform                             | B2                                | 1.7E-07                                          | 6.1E-03                                     | B2                                | 2.3E-05                                        | 8.1E-02                                     |
| carbon tetrachloride                   | B2                                | 3.7E-06                                          | 1.3E-01                                     | B2                                | 1.5E-05                                        | 1.3E-01                                     |
| carbon disulfide                       |                                   |                                                  |                                             |                                   |                                                |                                             |
| 1,1,1-trichloroethane                  | D                                 |                                                  |                                             | D                                 |                                                |                                             |
| vinyl chloride                         | A                                 | 5.4E-05                                          | 1.9E+00                                     | A                                 | 8.4E-05                                        | 2.9E-01                                     |
| trichloroethylene                      | B2                                | 3.2E-07                                          | 1.1E-02                                     | B2                                | 1.7E-06                                        | 1.7E-02                                     |
| tetrachloroethylene                    | B2                                | 1.5E-06                                          | 5.1E-02                                     | B2                                | 5.2E-07                                        | 1.8E-03                                     |
| acetone                                | D                                 |                                                  |                                             | D                                 |                                                |                                             |
| 2-butanone                             |                                   |                                                  |                                             |                                   |                                                |                                             |
| 4-methyl-2-pentanone                   |                                   |                                                  |                                             |                                   |                                                |                                             |
| benzene                                | A                                 | 8.3E-07                                          | 2.9E-02                                     | A                                 | 8.3E-06                                        | 2.9E-02                                     |
| ethylbenzene                           | D                                 |                                                  |                                             | D                                 |                                                |                                             |
| toluene                                | D                                 |                                                  |                                             | D                                 |                                                |                                             |
| xylenes (total)                        | D                                 |                                                  |                                             | D                                 |                                                |                                             |
| styrene                                | B2                                | 8.6E-07                                          | 3.0E-02                                     | B2                                | 5.7E-07                                        | 2.0E-03                                     |
| <b>Semi-Volatile Organic Compounds</b> |                                   |                                                  |                                             |                                   |                                                |                                             |
| benzoic acid                           | D                                 |                                                  |                                             | D                                 |                                                |                                             |
| phenol                                 | D                                 |                                                  |                                             | D                                 |                                                |                                             |
| 4-methylphenol                         | C                                 |                                                  |                                             | C                                 |                                                |                                             |
| di-n-butylphthalate                    | D                                 |                                                  |                                             | D                                 |                                                |                                             |
| di-n-octylphthalate                    |                                   |                                                  |                                             |                                   |                                                |                                             |
| bis(2-ethylhexyl)phthalate             | B2                                | 4.0E-07                                          | 1.4E-02                                     | B2                                |                                                | 1.4E-02                                     |
| butylbenzylphthalate                   | C                                 |                                                  |                                             |                                   |                                                |                                             |
| naphthalene                            | D                                 |                                                  |                                             | D                                 |                                                |                                             |
| <b>Pesticides and PCBs</b>             |                                   |                                                  |                                             |                                   |                                                |                                             |
| $\Sigma$ DDTR                          | B2                                | 9.7E-06                                          | 3.4E-01                                     | B2                                | 9.7E-05                                        | 3.4E-01                                     |
| 4,4'-DDD                               | B2                                | 6.9E-06                                          | 2.4E-01                                     |                                   |                                                | 2.4E-01                                     |
| 4,4'-DDE                               | B2                                | 9.7E-06                                          | 3.4E-01                                     | B2                                |                                                | 3.4E-01                                     |
| 4,4'-DDT                               | B2                                | 9.7E-06                                          | 3.4E-01                                     | B2                                | 9.7E-05                                        | 3.4E-01                                     |

Table 11  
Summary of Cancer Risks  
Current Land Use Scenario

| Chemical                               | Total ILCR  |                  |                |                |                                      |
|----------------------------------------|-------------|------------------|----------------|----------------|--------------------------------------|
|                                        | Trespassing | Wading / Fishing | Living at Home | All Activities | Percent of<br>Summary<br>ILCR<br>(%) |
|                                        | (prob)      | (prob)           | (prob)         | (prob)         |                                      |
| <b>Metals and Cyanide</b>              |             |                  |                |                |                                      |
| aluminum                               |             |                  |                |                |                                      |
| antimony                               |             |                  |                |                |                                      |
| arsenic                                | 2.8E-09     |                  |                | 2.8E-09        | 0.0%                                 |
| barium                                 |             |                  |                |                |                                      |
| beryllium                              | 4.6E-09     | 4.2E-08          | 2.2E-05        | 2.2E-05        | 40.7%                                |
| cadmium                                | 1.1E-10     |                  |                | 1.1E-10        | 0.0%                                 |
| chromium                               |             |                  |                |                |                                      |
| chromium VI                            |             |                  |                |                |                                      |
| cobalt                                 |             |                  |                |                |                                      |
| copper                                 |             |                  |                |                |                                      |
| lead                                   |             |                  |                |                |                                      |
| mercury                                |             |                  |                |                |                                      |
| nickel                                 | 1.5E-10     |                  |                | 1.5E-10        | 0.0%                                 |
| selenium                               |             |                  |                |                |                                      |
| silver                                 |             |                  |                |                |                                      |
| strontium                              |             |                  |                |                |                                      |
| thallium                               |             |                  |                |                |                                      |
| titanium                               |             |                  |                |                |                                      |
| vanadium                               |             |                  |                |                |                                      |
| zinc                                   |             |                  |                |                |                                      |
| cyanide                                |             |                  |                |                |                                      |
| <b>Volatile Organic Compounds</b>      |             |                  |                |                |                                      |
| methylene chloride                     | 7.8E-12     | 4.9E-11          |                | 5.8E-11        | 0.0%                                 |
| chloroform                             |             |                  |                |                |                                      |
| carbon tetrachloride                   | 3.0E-08     | 3.1E-09          | 1.4E-05        | 1.4E-05        | 25.9%                                |
| carbon disulfide                       |             |                  |                |                |                                      |
| 1,1,1-trichloroethane                  |             |                  |                |                |                                      |
| vinyl chloride                         |             |                  |                |                |                                      |
| trichloroethylene                      |             | 4.9E-11          |                | 4.9E-11        | 0.0%                                 |
| tetrachloroethylene                    |             | 1.3E-09          | 2.1E-06        | 2.1E-06        | 3.9%                                 |
| acetone                                |             |                  |                |                |                                      |
| 2-butanone                             |             |                  |                |                |                                      |
| 4-methyl-2-pentanone                   |             |                  |                |                |                                      |
| benzene                                | 1.8E-08     | 1.9E-09          | 8.4E-06        | 8.4E-06        | 15.4%                                |
| ethylbenzene                           |             |                  |                |                |                                      |
| toluene                                |             |                  |                |                |                                      |
| xylenes (total)                        |             |                  |                |                |                                      |
| styrene                                |             |                  |                |                |                                      |
| <b>Semi-Volatile Organic Compounds</b> |             |                  |                |                |                                      |
| benzoic acid                           |             |                  |                |                |                                      |
| phenol                                 |             |                  |                |                |                                      |
| 4-methylphenol                         |             |                  |                |                |                                      |
| di-n-butylphthalate                    |             |                  |                |                |                                      |
| di-n-octylphthalate                    |             |                  |                |                |                                      |
| bis(2-ethylhexyl)phthalate             |             | 3.2E-08          |                | 3.2E-08        | 0.1%                                 |
| butylbenzylphthalate                   |             |                  |                |                |                                      |
| naphthalene                            |             |                  |                |                |                                      |
| <b>Pesticides and PCBs</b>             |             |                  |                |                |                                      |
| ΣDDTR                                  | 1.3E-09     | 7.7E-06          |                | 7.7E-06        | 14.1%                                |
|                                        | 5.7E-08     | 7.7E-06          | 4.7E-05        | 5.5E-05        | 100.0%                               |
|                                        | 0.1%        | 14.2%            | 85.7%          | 100.0%         |                                      |

100000

1000093

APPENDIX III

ADMINISTRATIVE RECORD INDEX

1000094

**JOHNSTOWN CITY LANDFILL  
ADMINISTRATIVE RECORD FILE  
INDEX OF DOCUMENTS**

**1.0 SITE IDENTIFICATION**

**1.1 Background - RCRA and other information**

- P. 100001 - Report: City of Johnstown Landfill Town of  
100003 Johnstown Fulton County: Information Dossier,  
prepared by Office of Toxic Substances, New York  
State Department of Environmental Conservation,  
February 28, 1979.
- P. 100004 - Report: Johnstown Landfill, consists of various  
100266 background information, (undated).

**1.2 Notification/Site Inspection Reports**

- P. 100267 - Report : Potentially Hazardous Waste Site: Site  
100276 Inspection Report, Johnstown City Landfill,  
prepared by Mr. Robert F. Murphy, February 12,  
1980.

**1.3 Preliminary Assessment Reports**

- P. 100277 - Report: Preliminary Investigation of the Johnstown  
100543 Landfill. Phase I. Summary Report, prepared by  
Ecological Analysts, Inc., November 1983.

**1.4 Site Investigation Reports**

- P. 100544 - Letter to Mr. John Privitera, Esq.,  
100613 Environmental Bureau, Department of Law, from Mr.  
Robert M. Subik, City Attorney, City of Johnstown,  
re: Final Report to Industrial Pretreatment  
Program, November 19, 1987. Attached Report:  
Draft Final Report Industrial  
Pretreatment Program, Cities of Gloversville and  
Johnstown, New York, prepared by Stearns & Wheler,  
November 1982.
- P. 100614- Report: New York State Department of  
100686 Environmental Conservation, Bureau of Wastewater  
Facilities, Design - Industrial Chemical Survey  
(ICS), September 1982.

P. 100687 - Report: New York State Department of Health,  
100689 - Division of Laboratories and Research,  
Environmental Health Center - Results of  
Examination, April 1979.

P. 100690 - Report: New York State Department of Health,  
100692 - Division of Laboratories and Research,  
Environmental Health Center - Results of  
Examination, April 1979.

#### 1.6 Correspondence

P. 100693 - Letter to Bornt Waste & Metal Co., from Mr.  
100695 Douglas H. Ward, Assistant Attorney General,  
Environmental Protection Bureau, State of New York  
Department of Law, and Mr. Malcolm Coutant,  
Attorney, Department of Environmental  
Conservation. March 19, 1985. Reply from Mr.  
James Bornt, Partner is attached.

P. 100696 - Letter to Ms. Jacqueline Schaffer, Regional  
100710 Administator, U.S. EPA, Region II, from Ms. Nancy  
R. Sellers, Stearns & Wheler, re: 14 industries  
which New York State Department of Environmental  
Conservation specified as eligible monitoring  
stations, for Gloversville and Johnstown, file No.  
954.4, February 3, 1983.

P. 100711 - Letter to Mr. and Mrs. Donald Wilson, West  
100716 Fulton Street Extension, from Mr. Raymond E.  
Lupe, P.E., Senior Sanitary Engineer, State of New  
York Department of Health, re: Private Water  
Supply, Water Contamination Complaint for  
Johnstown Landfill, July 9, 1979. Attached  
Report: New York State Department of Health,  
Division of Laboratories and Research,  
Environmental Health Center - Results of  
Examination, November 4, 1979.

P. 100717 - Letter to Mr. Donald Corliss, Regional Engineer,  
100719 New York State Department of Environmental  
Conservation, from Mr. Raymond E. Lupe, P.E.,  
Senior Sanitary Engineer, State of New York  
Department of Health, re: Refuse Landfill  
Complaint (Wilson), Johnstown City Landfill, May  
25, 1979.

- P. 100720 - Letter to Mr. Donald Wilson, West Fulton  
100722 Street Extension, from Mr. Raymond E. Lupe,  
P.E., Senior Sanitary Engineer, State of New  
York Department of Health, re: Private Water  
Supply, Water Contamination Problem for Johnstown  
Landfill, May 23, 1979.
- P. 100723 - Letter to Mr. and Mrs. Donald Wilson, West  
100726 Fulton Street Extension, from Mr. Raymond E. Lupe,  
P.E., Senior Sanitary Engineer, State of New  
York Department of Health, re: Private Water  
Supply, Water Contamination Complaint for  
Johnstown Landfill, May 8, 1979. Attached Report:  
New York State Department of Health Division of  
Laboratories and Research, Environmental Health  
Center - Results of Examination, November 4, 1979.

### 3.0 REMEDIAL INVESTIGATION

#### 3.1 Sampling and Analysis Plans

- P. 300001 - Report: Air Investigations Sampling Operations  
300045 Plan for the RI/FS at the Johnstown, NY  
Landfill, prepared by Normandeau Engineers, Inc.,  
for City of Johnstown, New York, January 1989.
- P. 300046 - Report: Sampling Operations Plan for the Johnstown  
300198 Landfill Remedial Investigation, prepared by  
Normandeau Engineers, Inc., January 1989.
- P. 300199 - Report: Quality Assurance, Quality Control and  
300593 Data Validation Plan for the Johnstown Landfill,  
Johnstown, New York, prepared by Normandeau  
Engineers, Inc., April 1989.

#### 3.2 Sampling and Analysis Data/Chain of Custody Forms

- P. 300594 - Letter to Mr. George Karras, U.S. EPA, Region II,  
300595 from Ms. Karen Taylor, ESAT Org. Data Reviewer,  
Lockheed Engineering & Sciences Company, re:  
Johnstown Landfill PRP, January 29, 1992. Data  
validation attachment.

- P. 300596 - Letter to Ms. Dorothy Allen, U.S. EPA, Region II,  
300609 - from Mr. Anthony R. Sheeran, P.E., Project  
Manager, Bureau of Central Remedial Action,  
Division of Hazardous Waste Remediation, New York  
State Department of Environmental  
Conservation, re: Johnstown Landfill, Site no.  
518002, discussing the enclosure of the attached  
copies of (8) eight independent NYS DOH Homeowner  
Sample Results and the delay of the RI and FS  
Reports, January 14, 1992. List of Homeowners  
attached.
- P. 300610 - Letter to Ms. Laura Scalise, EPA MMB from Mr.  
300611 - Dale S. Boshart, ESAT Inorganic Data Reviewer,  
Weston, re: Inorganic revalidation of the  
Johnstown City Landfill potentially responsible  
party, August 6, 1991.
- P. 300612 - Memorandum to Ms. Laura Scalise, Monitoring  
300613 - Management Branch, from Ms. Dorothy Allen, Project  
Manager, Eastern New York/Carribean Superfund  
Section II, re: Quality Assurance review of the  
data from Phase I Remedial Investigation and  
Feasibility Study for Johnstown Landfill Superfund  
Site, March 6, 1991.
- P. 300614 - Letter to Ms. Dorothy Allen, U.S. EPA, Region II,  
300637 - from Mr. Anthony R. Sheeran, P.E., Project  
Manager, Bureau of Central Remedial Action,  
Division of Hazardous Waste Remediation, New York  
State Department of Environmental  
Conservation, re: Johnstown Landfill RI/FS Site  
No. 518002, discussing the enclosed attached items  
concerning the ongoing RI/FS, January 15, 1991.  
The following are attached: 1. Spreadsheet of Data  
Validation Reports. 2. Volume Calculations for  
Tenax Air Samples. 3. Form 1 Laboratory Results  
from Ambient Air Samples (9/89).
- P. 300638 - Letter to Ms. Dorothy Allen, Project Manager,  
300643 - Emergency and Remedial Response Division, U.S.  
EPA, Region II, from Ms. Maribeth, Weston, re:  
Data Validation reports, November 9, 1990.  
Handwritten. Attachment re: PRP data case -  
Inorganic Review.

- P. 300644 - Memorandum to Mr. Louis Bevilacqua, Chief, Toxic  
300644 and Hazardous Waste Section, U.S. EPA, Region II,  
from Mr. Melvin Hauptman, Chief, Eastern New  
York/Caribbean Compliance Section, re: Quality  
Assurance Review of the data from the Phase I  
Remedial Investigation/Feasibility Study for  
Johnstown Landfill Superfund Site, September 24,  
1990.
  
- P. 300645 - Report: Report Number 30900-1428A, prepared by  
300750 Normandeau Engineers, September 6, 1990.
  
- P. 300751 - Report: Report of Analysis, prepared by  
300776 Hazleton Laboratories America, Inc., July 26,  
1990.
  
- P. 300777 - Report: New York State Department of Health,  
300789 Wadsworth Center for Laboratories and Research -  
Results of Examination, July 1990.
  
- P. 300790 - Report: New York State Department of Health  
300814 Wadsworth Center for Laboratories and Research -  
Results of Examination, February 1990.
  
- P. 300815 - Report: A Summary: Ammonia Toxicity and Chemical  
300863 Analysis In Relation to Mathew Creek, Johnstown,  
New York, prepared by NYS Department of  
Environmental Conservation, Division of Fish and  
Wildlife, July 1987.
  
- P. 300864 - Report: Volatile Organics Analysis Data Sheet,  
300882 January 1987.
  
- P. 300883 - Letter to Mr. Peter Smith, Director, Bureau of  
300896 Public Water Supply, New York State Department  
of Health, from Mr. Robert R. Williams, P.E.  
Acting Chief, Water Supply Branch, U.S. EPA;  
Region II, re: Analytical results from samples  
collected, November 5, 1980. Attachment of  
analytical results.

### 3.3 Work Plans

- P. 300897 - List of attendees at Phase II Scoping and Strategy  
300897 Meeting, January 9, 1991.
  
- P. 300898 - Report: Amended Scope of Work, December 26, 1990.  
300914 Letter of Transmittal attached.

- P. 300915 - Report: Interim Final Remedial Investigation Work  
301029 - Plan For The Johnstown Landfill, Johnstown, New  
York, prepared by Normandeau Engineers, Inc.,  
April 1989.
- P. 301030 - List of attendees at City of Johnstown Remedial  
301033 Investigation/Feasibility Study meeting, New  
York State Department of Environmental  
Conservation, February 9, 1988. Handwritten work  
plan notes attached.

#### 3.4 Remedial Investigation Reports

- P. 301034 - Report: RI Report for the Johnstown Landfill,  
301356 Johnstown, New York, prepared by TWM Northeast of  
NY, P.C., doing business as Thermo Consulting  
Engineers of NY, P.C., September 1992.
- P. 301357 - Report: Second Draft Report, RI/FS For The  
301692 Johnstown Landfill, Johnstown, New York, Figures  
and Tables, prepared by TWM Northeast of N.Y.,  
P.C., doing business as Thermo Consulting  
Engineers of NY, P.C., September, 1992.
- P. 301693 - Report: Draft Report, Remedial  
302283 Investigation/Feasibility Study for the  
Johnstown Landfill, Johnstown, New York,  
Appendices A through G, prepared by Thermo  
Consulting Engineers Inc., May 1992.
- P. 302284 - Report: Draft Report, RI/FS for the Johnstown  
302712 Landfill, Johnstown, New York, Appendix H  
(Sections 1-7), prepared by Thermo Consulting  
Engineers Inc., May 1992.
- P. 302713 - Report: Draft Report, RI/FS for the Johnstown  
303133 Landfill, Johnstown, New York, Appendix H  
(Sections 8-17), prepared by Thermo Consulting  
Engineers Inc., May 1992.
- P. 303134 - Report: Draft Report, RI/FS for the Johnstown  
303963 Landfill, Johnstown, New York, (Appendix I),  
prepared by Thermo Consulting Engineers Inc. May  
1992.

### 3.5 Correspondence

- P. 303964 - Letter to Honorable David O. Martin, House of  
303969 Representatives, from Mr. Constantine Sidamon-  
Eristoff, Regional Administrator, U.S. EPA, Region  
II, re: Resolution of the RI/FS adopted by the  
Town of Johnstown Board, November 23, 1992.
- P. 303970 - Letter to Mr. Robert Subik, City Attorney, City of  
303970 Johnstown, from Mr. Robert J. Cozzy, P.E., Chief,  
Special Projects Section, Bureau of Central  
Remedial Action, Division of Hazardous Waste  
Remediation, New York State Department of  
Environmental Conservation, re: RI/FS reports,  
November 13, 1992.
- P. 303971 - Letter to Mr. Robert Nunes, Western NY Superfund  
303973 Section, U.S. EPA, Region II, from Mr. Robert J.  
Cozzy, P.E., Chief, Special Projects Section,  
Bureau of Central Remedial Action, Division of  
Hazardous Waste Remediation, New York State  
Department of Environmental Conservation, re:  
Johnstown City Landfill Site No. 518002, listing  
comments on the draft Proposed Remedial Action  
Plan (PRAP) offered by the New York State  
Department of Environmental Conservation and  
Department of Health (DOH), November 16, 1992.
- P. 303974 - Memorandum to Mr. Bob Nunes, Remedial Project  
303975 Manager, New York/Caribbean Superfund Branch 2,  
from Ms. Shari Stevens, Environmental Scientist,  
Surveillance and Monitoring Branch, U.S. EPA,  
Region II, re: Technical Review of Supplemental  
Information to Johnstown Landfill site, October 6,  
1992.
- P. 303976 - Letter to Mr. Constantine Sidamon-Eristoff,  
303983 Regional Administrator, U.S. EPA, Region II, from  
Mr. Francis W. Reed, City of Johnstown, Mayor, re:  
Remedial Investigation and Feasibility Study at  
former Johnstown Landfill discussing the  
alternative supported by the city to remediate the  
site, September 22, 1992.

- P. 303984 - Letter to Mr. Robert Subik, City Attorney, City of  
304004 - Johnstown, from Mr. Anthony R. Sheeran, P.E.,  
Project Manager, Bureau of Central Remedial  
Action, Division of Hazardous Waste Remediation,  
New York State Department of Environmental  
Conservation, re: Johnstown Landfill, Site no.  
518002, Review of comments on Remedial  
Investigation and Feasibility Study Draft  
Reports received from the United States  
Environmental Protection Agency, August 3, 1992.  
Review comments attached.
- P. 304005 - Letter to Mr. Robert Nunes, U.S. EPA, Region II,  
304007 - from Mr. Anthony R. Sheeran, P.E., Project  
Manager, Bureau of Central Remedial Action,  
Division of Hazardous Waste Remediation, New York  
State Department of Environmental Conservation,  
re: A file review of all available independent  
data for the Remedial Investigation Report and the  
enclosed Table of Contents detailing the results  
of this effort, June 12, 1992.
- P. 304008 - Letter to Mr. Robert Subik, City Attorney, City of  
304009 - Johnstown, from Mr. Anthony Sheeran, P.E.,  
Project Manager, Bureau of Eastern Remedial  
Action, New York State Department of Environmental  
Conservation, re: Project Status: Johnstown  
Landfill, Site no. 518002, December 17, 1991.
- P. 304010 - Letter to Ms. Dorothy Allen, U.S. EPA, Region II,  
304011 - from Mr. Anthony Sheeran, Project Manager,  
Division of Hazardous Waste Remediation, re:  
Review of major points of February 25, 1991  
conference call and enclosure of environmental  
data acquired since the Phase I Remedial  
Investigation Report was prepared, March 1, 1991.
- P. 304012 - Letter to Mr. Robert Subik, City Attorney, City of  
304015 - Johnstown, from Mr. Anthony Sheeran, Project  
Manager, Division of Hazardous Waste Remediation,  
New York State Department of Environmental  
Conservation, re: Comments on the proposed Phase  
II Scope of Work for the Remedial Investigation  
and Feasibility Study, February 6, 1991.

- P. 304016 - Letter to Ms. Dorothy Allen, U.S. EPA, Region II,  
 304020 - from Mr. Anthony Sheeran, Project Manager,  
 Division of Hazardous Waste Remediation, New York  
 State Department of Environmental Conservation,  
 re: Johnstown Landfill Remedial Investigation and  
 Feasibility Study with comment by comment review  
 of New York State Department of Environmental  
 Conservation's statements concerning the proposed  
 Scope of Work attached, February 4, 1991.
- P. 304021 - Letter to Mr. Anthony Sheeran, Project Manager,  
 304026 - Division of Hazardous Waste Remediation, New York  
 State Department of Environmental Conservation,  
 from Ms. Dorothy Allen, U.S. EPA, Region II, re:  
 Johnstown Landfill--Review of Scope of Work for  
 Phase Two Remedial Investigation and Feasibility  
 Study--Identification of ARAR's, January 28, 1991.
- P. 304027 - Letter to Ms. Dorothy Allen, U.S. EPA, Region II,  
 304028 - from Mr. Anthony Sheeran, Project Manager,  
 Division of Hazardous Waste Remediation, New York  
 State Department of Environmental Conservation,  
 re: Johnstown Municipal Landfill Site No. 518002,  
 Comments on city proposal, January 10, 1991.
- P. 304029 - Letter to Mr. Robert Subik, City Attorney, City of  
 304029 - Johnstown, from Mr. Anthony Sheeran, Project  
 Manager, Division of Hazardous Waste Remediation,  
 New York State Department of Environmental  
 Conservation, re: Response to Request for a  
 meeting with the United States Environmental  
 Protection Agency and the New York State  
 Department of Environmental Conservation on  
 January 8, 1991, January 7, 1991.
- P. 304030 - Memorandum to Mr. William Webster, Division of Air  
 304030 - Resources, from Mr. Anthony Sheeran, through Mr.  
 Robert J. Cozzy, Division of Hazardous Waste  
 Remediation, New York State Department of  
 Environmental Conservation, re: Response to the  
 DAR comments received December 20, 1990 concerning  
 the June 1990 Interim Remedial Investigation and  
 Feasibility Study report, January 3, 1991.
- P. 304031 - Letter to Mr. Robert Subik, City Attorney, City of  
 304031 - Johnstown, from Mr. Anthony Sheeran, Project  
 Manager, Division of Hazardous Waste Remediation,  
 New York State Department of Environmental  
 Conservation, re: Meeting on January 8, 1991,  
 December 31, 1990.

- P. 304032 - Memorandum to Ms. Dorothy Allen, Emergency  
304032 Remedial and Response Division, U.S. EPA, Region  
II, from Mr. Robert J. Cozzy, Division of  
Hazardous Waste Remediation, New York State  
Department of Environmental Conservation, re:  
Meeting on January 8, 1991, December 31, 1990.
- P. 304033 - Letter to Mr. Anthony Sheeran, New York State  
304033 Department of Environmental Conservation, Division  
of Hazardous Waste Remediation, from Mr. Robert M.  
Subik, City Attorney, City of Johnstown, re:  
Phase II of Remedial Investigation/Feasibility  
Study, December 20, 1990.
- P. 304034 - Letter to Mr. Anthony Sheeran, New York State  
304034 Department of Environmental Conservation, Division  
of Hazardous Waste Remediation, from Mr. Robert  
Subik, City Attorney, City of Johnstown, re: Phase  
II Remedial Investigation/Feasibility Study  
budget, December 12, 1990. (Note: This document  
is CONFIDENTIAL. It is located at United States  
Environmental Protection Agency, Records Center,  
Room 2900, 26 Federal Plaza, New York, New York  
10178.
- P. 304035 - Letter to Ms. Dorothy Allen, Emergency Remedial  
304036 and Response Division, U.S. EPA, Region II, from  
Mr. Anthony Sheeran, New York State Department of  
Environmental Conservation, Division of Hazardous  
Waste Remediation, re: Interim Phase I Report,  
December 4, 1990.
- P. 304037 - Letter to Mr. Robert Subik, City Attorney, City of  
304038 Johnstown, from Mr. Anthony Sheeran, New York  
State Department of Environmental Conservation,  
Division of Hazardous Waste Remediation, re: Phase  
II contract, December 3, 1990.

- P. 304039 - Letter to Ms. Dorothy Allen, Emergency Remedial  
 304048 - and Response Division, U.S. EPA, Region II, from  
 Mr. Anthony Sheeran, New York State Department of  
 Environmental Conservation, Division of Hazardous  
 Waste Remediation, re: Status of the ongoing  
 Remedial Investigation/Feasibility Study and  
 discussion of various Environmental Protection  
 Agency comments contained in the July 19, 1990  
 letter, November 30, 1990.
  
