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Singer Link Flight Simulator Division
Hillcrest Facility

Site Number 704015
Town of Fenton, Chenango County
~~Chenango~~ County, New York
Broome

Record of Decision

March 1994

RECORD OF DECISION SUMMARY SHEET

Site Number: 704015
Site Name