- P. 304049 - Letter to Mr. Anthony Sheeran, New York State  
 304051 - Department of Environmental Conservation, Division  
 of Hazardous Waste Remediation, from Ms. Dorothy  
 Allen, Emergency Remedial and Response Division,  
 U.S. EPA, Region II, re: Johnstown  
 Landfill/Wetlands Delineation, Assessment, Data  
 Validation Review and Communications, November 26,  
 1990.
  
- P. 304052 - Letter to Mr. Anthony Sheeran, New York State  
 304052 - Department of Environmental Conservation, Division  
 of Hazardous Waste Remediation, from Ms. Dorothy  
 Allen, Emergency Remedial and Response Division,  
 U.S. EPA, Region II, re: Environmental Protection  
 Agency guidance for the Remedial Investigation at  
 Johnstown Landfill, September 24, 1990.
  
- P. 304053 - Memorandum to Mr. Melvin Hauptman, Chief, Eastern  
 304053 - New York/Caribbean Compliance Section, from Mr.  
 Marsden Chen, Acting Director, Bureau of Eastern  
 Remedial Action B, DHINR, re: Johnstown Landfill  
 Remedial Investigation/Feasibility Study Meeting,  
 August 15, 1990.
  
- P. 304054 - Letter to Mr. Robert Subik, City Attorney, City of  
 304054 - Johnstown, from Mr. Anthony Sheeran, New York  
 State Department of Environmental Conservation,  
 Division of Hazardous Waste Remediation, re:  
 Interim Report of the Remedial Investigation and  
 Feasibility Study prepared by Normandeau  
 Engineers, Inc., July 31, 1990.
  
- P. 304055 - Letter to Mr. Anthony Sheeran, New York State  
 304068 - Department of Environmental Conservation, Division  
 of Hazardous Waste Remediation, from Ms. Dorothy  
 Allen, Emergency Remedial and Response Division,  
 U.S. EPA, Region II, re: Review of Johnstown  
 Landfill Interim Remedial  
 Investigation/Feasibility Study Report, July  
 18, 1990. U.S. EPA comments on Interim Report  
 attached.

- P. 304069 - Letter to Mr. Anthony Sheeran, New York State  
 304069 - Department of Environmental Conservation, Division  
 of Hazardous Waste Remediation, from Ms. Dorothy  
 Allen, Emergency Remedial and Response Division,  
 U.S. EPA, Region II, re: Johnstown Landfill  
 Remedial Investigation/Feasibility Study Phase I  
 Report, June 19, 1990.
  
- P. 304070 - Letter to Mr. Anthony Sheeran, New York State  
 304088 - Department of Environmental Conservation, Division  
 of Hazardous Waste Remediation, from Mr. Norman W.  
 Spindel and Mr. Scott N. Fein, of Lowenstein,  
 Sandler, Kohl, Fisher & Boylan, Counsellors at  
 Law, re: Interim Report for Johnstown Landfill  
 Remedial Investigation/Feasibility Study, June 26,  
 1990. Attached are two letters re: Comments on  
 the Interim Report for the Remedial  
 Investigation/Feasibility Study and Ecological  
 Risk Assessment.
  
- P. 304089 - Letter to Ms. Dorothy Allen, Emergency Remedial  
 304099 - and Response Division, U.S. EPA, Region II, from  
 Mr. Anthony Sheeran, New York State Department of  
 Environmental Conservation, Division of Hazardous  
 Waste Remediation, re: Status of the New York  
 State Department of Environmental Conservation's  
 Remedial Investigation and Feasibility Study at  
 Johnstown Landfill and request for copies of an  
 Environmental Protection Agency sponsored sampling  
 event from September 1980, May 23, 1990. Sampling  
 and Data Package attached.
  
- P. 304100 - Letter to Mr. Douglas Tomchuk, Environmental  
 304100 - Engineer, U.S. EPA, Region II, from Mr. Anthony  
 Sheeran, New York State Department of  
 Environmental Conservation, Division of Hazardous  
 Waste Remediation, re: Project Status and  
 revisions to the planning documents relative to  
 the Johnstown Landfill Remedial Investigation/  
 Feasibility Study Project, July 6, 1989.
  
- P. 304101 - Letter to Mr. Douglas Tomchuk, Environmental  
 304103 - Engineer, U.S. EPA, Region II, from Mr. Anthony  
 Sheeran, New York State Department of  
 Environmental Conservation, Division of Hazardous  
 Waste Remediation, re: Comments on the Remedial  
 Investigation/Feasibility Study Work Plan,  
 February 15, 1989.

- P. 304104 - Letter to Mr. Robert Subik, City Attorney, City of  
304105 - Johnstown, from Mr. Anthony Sheeran, New York  
State Department of Environmental Conservation,  
Division of Hazardous Waste Remediation, re:  
Conditional approval of January 1989 revision of  
the Remedial Investigation/Feasibility Study Work  
Plans, February 15, 1989.
- P. 304106 - Letter to Mr. Anthony Sheeran, New York State  
304109 - Department of Environmental Conservation, Division  
of Hazardous Waste Remediation, from Mr. Douglas  
Tomchuk, Environmental Engineer, U.S. EPA, Region  
II, re: Johnstown Landfill Revised Work Plan,  
February 8, 1989.
- P. 304110 - Letter to Mr. Robert Subik, Esq., City Attorney,  
304110 - City of Johnstown, from Mr. Anthony R. Sheeran,  
Project Manager, Bureau of Eastern Remedial  
Action, Division of Hazardous Waste Remediation,  
U.S. EPA, Region II, re: Application for 1986  
Environmental Quality Bond Act funding, December  
6, 1988.
- P. 304111 - Letter to Mr. Robert Subik, City Attorney, City of  
304114 - Johnstown, from Mr. Joseph L. Slack, P.E.,  
Director, Bureau of Eastern Remedial Action,  
Division of Hazardous Waste Remediation, New York  
State Department of Environmental Conservation,  
re: The State of New York's comments on the  
September 1988 Remedial Investigation Work Plan,  
November 3, 1988.
- P. 304115 - Letter to Mr. Anthony Sheeran, New York State  
304118 - Department of Environmental Conservation, Division  
of Hazardous Waste Remediation, from Mr. Douglas  
Tomchuk, Environmental Engineer, U.S. EPA, Region  
II, re: Johnstown Landfill Work Plan-Environmental  
Protection Agency's comments, October 20, 1988.
- P. 304119 - Letter to Mr. Anthony Sheeran, New York State  
304120 - Department of Environmental Conservation, Division  
of Hazardous Waste Remediation, from Mr. Geoffrey  
J. Laccetti, Program Research Specialist II,  
Bureau of Environmental Exposure Investigation,  
New York State Department of Health, re: Comments  
on the Revised Work Plan for the Remedial  
Investigation at Johnstown Landfill, October 11,  
1988.

- P. 304121 - Letter to Mr. Anthony R. Sheeran, Bureau of Eastern Remedial Action, New York State Department of Environmental Conservation, from Mr. Douglas J. Tomchuk, Site Compliance Branch, U.S. EPA, Region II, re: Draft comments by Bioassessment Group for Johnstown Landfill, August 22, 1988.
- P. 304122 - Letter to Mr. Robert Subik, City Attorney, City of Johnstown, from Mr. Joseph L. Slack, P.E., Director, Bureau of Eastern Remedial Action, Division of Hazardous Waste Remediation, re: Comments on the March, 1988 Remedial Investigation/Feasibility Study Work Plans, August 5, 1988.
- P. 304128 - Letter to Mr. John Privatera, Assistant Attorney General, Environmental Protection Bureau, Department of Law, from Mr. Geoffrey J. Laccetti, Program Research Specialist II, Bureau of Environmental Exposure Investigation, re: Comments on the Remedial Investigation Work Plan, May 19, 1988.
- P. 304130 - Letter to Mr. Anthony Sheeran, New York State Department of Environmental Conservation, Division of Hazardous Waste Remediation, from Mr. Douglas Tomchuk, Environmental Engineer, U.S. EPA, Region II, re: Johnstown Landfill Work Plan-Environmental Protection Agency's comments, May 6, 1988. Site Layout attached.
- P. 304134 - Letter to Mr. Stephan D. Luftig, Director, Emergency Remedial and Response Division, U.S. EPA, Region II, from Mr. William J. Dreyer of Dreyer, Kinsella, Boyajian and Tuttle, Attorneys at Law, re: City of Johnstown and State of New York negotiation of Interim Consent Order providing for a Remedial Investigation/Feasibility Study of the Johnstown Landfill, April 15, 1988.
- P. 304136 - Letter to Mr. Douglas Tomchuk, Environmental Engineer, U.S. EPA, Region II, from Mr. William J. Dreyer of Dreyer, Kinsella, Boyajian and Tuttle, Attorneys at Law, re: Enclosure of the March 1988 Remedial Investigation Work Plan, April 4, 1988.
- P. 304137 - Letter to Mr. Douglas Tomchuk, Environmental Engineer, U.S. EPA, Region II, from Mr. William J. Dreyer of Dreyer, Kinsella, Boyajian and Tuttle, Attorneys at Law, re: City of Johnstown as a Potentially Responsible Party, February 27, 1988.

- P. 304138 - Letter to Mr. John Privatera, Assistant Attorney  
304139 - General, Environmental Protection Bureau,  
Department of Law, from Mr. Douglas Tomchuk,  
Environmental Engineer, U.S. EPA, Region II, re:  
Environmental Protection Agency's comments on the  
Remedial Investigation Work Plan for Johnstown  
Landfill, September 8, 1987.
- P. 304140 - Letter to Senator Alfonse D'Amato, United States  
304141 - Senator, from Mr. Christopher J. Daggett, Regional  
Administrator, U.S. EPA, Region II, re: Response  
to March 7, 1987 letter concerning Johnstown  
Landfill, April 1, 1987.
- P. 304142 - Letter to Mr. Robert M. Subik, City Attorney, City  
304168 - of Johnstown, from Mr. Paul A. Rubin,  
Hydrogeologist, re: Review of the Remedial  
Investigation Work Plan for the Johnstown  
Landfill, September 4, 1986. Attachments  
include: Hazardous Substance List, Modified Figure  
1 and LaGrange Spring Sampling results.
- P. 304169 - Letter to Mr. David Munro, New York State  
304170A - Department of Law, Environmental Protection  
Bureau, from Mr. John E. Iannotti, P.E.,  
Supervisor, Division of Solid and Hazardous Waste,  
New York State Department of Environmental  
Conservation, re: Proposed Remedial  
Investigation/Feasibility Study Scope of Work,  
July 2, 1986.
- P. 304171 - Letter to Ms. Caroline Kwan, Environmental  
Engineer, U.S. EPA, Region II, from Mr. David A.  
Munro, New York State Department of Law,  
Environmental Protection Bureau, re: Proposed  
Remedial Investigation Work Plan, November 29,  
1985.
- P. 304172 - Letter to Ms. Caroline Kwan, Environmental  
Engineer, U.S. EPA, Region II, from Mr. John E.  
Iannotti, P.E., Supervisor, Division of Solid and  
Hazardous Waste, re: Request for copy of proposed  
Remedial Investigation/Feasibility Study, November  
25, 1985.
- P. 304173 - Letter to Ms. Beverly Brown, GCA Corporation  
Technology Division, from Ms. Caroline Kwan,  
Environmental Engineer, U.S. EPA, Region II, re:  
Enclosure of Dun and Bradstreet reports for  
Johnstown Landfill site, (undated).

#### **4.0 FEASIBILITY STUDY**

##### **4.3 Feasibility Study Report**

- P. 400001 - Report: FINAL REPORT: Feasibility Study for the  
400292 Johnstown Landfill, Johnstown, New York, prepared  
by Thermo Consulting Engineers of New York P.C.,  
for The City of Johnstown, October 1992.

##### **4.5 Supplements and Revisions to Proposed Plan**

- P. 400293 - Supplemental to information in proposed plan,  
400295 January 1993.

##### **4.6 Correspondence**

- P. 400296 - Letter to Mr. Anthony Sheeran, Project Manager,  
400298 New York State Department of Environmental  
Conservation, from Mr. Robert M. Subik, City  
Attorney, City of Johnstown, re: Johnstown  
Landfill RI/FS; Controversy over installation of  
municipal water mains, October 21, 1992. The  
following are attached:  
A-Press release, "Johnstown Dump Neighbors Blast  
City Water Plan," for release (undated).  
B-Press Release, "Town Residents Board Protest,"  
for release (undated).
- P. 400299 - Letter to Mr. Anthony Sheeran, Project Manager,  
400308 Bureau of Central Remedial Action, Division of  
Hazardous Waste Remediation, New York State  
Department of Environmental Conservation, from  
Mr. Robert Nunes, Remedial Project Manager,  
Western New York Superfund Section I, re:  
Johnstown City Landfill, June 1992 Draft  
Feasibility Study Report, July 24, 1992.  
Letter re: Comments on the revised Ecological Risk  
Assessment and Draft RI report, June 30, 1992  
attached.

#### **5.0 RECORD OF DECISION**

##### **5.4 Correspondence**

- P. 500001 - Letter to Mr. Richard Caspe, P.E., Director,  
500004 Office of Emergency and Remedial Response,  
U. S. EPA, from Mr. Michael J. O'Toole, Jr., P.E.,  
Director, Division of Hazardous Waste Remediation,  
re: NPL sites/NYSDEC Lead, August 22, 1990. State  
lead PRP attached.

## 6.0 STATE COORDINATION

### 6.3 Correspondence

- P. 600001 - Letter to Ms. Dorothy Allen, Emergency  
600001 Remedial Response Division U.S. EPA, Region II,  
from Mr. Anthony R. Sheeran, P.E., Project  
Manager, Bureau of Central Remedial Action  
Division of Hazardous Waste Remediation, New York  
State Department of Environmental Conservation,  
re: Johnstown Municipal Landfill Site No. 518002,  
discussing whether the Wetlands assessment  
manual should be listed as Applicable Requirement  
or as a Relevant and Appropriate Requirement  
(ARAR) for the Johnstown Landfill remedial  
program, March 13, 1992.
- P. 600002 - Letter to Ms. Dorothy Allen, Emergency Remedial  
600002 Response Division U.S. EPA, Region II, from Mr.  
Anthony R. Sheeran, P.E., Project Manager, Bureau  
of Central Remedial Action Division of Hazardous  
Waste Remediation, New York State Department of  
Environmental Conservation, re: Johnstown  
Municipal Landfill Site No. 518002, states the  
reference manual for Wetlands delineation doesn't  
meet the definition of an Applicable Requirement  
or a Relevant and Appropriate Requirement.  
February 19, 1992.
- P. 600003 - Letter to Mr. Anthony Sheeran, Project Manager,  
600003 Bureau of Eastern Remedial Action Division of  
Hazardous Waste Remediation, New York State  
Department of Environmental Conservation, from Ms.  
Dorothy Allen, Project Manager, Eastern New  
York/Carribean Superfund Section II, U.S. EPA,  
Region II, re: Federal Manual for Identifying  
and Delineating Jurisdictional Wetlands. February  
6, 1992.
- P. 600004 - Letter to TAG Project Officer, U.S. EPA, Region II  
600004 from Mr. Marcus Harazin, Chair-person of Rainbow  
Alliance for a Clean Environment, Inc., re: Intent  
to apply for Technical Assistance Grant, August 2,  
1988.

## **7.0 ENFORCEMENT**

### **7.1 Enforcement History**

- P. 700001 - List: Waste Hauler's and Industries that used the  
700005 Johnstown Landfill until April 1979. (undated).  
Industrial Hauler's going to Gloversville Landfill  
list attached.

### **7.4 Consent Decrees**

- P. 700006 - Interim Consent Order, Index No. CV-87-636,  
700019 Judge Cholakis, October 4, 1988.

### **7.5 Affidavits**

- P. 700020 - Affidavit, In the matter of an Investigation of  
700021 the Johnstown and Gloversville Landfills, Town of  
Johnstown, Fulton County, New York, August 18,  
1986.
- P. 700022 - Letter to Mr. John Privitera, Assistant Attorney  
700023 General, New York State Department of Law, from  
Mr. Scott N. Fein of Whiteman, Osterman, and  
Hanna, Attorneys at Law, re: Enclosure of a  
affidavit of Theresa Cooke, Vice President of  
Hermann Loewenstein, Inc., October 28, 1986.  
Affidavit attached.
- P. 700024 - Letter to Mr. John Privitera, Assistant Attorney  
700025 General, New York State Department of Law, from  
Mr. Scott N. Fein of Whiteman, Osterman, and  
Hanna, Attorneys at Law, re: Enclosure of a  
affidavit of James Kilmer, September 17, 1986.  
Letter attached.

### **7.6 Documentation of Technical Discussions with PRPs**

- P. 700026 - Letter to Mr. Douglas Tomchuk, Project Manager,  
700109 Emergency and Remedial Response Division, U.S.  
EPA, Region II, from Mr. Norman W. Spindel, of  
Lowenstein, Sandler, Kohl, Fisher and Boylan,  
Counsellors at Law, re: Johnstown, N.Y. Landfill  
Superfund Site, Milligan & Higgins willingness to  
explore the municipal performance of the Remedial  
Investigation/Feasibility Study. February 25,  
1988. Attachments.

- P. 700110 - Letter to Mr. Douglas H. Ward, Assistant Attorney General, New York State Department of Law, from Mr. Jeremiah Wood, of Wood, Holtzworth and Seward, re: Lee Dying Company as a non potentially responsible party for transport of hazardous substance to Johnstown Landfill, April 4, 1984.  
700121 -

**7.7 Notice Letters and Responses - 104e's**

- P. 700122 - Letter to Mr. Douglas Tomchuk, Emergency and Remedial Response Division, U.S. EPA, Region II, from Mr. John D. Gates, Secretary/Treasurer, Gates-Mills, Inc., re: Request for Information for Artcraft Glove Corporation, Inc., Certification of answers to request for information attached, September 30, 1989.  
700123 -
- P. 700124 - Letter to Mr. Douglas Tomchuk, Emergency and Remedial Response Division, U.S. EPA, Region II, from Mr. John D. Gates, Secretary/Treasurer, Gates-Mills, Inc., re: Request for Information for Crescendoe Gloves, Inc., Certification of answers to request for information attached, September 30, 1989.  
700125 -
- P. 700126 - Letter to Mr. Douglas Tomchuk, Emergency and Remedial Response Division, U.S. EPA, Region II, from Mr. John D. Gates, Secretary/Treasurer, Gates-Mills, Inc., re: Request for Information for Daniel Hayes Co., Certification of answers to request for information attached, September 30, 1989.  
700127 -
- P. 700128 - Letter to Mr. Douglas Tomchuk, Emergency and Remedial Response Division, U.S. EPA, Region II, from Mr. Scott N. Fein, of Whiteman, Osterman & Hanna, Attorneys at Law, re: 104(e) response to the Request for Information for Simco Leather Corporation, December 20, 1988.  
700142 -
- P. 700143 - Letter to Mr. Douglas Tomchuk, Emergency and Remedial Response Division, U.S. EPA, Region II, from Mr. Michael J. Murphy, of Ainsworth, Sullivan, Tracy, Knauf, Warner and Ruslander, Attorneys at Law, re: 104(e) response to the Request for Information for St. Amour Refuse Collection Service, Inc., August 26, 1988.  
700161 -  
(Note: Attachment is CONFIDENTIAL. It is located at United States Environmental Protection Agency, Records Center, Room 2900, 26 Federal Plaza, New York, New York, 10278).

- P. 700162 - Letter to Mr. Douglas Tomchuk, Emergency and  
700175 - Remedial Response Division, U.S. EPA, Region II,  
from Mr. Scott N. Fein, of Whiteman, Osterman &  
Hanna, Attorneys at Law, re: 104(e) response to  
the Request for Information for Johnstown Leather  
Corporation, June 1, 1988.
- P. 700176 - Letter to Mr. Douglas Tomchuk, Emergency and  
700179 - Remedial Response Division, U.S. EPA, Region II,  
from Mr. Scott N. Fein, of Whiteman, Osterman &  
Hanna, Attorneys at Law, re: Pan American  
Tanning Corporation and Johnstown Leather  
Corporation notarized certificate and  
identification forms, May 17, 1988. Forms  
attached.
- P. 700180 - Letter to Mr. Douglas Tomchuk, Emergency and  
700195 - Remedial Response Division, U.S. EPA, Region II,  
from Mr. Scott N. Fein, of Whiteman, Osterman &  
Hanna, Attorneys at Law, re: 104(e) response to  
the Request for Information for Carville National  
Leather Corporation, May 12, 1988.
- P. 700196 - Letter to Mr. Douglas Tomchuk, Emergency and  
700239 - Remedial Response Division, U.S. EPA, Region II,  
from Mr. Scott N. Fein, of Whiteman, Osterman &  
Hanna, Attorneys at Law, re: 104(e) response to  
the Request for Information for Pan American  
Tanning Corporation, Karg Bros. Inc., and Crown  
Leather Finishing, Inc., May 5, 1988.
- P. 700240 - Letter to Mr. Douglas Tomchuk, Emergency and  
700240 - Remedial Response Division, U.S. EPA, Region II,  
from Mr. Scott N. Fein, of Whiteman, Osterman &  
Hanna, re: Feuer Leather Corporation denial of  
disposal, May 3, 1988.
- P. 700241 - Letter to Mr. Douglas Tomchuk, Emergency and  
700241 - Remedial Response Division, U.S. EPA, Region II,  
from Mr. Ivan Becker, Executive Vice-President,  
Crescent Leather Finishing Co., re: Response to  
item #10 of Request for Information, April 21,  
1988.
- P. 700242 - Letter to Mr. Douglas Tomchuk, Emergency and  
700243 - Remedial Response Division, U.S. EPA, Region II,  
from Ms. Donna L. Kolar, Attorney for Browning -  
Ferris Industries of New York Inc., re: Response  
to 104(e) Request for Information, April 20, 1988.

- P. 700244 - Letter from Mr. Vincent J. Ambrosino of Ambroson  
700244 - Gloves Inc., re: response to request for  
information, April 13, 1988. Handwritten.
  
- P. 700245 - 104(e) response to the Request for Information for  
700251 Elmer Little Gloves, April 12, 1988.  
(Note: Attachment is CONFIDENTIAL. It is  
located at United States Environmental Protection  
Agency, Records Center, Room 2900, 26 Federal  
Plaza, New York, New York, 10278).
  
- P. 700252 - Letter to Mr. Douglas Tomchuk, Emergency and  
700252 Remedial Response Division, United States  
Environmental Protection Agency, from Ms. Theresa  
Cooke, Comptroller, re: Herman Loewenstein Inc.,  
as a potentially responsible party, April 12,  
1988.
  
- P. 700253 - 104(e) response to the Request for Information for  
700256 Noone Gloves, Inc., from Mr. Thomas Noone, April  
12, 1988.
  
- P. 700257 - Letter to Mr. Douglas Tomchuk, Emergency and  
700257 Remedial Response Division, United States  
Environmental Protection Agency, from Mr. Fred A.  
Rulison, President, F. Rulison & Sons, Inc., re:  
Response to Request for Information, April 11,  
1988.
  
- P. 700258 - Letter to Mr. Douglas Tomchuk, Emergency and  
700258 Remedial Response Division, U.S. EPA, Region II,  
from Ms. Gwen S. Walsh, of Browning - Ferris  
Industries, Inc., re: extension to 104(e)  
Request for Information, April 11, 1988.
  
- P. 700259 - Letter to Ms. Elena Kissel, Esq., U.S. EPA,  
700260 Region II, from Mr. Ronald G. Hull, of Nixon,  
Hargrave, Devans and Doyle, Attorneys at Law, re:  
Request for Information from Gloversville/  
Johnstown Joint Sewer Board concerning Johnstown  
Landfill site, April 11, 1988.
  
- P. 700261 - Letter to Mr. Douglas Tomchuk, Emergency and  
700272 Remedial Response Division, U.S. EPA, Region II,  
from Mr. Bruce E. Miller, of Bruce E. Miller  
Trucking, re: 104(e) response to Request for  
Information for Bruce E. Miller Trucking, April  
11, 1988.

- P. 700273 - Letter to Mr. Douglas Tomchuk, Emergency and  
700274 - Remedial Response Division, U.S. EPA, Region II,  
from Mr. Robert Pitcavage, of Bob's Trucking, re:  
104(e) response to Request for Information for  
Bob's Trucking, April 11, 1988. Attachment for  
certification of answer to request for  
information.
  
- P. 700275 - Identification and Certification of potentially  
700276 - responsible party of Independent Leather  
Manufacturing Corporation. April 9, 1988.
  
- P. 700277 - 104(e) response to the Request for Information for  
700281 - Kiernan State St. Leather, Inc., April 8, 1988.  
Handwritten.
  
- P. 700282 - Letter to Mr. Douglas Tomchuk, Emergency and  
700282 - Remedial Response Division, U.S. EPA, Region II,  
from Mr. Norman W. Spindel, Lowenstein, Sandler,  
Kohl, Fisher and Boylan, Counsellors at Law, re:  
Request for Information concerning Johnstown  
Landfill, April 8, 1988.
  
- P. 700283 - Letter to Mr. Douglas Tomchuk, Emergency and  
700284 - Remedial Response Division, U.S. EPA, Region II,  
from Mr. Robert Wilcox, owner of Bob Wilcox's  
Rubbish Removal, re: Request for Information,  
April 8, 1988.
  
- P. 700285 - Letter to Mr. Douglas Tomchuk, Emergency and  
700317 - Remedial Response Division, U.S. EPA, Region II,  
from Mr. John D. Gates, Secretary/Treasurer,  
Gates-Mills, Inc., re: 104(e) response to the  
Request for Information, for Gates Mills, Inc.,  
April 7, 1988. General Liability Policy attached.  
(Note: Attachment is CONFIDENTIAL. It is  
located at United States Environmental Protection  
Agency, Records Center, Room 2900, 26 Federal  
Plaza, New York, New York, 10278).
  
- P. 700318 - Letter to Mr. Douglas Tomchuk, Emergency and  
700321 - Remedial Response Division, U.S. EPA, Region II,  
from Mr. Herman DiMaio, of H & J Leather  
Finishers, re: 104(e) response to the Request for  
Information for H & Leather Finishers. April 5,  
1988.

- P. 700322 - Letter to Mr. Douglas Tomchuk, Emergency and  
700322 - Remedial Response Division, U.S. EPA, Region II,  
from Mrs. Jane Vosburgh of Combined Leasing Group  
International, re: Potentially Responsible Party  
status, April 4, 1988. Handwritten.
  
- P. 700323 - Letter to Mr. Douglas Tomchuk, Emergency and  
700325 - Remedial Response Division, U.S. EPA, Region II,  
from Mr. Steven T. Hart, of Hart's Trucking  
Service, re: 104(e) response to the Request for  
Information for Hart's Trucking Service, April 4,  
1988.
  
- P. 700326 104(e) response to request for information from  
700329 Merton J. Lesser, April 3, 1988.
  
- P. 700330 - Letter to Mr. Douglas Tomchuk, Emergency and  
700343 - Remedial Response Division, U.S. EPA, Region II,  
from Mr. Clark Easterly, President, of Johnstown  
Knitting Mill Co., re: The Johnstown Knitting  
104(e) response to the Request for Information,  
March 31, 1988. (Note: Attachment is  
CONFIDENTIAL. It is located at United States  
Environmental Protection Agency, Records Center,  
Room 2900, 26 Federal Plaza, New York, New York,  
10278).
  
- P. 700344 - Letter to Mr. Douglas Tomchuk, Emergency and  
700345 - Remedial Response Division, U.S. EPA, Region II,  
from Mr. Terry A. Kucel, President, Crescent  
Leather Finishing Co., Inc., re: 104(e) response  
to Request for Information for the Crescent  
Leather Finishing Co., Inc., March 31, 1988.
  
- P. 700346 - Identification and certification for Milbrook  
700349 Kitchens, Inc., March 30, 1988.
  
- P. 700350 - 104(e) response to Request for Information for the  
700351 M.F. Adams & Sons Inc. March 29, 1988.  
Handwritten.
  
- P. 700352 - Letter to Johnstown Landfill Superfund site from  
700363 Mr. Stephen D. Luftig, Director, Emergency and  
Remedial Response Division, U.S. EPA, Region II,  
re: Request for information, March 25, 1988.
  
- P. 700364 - Letter to R.L. Kilmer & Sons, Inc. from Mr.  
700372 Stephen D. Luftig, Director, Emergency and  
Remedial Response Division, U.S. EPA, Region II,  
re: Request for information, March 25, 1988.

- P. 700373 - Letter to Ms. Elena Kissel, Office of Regional  
700373 - Counsel, U.S. EPA, Region II, from Mr. Scott N.  
Fein of Whiteman, Osterman, and Hanna, Attorneys  
at Law, re: Enclosure of a list of Potentially  
Responsible Parties, March 10, 1988.
  
- P. 700374 - General notice letter to be sent to potentially  
700378 - responsible parties, February 12, 1988.  
Attachments.
  
- P. 700379 - List of recipients of Special Notice Letter for  
700384 - Johnstown Landfill Superfund Site, February 1988.
  
- P. 700385 - Response to Demand - In the Matter of and  
700395 - Investigation of the Johnstown and Gloversville  
Landfills, Town of Johnstown, Fulton County, New  
York, re: St. Amour Refuse Collections Service,  
Inc., October 20, 1986.
  
- P. 700396 - Letter from Ms. Linda M. Arnold, Vice-President,  
700397 - Jones & Naudin Leather Corporation, re: Sanitary  
waste and materials, September 9, 1986.  
Attachment.
  
- P. 700398 - Letter to Mr. John Privitera, Assistant Attorney  
700401 - General, New York State Department of Law, from  
Mr. Jeremiah Wood of Wood, Holtzworth and Seward,  
re: Status of Baronet Litho, Inc., as a  
potentially responsible party, August 15, 1986.
  
- P. 700402 - Letter to Mr. John Privitera, Esq., Assistant  
700403 - Attorney General, State of New York Department of  
Law, Environmental Protection Bureau, from Murphy,  
Niles & Greco, Attorneys at Law, re: Response to  
demand letter for Pearl Leather Finishers, Inc.,  
August 14, 1986.
  
- P. 700404 - Letter to Mr. Robert Abrams, Attorney General for  
700406 - the State of New York, from Mr. Alfred Zambella,  
of Fashion Tanning Company, Inc., re: Question of  
Potentially Responsible Party status. August 12,  
1986. Attachment.
  
- P. 700407 - Letter to Honorable Donald F. Murphy, Mayor, City  
700409A - of Johnstown, from Mr. John Privitera and David A.  
Munro, Assistant Attorney Generals, re: Claim  
concerning Johnstown Landfill, July 15, 1986.

- P. 700410 - Letter to Mr. John Privitera, Esq., Assistant  
700412 - Attorney General, State of New York Department of  
Law, Environmental Protection Bureau, from Mr.  
William P. Willig, of Higgins, Roberts, Beyerl &  
Coan, P.C., Attorneys and Counsellors at Law, re:  
Tiffany Leather Company, Inc., response to demand,  
June 11, 1986.
  
- P. 700413 - Letter to Mr. David Munro, State of New York  
700415 - Department of Law, Environmental Protection  
Bureau, from Mr. Edward G. Suffern, Suffern  
Chemical Co., Inc., re: Frequent visits to  
Johnstown Landfill prior to 1974, May 19, 1986.  
Reply letter attached.
  
- P. 700416 - Letter to Suffern Chemical Company, Inc., from Mr.  
700418 - Frank Giocando, Assistant Branch Manager,  
Merchants Insurance Company, re: Liability  
policies and definitions, May 13, 1986.
  
- P. 700419 - Response to Demand - In the Matter of and  
700421 - Investigation of the Johnstown and Gloversville  
Landfills, Town of Johnstown, Fulton County, New  
York, re: Coleco Industries, May 6, 1986.
  
- P. 700422 - Letter to Mr. David Monroe, Esq., Mr. Douglas  
700553 - Ward, Esq., Assistant Attorney Generals, from Mr.  
Scott N. Fein, of Whiteman, Osterman and Hanna,  
Attorneys at Law, re: Request for information  
concerning contributions by the Tanners to the  
Gloversville and Johnstown landfills, July 29,  
1985.
  
- P. 700554 - Letter to Honorable Douglas H. Ward, Assistant  
700554 - Attorney General, Environmental Protection Bureau,  
New York State Department of Law, re: Leavitt-  
Bernier Tanning Corporation--confirmation of  
representation and company records, July 18, 1985.
  
- P. 700555 - Letter to Mr. Douglas H. Ward, Esq., Assistant  
700556 - Attorney General, Environmental Protection Bureau,  
Department of Law, and Mr. Malcolm Coutant, Esq.,  
Attorney, Department of Environmental  
Conservation, from Mr. William P. Willig, of  
Higgins, Roberts, Beyerl & Coan, Attorneys and  
Counselors at Law, re: Response to request for  
information letter, June 5, 1985.

- P. 700557 - Letter to Mr. Douglas H. Ward, Esq., Assistant  
700558 - Attorney General, Environmental Protection Bureau,  
from Mr. Kormanek Ronald S. Kormanell, Vice-  
President, Milligan & Higgins, re: Response to  
request for information letter, May 14, 1985.
- P. 700559 - Letter to State of New York Department of Law,  
700564 - from Mr. Solomon B. Wise, Gloversville Embossing  
Company, Inc., re: Response to 104(e) letter, May  
6, 1985. Statement attached.
- P. 700565 - Letter to Mr. Douglas Ward, Assistant Attorney  
700569 - General, Environmental Protection Bureau, New York  
State Department of Law from Mr. Robert L. Miller,  
Manager, Hazardous Materials and Environmental  
Protection Agency, re: Hussman Corporation  
response to 104(e) request for information, May  
3, 1985.
- P. 700570 - Letter to Mr. Douglas Ward, Assistant Attorney  
700571 - General, Environmental Protection Bureau, New York  
State Department of Law from Mr. George H. Voght,  
G.H. Voght Trucking, re: Request for Information  
concerning G.H. Voght Trucking, May 1, 1985.
- P. 700572 - Letter to State of New York Department of Law,  
from Mr. Walter Wessendorf Sr., Wessendorf Glove  
Co., re: Wessendorf Brothers, Glove Company as  
potentially responsible party, April 27, 1985.  
Handwritten.
- P. 700573 - 104(e) response to request for information for  
700577 - Ernest Horning, April 22, 1985. Handwritten.
- P. 700578 - Letter to Mr. Douglas Ward, Assistant Attorney  
700583 - General, Environmental Protection Bureau, New York  
State Department of Law, from Mr. Richard T.  
Aulisi, of Caputo, Aulisi and Skoda, Attorneys and  
Counselors at Law, re: Daytona Corporation (Bridge  
Manufacturing Corporation), status as potentially  
responsible party, April 12, 1985. Letter  
attachments.
- P. 700584 - Letter to Mr. Douglas Ward, Mr. Malcolm Coutant,  
700593 - Environmental Protection Bureau, Department of Law  
from Mr. Richard F. Goebel Sr., Plant Manager, The  
Glove City Abroading Co., Inc., re: Request  
dated 3/19/85 for information relating to  
transportation of hazardous waste, April 4, 1985.

- P. 700594 - Letter to Mr. Douglas H. Ward, Esq., Assistant  
700595 Attorney General, Environmental Protection  
Bureau, Department of Law, and Mr. Malcolm  
Coutant, Esq., Attorney, Department of  
Environmental Conservation, from  
Mr. Donald R. Seelow, Controller, The Johnstown  
Knitting Mill Company, re: Response to 104(e)  
letter, April 4, 1985.
- P. 700596 - Letter to State of New York, Department of Law,  
700626 from Mr. Larry Potter, President, Skin & Leather  
Co., Inc., re: Response to 104(e) letter, April 3,  
1985. Laboratory Report and Landfill User  
Statements attached.
- P. 700627 - Letter to Mr. Douglas H. Ward, Assistant  
700632 Attorney General, Environmental Protection  
Bureau, State of New York Department of Law, from  
Mr. Leonard Prall, Prall's Trucking and Rubbish  
Removal, re: Response to 104(e) letter with  
attachments, April 3, 1985. Handwritten.
- P. 700633 - Letter to Mr. Douglas H. Ward, Assistant Attorney  
700634 General, Environmental Protection Bureau, State of  
New York Department of Law, from Mr. Richard  
Hogan, Manager, Waste Water Treatment Facility,  
Gloversville-Johnstown Joint Sewer Board, re:  
Response to 104(e) letter, April 2, 1985. Letter  
attached.
- P. 700635 - Letter to Mr. Douglas Ward, Assistant Attorney  
700636 General, Environmental Protection Bureau, New York  
State Department of Law, from Mr. C. Holden  
Bachner, C.J. Bachner & Sons, Inc., Gloves by  
Bachner, re: Status of company as potentially  
responsible party, April 2, 1985.
- P. 700637 - Letter to Mr. Douglas H. Ward, Assistant Attorney  
700637 General, Environmental Protection Bureau, State of  
New York Department of Law, from Mr. Robert  
Wilcox, re: Response to 104(e) letter, April 2,  
1985. Handwritten.
- P. 700638 - Letter to Mr. Douglas H. Ward, Assistant Attorney  
700638 General, Environmental Protection Bureau, State of  
New York Department of Law, from Mr. R.G. Brown,  
Technical Director, Wells Chemical Company, Inc.,  
re: Response to 104(e) letter, April 1, 1985.

- P. 700639 - Letter to Mr. Douglas H. Ward, Assistant Attorney  
700640 - General, Environmental Protection Bureau, State of  
New York Department of Law, from Mr. Humbert  
Saluzzo, President, Perrella Gloves Inc., re:  
Response to request for information for Perrella  
Gloves, Inc., April 1, 1985.
- P. 700641 - Letter to Mr. Douglas H. Ward, Assistant Attorney  
700643 - General, Environmental Protection Bureau, State of  
New York Department of Law, from Mr. Renato  
Sanges, Grandoe Information Corporation, re:  
Response to Request for Information for Grandoe  
International Corporation, April 1, 1985.
- P. 700644 - Letter to Mr. Douglas Ward, Mr. Malcolm Coutant,  
700645 - Environmental Protection Bureau, State of New York  
Department of Law, from Ms. Mary Jane Chapman, of  
Quinn, Jacobs, Barry and Miller, Attorneys at Law,  
re: Extension to Request for Information for  
Hermann Lowenstein, Inc., April 1, 1985.
- P. 700646 - Letter to Mr. Douglas Ward, Assistant Attorney  
700647 - General, Environmental Protection Bureau, New York  
State Department of Law, from Mr. William B.  
Gates, Gates-Mills, Inc., re: City of Johnstown  
Municipal Landfill, status as potentially  
responsible party, April 1, 1985.
- P. 700648 - Letter to Mr. Douglas Ward, Assistant Attorney  
700648 - General, Environmental Protection Bureau, New York  
State Department of Law, from Mr. James A. Curtin,  
Curtin-Hebert Co., Inc., re: Status as potentially  
responsible party, March 29, 1985.
- P. 700649 - Letter to Mr. Malcolm Coutant, Attorney, State of  
700650 - New York, Department of Law, from Mr. George W.  
Taylor, Fulton County Silks Mills, re: Letter of  
3/19/85 City of Johnstown Municipal Landfill,  
March 29, 1985.
- P. 700651 - Letter to Mr. Douglas H. Ward, Esq., Assistant  
700651 - Attorney General, Environmental Protection Bureau,  
New York State Department of Law, from Mr. Michael  
E. Lucas, Treasurer and General Manager, The  
Leader-Herald, re: Response to 104(e) letter,  
March 28, 1985.
- P. 700652 - Letter to State of New York Department of Law,  
700653 - from Ms. Everett Weber, Rubin Gloves, Inc., re:  
Response to 104(e) letter, March 27, 1985.

- P. 700654 - Letter to State of New York Department of Law,  
700655 - Department of Environmental Conservation, from  
Mrs. Edward G. Suffern, Suffern Chemical  
Company, Inc., re: Response to 104(e) letter,  
March 27, 1985.
  
- P. 700656 - Letter to Mr. Douglas H. Ward, Assistant Attorney  
700656 - General, Environmental Protection Bureau, New York  
State Department of Law, from Mr. George E. Bradt,  
President, G. Levor & Company Inc., re: Response  
to 104(e) letter, March 27, 1985.
  
- P. 700657 - Letter to State of New York Department of Law,  
700658 - from Mr. Robert A. Kazmierski, of Bob's Taxidermy  
Studio, re: Status as potentially responsible  
party, March 26, 1985. Attachment.
  
- P. 700659 - Letter to Mr. Douglas H. Ward, Assistant Attorney  
700661 - General, Environmental Protection Bureau, New York  
State Department of Law, and Mr. Malcolm Coutant,  
Esq., Attorney, Department of Environmental  
Conservation, from Donald A. Fleischut, President,  
Somerset Industries, Inc., re: Response to Request  
for Information, March 25, 1985.
  
- P. 700662 - Letter to Mr. Douglas H. Ward, Assistant Attorney  
700662 - General, Environmental Protection Bureau, New York  
State Department of Law, from Mr. William M. St.  
Thomas, Executive Coordinator, St. Thomas, Inc.,  
re: Response to request for information, March 25,  
1985.
  
- P. 700663 - Inter-office memo to Department of Environmental  
700663 - Conservation from Stan Bellinger Trucking, re:  
Gloversville Landfill Disposal, March 24, 1985.  
Handwritten.
  
- P. 700664 - Letter to State of New York Department of Law,  
700664 - from Ms. Lynn Saltsman, Saltsman Enterprises, re:  
Hazardous waste disposal by Saltman Enterprises,  
March 22, 1985.
  
- P. 700665 - Letter to State of New York Department of Law,  
700665 - Department of Environmental Conservation, from Mr.  
Henry J. Lesser, Henry J. Lesser Glove Company  
Inc., re: Reply to Request for Information, March  
21, 1985.
  
- P. 700666 - Letter to State of New York Department of Law,  
700666 - from Mr. Warren Dennie, Warden Leathers, Inc., re:  
Reply to request for information, March 20, 1985.

- P. 700667 - Letter to Mr. Douglas H. Ward, Assistant Attorney General, Environmental Protection Bureau, New York State Department of Law, from Mr. Fred A. Rulison, Chief Executive Officer, F. Rulison & Sons, Inc., re: Reply to Request for Information, March 20, 1985.

700667 -
- P. 700668 - Letter to State of New York Department of Law, from Mr. Peter Leonardi, President, Halo Optical Products, Inc., re: Reply to request for information, March 20, 1985.

700668 -
- P. 700669 - Letter to T&R Toggling Company, from Mr. Douglas H. Ward, Assistant Attorney General, Environmental Protection Bureau, New York State Department of Law, and Mr. Malcolm Coutant, Esq., Attorney, Department of Environmental Conservation, New York State Department of Law, re: New York State version of 104(e) letter, City of Johnstown Landfill, March 19, 1985.

700671 -
- P. 700672 - Letter to J&J Trucking, from Mr. Douglas H. Ward, Assistant Attorney General, Environmental Protection Bureau, New York State Department of Law, and Mr. Malcolm Coutant, Esq., Attorney, Department of Environmental Conservation, New York State Department of Law, re: New York State version of 104(e) letter, City of Johnstown Landfill, March 19, 1985.

700674 -
- P. 700675 - Letter to JAD Industries, Inc., from Mr. Douglas H. Ward, Assistant Attorney General, Environmental Protection Bureau, New York State Department of Law, and Mr. Malcolm Coutant, Esq., Attorney, Department of Environmental Conservation, New York State Department of Law, re: New York State version of 104(e) letter, City of Johnstown Landfill, March 19, 1985.

700677 -
- P. 700678 - Letter to Gloversville Snow Melte, from Mr. Douglas H. Ward, Assistant Attorney General, Environmental Protection Bureau, New York State Department of Law, and Mr. Malcolm Coutant, Esq., Attorney, Department of Environmental Conservation, New York State Department of Law, re: New York State version of 104(e) letter, City of Johnstown Landfill, March 19, 1985.

700680 -

- P. 700681 - Letter to Hohenforst Splitting Company, Inc., from  
 700683 - Mr. Douglas H. Ward, Assistant Attorney General,  
 Environmental Protection Bureau, New York State  
 Department of Law, and Mr. Malcolm Coutant, Esq.,  
 Attorney, Department of Environmental  
 Conservation, New York State Department of Law,  
 re: New York State version of 104(e) letter, City  
 of Johnstown Landfill, March 19, 1985.
- P. 700684 - Letter to Innovation Packaging, Inc., from Mr.  
 700687 - Douglas H. Ward, Assistant Attorney General,  
 Environmental Protection Bureau, New York State  
 Department of Law, and Mr. Malcolm Coutant, Esq.,  
 Attorney, Department of Environmental  
 Conservation, New York State Department of Law,  
 re: New York State version of 104(e) letter, City  
 of Johnstown Landfill, March 19, 1985.
- P. 700688 - Letter to New York State Department of  
 700694 - Environmental Conservation, from Mr. Renato J.  
 Sanges, Manager, Grandoe International  
 Corporation, re: Enclosed and attached Hazardous  
 Waste Disposal Questionnaire and Survey, September  
 19, 1984.
- P. 700695 - Letter to New York State Department of  
 700699 - Environmental Conservation, Division of Solid  
 Waste, from Mr. John Grit Savage, The Grandoe  
 Corporation, re: Enclosure of permit to transport  
 waste ad collector annual report, September 23,  
 1981.
- P. 700700 - 104(e) response to request for information for  
 700782 - N.A. Taylor Personnel at the South Boulevard Plant  
 Involved in the Management and Handling of  
 Hazardous Waste Material, (undated).
- P. 700783 - Letter to State of New York Department of Law,  
 700783 - from Robert Jump & Son Trucking, re: Reply to  
 Request for Information, (undated).
- P. 700784 - 104(e) response to Request for Information for  
 700785 - R.L. Kilmer & Sons Inc., (undated).
- P. 700786 - Letter from Mr. Larry Rajjano, of Mr. Larry  
 700787 - Rajjano Trucking, re: Breakdown of hazardous  
 waste, (undated). Handwritten.
- P. 700888 - Johnstown Information Request List of addresses,  
 700792 - (undated).

## **7.8 Correspondence**

- P. 700793 - Letter to Mr. Anthony Sheeran, New York State  
700798 Department of Environmental Conservation, Division  
of Hazardous Waste Remediation, from Mr. Robert M.  
Subik, City of Johnstown, re: Johnstown Remedial  
Investigation/Feasibility Study, April 6, 1992.  
Attachments.
- P. 700799 - Letter to Mr. Paul Van Cott, Esq., Division of  
700799 Environmental Enforcement, New York State  
Department of Environmental Conservation, from Mr.  
John J. Privitera, Assistant Attorney General,  
State of New York, Department of Law, re: State  
of New York v. City of Johnstown, et al.  
87-CV-636, October 18, 1988.
- P. 700800 - Letter to Mr. John Privitera, Assistant Attorney  
700801 General, Environmental Protection Bureau, New York  
State Department of Law, from Mr. Paul Simon,  
Assistant Regional Counsel, Office of Regional  
Council, re: Comments concerning Interim Consent  
Order between the State and the City of Johnstown,  
June 6, 1988.
- P. 700802 - List: Index of documents requested pursuant to  
700813 FOIA, from New York State Attorney Generals  
potentially responsible party file, Tanners  
Association, (undated).

## **10.0 PUBLIC PARTICIPATION**

### **10.1 Comments and Responses**

- P. 1000001 - Letter to 16 residents that attended the Johnstown  
1000001 Public meeting on 2/10/93, from Mr. Robert J.  
Cozzy, P.E., Chief, Special Project Section,  
Bureau of Central Remedial Action, Division of  
Hazardous Waste Remediation, re: Attendance at  
public meeting and enclosure of Proposed Remedial  
Action Plan, February 11, 1993.

### 10.3 Public Notices

- P. 1000002 - Public notice: "The New York State Department of Environmental Conservation and the Environmental Protection Agency propose a cleanup remedy and schedule a Public Meeting for the Johnstown City Landfill Site", for release January 20, 1993.

### 10.6 Fact Sheets and Press Releases

- P. 1000003 - News article: "Town residents, board protest potential water hookup," for release October 20, 1992.
- P. 1000004 - News article: "Gloversville's plan to reopen landfill rejected," for release October 14, 1992.
- P. 1000005 - News article: "Landfill closing still under study," for release January 24, 1991.
- P. 1000007 - Fact Sheet: Johnstown Landfill Fact Sheet, April 15, 1986.
- P. 1000010 - Question and Answer Fact Sheet for the Johnstown Landfill as prepared by the N.Y.S. Dept. of Environmental Conservation, Division of Solid & Hazardous Waste, April 1986.

### 10.9 Proposed Plan

- P. 1000016 - Proposed Plan to Johnstown City Landfill, January 1993.

### 10.10 Correspondence

- P. 1000030 - Letter to Ms. Sandy Fonda, Rainbow Alliance for a Clean Environment, Inc., from Ms. Lillian Johnson, Chief, Community Relations Staff, Office of External Programs, re: Technical Assistance Grant for Johnstown Landfill, April 1, 1989. Handwritten note attached.

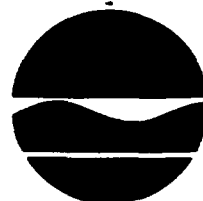
APPENDIX IV

NYSDEC LETTER OF CONCURRENCE

1000128

New York State Department of Environmental Conservation  
50 Wolf Road, Albany, New York 12233

*cc: Pavluc  
Casper  
Dibey*



Thomas C. Jorling  
Commissioner

MAR 23 1993

Mr. William J. Muszynski  
Acting Regional Administrator  
United States Environmental  
Protection Agency, Region II  
26 Federal Plaza  
New York, New York 10278

US EPA  
93 MAR 29 PM 4:21  
PPIB

Dear Mr. Muszynski:

RE: Johnstown City Landfill - Site No. 518002  
Record of Decision

Concerning the draft Record of Decision at the Johnstown City Landfill Site, the New York State Department of Environmental Conservation (NYSDEC) concurs with the United States Environmental Protection Agency's (USEPA) selection of Alternative SC-3, which will include the following major components:

1. Excavation of the LaGrange Gravel Pit sediments, placing the excavated materials on the existing landfill. The pit would then be filled with clean fill to eliminate any standing water.
2. Construction of a multi-layer closure cap over the landfill mound and excavated sediments per New York State 6NYCRR Part 360 regulations.
3. Expansion of the Johnstown City water supply system to provide potable water to all private water supplies potentially impacted by the landfill.
4. Erection of approximately 6800 feet of conventional chain link fencing surrounding the entire landfill mound, with placement of appropriate warning signs.
5. Performance of air monitoring prior to, during, and following construction at the site. Perimeter subsurface gas monitoring between the landfilled area and adjacent properties will be conducted and landfill gas emissions controlled as needed.

1000129

6. Performance of a maintenance and monitoring program which at a minimum will fulfill the requirements of 6NYCRR Part 360 for post closure monitoring.
7. Performance of a Stage 1A cultural resources survey in on-site and in off-site areas where there is a potential impact to cultural resources.
8. Imposition of property deed restrictions which will include measures to prevent the installation of drinking water wells at the site and restrict activities which could affect the integrity of the cap.

The NYSDEC also concurs with the contingent remedy, Alternative SC-6, which may be implemented should monitoring results show that groundwater and/or surface water quality is not being restored to acceptable levels through natural attenuation after construction of the landfill cap required in Alternative SC-3. Alternative SC-6 would include all of the major components of Alternative SC-3 described above, and in addition groundwater extraction, treatment and discharge.

If you have any questions, please contact Mr. Robert Cozzy at 518-457-1641.

Sincerely,



Ann Hill DeBarbieri  
Deputy Commissioner  
Office of Environmental  
Remediation

10,00130

62109

APPENDIX V  
RESPONSIVENESS SUMMARY

## APPENDIX V

### RESPONSIVENESS SUMMARY

#### JOHNSTOWN CITY LANDFILL SUPERFUND SITE

##### Introduction

A responsiveness summary is required by Superfund policy. It provides a summary of citizens' comments and concerns received during the public comment period, and the New York State Department of Environmental Conservation's (NYSDEC's) and the United States Environmental Protection Agency's (EPA's) responses to those comments and concerns. All comments summarized in this document have been considered in NYSDEC's and EPA's final decision for selection of a remedial alternative for the Johnstown City Landfill site.

##### Summary of Community Relations Activities

NYSDEC, the lead agency for this project, conducted community relations activities related to the remedial investigation and feasibility study (RI/FS) and oversaw community relations activities conducted by the City of Johnstown.

On May 17, 1989, a public informational meeting was held concerning the workplan for the RI/FS. Two local document repositories were set up at the Johnstown Public Library and the City of Johnstown City Hall. A follow-up public meeting was held on June 13, 1990 to describe the results of the first phase of the RI and to present plans for the second phase of field work.

A public comment period associated with the RI/FS report and the Proposed Plan was held from January 21 through February 19, 1993. The availability of the RI/FS report and the Proposed Plan and a public meeting to discuss the results of the RI/FS and to present the preferred remedy, were advertised by means of a legal notice in the January 20, 1993 Johnstown Leader Herald. A press release was issued by NYSDEC on January 21, 1993 announcing the public comment period and the public meeting. Residents, interested public, and local officials listed on the site contact list were mailed notices to encourage their participation and to solicit comments on the Proposed Plan and the RI/FS reports.

A public meeting took place on February 10, 1993 at the Johnstown High School in Johnstown, New York. Approximately 80 people attended, including representatives of EPA, NYSDEC, and the New York State Department of Health (DOH), as well as local officials, residents, and representatives of civic and environmental associations, news media, and businesses. NYSDEC also had frequent contact with many of these interested parties and sent them notices and project reports.

1000132

### Summary of Comments and Responses

The following correspondence was received during the public comment period:

- Letter to Robert Cozzy, NYSDEC, from William J. Greagan of Carter, Conboy, Bardwell, Case, Blackmore, & Napier-ski, regarding comments submitted on behalf of Berkshire Leather and Coast-Line Trading Co., Inc. concerning the Proposed Plan; February 19, 1993.
- Letter to Robert Cozzy, NYSDEC, from Scott N. Fein of Whiteman, Osterman, and Hanna, regarding comments prepared by C. T. Male Associates, P.C. and submitted on behalf of the Johnstown potentially responsible party (PRP) Steering Committee concerning the Proposed Plan, February 19, 1993.

A summary of the comments contained in the above letters and the comments provided by the public at the February 10, 1993 public meeting, as well as NYSDEC's and EPA's response to those comments, follows.

Comment #1: How will changes to 6 NYCRR Part 360 affect the selected remedy? Proposed revisions to 6 NYCRR Part 360 regulations are anticipated to have an effective date of October 9, 1993. Will the proposed remedy, Alternative SC-3, allow for closure and post-closure monitoring and maintenance under the terms of the proposed 6 NYCRR Part 360?

Response #1: In accordance with the National Contingency Plan (refer to 40 CFR 300.430(f)(1)(ii)(B)), on-site remedial actions selected in a Record of Decision (ROD) must attain those Applicable or Relevant and Appropriate Requirements (ARARs) that are identified at the time of ROD signature. Therefore, the current 6 NYCRR Part 360 regulations (effective December 31, 1988) will be the applicable landfill closure regulation for this site.

Comment #2: Why include a contingent remedy? Within the framework of the selected remedy, it is not necessary to outline a contingent alternative (Alternative SC-6) that includes additional and costly remedial actions. Since hazardous substances will remain on the site following implementation of the remedy, Alternative SC-3 would be subject to a 5-year review under the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (CERCLA), at which time contingent alternatives necessary to ensure protection of human health and the environment could be considered. What criteria will be used to decide if the contingent remedy of pumping and treating ground water is implemented? Who pays for it in the future?

1000133

Response #2: The selected remedy must demonstrate overall protection of human health and the environment and compliance with ARARs unless a waiver is justified. Data collected during the RI indicates that both ground-water and surface-water standards, which are ARARs for this site, were exceeded. While it is believed that Alternative SC-3 will attain these ARARs through natural attenuation as a result of reduced leachate generation, there is an element of uncertainty with Alternative SC-3, since no treatment of ground water would be used to attain ARARs. While a 5-year review of this remedy following its implementation will be undertaken as required under CERCLA, the contingent remedy, Alternative SC-6, allows the flexibility to implement the treatment of ground water at any time between the 5-year review periods based on the long-term monitoring data. After Alternative SC-3 (Part 360 cap) is implemented, trends in long-term ground-water and surface-water data will be analyzed to determine if ground-water remediation as discussed under Alternative SC-6 is necessary. Criteria will include ground-water and surface-water contaminant concentration levels and the speed at which ground water and surface water quality is approaching background conditions or state and federal water quality standards. It is NYSDEC's intention to have the responsible parties for the site undertake any remedial activities, including ground-water cleanup.

Comment #3: Will any sediment remediation be included in this remedy? The FS report does not address a limited removal action of the LaGrange Gravel pit and Mathew Creek sediments. Remedial alternatives considered in detail only include source removal actions that involve removal of the entire waste mass which is not feasible for a landfill of this size. A remedial alternative that includes limited hotspot removal of sediments should satisfy the CERCLA statutory preference for treatment as a principal element of the remedy, instead of a ground-water pump and treat scenario.

Response #3: The selected and contingent remedies do not include any active remediation of Mathew Creek sediments. While contaminated sediments are apparent from the RI, the level of contamination does not warrant remediation of the creek. During post-construction monitoring, sediment samples will be collected from Mathew Creek to determine if contaminant concentrations are improving following implementation of the remedy.

In the case of LaGrange Pit, water quality samples collected in the pit during the RI indicated that ARARs for several compounds were exceeded. Sediment samples also indicated the presence of metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and pesticides at concentrations typically higher than concentrations detected in soils from landfill borings. The FS report discusses the excavation and filling of the LaGrange Gravel Pit with clean fill, so that the pit could serve as an infiltration or stormwater collection basin. The waste that is removed from the

LaGrange gravel pit would be placed under the landfill cap.

**Comment #4:** Why is residential water replacement included in the remedy? The residential water replacement feature of the proposed remedy is not justified by the Risk Assessment Summary and Conclusions, since the contaminants which elevate risk are not related to the site. What are the potential contaminants to the water supply? Since numerous chemicals were found at concentrations exceeding the standards, the ROD should not identify chromium and lead as the contaminants driving this remedy. It does not appear that the ground-water chemical analytical results support the remedial action of extending the Johnstown City water supply system to all private water supplies potentially impacted by the landfill. An alternative and more cost-effective approach than the extension of a municipal water supply line is continued ground-water quality monitoring and, possibly, treatment at the individual residential wells.

**Response #4:** The baseline human health risk assessment conducted during the RI concluded that, for residents ingesting site-contaminated ground water, beryllium and arsenic were the major driving forces in producing elevated cancer and noncancer risks, respectively. Both of these contaminants were widespread in on-site water quality samples collected during the RI. Beryllium represents an increased cancer risk of about  $2 \times 10^{-4}$  for the future-use scenario. The incremental cancer risk for the future-use scenario, which is based on data from 28 on-site monitoring wells, slightly exceeds EPA's acceptable risk range of  $10^{-6}$  to  $10^{-4}$ . The hazard index (HI), which represents the potential for noncarcinogenic health effects to occur as a result of Site-related exposures, slightly exceeded the significant level (i.e. greater than 1.0) for adults ingesting site-contaminated ground water. (The HI was 1.5.)

The ground-water plume presently extends over 1,000 feet from the landfill property, as is evidenced by the contaminant concentrations in monitoring well 15s, with chromium at 229 parts per billion (ppb), iron at 173,000 ppb, lead at 32 ppb, manganese at 4,910 ppb, sodium at 68,900 ppb, zinc at 409 ppb, and total dissolved solids (TDS) at 509,000 ppb. The nearest directly downgradient residential well is approximately 2,500 feet from the landfill property. Based on three rounds of sampling of residential wells, concentrations (all values in ppb) of iron (4050, 801, and 883), manganese (73, 58, and 60), sodium (106,000, 100,000, and 93,900), and TDS (712,000, 586,000, and 575,000) are above drinking water standards. These elevated inorganics were found in several residential wells and are indicative of landfill leachate impacts to ground-water quality. While those leachate parameters (except beryllium) associated with a greater health risk were not presently found in significant concentrations in residential wells, the elevated concentrations of iron, manganese, sodium, and TDS in

residential wells are believed to be the precursors of the more adverse leachate contaminants. Other constituents detected above ground-water standards in the shallow aquifer on-site included 13 VOCs, several SVOCs, and eight metals. Discussion focused on chromium and lead during the public meeting because these were the only contaminants which were consistently detected during the RI at concentrations exceeding the maximum contaminant levels (MCLs) for drinking water. The chromium identified in the plume appears to be primarily trivalent chromium, not hexavalent chromium.

Because there may be both an increased risk of cancer and of noncarcinogenic health effects from ingestion of site-contaminated drinking water, and because drinking water standards have been exceeded in the contaminant plume, NYSDEC and EPA believe that extending the Johnstown City water supply to residents potentially impacted by the ground-water contamination is needed to ensure that the residents have a potable supply of drinking water.

Installing point-of-use treatment units and monitoring ground-water quality at the residential homes, while less costly over the long-term (present-worth cost is \$2,636,057 versus the \$2,848,321 present-worth cost for the proposed water supply replacement in Alternative SC-3), is not as protective of human health, because monitoring would allow the potential for up to 180 days consumption of contaminated ground water by the residents between sampling events. Since the costs are relatively close, NYSDEC and EPA proposed an alternative that permanently eliminates those potential risks.

Comment #5: Why was a 6 NYCRR Part 360 cap chosen for the site? Since a 6 NYCRR Part 360 cap would be required regardless of the nature of the waste, the proposed cap outlined in the preferred alternative, Alternative SC-3, should not be considered as a remedy for the alleged contamination of this site by hazardous wastes. Even in the absence of listing of the site on the Superfund National Priorities List, the Johnstown City Landfill would be required to be closed under 6 NYCRR Part 360 regulations, which would require 30-year monitoring, post closure maintenance, regrading, a multi-layered cover system, and periodic reporting to NYSDEC. Why not spend the extra money for Alternative SC-4 and further reduce leachate generation?

Response #5: The hazardous materials placed in the Johnstown City Landfill were not segregated in one area of the landfill during disposal operations and, therefore, could be located anywhere within the 34 acres of landfill waste. The RI did not identify any "hot spots" or small areas of high concentration of hazardous waste. Therefore, the hazardous wastes at this site must be remediated in conjunction with the solid wastes (municipal waste) since there is no feasible way to segregate the two types of waste at this site. One method to remediate hazardous wastes is via

1000136

containment, which isolates the wastes from the environment and minimizes the mobility of those wastes. Containment is recognized as a viable remedy for hazardous waste sites which encompass a large area with no identifiable "hot spots," such as the Johnstown City Landfill. Since the bottom of the waste is at least 14 feet above the water table, a cap alone would be effective at minimizing leaching of hazardous constituents at this site.

The FS report and the Proposed Plan evaluated various containment alternatives which included both a 6 NYCRR Part 360 cap and a Resource Conservation and Recovery Act (RCRA) cap (Alternative SC-4). The major difference in these two caps is the estimated amount of infiltration or leakage of water through them. The part 360 cap is estimated to provide a 94 to 99 percent reduction in infiltration and, therefore, leachate generation, while the RCRA cap is estimated to provide greater than a 99 percent reduction. Thus, the RCRA cap is slightly better in reducing leachate impacts to the ground water, but due to the large volume of ground water passing under the landfill, there would be no significant improvement in ground-water quality, given the small additional quantity of leachate generated under the RCRA cap scenario. Since a RCRA cap would cost about \$6 million more to construct than the Part 360 cap, it would not be as cost-effective.

**Comment #6:** How will the costs of the water line be shared? What costs will be borne by the water district, the City of Johnstown, and the State of New York? If the City collects money from third party defendants, what will it be used for? Who will bear the costs of water usage and what would these costs be? Will the residents be forced to accept the municipal water?

**Response #6:** The water district will bear any of the operation and maintenance costs associated with the water line. These costs, along with water usage costs, may be subject to negotiation with the City of Johnstown. The PRPs will be given the opportunity to undertake the clean up of the site, including construction of the water line. If the PRPs elect to undertake the clean up, the City of Johnstown will pay 25 percent and New York State will pay 75 percent of the City's cost share. In the event that the PRPs are unwilling or unable to conduct the clean up, the City of Johnstown will pay 25 percent and New York State will pay 75 percent of the construction costs. If the City of Johnstown and the State of New York recover money from any PRPs, the recovered money would be split 25/75 to offset the city/state costs incurred.

The cost of water usage will be borne by the users. However, residents near the landfill would not be obligated to hook up to the water line. In the event that the residents choose to hook up, hook-up charges would be paid for by the parties conducting the clean up of the site. The actual cost of water usage will be a matter for negotiation between the Town of Johnstown, the newly

created water district serving the residents living near the landfill, and the City of Johnstown. Several residents at the public meeting of February 10, 1993 expressed concern about the costs of water usage, and associated water district taxes that might be levied. One farmer, in particular, was very concerned about water-use charges given that she has 60 cows. Since she utilizes 2 wells, one for her home and the other for the barn, she may wish to have only the home hooked-up to the water line, assuming that the appropriate agricultural regulatory authorities approve.

Comment #7: What if the water district is not formed and there are future impacts? What if the homeowner wells become contaminated 10 years later? Who would pay to clean up contaminated residential wells?

Response #7: Although some of the Town of Johnstown's residents present at the public meeting on February 10, 1993 and at another Town Board meeting on March 4, 1993 expressed concern over how much they might have to pay for water use and other expenses related to the water line, they were generally supportive of the creation of a water district and the installation of a water line. A Resolution adopted by the Town Board of Johnstown at its meeting on October 19, 1992 specifically stated the Town Board's support for the proposed remedy for the site which includes installation of the water line. Consequently, the additional questions posed in this comment are moot.

Comment #8: Why is a slurry wall not recommended?

Response #8: Based on soil borings through and piezometers below the landfilled waste, the ground-water table is approximately 14 feet below the waste. A slurry wall would reduce the horizontal movement of ground water through the waste. Since the waste is not in contact with ground water, a slurry wall would not be effective at reducing leachate generation. Capping the landfill will significantly reduce infiltration, which will, in turn, significantly reduce leachate generation and contaminant loading to the aquifer.

Comment #9: What will be written in the deed to protect the land in the future?

Response #9: Deed restrictions will be placed by the City of Johnstown (the property owner) on the capped portion of the site to prevent anyone in the future from excavating through the cap except as needed to repair the cap. Ground-water use at the site would also be restricted on the deed.

APPENDIX V ATTACHMENT

RESPONSIVENESS SUMMARY RECORDS

JOHNSTOWN CITY LANDFILL SUPERFUND SITE

Transcript of public meeting regarding Remedial Investigation and Feasibility Study (RI/FS), February 10, 1993, 7:00 p.m., Associated Reporters International, Inc.

January 20, 1993 Legal Notice published in the Johnstown Leader Herald of public meeting to announce results of the RI/FS and the Proposed Plan.

Letter to Robert Cozzy, NYSDEC, from William J. Greagan, of the firm Carter, Conboy, Bardwell, Case, Blackmore, & Napierski, Re: Comments submitted on behalf of Berkshire Leather and Coast-Line Trading Co., Inc. concerning the Proposed Plan; February 19, 1993.

Letter to Robert Cozzy, NYSDEC, from Scott N. Fein, of the firm Whiteman, Osterman, and Hanna, Re: Comments prepared by C. T. Male Associates, P.C. and submitted on behalf of the Johnstown PRP Steering Committee concerning the Proposed Plan, February 19, 1993.

Letter to WHOM IT MAY CONCERN, from Nancy MacVean, Town Clerk, Town of Johnstown, concerning Resolution No. 110 adopted by the Town Board on October 19, 1992 pertaining to the closure and remediation of the Johnstown City Landfill, October 26, 1992.

1000139

R/FS, NYSDEC and EPA evaluated seven alternative cleanup methods summarized as follows: no action (Alternative SC-1); limited action and residential water replacement (Alternative SC-2); installation of a 6 NYCRR Part 360 landfill cap and residential water replacement (Alternative SC-3); installation of a Resource Conservation and Recovery Act (RCRA) landfill cap and residential water replacement (Alternative SC-4); ground water collection/treatment/discharge and residential water replacement (Alternative SC-5); 6 NYCRR Part 360 cap, residential water replacement, and ground water collection/treatment/discharge (Alternative SC-6); and RCRA cap, residential water replacement, and ground water collection/treatment/discharge (Alternative SC-7).

Based upon an evaluation of these alternatives, NYSDEC and EPA are recommending Alternative SC-3 as the preferred alternative, with Alternative SC-4 as a contingent alternative.

Complete documentation of the results of the investigations and studies performed at the

**ENVIRONMENTAL  
CONSERVATION  
AND THE  
ENVIRONMENTAL  
PROTECTION  
AGENCY  
PROPOSE A  
CLEANUP REMEDY  
AND SCHEDULE A  
PUBLIC MEETING  
FOR THE  
JOHNSTOWN CITY  
LANDFILL SITE  
CITY OF  
JOHNSTOWN  
FULTON COUNTY  
NEW YORK**

The New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (EPA), as lead and support agencies, respectively, will hold a public meeting to discuss the results of the remedial investigation and feasibility study (R/FS) and the Proposed Plan for the Johnstown City Landfill site.

The Proposed Plan calls for, as the preferred remedy for the site, the construction of a multi-layer cap over the landfill mound to isolate the wastes from rainfall and human contact, extension of city water to individual users to replace existing private potable supply wells potentially impacted by the landfill, erection of a security fence around the landfill mound, institution of land-use restrictions, and environmental monitoring to determine the effectiveness of the remedial program, which will include long-term monitoring of ground water, surface water, and sediments. In the event that monitoring results do not show that ground water quality is being restored to acceptable levels through natural attenuation as a result of reduced leachate generation, ground water remediation will be reevaluated and may be implemented. If ground water remediation is implemented in the future, it would include the extraction of ground water using collection wells with on-site treatment to remove inorganic and volatile organic contaminants, with discharge of the treated water to the ground water or to a stream.

NYSDEC has scheduled a public meeting to discuss the findings of the R/FS and the Proposed Plan. The meeting will be held at 7:00 P.M., Wednesday, February 10, 1993 at the Johnstown High School, Pearl Street, Johnstown, New York. The release of the Proposed Plan and the scheduled public meeting are in accordance with Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended.

After evaluating the information gathered during the studies and sampling conducted at the site as part of the

the Proposed Plan. These documents are available for public review at:

**CITY OF JOHNSTOWN  
ATTORNEY'S OFFICE**

City Hall  
33-41 East Main Street  
Johnstown, New York  
12095-2696  
(518) 762-3911

Monday-Friday  
9:00 A.M.-5:00 P.M.  
JOHNSTOWN

**PUBLIC LIBRARY**

38 South Market Street  
Johnstown, New York 12095  
(518) 762-8317

Sunday, 1:00 P.M.-4 P.M.

Monday, Thursday  
1:00 P.M.-5:00 P.M.

Tuesday, Wednesday  
10:00 P.M.-8:00 P.M.

Saturday

10:00 A.M.-1:00 P.M.

**NEW YORK STATE  
DEPARTMENT OF  
ENVIRONMENTAL  
CONSERVATION**

Region 5 Office

Ray Brook

Route 86

Ray Brook, New York 12927

(518) 891-1370

Monday-Friday  
9:00 A.M.-5:00 P.M.

**NEW YORK STATE  
DEPARTMENT OF  
ENVIRONMENTAL  
CONSERVATION**

50 Wolf Road

Albany, New York 12233

(518) 457-1641

Monday-Friday  
9:00 A.M.-5:00 P.M.

**UNITED STATES  
ENVIRONMENTAL  
PROTECTION  
AGENCY**

26 Federal Plaza

New York, New York 10278

(212) 264-2723

Monday-Friday

9:00 A.M.-5:00 P.M.

NYSDEC and EPA welcome public comments on the Administrative Record and all alternatives identified above. The final selection of a remedy for the site will be made after all public comments have been taken into consideration. Public comments on all of the alternatives are being solicited, since a remedy other than the proposed alternative may be selected after consideration of all comments received.

Public comments should be submitted during the period commencing on January 21, 1993 and concluding on February 19, 1993.

All written comments should be addressed to:

**ROBERT COZZY**

Project Manager

New York State

Department Of

Environmental Conservation

50 Wolf Road

Room 222

Albany, New York

12233-7010

DATED: January 14, 1993

Approved As To Form:

ROBERT M. SUBIK

Esquire

City Attorney

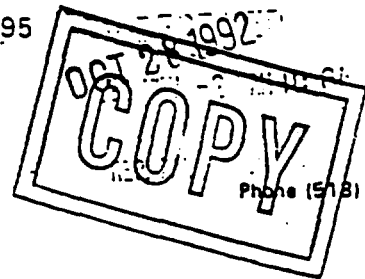
1/20

Johnstown

Leader  
Herald

1/20/93

10.00140



Nancy MacVean, Town Clerk

October 26, 1992

TO WHOM IT MAY CONCERN:

At the regular meeting of the Town Board of Johnstown, New York, on October 19, 1992, the following Resolution was made:

Mr. Smullen offered the following Resolution and moved its adoption:

WHEREAS, the City of Johnstown did on September 23, 1991 adopt Resolution No. 110 pertaining to the closure and remediation of the City of Johnstown Landfill wherein, among other things, the City of Johnstown proposed to extend its municipal water line to homes on the periphery of the landfill to supply City water to adjacent Town residents, and

WHEREAS, the Town residents have petitioned the Town Board in support of the water line but against any mandatory hookup or water charges to the homeowner, and

WHEREAS, the Town Board is generally in agreement with the Town residents, therefore, be it

RESOLVED, that the Town Board of the Town of Johnstown supports the concept of the City of Johnstown extending its water supply system to homes in the Town on the periphery of the landfill site but the Town Board is opposed to any requirement that homeowners be mandated to connect to the water line or pay for water consumed by such homeowners that do connect, and be it further

RESOLVED, that a copy of this resolution be sent to NYS DEC, USEPA, NYS DOH, Fulton County Planning Department, Mayor and City Council of the City of Johnstown, Assemblyman James King, State Senator Hugh Farley, Congressman David O. B. Martin, United States Senator Alphonse D'Amato and all others who may further the purport or have an interest in this Resolution.

SECONDED by Jack Wilson and approved by the following vote:

AYES : All.

STATE OF NEW YORK:  
COUNTY OF FULTON:  
TOWN OF JOHNSTOWN:

I, Nancy MacVean, Town Clerk of the Town of Johnstown, County of Fulton, State of New York, do hereby certify that I have compared the preceding Resolution with the original thereof filed in my office at the Town of Johnstown Hall on October 19th, 1992. The same is a true and correct copy of said original and the whole thereof.

In testimony whereof, I have hereunto set my hand and affixed the seal of said Town this 26th day of October, 1992.

Nancy MacVean

Nancy MacVean, Town Clerk

1000141

**CARTER, CONBOY, BARDWELL, CASE,  
BLACKMORE & NAPIERSKI**  
ATTORNEYS AND COUNSELORS AT LAW

JAMES S. CARTER  
JAMES M. CONBOY  
FORREST N. CASE  
JAMES C. BLACKMORE  
EUGENE E. NAPIERSKI  
JOHN T. MALONEY  
GREGORY S. MILLS  
EDWARD D. LAIRD, JR.  
DENNIS A. PRIST  
DIANNE BRESEE MAYBERGER  
SUBANNA L. MARTIN  
JOHN J. PHELAN, III  
BRIAN P. KAZYKOWSKI  
TERENCE P. O'CONNOR  
TERENCE S. HANNIGAN  
  
MICHAEL J. O'CONNOR  
OF COUNSEL

20 CORPORATE WOODS BOULEVARD  
ALBANY, NEW YORK 12211-2360  
  
(518) 485-3484  
TELECOPIER (518) 485-1843

JOHN W. VANDENBURGH  
WILLIAM J. BREAGAN  
ANNE M. MURLEY  
KEVIN P. BURKE  
JOHN J. GABLE  
SUSAN DEBELLA HARVEY  
SHIRLEY L. CLOUSER  
JAMES A. REBILA\*  
JAMES P. TRAINOR  
PAMELA A. NICHOLS  
DEAN C. HARVEY\*  
JOHN F. MULLER  
KEVIN G. GRIMES\*\*  
SHARON A. SIEGEL  
DAVID A. RIKARD  
NANCY E. MAY-SKINNER  
CHRISTOPHER R. LYONS\*  
EUGENE DANIEL NAPIERSKI  
JOSEPH T. PERKINS  
AUDREY THOMAS\*\*\*  
MICHELE M. MONSERRATE\*  
COLLEEN H. WHALEN  
PATRICK J. LaPORTA

\*Also Admitted in  
Massachusetts

\*\*Also Admitted in  
Pennsylvania

\*\*\*Also Admitted in  
Connecticut

February 19, 1993

New York State  
Department of Environmental Conservation  
Albany Office, Room 222  
50 Wolf Road  
Albany, New York 12233-7071

Att: Robert Cozzy  
Project Manager  
Re: Johnstown Landfill

Dear Mr. Cozzy:

The following comments are submitted on behalf of our clients, Berkshire Leather and Coast-Line Trading Co., Inc., for inclusion in the formulation of a Record of Decision regarding the conclusions of the Remedial Investigation and Feasibility Study and remediation of the Johnstown City Landfill Inactive Hazardous Waste Disposal Site (#518002).

1. The Risk Assessment Summary and Conclusions [Final Report of Feasibility Study For Johnstown Landfill, Johnstown, New York (hereinafter "Feasibility Study") pp. 1-22 - 24] indicates that the "major driving forces" requiring the residential water replacement features of SC3 are the presence beryllium, tetrachloroethylene and antimony in the groundwater. A review of the feasibility study shows that these contaminants are not related to the site and therefore the residential water replacement feature should be deleted from the proposed remedy.

1000142

2. Your statements at the public hearing held on February 10, 1993 at the Johnstown High School identified chromium and lead as the contaminants driving the remedy. However, antimony, calcium, magnesium, sodium, aluminum, zinc, manganese, iron, thallium and 11 pesticides were also found in the soil in levels above the background levels (Feasibility Study, pp. 1 - 17 - 19). Thirteen TCL VOCs, semi-volatile contamination and 20 TAL metals were found in overburden wells downgradient of the landfill. Additionally, acetone and bis(2 ethylhexyl)phthalate were the "primary contaminant" within the bedrock aquifer and residential wells showed contamination by metals, TDS, ammonia, nitrogen, manganese, sodium and zinc.

Surface water contamination included six VOCs, several semi-volatile organic compounds and 15 TAL metals were found. The highest concentrations of these metals were iron, manganese and selenium.

In addition to chromium and lead, sediment contamination included concentrations of arsenic, cadmium, copper, manganese, mercury, nickel and zinc.

In light of these numerous other chemicals and compounds, it is extraordinary to conclude that lead and chromium are the elements driving the remedy. This is especially true considering the expert computations at page D-19 of the Feasibility Study which states that the current amount of chrome being released from the landfill is .19 lbs. (or 3.04 oz.) per year. Therefore, the Record of Decision should not identify chromium and lead as the contaminants driving this remedy.

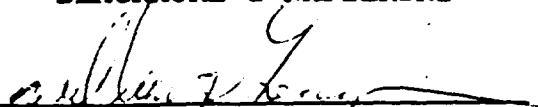
3. Since an inactive municipal landfill must be capped with a Part 360 cap regardless of the nature of the waste present, the proposed cap outlined in SC3 should not be considered as a "remedy" for the alleged contamination of this site by hazardous wastes.

4. According to the information presented at the public hearing on February 10, 1993, residential water wells are not currently contaminated and the chances of future contamination is low. Residential water replacement is therefore unnecessary and should not be considered as part of the remedy for this site.

Please consider these comments when formulating the Record of Decision.

Very truly yours,

CARTER, CONBOY, BARDWELL, CASE,  
BLACKMORE & NAPIERSKI

By   
WILLIAM J. GREAGAN

WJG:bsg

00002178.bsg  
- 1000

1000143

WHITEMAN OSTERMAN & HANNA

ATTORNEYS AT LAW

ONE COMMERCE PLAZA  
ALBANY, NEW YORK 12260

(518) 487-7600  
FAX (518) 487-7777

CABLE ADVOCATE ALBANY

BUFFALO OFFICE

1700 LIBERTY BUILDING  
BUFFALO, NEW YORK 14202  
(716) 854-4420  
FAX (716) 854-4428

MICHAEL WHITEMAN  
MELVIN H. OSTERMAN  
JOHN HANNA, JR.  
JOEL L. HODES  
PHILIP M. GITLEN  
COTT N. FEIN  
JULIE J. KRZYAN  
DANIEL A. RUZOW  
PHILIP M. DIXON  
GUNTHER DULLY  
JAMES W. LITTLE  
RICHARD E. LECKERLING  
MARGARET J. GILLIS  
JONATHAN R. NYE  
HEATHER D. DIDDLE  
NEIL L. LEVINE  
MARY JANE BENDON COUCH

LESLIE K. THIELE  
CLAUDE R. BRESEE  
OF COUNSEL

KENNETH S. RITZENBERG  
JEAN F. GERBANI  
JOHN T. KOLAGA  
ELAINE M. LICCIONE  
JONATHAN WOOD  
JEFFREY S. BAKER  
TERESA M. BARNER  
ELIZABETH M. MORSE  
CARLA E. HOGAN  
ANNE K. HOFENSTEIN  
PAUL C. RAPP  
D. SCOTT BASSINSON  
TERRI A. RANDOLPH  
CARL F. PATKA  
MARY WALSH SHYDER  
BETH A. SOURASSA  
CHERYL L. RANDALL  
MARTIN J. RICCIARDI  
ALICIA C. ROOD  
ALEXANDER W. BLOOMSTEIN  
CAROLYN DICK  
NOAH D. BABIN

February 19, 1993

Robert Cozzy, P.P., Chief  
Special Projects Section  
Division of Hazardous Waste Remediation  
New York State Department of  
Environmental Conservation  
50 Wolf Road  
Albany, New York 12233

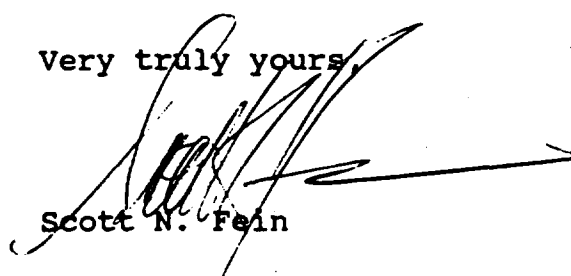
Re: State of New York v. City of Johnstown, et al.  
Civil Action No. CV-87-3862

Dear Mr. Cozzy:

Enclosed are written comments on the RI/FS and Superfund  
Proposed Plan for the Johnstown City Landfill Site prepared by C.  
T. Male Associates, P.C. and submitted on behalf of the Johnstown  
PRP Steering Committee.

If you have any questions or comments, please call me or Carl  
Patka at 487-7600.

Very truly yours,

  
Scott N. Fein

Enclosure

/amc[ltr(cozzy)021993]

|                |          |              |
|----------------|----------|--------------|
| FOILABLE Y-N   | B.E.R.A. | FILE SECTION |
| SITE NAME      |          |              |
| SITE CODE      |          |              |
| SUB SECTIONS   |          |              |
| PRO. ELEMENT   |          |              |
| UNIT NO. DECC. |          |              |

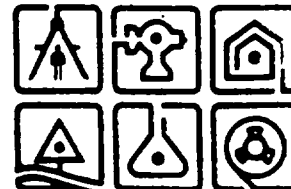
|             |
|-------------|
| RECEIVED    |
| FEB 19 1993 |

1000144

**C.T. MALE ASSOCIATES, P.C.**

50 Century Hill Drive  
PO Box 727  
Latham, New York 12110  
(518) 786-7400  
FAX (518) 786-7299

Engineering  
Land Surveying  
Architecture  
Landscape Architecture  
Environmental Services  
Computer Services



February 18, 1993

Mr. Scott N. Fein  
Whiteman Osterman & Hanna  
One Commerce Plaza  
Albany, New York 12260

RE: *Johnstown RI/FS and Superfund Proposed Plan*  
*CTMA Project No. 93.2198*

Dear Mr. Fein:

At your request as liaison counsel to the Johnstown PRP Steering Committee, C.T. Male Associates, P.C. has reviewed the documents you supplied our office concerning remediation of the Johnstown City Landfill.

This letter presents a review of the Second Draft Report Remedial Investigation/Feasibility Study (RI/FS) dated September 1992 (two volumes), the Final Report Feasibility Study (FS) dated October 1992, and the Superfund Proposed Plan dated January 1993 for the Johnstown City Landfill located in Fulton County, New York. The FS report that was reviewed did not contain a chapter that outlined the selection process for the preferred remedial alternative. The last section of the FS provided only an individual and comparative analysis. The selected alternative, SC-3, was provided, however, in the Superfund Proposed Plan.

C.T. Male Associates, P.C. offers the following general comments with the objective of selecting a cost effective remedial alternative that is protective of human health and the environment.

**6NYCRR PART 360 LANDFILL CLOSURE**

The essential components of the selected remedy are identical to the requirements of 6NYCRR Part 360 regulations. These solid waste regulations are applicable to all solid waste management facilities including municipal landfills. Even in the absence of NPL listing, the Johnstown City Landfill which reportedly operated until June 1989 would be required to close under 6NYCRR Part 360 regulations which among other conditions would require 30-year environmental monitoring, post-closure maintenance, regrading, a layered cover system, and periodic reporting to NYSDEC.

**C.T. MALE ASSOCIATES, P.C.**

Mr. Scott N. Fein  
February 18, 1993  
Page - 2

Moreover, the leachate metals, volatile organic compound, and semi-volatile compound results (MWs 16, 18, and 19) for the Johnstown City Landfill are consistent with the published range of leachate constituents that are characteristic of municipal solid waste (USEPA, 1988)\*, with the exception of chromium and mercury which were detected in one monitoring well (MW-16) at concentrations marginally above the published range of concentrations for municipal solid waste leachate. These leachate chemical analytical results do not suggest the presence of a unique waste source, and are interpreted to be characteristic of municipal solid waste leachate.

**CONTINGENCY ALTERNATIVE**

Within the framework of the selected remedy, it is not necessary to outline a contingency alternative (SC-6) that includes additional and costly remedial actions. Since hazardous substances will reportedly remain on the site following the implementation of the selected remedy, remedial alternative SC-3 would be subject to a five year review under CERCLA. At that time it would be appropriate to consider alternative contingency approaches necessary to ensure protection of human health and the environment.

**PLUME DELINEATION/WATER LINE EXTENSION**

While it is apparent that a groundwater contaminant plume exists beneath the landfill and directly downgradient of the landfill in the shallow overburden within several hundred feet of the landfill footprint, it appears further that the groundwater plume does not extend significantly downgradient of the landfill.

The three rounds of comprehensive chemical analytical testing for the residential wells surrounding the landfill, support the conclusion that the water quality of residential wells is not being impacted by the release of leachate constituents from the landfill. Therefore, it has not been demonstrated that the groundwater plume extends to the residential wells.

The only chemical analytical parameters exceeding the applicable USEPA, NYSDOH or NYSDEC water quality standards in some residential wells were iron, manganese, sodium, TDS and

Mr. Scott N. Fein  
February 18, 1993  
Page - 3

occasionally zinc. By themselves these exceedances do not demonstrate an impact from the landfill, nor do these constituents pose a significant threat to human health. Iron, manganese, sodium, TDS, and zinc are all naturally occurring constituents that commonly exist at background concentrations that sometimes exceed water quality standards. Some very low levels of volatile organic and semi-volatile compounds also were detected in several residential wells, however these very low levels did not exceed any water quality standards and were detected below or just above the quantitation limit (QL) in instances where specific compounds were not detected in sample blanks. No significant conclusions can be drawn from the results in which an analyte was found in the sample blank. Other contaminant sources, sampling variation, chemical analytical laboratory contamination and natural background variations in water quality parameters can account for all of these detections and/or exceedances in residential wells.

In light of the above comments, it does not appear that the groundwater chemical analytical results support the remedial action of extending the Johnstown City water supply system to all downgradient private water supplies potentially impacted by the landfill. These residential wells are not presently being impacted, nor is it apparent based on the results provided in the RI/FS that these wells would be impacted adversely at some point in the future provided that appropriate and necessary remedial actions are taken. An alternative and more cost-effective approach than the extension of a municipal water supply is continued groundwater quality monitoring and possibly treatment at the individual residential wells.

#### 6NYCRR PART 360 REVISIONS

NYSDEC has proposed revisions to the 6NYCRR Part 360 regulations which are anticipated to have an effective date of October 9, 1993, corresponding to the RCRA Subtitle D implementation schedule. It is unclear whether the proposed remedy, SC-3, would allow for closure and post-closure monitoring and maintenance under the terms of the proposed 6NYCRR Part 360 or not. Some level of flexibility in this regard may be appropriate, since the cover system details under the proposed revisions to the 6NYCRR Part 360 are to be modified.

C.T. MALE ASSOCIATES, P.C.

Mr. Scott N. Fein  
February 18, 1993  
Page - 4

**SEDIMENT REMOVAL**

The results of the RI/FS seem to demonstrate that under present conditions the most significant off-site contaminant pathway is via surface water. This pathway will be eliminated by regrading to prevent ponding and construction of a closure cap over the landfill. However, some level of residual contamination may remain in the pit and creek sediments downstream of the landfill.

The FS does not address a limited removal action of the pit and creek sediments. Remedial alternatives considered in detail only include source removal actions that involve removal of the entire waste mass which is not feasible for a landfill of this size. A remedial alternative that includes limited hotspot removal of sediments should satisfy the CERCLA statutory preference for treatment as a principal element of the remedy, instead of a groundwater pump and treat scenario.

If you have any questions or need further information, please do not hesitate to contact our office.

Sincerely,

C.T. MALE ASSOCIATES, P.C.

John S. Munsey, CPG  
Senior Environmental Hydrogeologist

  
David W. Roecker, P.E.  
Managing Engineer  
Environmental Engineering

JSM/sm

\*USEPA, 1988; Summary of Data on Municipal Solid Waste Landfill Leachate Characteristics, "Criteria for Municipal Solid Waste Landfill" (40 CFR 258); July 1988; Office of Solid Waste.

PUBLIC HEARING  
FINAL RESULTS

of the REMEDIAL INVESTIGATION and FEASIBILITY STUDY  
at the FORMER JOHNSTOWN LANDFILL

JOHNSTOWN HIGH SCHOOL  
JOHNSTOWN, NEW YORK  
February 10, 1993  
7:00 p.m.

ASSOCIATED REPORTERS INTERNATIONAL INC.  
(800) 523-7887

1000149

1 MR. ROBERT SUBIK: Good evening, my name is  
2 Bob Subik. I'm the city attorney here in the  
3 city of Johnstown.

4 I'm also the project manager for the  
5 Remedial Investigation and Feasibility Study at  
6 the former Johnstown landfill.

7 Tonight we have a public hearing; the  
8 purpose of that public hearing is to discuss the  
9 final results of the Remedial Investigation and  
10 Feasibility Study at the landfill which is  
11 located at the extension of West Fulton Street in  
12 the town of Johnstown, and also to present the  
13 federal remedial action plan.

14 Just a few brief historical notes on how we  
15 came to be at this point. The city of Johnstown  
16 operated that site as a sanitary landfill from  
17 1947 to July of 1988 when it was closed. In  
18 November 1983, a phase one study was completed at  
19 the site which identified some off-site  
20 contamination. And thereafter, the site was  
21 nominated to the national priority list of  
22 federal Superfund sites. Thereafter in January  
23 of 1985, the city was notified that it had  
24 liability under the federal CERCLA statute --

1 that's the Comprehensive Environmental Response  
2 and Compensation Liability Act of 1980.

3 Thereafter, we had a series of negotiations  
4 with the state to develop a study, a scope of  
5 work to be undertaken in the study. In May of  
6 1987, the city of Johnstown was sued by the state  
7 of New York under that statute to require the  
8 city to conduct such a study and to remediate the  
9 site. In October of 1988, the city signed a  
10 consent order with the state of New York that it  
11 would in fact conduct the study and thereafter  
12 remediate the site.

13 We hired an engineering consultant, and in  
14 May of 1989 we began the process of studying the  
15 former Johnstown landfill and the area  
16 immediately surrounding it. The remedial  
17 investigation study began at that time. We had  
18 one prior public hearing before tonight. The  
19 fieldwork was completed approximately September  
20 of 1991. Thereafter, a list of alternatives was  
21 developed by our engineering consultant of those  
22 actions that the city could take to remediate the  
23 site. Those are identified in the feasibility  
24 study, which is available for your review.

1           And tonight we are presenting the results of  
2           the remedial investigation and the feasibility  
3           study, and there will be a discussion of the  
4           federal response to the city's submittal of that  
5           report, which is entitled a preliminary remedial  
6           action plan. We have people here tonight from  
7           both the federal government, the E.P.A., and also  
8           from the state government, the Department of  
9           Environmental Conservation, who will address  
10          those issues.

11           So without any further ado, I would like to  
12          introduce the members of the panel who are going  
13          to be presenting information to you tonight. And  
14          at the conclusion of their remarks, there will be  
15          an opportunity for people to ask questions at the  
16          end of the meeting. To my immediate left is  
17          Richard Fedigan. He is an official with the New  
18          York State Department of Health; he is with the  
19          program -- he is a program research specialist.  
20          To his left is Robert Cozzi. Bob is the section  
21          chief for the New York State Department of  
22          Environmental Conservation. To his left is James  
23          Barrett. James is the project engineer for the  
24          city's engineering consultant. To his left is

1 Joel Singerman, who is the section chief of the  
2 U.S. E.P.A. To his left is Robert Nunes, who is  
3 the -- who is with the United States  
4 Environmental Protection Agency and who is the  
5 principal author of the remedial action plan  
6 which will be presented tonight. And in the  
7 audience we have Betsy Lowe, who is a citizen  
8 participation specialist with D.E.C. We also  
9 have Michael Lesser, who is an attorney with  
10 D.E.C., and who would be available to address  
11 some questions with regard to the legal aspects  
12 of this matter.

13 At this point, I would like to turn the  
14 program over to Betsy Lowe.

15 MS. BETSY LOWE: Thank you. I just have a  
16 couple of real brief comments. This public  
17 meeting is being held as part of our statewide  
18 program to conduct citizen participation  
19 activities in inactive hazardous waste sites.  
20 And the purpose of the meeting tonight is not  
21 only to give you information about the study and  
22 investigation that was conducted at the site and  
23 the proposed measures to address what was found  
24 on the site but also to get your ideas and input

1 and reflections on what you hear tonight. And we  
2 look forward to working with you on that.

3 There is three document repositories that  
4 contain the full study and the appendices that  
5 was done. They are at the Johnstown Public  
6 Library, the Johnstown City Clerk's office, and  
7 the Johnstown Free Library. As part of the  
8 appellate participation program, we have -- early  
9 on, we developed a site contact list, which I'm  
10 sure is how a lot of you heard about the meeting  
11 tonight. There was an extensive mailing sent  
12 out. But prior to tonight, there have also been  
13 two other public meetings on the site. There was  
14 one May 17th, '89 on the draft work plan for the  
15 study and September 15th, 1990 on the first part  
16 of the study, called the remedial investigation.  
17 And we will be glad to entertain oral comments  
18 tonight or any comments that you have in writing  
19 that you would like to send to us through  
20 February 19th. And your comments should be sent  
21 to Bob Cozzi, the project manager, at the D.I.C.  
22 50 Wolf Road address. He can give you that  
23 detail. I think it is on one of the handouts.

24 MR. BOB COZZI: Actually, I left some cards

up there.

MS. LOWE: So if anybody wanted to follow up that way.

And then following this meeting today, there is going to be a response to the summary developed with all the comments and how the department acted on the comments, and that will be done once the final decision is selected for the site, and they will be available in the document repositories and then -- so that's all I have to say, and here is Joel Singerman.

MR. JOEL SINGERMAN: In order to understand the Superfund program, you first should take a look at how hazardous waste were handled historically. While this country has produced industrial waste for many years, until the mid-seventies, there was little regulation of their disposal. In response to concerns about this country's haphazard approach to waste disposal, Congress passed the Resource Conservation Recovery Act in 1976 to regulate hazardous waste generators, transporters, and treatment and disposal facilities. From this legislation, the E.P.A. created a program that

1 would regulate solid hazardous waste from its  
2 cradle where it is generated to its grave where  
3 it is disposed. A key distinction to make is  
4 that RCRA only addresses today's waste  
5 generators, transporters, and treatment disposal  
6 facilities.

7 Several well-publicized toxic waste disposal  
8 disasters in the late nineteen-seventies, among  
9 them Love Canal, shocked the nation and  
10 highlighted the fact that past waste disposal  
11 practices were not safe. In 1980, Congress  
12 responded with a creation of the Comprehensive  
13 Environmental Response Compensation and Liability  
14 Act, more commonly known as Superfund. The  
15 original Superfund law provided one point six  
16 billion dollars of federal funds to be used in  
17 the cleanup of uncontrolled and abandoned  
18 hazardous waste sites and for responding to  
19 emergencies involving hazardous substances. In  
20 addition, the E.P.A. was empowered to compel  
21 those responsible for these sites to pay for or  
22 conduct necessary response actions. Superfund  
23 was reauthorized by Congress in 1986, increasing  
24 the size of the fund to eight point six billion

dollars.

The work to remediate a Superfund site is usually very complex and takes places in many stages. Once the site is discovered, an inspection to further identify the hazard and contaminants is conducted. A determination is then made whether to include the site on the Superfund national priorities list, a list of the nation's worst hazardous waste sites. Sites are placed on the national priorities list primarily based on the scores obtained by the hazard ranking system which evaluates the relative risk posed by a site. Only sites in the national priorities list are eligible for remedial work financed by Superfund.

The selection of a remedy of a site is based upon two studies, a remedial investigation and a feasibility study. The purpose of the remedial investigation is to determine the nature and extent of contamination at and emanating from the site and the associated risks to the public health and environment. The purpose of the feasibility study is to identify and to evaluate remedial alternatives to address site

1000157

contamination problems.

Public participation is a key feature of the Superfund program. The public is invited to participate in all of the decisions that are to be made, through the community relations program. Town meetings such as this one are held as necessary to keep the public informed about what is happening and what is planned for a site. The public is also given the opportunity to comment on the results of the investigations and studies and the proposed remedy. After considering public comments on the proposed remedy, a record of its decision is signed. The record of decision documents why a particular remedy was selected.

Following the selection of the remedy, the site is designed and then following the design, the actual hands-on work associated with cleaning up the site is undertaken. Following this work, the site is closed and monitored. As early as possible in this remedial process, E.P.A., with the affected state, begins looking for parties potentially responsible for contamination at the site. The search attempts to identify the

1 hazardous waste generators and transporters as  
2 well as the owners and operators of the site.  
3 Once identified, if E.P.A. or the affected state  
4 believes that the responsible parties are willing  
5 and capable of conducting the necessary  
6 investigation and/or cleanup work at the site,  
7 then an enforcement agreement may be signed. The  
8 work that will then be performed by the  
9 responsible parties with the E.P.A.'s or the  
10 affected state's oversight. If no agreement can  
11 be reached, E.P.A. or the affected state can  
12 order the responsible parties to conduct the  
13 work, or they can under take the work themselves  
14 and attempt to recover their costs at a later  
15 date.

16 MR. JIM BARRETT: My name is Jim Barrett.  
17 I'm with Thermo Consulting Engineers (phonetic  
18 spelling), who is the consulting company that was  
19 hired to do the field work at the Johnstown  
20 landfill that has taken place over the last  
21 couple of years. My intention for this meeting  
22 and just for this presentation is just mainly to  
23 just give a broad general discussion of what was  
24 done and what was found at the site with the idea

1           that if you have specific questions or specific  
2           concerns, we can address those in the question  
3           and answer period after this presentation. And  
4           likewise, if you have further concerns after this  
5           meeting, you can send them by letter to Bob  
6           Cozzi, which Bob and I will then attempt to  
7           address in as good a manner as possible.

8           Essentially the landfill study involved  
9           sampling ground water and soils around and inside  
10          the landfill itself, ground water and soils  
11          downhill from the landfill in this area and it  
12          also involved sampling sediments and surface  
13          water, fish and other stream biotic life, along  
14          the creek which leads just southeast from the  
15          landfill. We also sampled residential wells in  
16          approximately this area for ground water quality  
17          to assess drinking water concerns.

18          This particular diagram (indicating) gives  
19          you an idea of the number of wells. There was  
20          approximately thirty-two monitoring wells that  
21          were drilled at the site. Nearly one hundred  
22          ground water samples were taken from the  
23          site-specific monitoring wells, and approximately  
24          sixty water samples were taken from residential

1 wells. Early on at the beginning of the program  
2 in order to collected some baseline data so that  
3 we could have a good picture of the quality of  
4 the soil and water at all of the sites for all of  
5 the parameters, we took and did analyses of a  
6 very, very extensive sweep of laboratory  
7 parameters.

8 The third round of sampling, we focused on  
9 metals, which were the primary constituents of  
10 concern that were associated with the site. The  
11 metals that were at the site include aluminum  
12 manganese and iron, which are typically  
13 associated with landfills. You often find those  
14 as a result of garbage disposal. But at this  
15 site, the compounds of concern were the metals  
16 chromium and lead. The compounds and similar  
17 compounds were also found in Matthew Creek  
18 leading from the site. Primarily manganese and  
19 iron were found more often in sediments from the  
20 creek as well as other trace hints of some  
21 organic compounds, again the chromium and lead  
22 and ammonia.

23 In terms of the creek and impacts to  
24 wildlife in the creek, aluminum, ammonia,

1 manganese, and iron were the compounds that were  
2 most noted in the highest concentrations near the  
3 headwater springs that were about a thousand feet  
4 away from the landfill. In terms of the ground  
5 water in the landfill, the highest concentration  
6 of ground water containing those metals, as you  
7 might expect, was in wells that were taking  
8 ground water samples from directly below the  
9 landfill.

10 The drinking water analyses showed that all  
11 primary drinking water standards were met. No  
12 sample from any drinking water supply exceeded  
13 the what is called the M.C.O., the maximum  
14 contaminant level, which is the level that is --  
15 everything has to be below that level as part of  
16 federal and state law. The only things that ever  
17 were detected that were higher in drinking water  
18 were iron and manganese, and those exceeded the  
19 secondary standards. Secondary standards are  
20 what we term as aesthetic standards. If high  
21 enough concentrations of iron and manganese exist  
22 in water, you could get a taste, you could get  
23 staining of the plumbing fixtures, and you could  
24 get staining of laundry. But those are not

1 health-related items, and those were not  
2 discovered in any of the drinking water samples  
3 that we took at levels that were anywhere close  
4 to health-related concerns. I happen to live on  
5 a private property with a well, and my well  
6 exceeds the secondary drinking water standards  
7 for iron and manganese, and there is no landfill  
8 or anything. It is just a consequence of having  
9 a bedrock well in the northeastern part of the  
10 United States.

11 In addition to taking all of those water  
12 samples so that we could characterize the nature  
13 and extent of contamination and we could see  
14 where the effects of contamination were  
15 localized, we also did drilling -- and I guess we  
16 could call it geological studies -- to determine  
17 what the mechanism of contamination and transport  
18 from the landfill was. And what we found is that  
19 primarily rainfall falling onto the surface of  
20 the landfill and runoff from the roads  
21 surrounding the landfill flowing onto the  
22 landfill was producing water that would pond up  
23 on the landfill and percolate through the  
24 garbage. Essentially, because of the local

1 topographic conditions, the landfill was in a low  
2 spot so not only did it receive rain water, but  
3 it received runoff water from the nearby  
4 hillsides. The ideal situation for a landfill,  
5 of course, is to have it look like a dome and not  
6 look like a bowl because you want it to shed  
7 water, not collect water.

8 As the studies showed, we were very pleased  
9 to find out that the actual landfill waste, which  
10 is shown by these dashed patterns here, was well  
11 above the water table -- and this is the ground  
12 water table below the landfill. So essentially  
13 what was happening is rain would fall and run  
14 onto the site from the neighboring hillside,  
15 percolate through this landfill waste, go on down  
16 through the sand and gravels, come into the  
17 ground water, and then mix with the ground water  
18 and flow off of the site.

19 This is cross-section showing the  
20 relationship of the landfill and the waste it  
21 contains to the water table and to LaGrange  
22 Springs (phonetic spelling). LaGrange Springs  
23 exists primarily because there is insufficient  
24 soil to transmit the water underground. When you

1000164

4           1           get -- this is the bedrock here. As you go  
2           2           downhill from the landfill, the sand and gravel  
3           3           overburden above the bedrock thins. You can see  
5           4           it is lot thicker here than it is there  
6           5           (indicating). Consequently, there is no room for  
7           6           the water to be transported downhill; the bedrock  
8           7           does not allow transport to occur, so it finally  
9           8           pops out to the surface at LaGrange Springs. So  
10          9           essentially what we have on an annual basis is  
11          10          rainfall and run-on coming through the landfill  
12          11          waste, entering the ground water, flowing down  
13          12          with the ground water, some of it coming up in  
14          13          the surface water at LaGrange Springs, and  
15          14          becoming part of the flow of Matthew Creek.

16                 The fact that this garbage was above the  
17                 water table was a very import aspect to looking  
18                 at the various engineering alternatives. I don't  
19                 believe you have this handout; I just want to go  
20                 through some of the selection process, and I  
21                 don't intended for you to try to read this -- and  
22                 I never intended for you to try to read it other  
23                 than to give you a feel of what types of  
24                 evaluations are done.

                  We develop what the media of concern were.

1 In that case, it would be solid compounds, solid  
2 media such as the soils and the sediments of the  
3 creek, the solid waste of the landfill itself,  
4 water, meaning ground water as well as surface  
5 water, and any subsurface gas that could be  
6 produced from the landfill. We had to identify  
7 what those media concerned were and then look at  
8 the kinds of -- types of action that one could do  
9 to treat these particular contaminated  
10 substances.

11 As part of the E.P.A. process, doing the  
12 remedial investigation feasibility study, you  
13 have to look at the no-act and essentially you  
14 say, "Well, what is the result if we just monitor  
15 and give public awareness and constantly monitor  
16 the system." Limited action could involve things  
17 like putting a fence around the site just to keep  
18 people from walking across it. Containment is  
19 exactly that, and covering the site, either with  
20 a cap and then removal, is physically removing  
21 the materials from the area. All of these  
22 particular response actions have their benefits  
23 and their deficits. The no-action alternative is  
24 very inexpensive, but then it doesn't accomplish

1 anything.

2 The removal action would be okay in a site  
3 where you had a very small volume of very  
4 concentrated soils, but it doesn't work in an  
5 area like the Johnstown landfill where you have  
6 thirty-six acres of deposits of solid waste up to  
7 thirty feet thick. There is just too much  
8 volume, and there are no hot spots, so hauling  
9 does not become a very good option in terms of  
10 the cost and also the impact of exposing garbage  
11 that has been in the ground for so long. The  
12 benefit of the removal action is, however, that  
13 it is taken to another site that is designed to  
14 hold the waste.

15 After looking at those basic options, we  
16 also look at the kinds of processes that could be  
17 involved. As I have already mentioned, the  
18 limited access, which could involve a fence or  
19 deed restrictions or alternate water supplies.  
20 The removal could involve anywhere from  
21 excavation to ground water collection and  
22 treatment and all different types of ground water  
23 treatment and discharge options. The basic  
24 criteria that we had to look at were to make sure

1       that we could overall protect the public health  
2       and welfare and environmental conditions around  
3       the site, adjacent to the site, comply with the  
4       local and federal and state laws, evaluate a  
5       decision and solution that will have long-term  
6       performance, reduce either the toxicity or the  
7       mobility or volume of the waste, be something  
8       that you can implement -- that is, be something  
9       that can be done with today's technology that you  
10      know will work and also have cost items that can  
11      be looked at as acceptable.

12             Based on all that screening, we came up with  
13      these general alternatives, we came up with seven  
14      remedial alternatives. The no-action  
15      alternative, which is required under federal law,  
16      was rejected because it did not meet the criteria  
17      of cleaning up the site or containing the waste.  
18      Limited action involved replacing the existing  
19      private wells in the neighboring vicinity of the  
20      landfill with city water supply, and it included  
21      doing some soil and -- what is could slope  
22      control, ground grading, so that we would  
23      eliminate water ponding on the site and we would  
24      also eliminate water flowing from neighboring

1 hillsides onto the site, essentially just  
2 regrading and land contouring. That would alone  
3 reduce the percolation and creation of waste or  
4 ground water and leachate from the landfill by  
5 about thirty percent.

6 The next alternative was, again, the city  
7 water supply to the neighboring residences and a  
8 landfill cap based on New York State standards  
9 for a landfill. We went through further  
10 alternatives. One was a RCRA cap, which is a  
11 very similar cap to the state landfill cover cap  
12 except it has an extra clay layer. I have  
13 overlooked the details, but if you are  
14 interested, you can ask me during question and  
15 answer and we can show you the types of caps and  
16 arrangements for caps that there are. And we  
17 looked at an alternative for collecting ground  
18 water and treating it. The ground water  
19 collection and treatment option did not involve  
20 actual capping of the site.

21 Finally, we looked at the state cap, which  
22 we call the Part 360 cap for a landfill, tied  
23 into ground water collection treatment and  
24 discharge. We also looked at the federal cap

1 with ground water treatment and discharge.  
2 That's a quick summary of all of the seven  
3 alternatives.

4 Again, because the whole source of leachate  
5 and polluted ground water that ultimately becomes  
6 polluted surface water is due to rainfall either  
7 falling directly on the site or falling on  
8 neighboring land and running to the site, and the  
9 fact that the ground water itself is above -- the  
10 waste is above the ground water, the basic  
11 solution for this site is to put a cover over it.  
12 Essentially, it is like an umbrella so that the  
13 garbage can dry and remain dry.

14 The seven alternatives. Number one would  
15 make no difference in the production of leachate.  
16 Alternative two reduces leachate production by  
17 thirty percent because doing the land grading at  
18 least keeps the water from running to the site.  
19 Alternative three, the state cap, reduces the  
20 leachate production to less than one percent of  
21 its current production. The similar alternative  
22 with the federal cap reduces leachate even  
23 further to almost non-measurable levels.

24 With that, I guess I will conclude my

1           portion of the presentation, and Bob Cozzy will  
2           go through the discussion or the process that the  
3           state used to select among the seven  
4           alternatives.

5           MR. COZZI: Jim has described the seven  
6           alternatives that were presented in the F.S., and  
7           I'd like to describe the criteria that both  
8           E.P.A. and D.E.C. used to evaluate those  
9           alternatives.

10           The first two criteria that we use are  
11           called overall protection and compliance with  
12           A.R.A.R.s, and that's overall protection of  
13           human health and the environment, we look at  
14           both. The overall protection criteria considers  
15           how risks to public health and the environment  
16           could be eliminated, reduced, or controlled, and  
17           the compliance with A.R.A.R.s -- A.R.A.R.s are  
18           applicable relevant or appropriate requirements.  
19           And to give you some examples, they would be like  
20           ground water standards, surface water standards  
21           or Part 360 landfill closure requirements --  
22           would all be considered A.R.A.R.s. And those two  
23           criteria are called threshold criteria in the  
24           federal guidance. And that means in order for a

1           remedy to be selected, it has to at a minimum  
2           meet those two criteria.

3           The next five criteria are long-term  
4           effectiveness and permanence, reduction of  
5           toxicity, mobility, or volume, short-term  
6           effectiveness, implementability, and cost. Now,  
7           those five criteria are called primary balancing  
8           criteria. What we do is if the -- basically, if  
9           the alternative passes through the first two  
10          criteria, which is must meet, the threshold  
11          criteria, we use these five criteria to then  
12          strike a balance amongst these five criteria.  
13          The long term effectiveness of it, any short-term  
14          impacts, and how much reduction of toxicity,  
15          mobility, and volume we get, and also how  
16          implementable the remedy is, and last of all,  
17          cost. Now, the cost considers the capital costs,  
18          the operation and maintenance costs, and it uses  
19          a present-worth analysis to compare the  
20          alternatives.

21                 In going through the analysis the -- of the  
22                 seven alternatives that Jim described,  
23                 alternatives one, two, and five do not meet both  
24                 of the threshold criteria, the first two. And

1           therefore, those three alternatives one, two, and  
2           five could not be selected because they don't  
3           meet that minimum requirement.

4           The other four alternatives S.E. three,  
5           four, six, and seven would all meet those two  
6           threshold criteria and then use the next five  
7           criteria to strike a balance amongst those four.  
8           Now, alternatives three, four, six, and seven  
9           would all be effective in the long term because  
10          they rely on the ability of a low permeability  
11          cap to virtually eliminate all future leachate  
12          generation and any impacts to ground water.  
13          Alternatives three and four rely on that low  
14          permeable cap to reduce the mobility of the  
15          hazardous waste within the landfill while  
16          alternatives six and seven further reduce the  
17          mobility by pumping and treating in addition to  
18          the cap. All four of the alternatives have  
19          similar short-term impacts such as dust, noise,  
20          increased truck traffic, typical things you will  
21          get with a large construction project. And  
22          therefore, there is really no difference between  
23          the four because they all involve some sort of  
24          cap on the landfill. All four alternatives are

1           also equally implementable because the equipment  
2           and qualified personnel are readily available to  
3           construct any one of those four alternatives.

4           Now, when we look at the cost criteria  
5           requirement -- if you look at the cost of  
6           alternatives six and seven -- we look at the  
7           present worth value. And if you'll look at the  
8           cost of alternatives six and seven, it is just  
9           about double the cost of either alternative three  
10          or four. And basically, because of that  
11          factor --.

12                   UNIDENTIFIED SPEAKER: Can you read some of  
13           those figures? We can't see them.

14                   MR. COZZI: Okay. Alternative three, the  
15           present worth is sixteen million four hundred  
16           fifty-four thousand. Alternative four, the  
17           present worth is twenty-two million four hundred  
18           twenty thousand. Alternative six, the cost is  
19           thirty-two million five hundred eighty thousand.  
20           Alternative seven, the present worth is  
21           thirty-eight million five hundred forty-five  
22           thousand.

23                   Now, because the costs of six and seven are  
24           basically double that of three and four, there --

1 to strike a balance amongst the other criteria,  
2 since three or four would be essentially  
3 equivalent to alternative six and seven based on  
4 long-term impact/short-term impact reduction of  
5 toxicity, mobility, and volume, the cost would  
6 then swing us to alternative three or four as  
7 long as they meet the threshold criteria. If you  
8 compare alternatives three or four, you will see  
9 alternative four is about forty-five percent more  
10 than alternative three. And again, they are  
11 equally protective based on the criteria that we  
12 use.

13 So based on this evaluation, D.E.C. and  
14 E.P.A. are proposing tonight alternative S.E.  
15 three, which is installation of a Part 360  
16 landfill cap and residential water.

17 Now, the criteria that I mentioned  
18 earlier -- there is actually nine criteria, and  
19 the last two criteria that E.P.A. uses are state  
20 acceptance and community acceptance. Now, the  
21 state has already concurred with this proposed  
22 remedy; we have already agreed with the E.P.A.  
23 that this is the best proposed remedy. And now  
24 we are here tonight, and the purpose of the

1 public comment period is to, then, assess  
2 community acceptance of the proposed remedy.

3 I would just like to describe the components  
4 of the proposed remedy. The primary component of  
5 alternative S.E. three would be the design and  
6 construction of an impermeable cap with a gas  
7 venting system, and that will comply with  
8 D.E.C.'s Part 360 landfill closure regulation.  
9 This slide shows you the waste mass, the waste  
10 material down here. There is a filter layer  
11 above that, there is a gas vent layer above that,  
12 there is a geo membrane above that and then a  
13 drainage layer and topsoil.

14 The primary component that provides the  
15 environmental protection is the geo membrane.  
16 And what that does, as Jim described earlier, the  
17 primary impact of this site is water percolating  
18 through the waste. The function of this geo  
19 membrane is to prevent that water from  
20 infiltrating down into the waste. What will  
21 happen is it will run off through this drainage  
22 layer above. There is also is -- the purpose of  
23 the gas vent layer below the geo membrane is to  
24 capture the methane gas that is generated within

1 the waste and properly vent it above the cap, and  
2 that prevents pressure buildup and migration of  
3 methane gas. The remedy would also include --  
4 the proposed remedy would also include extension  
5 of city water mains and hookups to all  
6 downgradient water supplies that are potentially  
7 impacted by the landfill. I would also include  
8 erection of a security fence around the cap of  
9 the landfill and the imposition of deed  
10 restrictions to protect the cap from damage. And  
11 the finally component would be long-term  
12 monitoring of ground water, surface water, and  
13 sediments to determine the effectiveness of the  
14 remedy.

15 Now, the one thing I would like to add is  
16 that after construction of the landfill cap --  
17 and this is in our proposed remedy also -- our  
18 long-term monitoring data will be evaluated. And  
19 in the event that ground water/surface water  
20 quality is not being restored to acceptable  
21 levels, the ground water remediation component  
22 that is contained in alternative S.E. six may be  
23 implemented. For this reason, the proposed plan  
24 has alternative S.E. six as a contingent remedy

1 in the event that alternative S.E. three does not  
2 restore the ground water and surface water  
3 quality to acceptable levels. S.E. six contains  
4 all the components in alternative S.E. three and  
5 in addition would include ground water extraction  
6 treatment and discharge requirement. If ground  
7 water treatment is necessary in the future, it  
8 would include pH adjustment, chemical  
9 precipitation, and carbon absorption to remove  
10 inorganic and volatile organic compounds.

11 The last thing I would like to cover is the  
12 projected schedule. And right now, we expect to  
13 be able to have a record of decision in the  
14 spring of this year, 1993, and a final design by  
15 the spring of 1994. And then going for bid in  
16 the summer of 1994, we hope to be able to start  
17 construction late in the summer of 1994.

18 Okay. At this point, I would like to open  
19 it up to public comments and questions. We ask  
20 that you please state your name and your address  
21 for the court stenographer so that we have it for  
22 the record. We will try to answer as many  
23 questions as we can tonight, and I just ask that,  
24 please, have one person at a time speak. Raise

1000178

1           your hand, we will recognize you so that we get a  
2           proper record made. Okay, any questions  
3           comments?

4           Yes, sir.

5           MR. DENNIS WILSON: Dennis Wilson (phonetic  
6           spelling), Johnson Avenue, town of Johnstown. My  
7           wife is right here with me, she's had a  
8           conversation with you. You know us; right?

9           MR. COZZI: Yes.

10          MR. D. WILSON: Mr. Sheran (phonetic  
11          spelling) works with you?

12          MR. COZZI: He used to.

13          MR. D. WILSON: Did he get promoted or  
14          demoted?

15          MR. COZZI: He works for a private  
16          consultant now.

17          MR. D. WILSON: My biggest concern is -- and  
18          I am not going to try to speak for everyone here  
19          tonight, but I believe that a lot of my neighbors  
20          are here and they feel the same way -- but again,  
21          I'm not going to attempt to speak for anybody  
22          else other than myself right now -- is the cost  
23          involved with paying water bills to the city of  
24          Johnstown. Now, you talk about the cost, and all

1 the cost that you mentioned this evening, I  
2 believe, are the costs for the owner of the site;  
3 the O and M, the capital costs. Have you  
4 considered the costs to the homeowners if they  
5 should take city water? Is that a consideration,  
6 or are you, in the O and M, in the capital costs,  
7 considering that you are going to give all the  
8 homeowners water at no charge?

9 MR. RICHARD FEDIGAN: No, we are not.

10 MR. D. WILSON: So you made a presumption  
11 down in Albany that I am willing to pay a water  
12 bill at this point in time.

13 MR. FEDIGAN: No, we didn't.

14 MR. D. WILSON: I have lived in the town of  
15 Johnstown for sixteen years.

16 MR. FEDIGAN: No, we didn't. What we are  
17 recommending is that we --.

18 MR. D. WILSON: Well, who made that  
19 presumption then?

20 MR. FEDIGAN: What we're recommending is  
21 that we provide water in the streets -- and we  
22 are willing to pay for the hookups, both the  
23 state and the city are willing to pay for the  
24 hookups. Now, each individual homeowner

1           certainly has the right to refuse that. We are  
2           not forcing anybody to take water.

3           MR. D. WILSON: Okay. Now, that is part of  
4           the record; you just stated that. Because that  
5           contradicts the conversations that I had with Mr.  
6           Sheran. Apparently that may be why he is not  
7           with your department any longer because he  
8           suggested --.

9           MR. FEDIGAN: That's not true.

10          MR. D. WILSON: And it was also suggested in  
11          the Leader-Herald just last evening that the city  
12          would not make any attempt to force any homeowner  
13          to take city water but that could be done by the  
14          state. So who here from the state is going to  
15          make that attempt? You are saying that you are  
16          not going to do it, but the health department is  
17          absent tonight.

18          MR. COZZI: No, we are right here.

19          MR. D. WILSON: Okay. Are you going to do  
20          it?

21          MR. COZZI: No, we don't force --.

22          MR. D. WILSON: Okay. So I think you have  
23          relieved my concern over being -- the suggestion  
24          of somebody being forced into this. And this is

1           what's irritated me for months on end. And Bob  
2           Subik knows this, I have discussed it with him,  
3           to think that I was -- somebody was going to try  
4           to force me into taking this water. You have  
5           changed your position on that apparently.

6           MR. COZZI: No --.

7           MR. D. WILSON: You haven't changed your  
8           position on that?

9           MR. COZZI: The health department does not  
10          regulate individual homeowners.

11          MR. D. WILSON: I know. But Sheran told me  
12          that they might, and that's what concerns me.

13          MR. COZZI: Well, that's probably because he  
14          wasn't sure if they would, but Rich and myself  
15          have talked about it.

16          MR. D. WILSON: Okay. So you are going to  
17          build a pipeline, it's optional. And you are not  
18          going to try to put a lien on anybody's deed that  
19          they can't sell it if they don't hook up. That's  
20          the scenario that was given to me by your  
21          department.

22          MRS. WILSON: I talked to you, sir. You told  
23          me that.

24          MR. COZZI: I did not say they we would

1 force you to hook up. No, I didn't.

2 MRS. WILSON: Sir, we talked a good  
3 half-hour one day, and you told me that -- you  
4 said it could happen, it very well could happen.

5 MR. D. WILSON: Somebody in the deputy  
6 commissioner's office also told me that it could  
7 happen, so you are making it a part of the record  
8 tonight official in front of media and part of  
9 the transcript that you are not going to make any  
10 attempt to force anybody to take water, try to  
11 get them to sign a statement they won't sue the  
12 city if they don't take the water or any of those  
13 intimidating attempts on people?

14 MR. COZZI: No.

15 MR. D. WILSON: Then I don't have to read my  
16 speech that I prepared because I'm not concerned  
17 about it now.

18 I would like to let you know one thing. You  
19 did tell my wife -- you did tell my wife this,  
20 that the cost of paying for the water would be  
21 negligible and would be offset by not running  
22 your pump any longer. And I'd like to educate  
23 you a little bit tonight because you took the  
24 time to educate everyone here tonight. I went to

1           Niagara Mohawk, and it costs a dollar eighty a  
2           month to run a well at today's price per kilowatt  
3           hour. And that comes out to about twenty-three  
4           or twenty-four bucks a year with quick math.  
5           I've got a pump that I have had in the ground for  
6           seventeen years, it cost me three hundred  
7           sixty-nine dollars.

8           MR. BARRETT: Which brand of pump is that?

9           MR. D. WILSON: Sears.

10          That cost me about twenty-three, twenty-two  
11          dollars. Okay, a few bucks for maintenance, you  
12          are talking fifty bucks a year. Now, if I start  
13          paying for water according to the recent article  
14          that was in the paper, it is going to be upwards  
15          of eight hundred a year with the cost of the  
16          water and the water district tax, so I want to go  
17          on the record that you have been corrected. And  
18          when you do talk to public for now on as a state  
19          official, perhaps you ought to do your homework,  
20          unless you are paying lot more for Niagara Mohawk  
21          electricity than I am.

22          MR. COZZI: Do you have a water softener,  
23          sir?

24          MR. D. WILSON: No, I don't, sir.

1 MR. COZZI: If you have a water softener, I  
2 believe the cost would be very comparable.

3 MR. D. WILSON: No eight hundred dollars.

4 MR. COZZI: Eight hundred dollars is  
5 incorrect.

6 MR. SUBIK: If I could just address Dennis's  
7 question for a moment with respect to this part  
8 of the remedy. Part of the remedy calls for the  
9 city to run thousands of linear feet of a water  
10 main which would service essentially Johnson  
11 Avenue, a portion of Maple Avenue, and then over  
12 to the extension of West Fulton Street, and going  
13 in the other direction, a portion of O'Neil  
14 Avenue (phonetic spelling) so that in essence  
15 there would be a water district created which  
16 would encompass about three sides of the existing  
17 site. Now, the state and the city would fund the  
18 cost of constructing this line and the service  
19 lines into the homes, okay. However, beyond  
20 that, as far as internal changes in the houses to  
21 connect the lines, we would not be involved in  
22 that. The cost of actually buying water will be  
23 a matter for negotiation between the town of  
24 Johnstown and the City of Johnstown at some

1 point, and it will be necessary -- I guess we  
2 might as well address this now -- it will be  
3 necessary if this project goes forward in this  
4 fashion for the town board to apply to the state  
5 and create a water district, which would  
6 encompass this general area. And there are  
7 certain rules and regulations that have to be  
8 complied with to create such a district, and all  
9 that process will be subject to public hearing in  
10 the town, which your own town board will be  
11 conducting, and that at some point there will be  
12 negotiations between the town and the city for  
13 purposes of having a master contract between the  
14 city and this water district to supply the  
15 district.

16 MR. D. WILSON: Should the district be  
17 approved -- positive thinking, you might just  
18 want to back up.

19 MR. SUBIK: Our obligation -- the city of  
20 Johnstown's obligation and the state of New York,  
21 as the lead agencies in this project to study the  
22 problems on the site, were to propose remedies.  
23 And the proposed remedy that we have come up with  
24 includes the construction of a water line, and so

1 we feel that we would not be acting responsibly  
2 if we did not include this as part of the  
3 proposed remedy. Now, whether the town residents  
4 avail themselves of the opportunity to hook up to  
5 this or not probably will be done on a  
6 case-by-case basis with the town residents. We  
7 would encourage them to do it. We think it is  
8 prudent to do it because, although there is no  
9 contamination of their wells now that violates  
10 the primary drinking water standards of the state  
11 of New York, we don't know what the future holds,  
12 and so we think the prudent action would be for  
13 the town residents in the affected area to  
14 connect to the system once it is in place. But  
15 it will be a decision for individual homeowners  
16 to make. As far as the rate is concerned, that  
17 will be a matter for the town board and the city  
18 to negotiate in the course of this process.

19 MR. D. WILSON: I think it would be prudent  
20 for the city to make that cost as economical as  
21 possible for the homeowners so that you eliminate  
22 liability. That's what you are trying to do is  
23 eliminate liability in the future. If you make  
24 it attractive, you may get people to hook up.

1 One last question -- you don't have to go on any  
2 longer, Bob, on how you're going to build the  
3 pipeline. If the pipeline is put in and somebody  
4 doesn't want to use it, are we going to be taxed  
5 because there is a water district, do you know?

6 MR. SUBIK: The capital costs to construct  
7 the line will be entirely borne by the state<sup>and City</sup>, so  
8 there will be no special assessment district for  
9 the capital costs of the construction of the line  
10 and the appurtenant equipment such as a booster  
11 pump station if that's necessary and some other  
12 structures that might be necessary to make it  
13 work; however, the usage, the actual consumption  
14 of water, would be a matter that the individual  
15 homeowner would have to pay for.

16 MR. D. WILSON: No, I'm talking about a  
17 yearly water district tax.

18 MR. SUBIK: Well, that -- again, that would  
19 be a subject for negotiation between the town and  
20 the city. If there is a cost in running that  
21 district, then obviously they might have to pass  
22 that on to the people that are in the district.  
23 What that cost might be, I don't know.

24 Just one other thing while we are on the

1 subject just to kind of complete the thought, we  
2 did have some discussions with some employees of  
3 the water board today about what costs might look  
4 like for users in that district. And of course,  
5 this is based on a minimum usage of two thousand  
6 cubic feet per semiannual billing period;  
7 however, based on the historical rate, which is  
8 twice the rate of city residents for outside  
9 users, we came up with a figure of about hundred  
10 and fifty dollars for the minimum usage for an  
11 average household in the district. Now, an  
12 average household might consume far more than  
13 that, but at least in terms of the minimum usage,  
14 it would be about a hundred and fifty dollars or  
15 maybe a hundred and fifty to two hundred dollars.  
16 It could be more, but I think the figures of  
17 eight hundred dollars and some other figures I  
18 have heard thrown around may be on the high side,  
19 so I would caution you to take a look at those  
20 figures because I'm not sure going to be --.

21 MR. D. WILSON: Any way you look at it, the  
22 figures are going to be considerably more than  
23 what somebody is currently expending to run a  
24 well, to run a pump on their well. And as far --

1 I'll shut my mouth, I just have one last point I  
2 want to make at this time, I'll still reserve my  
3 right to speak later. You know, when there are  
4 costs for a water district -- Bob, are you  
5 looking at me?

6 MR. SUBIK: Yes.

7 MR. D. WILSON: When there are costs for a  
8 water district, generally water districts are  
9 formed at the request of individuals because they  
10 have a housing development they want to put in or  
11 whatever the case may be. This is being done as  
12 a necessity mandated by the state and federal  
13 government because of a violation that the city  
14 has in our neighborhood, so therefore the costs  
15 to the homeowner should be negligible. We didn't  
16 create the problem that's out there.

17 MR. SUBIK: Let me just say it this way:  
18 Rather than characterize it as a violation, I  
19 would simply say this, there is the potential,  
20 potential for contamination of the ground water  
21 which would be in the area of the wells in this  
22 private -- along Johnson Avenue.

23 MR. D. WILSON: This isn't just a matter of  
24 convenience --.

1000190

1 MR. SUBIK: There is no existing  
2 contamination or at least violation of the  
3 primary drinking water standards. We don't want  
4 to alarm people who will go home tonight and say,  
5 "I'm not going to drink that water any longer."  
6 What they are saying is there is a problem there;  
7 there no violation of the primary drinking water  
8 standards of any of the wells that were tested.  
9 But as a precaution, and not knowing exactly what  
10 the future may hold as far as further migration  
11 of leachate out of the site, we are recommending  
12 this line be built, and we are urging people in  
13 the affected area to connect.

14 MR. D. WILSON: And because you're  
15 instigating this because of your potential  
16 problems with the landfill, that should be a  
17 consideration of the homeowners. We are not here  
18 rallying -- or I'm not here rallying tonight to  
19 have you put in a pipeline. It is not at our  
20 request in most cases.

21 MR. SUBIK: We know this is not initiated by  
22 the residents; we understand this.

23 MR. D. WILSON: Right. So therefore, this  
24 should be considered when the negotiations come

up and when anybody thinks about taxing somebody,  
that we didn't ask for this.

MR. SUBIK: I'm sure this would be a factor.  
Go ahead.

MS. WINIFRED DAUM: Winifred Domm (phonetic  
spelling), and I own property on West Fulton  
Street. Now, why would my son have to pay a  
hundred fifty dollars for water at that site when  
my daughter pays over eight hundred dollars at  
year at Leed Street (phonetic spelling) in the  
city.

MR. SUBIK: Well, again, I don't know what  
her usage is on Leed Street. When I said a  
hundred fifty dollars -- I don't want that to be  
misleading, either. That number was based upon  
the minimum billing of two thousand cubic feet of  
water, okay. And a home with perhaps two adults  
and two children might use a great deal more than  
that, I don't know.

MR. BARRETT: Bob, that's probably with  
sewer, too.

MS. DAUM: There is sewer tax on top of  
that.

MR. SUBIK: That's just the water portion?

1 Well, it is probably based on her fairly heavy  
2 usage of water at this location.

3 MS. DAUM: No, they are very careful about  
4 it.

5 MR. SUBIK: Well, at each home, the usage is  
6 a little different.

7 MS. DAUM: Now, is this a hundred fifty  
8 every six months or for the year?

9 MR. BARRETT: Hundred fifty dollars, Bob,  
10 that's for the year.

11 MR. D. WILSON: And that's for how many  
12 people?

13 MR. BARRETT: No, we are not talking about  
14 people. We are talking about the amount of water  
15 going through the meter.

16 MR. D. WILSON: Yes, but you are saying  
17 that's an average. What are you basing your  
18 average on, two people or four people?

19 MR. BARRETT: It is the minimum bill.

20 MR. D. WILSON: Well, I pay a minimum for my  
21 camp for electricity for Niagara Mohawk. It's  
22 thirteen bucks for every two months. As soon as  
23 I go in there, it costs me a lot of money. Now,  
24 you are saying the minimum to be hooked up.

1           That's --.

2           MR. SUBIK: Yes, we don't want to be  
3           misleading. The actual usage could exceed that.

4           MR. D. WILSON: It could. It's going to,  
5           Bob. Don't try to mislead me.

6           MR. BARTLETT: The hundred fifty dollars,  
7           that was for one year.

8           MR. D. WILSON: To be hooked up even if  
9           nobody is living at the place; right?

10          MR. SAM GRECCO: Sam Grecco (phonetic  
11          spelling), alderman, city of Johnstown.

12          Dennis, I have water meters on a lot of  
13          apartments, and the average bill for all of the  
14          apartments don't run fifteen dollars a month, and  
15          those also include the sewer rate, just to throw  
16          that out. But they run anywhere from fifteen to  
17          twenty with the sewer.

18          MR. D. WILSON: You're billed monthly? I  
19          thought it was every six months.

20          MR. GRECCO: No, I said that's what the  
21          monthly cost was.

22          MR. D. WILSON: So what do you figure,  
23          that's about a hundred eighty bucks a year maybe?

24          MR. GRECCO: Well, times twelve.

1 MR. D. WILSON: And that's how many people  
2 you have living in your flats? Do you have  
3 families or retired people?

4 MR. GRECCO: Two people, two and three.

5 MR. COZZI: Could we move on?

6 MR. RICH SMULLEN: Rich Smullen (phonetic  
7 spelling), town of Johnstown supervisor.. When  
8 the water district is formed, who will pay for  
9 the engineering costs that are required to put  
10 the -- get the district okayed by the district or  
11 the department of health? Is that included in  
12 the cost, the original cost? Because we have to  
13 do the engineering, that is all included into it  
14 so when we apply for our water district  
15 permission, that will be included right there,  
16 and we will have to do nothing. We will have to  
17 hire no engineers or anything. We can just say  
18 this the engineering is done ahead of time, and  
19 when we send to D.O.H., they say, "Okay, the  
20 engineering is done; it costs you nothing," and  
21 you okay it?

22 MR. BARRETT: To answer your question, the  
23 engineering costs for the design and construction  
24 of the pipeline include the complete engineering

1 design for New York State standards and  
2 requirements, the construction, the testing, and  
3 permitting. The cost estimate this was shown in  
4 the overhead is a basic cost estimate; it is a  
5 preliminary cost estimate. We put in a  
6 contingency to be sure this number, if anything,  
7 is on a high number. But before any detailed  
8 design and construction was done, there would be  
9 lot more analysis. You recognize that these  
10 numbers are for comparison purposes. They are  
11 not -- you know, if you saw a number this said  
12 two point two one seven five million dollars, you  
13 are not supposed to lock on to that to the  
14 nearest seventy-five cents. But the answer your  
15 question is yes, that is to have a complete  
16 functional committed water transmission system.

17 MR. SMULLEN: And that is accepted by the  
18 department of health? I mean, so there will be  
19 no cost as far as --?

20 MR. BARRETT: They would submit to the  
21 bureau of public water supply the plans, and  
22 they would be reviewed like any other town water  
23 district, and all that cost is done through the  
24 state and the city.

1 MR. CHRIS SAVAGE: Chris Savage (phonetic  
2 spelling).

3 Will you be -- will the department of health  
4 require fire hydrants on this line, too, for  
5 flushing?

6 MR. FEDIGAN: No, that is a decision made,  
7 again, by the town and city when they negotiate  
8 what they want. The state will pay so much to  
9 the city to take care of what the potential  
10 impacts of the landfill are, okay. Now, if  
11 that's a six-inch water line serving everyone,  
12 okay, that's potentially impacted, that's what  
13 the state will contribute to the city. Okay, if  
14 the state and the town jointly decide we want  
15 fire protection and we want lines big enough to  
16 service -- if there is eighty homes, we want  
17 lines big enough to service hundred and fifty in  
18 the future -- that's up to them to decide jointly  
19 and bear the extra cost.

20 MS. MARYLOU FRASER: Marylou Fraser (phonetic  
21 spelling), and I live on O'Neil Avenue.

22 Is the city looking at annexing any of this  
23 area? I have heard rumors to the effect that  
24 this is being looked at.

1 MR. SUBIK: So far as I know, there is no  
2 thought at this time that annexation would be  
3 part of this proposal. This proposal to  
4 remediate the area involving capping of the site  
5 and the building of the water line, those  
6 proposals stand alone, and annexation is not part  
7 of this thinking at this point in time.

8 MS. FRASER: Is it being considered though?

9 MR. SUBIK: Not to my knowledge, not in this  
10 area.

11 MR. RENEY SANCES: I have a couple of  
12 questions. My name is Reney Sanders (phonetic  
13 spelling). I'm with the Rainbow Alliance; we are  
14 a Fulton-County-based environmental group. I  
15 reside in Gloversville.

16 At the beginning, you stated this is the  
17 third public hearing to date; the last one was in  
18 1990. I'd just like to comment that I think the  
19 whole public participation program on the federal  
20 and state level is totally inadequate on projects  
21 such as this and the public should be involved on  
22 a much more frequent basis, and periodic updates  
23 and opportunities for input provided. That's  
24 just one comment.

1           There's a couple of questions. You list the  
2           seven alternatives. There really are more  
3           alternatives, I don't know how you narrow it down  
4           to the seven. You consider things like  
5           containment as alternatives where you are really  
6           just talking about capping. You don't mention  
7           things like slurry walls and putting up walls  
8           around the outside. What kind of alternatives  
9           does this fall into and how did you narrow it  
10          down to these seven, and concerning just the  
11          different types of caps of these seven?

12           MR. BARRETT: That's a good question. As I  
13          mentioned to you when I made the presentation, I  
14          was giving a broad brush. I wasn't going to go  
15          into all that kind of detail unless each  
16          individual had their own specific detailed  
17          question.

18           We did look at slurry walls and we did look  
19          at different kinds of emplacements of slurry  
20          walls as well as interception of ground water  
21          through trenches and interception of ground water  
22          through the use of ground water interception  
23          wells. The decision to drop the use of the  
24          trenches is based on the fact that the ground

1           water is not in contact with the garbage. The  
2           garbage is high and dry above the ground water if  
3           you don't have rain fall percolating through it.  
4           You would use an interception trench either  
5           downgradient to the landfill or all the way  
6           around the landfill if, like Gloversville, the  
7           garbage is in the water so it is constantly  
8           percolating away and constantly making leachate.  
9           In this case, once the cap is in place and once  
10          the existing volume of garbage has drained, there  
11          will not be any leachate from the landfill to a  
12          measurable level. Therefore, the decision is  
13          based on the cost versus the effectiveness. The  
14          cost of that kind of containment is very, very  
15          expensive and has no impact to the absolute  
16          ultimate effectiveness.

17                 MR. SANGES:       There are documented sludge  
18          rock containing high level of chromium rolling  
19          out of the landfill over in the area on your  
20          drawing by the LaGrange gravel pit. These have  
21          been laboratory documented by New York State  
22          D.E.C., chromium compositions of up to twenty-six  
23          thousand parts per million rolling out of the  
24          landfill onto that area. How will this area be

1 contained in that area there? Let me finish my  
2 comment -- on your other drawing, you show a  
3 hedgerow of trees on that area, which is not a  
4 solid hedgerow of trees. If you look at the  
5 area, there are several deep ravines that allow  
6 these sludge rocks to flow out of that area  
7 there.

8 MR. BARRETT: Let me answer your question.  
9 Again, my intention for this meeting was not to  
10 go into that kind of detail. However, the area  
11 around LaGrange pit was found to have  
12 contamination, and the actual mechanism whether  
13 it is as you describe or it's due to the leachate  
14 flowing into the sediments and then coating them  
15 makes no difference because it is still there.  
16 And those tests, which were also done by me, show  
17 this they were there. We are going to excavate  
18 all the area around LaGrange pit to the point of  
19 reaching clean background conditions in the soils  
20 within that pit, and we were going to put that  
21 material in the middle of the landfill to be  
22 covered by the closure cap.

23 MR. SANGES: I'm just saying why is this  
24 cliff here, though?

1000201

1 MR. BARRETT: That cliff won't be there like  
2 that anymore. The new cap will be a three  
3 percent grade, which is much less graded than  
4 these desk are in this room. I mean the fine  
5 detail of where the foot of that cap will be has  
6 not been determined because it is a fine  
7 engineering detail. It could just as well cover  
8 that pit, but we are going to dig up that pit  
9 anyway. I guarantee any contamination that is in  
10 that pit that has come from the site that you  
11 just described will be removed, put into the  
12 landfill to be covered. I can't tell you within  
13 the nearest five feet where the landfill cap is  
14 going to stop and natural ground is going to  
15 start. That is the process of the final design.

16 MR. SUBIK: Sir, in the back there.

17 MR. GORDON LaGRANGE: My name is Gordon  
18 LaGrange (phonetic spelling). I'm the root of  
19 this whole thing right here.

20 There is a hole that contains eight to ten  
21 feet of water and is polluted. You can go down  
22 to the bottom of the gravel pit ten or twelve  
23 feet, and it's solid stone this far. Last  
24 spring, there was fourteen foot of water in

1           there. Consequently, by June, it broke out a  
2           quarter of a mile away down the hayfield and  
3           spread the whole hayfield over towards that  
4           spring. So how are you going to contain that?

5           MR. BARRETT: As I mentioned to you  
6           earlier -- and again, it is another question  
7           which is a detail that I purposely did not  
8           discuss unless I heard that there was interest.  
9           The main problem of the landfill as is stands  
10          today is that it's flat. It is more like a bowl.  
11          It should be, instead of a bowl that contains  
12          water, it should be an upside down bowl that  
13          sheds water. And I mentioned that we were going  
14          to do land regrading, and the problem that you  
15          described is that because the landfill collects  
16          water and some of this water runs off of that  
17          landfill into that pond, when you finish with the  
18          site, there will not be this pit there, I should  
19          say, and there will not be this drainage problem.

20          MR. LaGRANGE: Well, there is something else  
21          I would like to say. Now, about ten years ago,  
22          they dug a big hole to bury garbage. They dug a  
23          hole thirty feet deep in the dump. The next  
24          morning, he had fifteen feet of water in that

1000203

1 hole, he couldn't dig no more, so they dumped the  
2 garbage in the hole. When the hole got full, the  
3 water come out down the hill and run right down  
4 the road into the gravel pit. Now, that spring  
5 is still there. Where is it going to go?

6 MR. BARRETT: Well, that spring won't be  
7 there because the only reason it is there now is  
8 because of the rainfall landing on the top of the  
9 landfill, percolating through and coming out  
10 through one of the lifts in the daily cover that  
11 is used in the landfill.

12 MR. LaGRANGE: This spring has been there  
13 years before anybody else here was born --  
14 running down through that spring.

15 MR. BARRETT: Well, are you talking about  
16 LaGrange Spring?

17 MR. LaGRANGE: Yes.

18 MR. BARRETT: I'm sorry, I thought you were  
19 talking about the spring that is by the LaGrange  
20 pit. That spring will still be there; we don't  
21 intended to change that.

22 MR. LaGRANGE: I've been here seventy-five  
23 years, and I know what it is.

24 MR. BARRETT: I'm sorry, I misunderstood.

1 MR. COZZI: What will happen is in the  
2 longer term, once the cap is in place, we have  
3 estimated that within three to nine years, the  
4 ground water will then approach background  
5 concentrations once the cap has had a chance to  
6 work. And that's why the remedy is set up the  
7 way it is where we cap it first. We are going to  
8 observe what happens over time, and the  
9 concentrations, we expect, will go down very  
10 rapidly. And within three to nine years, we  
11 should approach background, and then LaGrange  
12 Springs will still be there but it should be  
13 clean.

14 Ma'am.

15 MS. DAUM: In your presentation, you said  
16 something about you would protect it by deed.  
17 What are you going to write in the deeds to  
18 protect the land?

19 MR. COZZI: We don't have the exact wording  
20 right now, but the way it basically will work is  
21 the area on the property that is covered -- it is  
22 a sixty-eight acre parcel of which about  
23 thirty-four acres are landfill, so the area that  
24 is landfill that will be capped over, we will put

1 deed restrictions on it so that the city or  
2 anybody else in the future cannot dig through  
3 that cap.

4 MS. DAUM: That's the only places you are  
5 putting deed restrictions?

6 MR. COZZI: Right. Only on the cap there to  
7 protect it. And that cap will also be fenced to  
8 protect from four-wheel vehicles, things like  
9 that, all-terrain vehicles.

10 MR. ROY PALMATEER: Roy Palmateer (phonetic  
11 spelling), councilman, town of Johnstown.

12 You were or one of your fellow party members  
13 there mentioned that your selection --  
14 alternative selection was S.E. three; is that  
15 correct?

16 MR. COZZI: That's correct.

17 MR. PALMATEER: And you said that after the  
18 capping is completed, the amount of leachate  
19 filtering into the ground water would be  
20 substantially reduced. But then again,  
21 alternative S.E. four, with naturally an added  
22 cost of six million dollars, would in fact almost  
23 put the leachate figures -- to use a favorite  
24 phrase of mine -- is ninety-nine and one

1           one-hundredths percent pure. I guess I'm  
2           questioning why we wouldn't spend the additional  
3           six million to reduce the hazards.

4           MR. COZZI: It is actually alternative three  
5           and alternative four -- no, you're correct, it's  
6           three and four.

7           The difference between the two alternatives  
8           is the difference between the two-foot-thick  
9           layer of clay. The difference is also the  
10          difference of about -- with alternate three, the  
11          leachate production rate would be estimated to be  
12          about thousand gallons per year. That's about  
13          five gallons a day, six gallons a day. The other  
14          alternative four, for six million dollars more,  
15          instead of six gallons per day, you would be  
16          making one gallon per day. When you look at that  
17          in terms of the actual amount of chromium or lead  
18          that's being released to the environment, it is  
19          negligible. And recognize that those levels are  
20          so small that you really couldn't be able to  
21          measure them anyway. By using alternative three  
22          to reduce the flow rates to the very small amount  
23          that I said, we would reach the drinking water  
24          standards so that any lead or chrome that was in

1000207

1 the water that left the landfill would be so low  
2 that it could qualify for drinking water, as a  
3 drinking water supply, not that one would be  
4 prudent to do so.

5 So the point that not going any cleaner than  
6 that is that when you -- it's how clean is clean.  
7 How much more money do you want to spend? That  
8 next step is six million dollars more, and the  
9 difference in quality, if you measure the water,  
10 would be almost undetectable. So we took, I  
11 guess, the best-bang-for-the-buck approach, the  
12 most cost-effective solution. That's how we made  
13 that decision.

14 MR. SUBIK: Sir.

15 MR. SMULLEN: Yeah, Rich Smullen again.

16 Suppose when we have our public hearing to  
17 form a water district, we poll the residents and  
18 ninety percent say no, they don't want to form a  
19 water district, the town board decides against  
20 forming a water district. What happens then?

21 MR. COZZI: I guess at that point the people  
22 have spoken, the water line doesn't go in. The  
23 state has made its best recommendation, but it is  
24 still a country of the people, and the people

1 have spoken.

2 MR. SMULLEN: What happens ten years down the  
3 road when the wells become polluted due to that?

4 MR. COZZI: Then you have a problem because  
5 right now the state has the money available to  
6 the city and to the residents for hookups under  
7 the 1986 bond act, and the state's going to pay  
8 up to seventy-five percent of those costs. Now,  
9 ten years from now, that bond act money is going  
10 to be completely gone, and then it's going to be  
11 strictly up to negotiations with the city. The  
12 city would have to put their own --.

13 MR. SMULLEN: If we do go ahead and form a  
14 water district and nobody hooks up to it, there  
15 should be no O and M cost to it because it is  
16 going to be a stagnant line; right? There should  
17 be no cost to the residents until they actually  
18 start using it?

19 MR. BARRETT: I think that's something that  
20 would be best discussed during the process for  
21 permitting the water district. That's a detail  
22 that doesn't enter into this alternative. I mean  
23 it's an important detail, but we didn't intended  
24 to answer those kinds of questions at this

1 approach.

2 MR. D. WILSON: If by installing a cap, in-  
3 other words option A, B, or C, whatever you are  
4 going to do, you told me you can reduce it down  
5 even with the least expensive cap to how many  
6 gallons a day of leachate? Five gallons a day?

7 MR. COZZI: Approximately. It's in the  
8 report, and I would have to look it up. It's  
9 like five hundred cubic feet a year, which I  
10 think I said was about two thousand gallons.

11 MR. D. WILSON: All right. So it is very  
12 minimal.

13 MR. COZZI: Yes.

14 MR. D. WILSON: Obviously, it is not going  
15 to have any impact on the environment, I would  
16 think.

17 MR. COZZI: I would think so.

18 MR. D. WILSON: Okay. So why are we going  
19 to spend money putting in a pipeline? Just  
20 because there is money in the Environmental  
21 Quality Bond Act and somebody wants to use it up?  
22 Why are we going to install a pipeline?

23 MR. SUBIK: No, because there is already  
24 contamination off-site. You have to understand

1 that the genie is already out of the bottle. It  
2 is not just a question of <sup>material</sup> in the site that  
3 might get flushed out in the future. There is  
4 already off-site contamination, that's what  
5 triggered the CERCLA action in the first place.  
6 That's a threshold thing that has -- if that  
7 exists, then we go forward, and that's why we  
8 have done this study. So there is already  
9 contamination out there, it is moving, we don't  
10 know the rate of transport through the ground  
11 exactly now, but there is some element of danger.  
12 There is a potential for that existing leachate  
13 to move through the ground and make contact with  
14 the private well fields. That is what we are  
15 concerned about. When that might happen and to  
16 the extent it might impact it, that, we don't  
17 know, but that's what we are trying to guard  
18 against.

19 MR. BARRETT: I should add to that. Based  
20 on the information that we have and the studies  
21 that we have done and the determination of ground  
22 water flow direction, we don't believe it is  
23 going to go to any residential water supply well.  
24 However, nothing in this world is absolutely

1 perfect and risk free. We also believe there is  
2 a potential that it could be there. I mean I  
3 would be not doing my job to tell you that  
4 engineering is perfect. I mean how many bridges  
5 have you seen fall down? So it is because of  
6 that, even though we feel very, very strongly and  
7 the predominance of the evidence shows that --  
8 the preponderance of the evidence shows that the  
9 ground water is flowing into the creek and along  
10 the creek.

11 Prudence dictates that as a safety measure  
12 the water supply be provided for those who care  
13 to use it. We also looked at monitoring but the  
14 thought of going to everybody's house once a  
15 month, once a year -- what if you go once every  
16 three months and you take a sample and it is  
17 clean but the next day, in spite of all the odds,  
18 it is not clean? Then it is not until, what,  
19 three months later or thirty days later that the  
20 next sample is taken before you would ever find  
21 that.

22 MR. FEDIGAN: And that could go on for up to  
23 ten years. When the bond act and Superfund money  
24 disappears, and we all disappear, so does that

1 funding to put those lines in.

2 MR. D. WILSON: Okay, I just want to  
3 reiterate -- it seems that for your panel costs  
4 are a big concern, and you must understand that  
5 the costs are a big concern to the homeowners,  
6 too. You people are all concerned about costs;  
7 every other sentence has to do with dollars and  
8 cents and cost. And you have to remember that we  
9 are the little guys here, you guys have the big  
10 purse strings.

11 UNIDENTIFIED SPEAKER: Let's remember it is  
12 our money, too.

13 MR. BARRETT: Well, also remember one of the  
14 steps in this criteria was state and local  
15 acceptance. We have done all the work in terms  
16 of the technical and financial and implementable  
17 ideas. Now is the step for the public interest.  
18 So if this is rejected by those people who are  
19 being offered a water line, then the test of  
20 public acceptance isn't met, so you don't get it  
21 because you don't want it. But we couldn't  
22 present this information to you until going  
23 through all those other criteria, and that's what  
24 we are all here for so.

1 MR. GRECCO: I would like to ask the  
2 question of when we had the last study up at city  
3 hall, we were told that there was a time -- isn't  
4 time of the essence and that money might run out  
5 and that we might not get the full percentage  
6 possible? I wish you would address that; it is  
7 very important to me. It's not a guaranteed  
8 thing. It's been way too long and --.

9 MR. COZZI: Right. There is a limited  
10 amount in the bond act; the bond act was passed  
11 in 1986. Presently, the state has committed  
12 about six hundred million dollars of the bond  
13 act. There's about five hundred remaining for  
14 this type of work. At our present projections,  
15 we expect that the bond act will be depleted  
16 sometime during 1995-96. Now, we are sitting in  
17 1993, and the schedule I described said if we  
18 move long quickly enough, we should be able to  
19 start construction in the summer of 1994. This  
20 is going to be at least a one-year and possibly a  
21 two-year project so we are right on the fringe of  
22 that. So it is imperative that the city and the  
23 state move as quickly as we can to ensure the  
24 funding.

1000214

17 1 Ma'am.

2 MS. SUE FERRY (phonetic spelling):

3 Everybody else here just has houses, but I have a  
4 business. We milk sixty cows. Now, when this  
5 water line goes through, am I going to have the  
6 option of hooking the water up only to the house,  
7 or do I have to hook it up to the barn at the  
8 same time? The other part of my question was I  
9 was also told by Tony Sherin that if we hooked up  
10 to the water, that all existing water sources  
11 would then have to be capped to guarantee we  
12 would not use them for anything else.

13 MR. FEDIGAN: No. They have to be  
14 physically disconnected from the public water  
15 supply. I just went through an installation like  
16 this. When they come in to hook the water lines  
17 to the home -- and if you choose, the barn --  
18 they will physically cut the pipes to your  
19 supply, okay, because of the public water supply  
20 law saying no cross-connections to private and  
21 potentially nonpotable water supplies. What you  
22 do beyond that is up to you. If you choose to  
23 hook your well back up and turn the city water  
24 off, that's up to you. Once that city water is

1000215

1           available and out there and you choose not to use  
2           it, don't expect the city or the state to fund  
3           testing your wells for the next twenty years,  
4           okay. The one concern you have with the cows,  
5           okay, and the amount that the barn uses, okay,  
6           that's something you should discuss with the  
7           people that regulate you, Agriculture and  
8           Markets.

9           MS. FERRY: Well, my water is tested that  
10          comes into the barn by them periodically anyway,  
11          but if I hook this up to city water for my barn,  
12          I'm talking I could be using as much as three  
13          thousand gallons a day of water at double the  
14          rate?

15          MR. FEDIGAN: That's true. That's something  
16          you would have to personally decide whether it is  
17          worth it to you or not. Discuss it with your  
18          department of Agriculture and Markets; they have  
19          much more data available to them about what sort  
20          of chemicals would be of concern to cows and  
21          cows' milk.

22          MS. FERRY: Right. But where their water  
23          comes from now is fine. If we form this water  
24          district and you put the water line in and we

17

1 choose not to hook up to it now and then have the  
2 problem later, then are you going to allow us to  
3 hook up later if there is a problem?

4 MR. SUBIK: Well, you will have access to  
5 whatever main is there in the street. But  
6 whatever it takes to get the water from the main  
7 to either your house or barn, whatever you are  
8 trying to hook up, that expense in the future  
9 might become yours if you don't avail yourself of  
10 connecting up initially. But the main will be  
11 there, so you will be able to tap into it. It is  
12 just a question of running the service lines and  
13 whatever else has to be done.

14 MS. FERRY: How far down LaGrange Road are  
15 you going to run this main?

16 MR. SUBIK: I know you are a special  
17 situation because you are back off the main road  
18 quite a distance, so this is something really --  
19 you are probably one of the more unusual cases  
20 that's in the water district. I am somewhat  
21 familiar with the farm. That is something that  
22 you should talk to the town fathers about and  
23 something that we can discuss later in your  
24 particular case. The fact remains that the water

17  
1 main will be in the street, the public right of  
2 way, and your ability to connect is not going to  
3 be -- you are not going to be prohibited from  
4 connecting later on, but the cost associated with  
5 running that line is something that -- you may  
6 have to bear some of that cost because so much of  
7 that was on private property. It is not a  
8 typical service connection.

9 MS. FERRY: That's not private property.  
10 That road is town property.

11 MR. SUBIK: Is the road all the way back  
12 there -- ?

13 MS. FERRY: Yeah, all the way to the farm,  
14 that's town property.

15 MR. SUBIK: Well then, if that's included in  
16 the water district, then we would have to run  
17 that main back there, too, I suppose. But I  
18 might be getting a little bit ahead of ourselves  
19 because we don't know exact parameters of the  
20 district yet, so I wouldn't want to make any  
21 promises as to where the main will start and  
22 stop. And that will be a matter for some  
23 discussions and some design later on. Your  
24 particular situation is going to have to be

18

1 viewed in that context.

2 MR. COZZI: Just to clarify, you would have  
3 the option if the main is brought to your house  
4 and you only want to hook up your drinking water  
5 to it, your potable water for the house, we would  
6 pay for that hookup and you could still -- as  
7 long as you got approval from Agriculture and  
8 Markets, you could still use your well to water  
9 the cattle.

10 MS. FERRY: Okay. Because it is two  
11 separate wells. There is a spring that waters  
12 the cows, and I have a well right by the house  
13 that I use for the house water.

14 MR. D. WILSON: Is it possible, Bob, say,  
15 somebody wanted to have the water brought in at  
16 the time that you are doing the line and brought  
17 into their wellhouse or into their cellar or  
18 wherever their connections might take place and  
19 just leave it there but not have it hooked up and  
20 used until they feel maybe in a few years that  
21 they want to start doing it? Is that an option?

22 MR. SUBIK: That's a possibility.

23 MR. D. WILSON: Without having to pay a  
24 minimum or anything but it is there to

1 determine -- if their well goes dry or they feel  
2 there is pollution in the area. They could sell  
3 the house and it could be available to the new  
4 owners.

5 MR. SUBIK: There are certain rules about  
6 where the connection would have to start and stop  
7 for purposes of not having persons tamper with  
8 the lines.

9 MR. D. WILSON: Accessibility to the  
10 homeowner.

11 MR. SUBIK: Accessibility, yes. So those  
12 rules would have to be observed, but it is  
13 possible to have some preliminary things done  
14 without the actual -- the final connection to the  
15 building being made. That would be a  
16 possibility, yes, I think so.

17 Mr. Savage.

18 MR. SAVAGE: Could we still use our main  
19 water supply that we have now for toilets and  
20 washing and use the city water just for drinking  
21 only?

22 MR. FEDIGAN: As long as your system -- and  
23 this again gets into local regulations -- is  
24 completely physically disconnected from the

1000220

1 public water supply so that there is no potential  
2 cross-contamination of supplies.

3 MR. SANGES: One more comment on the  
4 process to date. I have not had a chance to  
5 review the information in your three  
6 repositories, so I can't address at this time any  
7 specific details of your plan, but I would  
8 comment on the handouts that were provided  
9 tonight. I feel it's inadequate to address the  
10 proposals that you are making. And in the  
11 interest of the people here, your handouts have  
12 several maps, no data that show what was selected  
13 from any of these maps, no information on the  
14 seven alternatives that were presented, or the  
15 scoring of the seven alternatives and how you  
16 chose which alternatives to pursue and which ones  
17 not to. I think that would have been basic  
18 information that, with a few extra pieces of  
19 paper, you could have handed out and provided  
20 tonight knowing that most of the people in this  
21 room do not have the time or the facilities to go  
22 to the public access point and review these  
23 volumes of information. This would give the  
24 basic information; if they had questions, they

1 could further address them in the repository  
2 location, and they could make an attempt. Now,  
3 this information you have given tonight is  
4 totally inadequate for the public to be informed  
5 on this. The information on the screen was  
6 unreadable and presented too quickly; you can't  
7 expect people to make notes on it. It is clearly  
8 inadequate.

9 MR. BOE NUNES: I just want to address that  
10 comment. I did bring copies of the proposed plan  
11 that E.P.A. prepared. Unfortunately, I  
12 didn't bring enough copies, I brought about  
13 twenty. And some of you have it, a lot of  
14 you who walked in later didn't have a chance to  
15 pick it up. Maybe what we could do is we could  
16 just make up a list of people who didn't get it  
17 and include their names and addresses, and what  
18 we could do is mail out copies of the proposed  
19 plan.

20 MR. SUBIK: That's a good idea. We can  
21 leave a sheet -- or Betsy can have a sheet at the  
22 front. If anybody would like copy of the  
23 preliminary remedial action plans that Mr. Nunes  
24 prepared, that has a distillation of lot of the

1 information that Reney says he didn't have an  
2 opportunity to review. It's a multi-paged  
3 document. If you would like a copy of that and  
4 you didn't receive one, give us your name. We  
5 will make up copies, and we will see that those  
6 get mailed out next week so you can get those.

7 MR. BILL GREAGAN: My name is Bill Greagan  
8 and I'm an attorney with Carter, Conboy in Albany  
9 representing some of the third-party defendants  
10 in the underlying city of Johnstown action.

11 As far as the contaminants to the water  
12 supply, what are they? What are the potential  
13 contaminants that you are concerned about?

14 MR. COZZI: The primary contaminants  
15 concerned are chromium and lead at this time.

16 MR. GREAGAN: And is that true for all  
17 leachate or just that that threatens the water  
18 supply? In short, are those the only two  
19 elements that you are concerned about  
20 transporting off-site regardless of whether it  
21 gets into the residential wells?

22 MR. COZZI: No, there is an entire list. I  
23 don't have the list here. We can include that in  
24 response of the summary. Those are the primary

1 two. There are various volatile organics, and  
2 there are a number of other metals that also  
3 exceed ground water and drinking water standards  
4 near the landfill.

5 MR. GREAGAN: When you talk about chromium,  
6 can you differentiate between trivalent and  
7 hexavalent chromium?

8 MR. COZZI: Yes, we have done that in our  
9 sampling.

10 MR. GREAGAN: Which one is it?

11 MR. COZZI: I believe it is the trivalent,  
12 but I will have to check, and we will address  
13 that in our responses summary. We will verify  
14 that.

15 MR. PALMATEER: The gentleman's name again,  
16 and who do you represent?

17 MR. GREAGAN: My name is Bill Greagan, and I  
18 am from the law firm of Carter, Conboy, Bardwell,  
19 Case, Blackmore & Napierski in Albany.

20 MR. PALMATEER: I may want to see you after  
21 we get done here. Who do you represent?

22 MR. GREAGAN: It gets complicated. The  
23 state of New York has sued the city of Johnstown,  
24 the city of Johnstown turned around and sued the

19

1 people who contributed -- businesses primarily --  
2 who contributed to the landfill during the course  
3 of their business. I currently represent, I  
4 think, two clients, but our firm is also what is  
5 called a liaison counsel, and I have the duty to  
6 report back to all the third-party defendants, I  
7 don't know, about fifty to seventy-five of them,  
8 I don't remember today how many there are.

9 MR. PALMATEER: I've just have another  
10 statement to make.

11 MR. SUBIK: Okay. Your name again?

12 MR. PALMATEER: My name is Roy Palmateer,  
13 I'm a councilman in the town of Johnstown.

14 And I just can't believe that -- this  
15 landfill in question back in 1947 was positioned  
16 in the town of Johnstown, and the town of  
17 Johnstown has been contractually using that  
18 landfill for God knows how many years, and I have  
19 no idea how much we paid the city of Johnstown to  
20 use it. But then we have to turn around and pay  
21 for water to keep the health hazards reduced to a  
22 sheer minimum. I just want to be on record I'm  
23 totally opposed to the residences in the town of  
24 Johnstown that fall within that water district to

19           1           have to pay for any water. I think it's  
          2           ludicrous.

          3           MR. FEDIGAN: To make clear on that, as it's  
          4           been said several times, it's community  
          5           acceptance. This is what the state has proposed  
          6           as the most permanent, feasible alternative for  
          7           private drinking water wells.

          8           MR. PALMATEER: Sir, you have to understand  
          9           the situation. We have had one landfill in the  
10          town of Johnstown and, son of a gun, we selected  
11          the Fulton County landfill. Now, that's in the  
12          town of Johnstown. And you know, we continuously  
13          come up with hazardous sites, and I'm concerned  
14          for the citizens within the town. I don't have  
15          no qualms whatsoever, I think it is an excellent  
16          idea. Every one of you are doing a fine job.  
17          But this water issue, I totally don't think that  
18          the residents should have to pay for the water.  
19          But I know it is a negotiable issue, and we will  
20          negotiate it.

          21          MR. FEDIGAN: Understand that though the  
          22          word "mandated" by the state has been used, it is  
          23          not being mandated. It is being offered through  
          24          D.E.C. Superfund monies at this time.

1 MR. PALMATEER: We understand that.

2 MS. FRASER: Will the water district be  
3 formed and the negotiations be done so that we  
4 know what the price tag is going to be before the  
5 homeowners have to make the decision of whether  
6 they're going to hook up?

7 MR. SUBIK: Well, we'll certainly know a lot  
8 more about what these figures are or will be when  
9 we get to that point. And I would say yes, we  
10 will have a better handle on those numbers before  
11 the district is actually formed. But to know all  
12 the specifics, I'm not sure just how much  
13 knowledge we'll have on the ultimate cost of  
14 everything.

15 MR. D. WILSON: Will the sign-up list serve  
16 as a mailing list to inform everybody that is  
17 here tonight of future meetings or other  
18 developments that are relevant to this issue?

19 MR. COZZI: Yes, the people on that list  
20 will be added to whoever is already on our  
21 mailing list.

22 MS. LOWE: If we have a complete address  
23 with your name on the sign-in sheet.

24 MR. D. WILSON: Did you receive a resolution

1 from the town board back in October or maybe  
2 November -- from the town of Johnstown board  
3 relative to this issue?

4 MR. COZZI: I believe we did. That was when  
5 Mr. Sheran had the project

6 MR. D. WILSON: And the health department,  
7 did you receive it?

8 MR. COZZI: Not to my --.

9 MR. D. WILSON: Probably just one to the  
10 D.E.C., I think. I don't know if we sent one to  
11 the health department.

12 MR. COZZI: You're talking about regarding  
13 the water district?

14 MR. D. WILSON: Regarding the -- forcing  
15 residents to take the water and residents have to  
16 pay for it. Those two issues were presented to  
17 the town board, and they passed a resolution in  
18 favor of the residents. I just want to make sure  
19 we have it for the record. And okay --.

20 MR. MORRIS EVANS: Morris Evans (phonetic  
21 spelling).

22 What are we spending for this water  
23 district? What is the estimate in your figures?

24 MR. COZZI: I think the estimate that we

1 have, which is also including all engineering and  
2 contingencies, is about two and a half million  
3 dollar.

4 MR. SUBIK: The chosen alternative of S.E.  
5 three, the third alternate that's being chosen,  
6 is approximately thirteen point seven million  
7 dollars, of which two point five is the water  
8 line, approximately.

9 MR. EVANS: Okay. And that, we don't --  
10 correct me if I'm wrong, you said that no wells  
11 that have been tested are outside of the federal  
12 drinking water standards; is that correct?

13 MR. COZZI: The primary standards, that's  
14 right.

15 MR. EVANS: Okay.

16 MR. COZZI: Federal or state.

17 MR. EVANS: And you also said within nine  
18 years you hope that your water will approach  
19 background --

20 MR. COZZI: Right.

21 MR. EVANS: -- values?

22 MR. COZZI: The water exiting the landfill.

23 MR. EVANS: Right.

24 MR. COZZI: Not the water that's approaching

1 the homeowner wells.

2 MR. EVANS: Do you think the water that's  
3 approaching the land -- where's that going to  
4 come from if it's not coming from the landfill?  
5 Is it -- you're talking about the water that is  
6 already out?

7 MR. COZZI: Right now, there's already --.

8 MR. FEDIGAN: A certain amount of  
9 contamination has left the landfill, and that  
10 won't be captured by the cap, so the potential  
11 still exists for contamination. Whether it's  
12 five years down the road, three years, or ten  
13 years, we don't know. So far, it has not  
14 impacted --.

15 MR. EVANS: Now, you're talking that you are  
16 mainly interested in the lead and the chromium.  
17 As I remember, those are heavy metals and don't  
18 tend to move very fast or very far.

19 MR. COZZI: Well, they don't tend to move  
20 very fast or very far, but they have migrated  
21 from the landfill, and they will continue to  
22 migrate, however, so slowly and in those  
23 concentrations. And they do exceed drinking  
24 water standards at the landfill.

1000230

1           MR. EVANS: At that site. And you don't  
2 think they will just mitigate and filter out and  
3 stay where they are? You think they're going to  
4 move?

5           MR. COZZI: We've already seen some  
6 migration. It will continue, it's -- as Jim  
7 mentioned earlier, there's a good chance none of  
8 the wells will be impacted. But as a matter of  
9 prudence, we believe this water line is the only  
10 permanent solution to ensure that none of those  
11 wells are impacted other than sampling them every  
12 day. Because, as Jim and I have mentioned  
13 before, you can sample it one day and three  
14 months later go out and take a another sample and  
15 you've missed when that well was contaminated.

16           MR. EVANS: Okay, I seem to -- I'm from the  
17 city of Johnstown, I seem to sense a great -- on  
18 the city of Johnstown from the town of Johnstown  
19 residents. I'd just like to say that, number  
20 one, when the city placed this landfill where  
21 they placed it, none of the things they put in it  
22 were illegal to put in there, were known to be  
23 illegal, were thought to be illegal, or even  
24 thought to be dangerous or any other thing. They

1 have become so since by regulation and not  
2 necessarily by action. The second thing is the  
3 city puts refuse in that dump, but also town  
4 residents put refuse into that dump. They use  
5 the same dump. The third thing is that those  
6 industries who employ people in this town employ  
7 people not only in the city of Johnstown but they  
8 employ people in the town of Johnstown and other  
9 places.

10 Now, it's probably pretty sure that a lot of  
11 pollution came from those industries, but those  
12 industries employ people in other places than  
13 city of Johnstown and provided that employment,  
14 so not -- I mean everybody benefited from these  
15 actions at the time, so it's not, quote unquote,  
16 "the fault" of Johnstown that this has happened,  
17 the city of Johnstown, nor for that matter the  
18 town of Johnstown. It's just something that has  
19 happened. Thank you.

20 MR. SUBIK: You, sir, in the blue shirt.

21 MR. JERRY SHERMAN: Jerry Sherman (phonetic  
22 spelling), extension of Cold Creek.

23 In which direction do you feel that the  
24 contaminants are moving right now in relationship

1000232

1 to Maple Avenue extension and Fulton Street?

2 MR. BARRETT: The measurement of the ground  
3 water flow path has indicated that ground water  
4 and contamination is flowing to the southeast  
5 along Matthew Creek.

6 MR. SHERMAN: That would be toward the city  
7 of Johnstown?

8 MR. BARRETT: Yes.

9 MR. SHERMAN: Were there any test wells  
10 drilled on the northeast side of the landfill?

11 MR. BARRETT: Yes.

12 MR. SHERMAN: And how far away were they  
13 drilled?

14 MR. BARRETT: The northeast corner landfill  
15 was where wells were drilled. I'd have to show  
16 you on the map, the map that is supplied by  
17 the --.

18 MR. COZZY: Dennis.

19 MR. D. WILSON: You've indicated that there  
20 has been contamination found off-site --  
21 obviously, not in anybody's home -- anybody's  
22 private well. This has been test borings that  
23 you've done off-site; how far off site? What's  
24 the greatest distance from the landfill?

1 MR. BARRETT: I can't give exact distance  
2 but several hundred feet southeast of LaGrange  
3 Springs. The furthest part of that's along the  
4 plume of the contamination. But that map, in one  
5 of pages that was passed out, shows the wells.  
6 Well fifteen was the furthest down here.

7 MS. FERRY: Sue Ferry.

8 Those test wells that you put out on the  
9 farm, people are going to continue monitoring and  
10 taking samples from them for a long period of  
11 time?

12 MR. BARRETT: Yes, we haven't got a defined  
13 operation monitoring and maintenance plan, but I  
14 would expect those wells probably would be  
15 included.

16 MS. FERRY: As a person who works that way,  
17 I would like a little consideration on when they  
18 go in to take those testing samples. I have  
19 crops growing there that are run over constantly.  
20 I'm never told when they are back there. We were  
21 back doing some hay work and they decided it was  
22 the day to test the wells, so they drove right  
23 across hay that had been raked and ready to bale  
24 and things like that. And now, as a land owner,

1000234

1 I think, you know, we deserve a little  
2 consideration of the fact that they're allowed to  
3 come in there and take these things. But, you  
4 know, they're destroying our property at the same  
5 time and our source of income.

6 The other thing I was told to ask you about  
7 is that there is considered a commercial rate on  
8 water use; does anyone know the limits on what  
9 the usage would have to be to qualify for that?

10 MR. JOHN JURICA: Well, there is no  
11 commercial rate as such.

12 MR. SUBIK: Could we have your name, please?

13 MR. JURICA: Hello, my name is John Jurica  
14 (phonetic spelling) from the city of Johnstown.

15 There's a two-tier rate in the city of  
16 Johnstown, it's all based on water usage.  
17 Everyone pays the same rate, be it industry,  
18 residential, commercial, whatever. It's a  
19 declining rate of the -- I think it's over two --  
20 we bill in increments of cubic feet. Anything  
21 over two hundred thousand cubic feet every six  
22 months is a declining rate.

23 MS. FERRY: Thank you.

24 MR. COZZI: Ma'am, I'd just like to address

1 the first question you had. In the future, if  
2 individuals are sampling those wells, they should  
3 receive permission from you first as the property  
4 owner.

5 MS. FERRY: Thank you.

6 MR. COZZI: And we will try to address that.  
7 Sir, in back.

8 MR. LaGRANGE: I'm the property owner of  
9 that land she's talking about, and I let them  
10 work the fields.

11 MR. COZZI: Okay.

12 MR. LaGRANGE: And the reason that the wells  
13 are drilled on that property, that sixteen  
14 acres -- nobody even asked me permission to drill  
15 them wells. The back fifty acres, I give  
16 permission to drill. There's sixteen more  
17 there --.

18 MR. COZZI: I've been -- I've been told that  
19 Tony Sheran, the previous project manager, had  
20 gotten your permission to do that.

21 MR. LaGRANGE: I talked to Tony Sheran but  
22 no permission. Bob Subik sent me a letter on the  
23 others. He was going in there and test wells, I  
24 signed the letter, sent it back to him;

1 everything was good. The next sixteen acres was  
2 never -- nothing said about to nobody.

3 MR. SUBIK: We'll look into that, Mr.  
4 LaGrange, and see what was done on that.

5 MR. LaGRANGE: You know where the land is,  
6 Bob, you've baled hay onto it.

7 MR. D. WILSON: Where will a copy of the  
8 transcript that's taken be available for review?  
9 Where will a copy of this transcript that's being  
10 taken be available for review?

11 MR. COZZI: Where will it? What we will do  
12 is we'll make -- the transcript will be available  
13 with the record of the decision. Now, that will  
14 end up in the repositories, which I believe, as  
15 you mentioned earlier -- depending upon our  
16 ability to do it, we may, if there's a certain  
17 group of individuals and if you're the head of a  
18 group of individuals and you would like a copy,  
19 certainly we can do that. Obviously, we do not  
20 have the resources -- we can't give everybody a  
21 copy, but it will be in the repositories. And if  
22 a group or if the Rainbow Alliance would like a  
23 copy, just give me a call.

24 MR. D. WILSON: I'm sure Bobby gets a copy;

1 right?

2 MR. COZZI: The city will have a copy also.

3 MR. D. WILSON: Bobby will give you a copy;  
4 won't you, Bob?

5 MR. COZZI: Yes, so we will have --.

6 MR. D. WILSON: Listen, I would like to  
7 point out one thing to this young lady here.  
8 There's only one library in the city of  
9 Johnstown. I don't know where you got two. I  
10 don't know that's kind of ---.

11 MR. FEDIGAN: She meant the city clerk's  
12 office as well as the town library.

13 MR. D. WILSON: There's no town library,  
14 there's a city library.

15 MR. FEDIGAN: City library as well as the  
16 city clerk's office.

17 MR. WILSON: Oh, she mentioned two  
18 libraries.

19 MS. LOWE: Okay.

20 MR. FEDIGAN: Yes, she meant the city clerk.

21 MS. TINA HENRY (phonetic spelling): If the  
22 money that's to clean up the landfill is coming  
23 from the Quality Bond Act, where's the money that  
24 the city will be collecting from the third-party

1000238

1 defendants? Where will that be going?

2 MR. COZZI: Okay, what will happen is  
3 whatever monies are recovered from the  
4 third-party defendants and from the other  
5 responsible parties will be split seventy-five  
6 percent state, twenty-five percent city,  
7 equivalent to our shares. So there will be --  
8 there's going to be ongoing negotiations, and  
9 there may be fixed percentages that the  
10 responsible parties end up paying and then the  
11 state and the city will negotiate our share with  
12 those responsible parties. But if there's  
13 recovery after we spent money, that would be  
14 split seventy-five, twenty-five.

15 MS. HENRY: Don't you think that the  
16 residents should be compensated with some sort  
17 of -- I mean some of the money that the tanneries  
18 and whatnot have to put out?

19 MR. COZZI: That's up to the each individual  
20 resident. If you feel that you've been slighted  
21 by one of these industries, you certainly have  
22 that option.

23 MS. HENRY: I think we all have. We're all  
24 victims.

1 MR. COZZI: Yes, and we're all taxpayers,  
2 and it's your state tax dollars and your town or  
3 city tax dollars that are going to pay for this,  
4 and that's the way you will get reimbursed.

5 MS. HENRY: I'd like to be on record, Tina  
6 Henry.

7 I totally agree. It's fine if you want to  
8 put through the water lines and have the  
9 residents pay for it, and I'm totally against --.

10 MR. COZZI: Yes, ma'am.

11 MS. HULBERT: I'm Violet Hulbert (phonetic  
12 spelling), on Hulbert Road.

13 And I'd like to ask you to make note that  
14 Matthew Creek is that black line that flows  
15 south. You mentioned Matthew Creek, that it was  
16 going down in that direction and it was flowing  
17 south -- and the leachate from your landfill.  
18 And I wish to note you have other notes there  
19 of -- well, of the Hulbert Pond, but you don't  
20 have it as Matthew Creek either. I think you  
21 ought to put that on your map so the people maybe  
22 know where it is.

23 MR. COZZI: Okay, thank you.

24 The guy in the back.

3           1           MR. GARY HULBERT: Gary Hulbert (phonetic  
2           2           spelling). My mother is Rhonda (phonetic  
3           3           spelling).

4           4           I've live in this farm since 1956. In 1973,  
5           5           I lost nineteen head of beef cattle, rather  
6           6           mysteriously, on this farm, and the statute of  
7           7           limitations has long sense gone. I'm sure that  
8           8           this problem has originated since the 1947  
9           9           origination of the dump -- may well have had  
10          10          something to do with it. I know, Mr. Cozzy, your  
11          11          organization has been since 1978 testing the area  
12          12          up there, and there's considerable contamination.  
13          13          Apparently down through the --- all the fish died  
14          14          many, many years ago in that stream, which was a  
15          15          classified trout stream, and it's my  
16          16          understanding it is still today although there is  
17          17          no trout in it. And I think we're dealing with  
18          18          capping this landfill.

19                 Now, how about the state law that says that  
20                 if my mother sells this property knowing that  
21                 it's contaminated she is responsible for its  
22                 cleanup? Who's going to pay us to clean up this  
23                 pond, with beaver dams all below LaGrange Springs  
24                 and the city dump? We can't afford millions of

1000241

1 dollars to clean our pond, clean all this  
2 farmland up through the area. It's private land.  
3 Are we going to be reimbursed by the E.P.A. for  
4 cleanup activity?

5 MR. COZZI: No --.

6 MR. SUBIK: Before you answer that, Bob, I  
7 just think that I should identify the fact that  
8 there is an active lawsuit going with the Hulbert  
9 family involving the property, and I'm not sure  
10 it would be appropriate to comment on that at  
11 this time inasmuch as that matter has not come to  
12 a complete conclusion. So for us to discuss that  
13 litigation publicly or any stance that the state  
14 or locality might take with respect to it in this  
15 forum, I don't think would be appropriate, Mr.  
16 Hulbert. We do know your comments, sir, for the  
17 record. Thank you, sir.

18 MR. FRANK KOVARIK: I've got a quick  
19 question for you.

20 MR. SUBIK: Could we have your name, please?

21 MR. KOVARIK: Frank Kovarik: (phonetic  
22 spelling). I'm the comptroller from the city of  
23 Johnstown.

24 You brought out one good point. I think

1           everybody had a misconception here that all this  
2           money was coming from the Superfund and it isn't.  
3           My question is from my own information. When the  
4           state came to us with the closure, we had a  
5           choice, like the first gentleman had spoke. It  
6           was a case of do it -- like that transmission  
7           commercial -- "You can pay me now or pay me  
8           later." We had the choice of closing or we had a  
9           choice of letting the state do it. I want to  
10          know if the state has closed any landfills. Have  
11          they closed any that you know of?

12                 MR. COZZI: By closed you mean put a cap on  
13          of this sort?

14                 MR. KOVARIK: I'm talking about -- well,  
15          that they've gone through all of what we've gone  
16          through. Has the state done this for other  
17          cities?

18                 MR. COZZI: Yes, we have for other cities.

19                 MR. KOVARIK: How many? Roughly, I'm not  
20          holding you on that.

21                 MR. COZZI: Okay, there's two groups of  
22          landfills. There are landfills such as yours,  
23          which is a hazardous -- inactive hazardous waste  
24          site, which is a class two landfill. And then

4 1 there's a another group, which are nonhazardous  
2 landfills. I'm familiar with the hazardous  
3 landfill such as yours. And right now -- as far  
4 as how many are actually closed?

5 MR.KOVARIK: No, how many are the state  
6 actually closing, that these municipalities have  
7 said, "We're not going to close it, you go ahead  
8 and do it."

9 MR. COZZI: Oh, I see, okay. As far as I  
10 know, every municipality such as yours that we've  
11 approached has decided to accept the state's  
12 seventy-five percent. So right now, to my  
13 knowledge, there aren't any that the state is  
14 closing and then going back after the  
15 municipality because we've reached agreement.

16 MR.KOVARIK: That was going to be my next  
17 question. How do they go about getting the money  
18 if they had closed them? I just wondered if we  
19 had taken the right path.

20 MR. COZZI: I thought you meant how many had  
21 actually been final capped.

22 MR. KOVARIK: No, no.

23 MR. D. WILSON: What is the next step in  
24 this process so that everybody here can

4 1 continually be involved, so that there is a water  
2 district formed, so a rate is set that's not  
3 appropriate for homeowners? How can we continue  
4 to have an input in this so that, you know, the  
5 town and the city and all the residents are  
6 involved in this? Do you have some meeting  
7 coming up where is something is decided and  
8 suddenly I get a notice that I can take water,  
9 you know, at twelve thousand dollars a year if I  
10 want it. How are we going to make sure that we  
11 continue to have dialogue?

5 12 MR. COZZI: Okay, the next step in this  
13 particular program is we have the record of  
14 decision. As I mentioned earlier, after we take  
15 all the public comments into account during this  
16 period with -- both the E.P.A. and the state will  
17 arrive at a record of decision. And as I said,  
18 we expect to have that this spring. Then there  
19 will be a negotiation period between the state  
20 and the industries that are involved, and that  
21 will take place through the spring and into the  
22 summer. And at the end -- at the conclusion of  
23 that, we would hope that by the end of summer and  
24 into early fall we would then be able to begin to

1 design the final remedy, which be -- with the  
2 industries or with the city or just the state.

3 MR. D. WILSON: But how can you have a  
4 design of the final remedy if you haven't  
5 conferred with the town to see if we formed a  
6 water district yet? You haven't put that in  
7 there. Are you going to do that?

8 MR. COZZI: No, once we have our record of  
9 decision, then the burden is on the city and the  
10 town to negotiate with the town. And then it's  
11 up the town or the citizens to raise this  
12 possibility of a water district. Then it will go  
13 the normal route of a water district.

14 Yes.

15 MR. SMULLEN: Rich Smullen, supervisor.

16 I think the first thing we'll do is have a  
17 public hearing just for concerned citizens to see  
18 if we are -- if the people that are there do want  
19 to form a water district. And say, if we got --  
20 how many do you think are in there, Dennis,  
21 fifteen or twenty -- whatever would be involved  
22 around there.

23 MR. SUBIK: There are potentially eighty in  
24 the district.

1 MR. SMULLEN: All right. But I mean the  
2 close ones right around -- I mean those would be  
3 the ones that are potentially involved more than  
4 that. If they only go for whatever amount it is  
5 at our next town board meeting, we'll set up a  
6 public hearing. Maybe nothing to do with the  
7 water district, but just to have the people who  
8 are involved in the --.

9 MR. D. WILSON: Get a consensus.

10 MR. SMULLEN: To get a consensus, that's  
11 right, to see if the people want to go forward  
12 with it.

13 MR. D. WILSON: It wouldn't be an official  
14 hearing, it would just be a polling line?

15 MR. SMULLEN: That's right. I mean if we had  
16 a public hearing and the people say, "No, we  
17 don't want to go any farther," then --.

18 MR. D. WILSON: So you will notify everybody  
19 here, Rich?

20 MR. SMULLEN: I'll have a resolution at the  
21 next town board meeting, and I've got two  
22 councilmen right here, so we can say that very  
23 easily that we'll have resolution at our next  
24 town board meeting.

1 MR. D. WILSON: The following.

2 MR. SMULLEN: That's right, we have to  
3 advertise it and everything. We'll have a public  
4 hearing and invite everybody there.

5 MR. D. WILSON: You're inviting them here to  
6 tell all to come to that?

7 MR. SMULLEN: Right, right, yes.

8 MR. D. WILSON: I'd like to make just one  
9 comment. Can I make one more comment? I'd like  
10 to make one comment.

11 I'd like just to make one comment. As a  
12 taxpayer in the town of Johnstown, I would like  
13 to commend Rich and Roy and Jack for being here  
14 tonight and not only just for being here tonight  
15 but making their positions known on this and  
16 entertaining the resolution that we asked them to  
17 pass back in October. And I really appreciate  
18 the support that you've given us, and I think  
19 you're a good town board. And we look forward to  
20 continued support and looking forward to working  
21 with you on this decision. Nobody else is going  
22 to say it, but I'd like to commend them. They do  
23 a great job, they are very responsive town board.

24 MR. JACK WILSON: Jack Wilson (phonetic

1 spelling). I'm also a councilman in the town of  
2 Johnstown.

3 And I would just like to address Mr. Evans.  
4 I don't think any of these people here tonight  
5 have come here directly to bash the city of  
6 Johnstown. These people are very concerned. The  
7 property represents their lives, and they're very  
8 interested in their own personal property, and  
9 they're not here to bash the city of Johnstown.  
10 They're here to help work through a very  
11 frustrating situation.

12 MR. TIM PRENTICE: My name is Tim Prentice  
13 (phonetic spelling). I'm an aquatic biologist  
14 with the D.E.C. I came here tonight to ask you  
15 or entertain a few question possibly related to  
16 Matthew Creek and the landfill. I live in the  
17 town of Johnstown. I have my own question for  
18 you.

19 I have every reason to believe that what's  
20 being proposed is going to work three to nine  
21 years down the road, following 1994 with the  
22 construction started and everything in place. If  
23 the cap is working and precipitation through the  
24 landfill is pretty much eliminated and we still

1           see that the leachate levels are not or the  
2           ground water levels or not reaching the  
3           background levels that we hoped -- you've heard  
4           of monitoring nine years at that point -- when do  
5           we decide we need more? What's going to cause us  
6           to think, well, we'll wait a little longer and  
7           monitor a little longer or are we going to go to  
8           the next step of putting in ground water wells  
9           and pumping and treating, and who pays for that?

10           MR. COZZI: I would say that what we will do  
11           is based on the monitoring data that we obtain,  
12           primarily the ground water data, but also surface  
13           water data. Surface water, we should see a rapid  
14           improvement. Ground water may take a little  
15           longer. But based on the long-term trend of the  
16           ground water, what we expect is a fairly steep  
17           drop once the cap is in place and then leveling  
18           off. And it depends at what level it levels off  
19           at, what level the contaminate concentrations  
20           level off at.

21           The standards are here, and if it levels off  
22           below standards, we have no problem. If it  
23           levels off just above standard, it's probably not  
24           going to be a problem. If it levels off

1000250

6  
1 significantly above standard, then I would say  
2 that we will have to go back and we will have to  
3 evaluate the feasibility of pumping and treating.  
4 And at that point, as you mentioned, if it is  
5 seven, eight, nine years from now, there won't be  
6 state money available to do that, and then it  
7 will be a question of either alternate state  
8 funding if it's available at that time or the  
9 city of Johnstown or the industrial P.R.P.s,  
10 depending on what agreements are reached, would  
11 have to pay for that.

12 Any other questions, comments? Yes, sir.

13 MR. ED BOSNER: Ed Bosner (phonetic  
14 spelling), of Johnson Ave.

15 Is it possible well lines could be knocked  
16 down again and we're not being told?

17 MR. COZZI: Yes.

18 MR. BOSNER: I think some people are  
19 thinking ahead in case -- what happened if your  
20 well goes bad and you have to have -- then what  
21 do you do? I would like to see the water line  
22 put in but not a mandatory hookup, in case five  
23 years from now you have trouble with -- what are  
24 you supposed to do, pick your house up and move?

6  
1 MR. COZZI: And the state and the E.P.A. are  
2 proposing tonight to put the water line in. The  
3 state and the city are proposing that we would  
4 even pay for it, and it's going have to be the  
5 choice of the people, though, whether this  
6 district is formed. We cannot mandate --as Rich  
7 said, we cannot mandate.

8 MR. BOSNER: I would like to see, even if  
9 it's not a mandatory hookup -- and the other  
10 question is that after -- talking about the  
11 rates, we should pay the same rate as the city.

12 MR. FEDIGAN: One thing, even if in our, the  
13 state's and the E.P.A.'s ROD (phonetic spelling)  
14 decision, the extension of water mains is put in  
15 there. If the town says, "We're not going to do  
16 a water district," we can't go out and put the  
17 pipes in the line -- or the pipes in the ground,  
18 okay, and spend the money. If there's no water  
19 district, it's not going to go in the ground even  
20 though it's been --.

21 MR. BOSNER: Even though a certain amount of  
22 people are going to say, "I want to pay for  
23 water?" What percentage?

24 MR. SUBIK: The city of Johnstown, as the

1000252

1           lead agency here in working with the state, is  
2           not empowered or authorized to start digging in  
3           somebody else's right of way and extending this  
4           water main no matter how well-intentioned it  
5           might be that we do so. There has to be a  
6           structure in which that project can go forward.  
7           That structure is the creation of a water  
8           district. We would urge you to move in that  
9           direction.

10                 MR. D. WILSON: Now, I would just like to  
11           say, I think it would be harder to poll people  
12           next month, Rich, if you don't know what the  
13           level of even the district tax might be if you  
14           don't use the water, so you -- you can't ask me  
15           tonight about voting yes or no because I don't  
16           what it's going to cost me if it goes by my house  
17           and I don't use it; you understand what I'm  
18           saying? It's going to be hard to get people to  
19           make a decision if you don't know the cost -- the  
20           cost the thing that everybody --.

21                 MS. HULBERT: I'd like to ask you one  
22           question.

23                 Now, is the water level here in New York  
24           State lowering up in the north end, you know? In

1 the east, we have a lot of water but is the water  
2 level really going down or are we about the same  
3 as we have been?

4 MR. COZZI: I'm not familiar with the  
5 long-term trends, but as far as I know from the  
6 sites that we've look at and others, the  
7 long-term trend doesn't seem to be going down.  
8 The clearest example that I can think of is Long  
9 Island. We have a site in Long Island -- central  
10 Long Island that the water table has gone up six  
11 to ten feet starting about from 1988 back to  
12 1982. But since 1988, it's gone back down again,  
13 so it's probably gone down two or four feet  
14 since then. It just fluctuates, and I really  
15 don't know what the long-term trend is for this  
16 area.

17 Any other questions?

18 MR. JURICA: Just one question. My name is  
19 John Jurica of the water department.

20 Historically, the north end of the city of  
21 Johnstown has not been the greatest as far as the  
22 water pressure. Now, if this water line does  
23 theoretically go out there if it is accepted by  
24 all parties, there is -- you know, there is

1 somewhat of a concern for the residents of the  
2 north end of city of Johnstown as well as  
3 industries in the ability of getting the water  
4 out that far without -- you know, a judgment  
5 without infrastructure as well as the  
6 availability of furnishing water out there. So  
7 just for the record, that should be known and --.

8 MR. FEDIGAN: That's got to be taken into  
9 design. The bureau of public waters, that's one  
10 of the first things that they look at, adequate  
11 pressure and quantities.

12 MR. SUBIK: All right, thank you very much.  
13 Betsy Lowe has the --.

14 MS. LOWE: I just want to thank you all for  
15 coming, and I'll be here for a little while to  
16 talk to you one-on-one if you have any questions.

17

18

19

20

21

22

23

24

W. David Layton  
I, W. David Layton, certify  
that this transcript is an  
accurate representation of the  
proceedings to the best  
of my skill and ability

2-23-93  
Dated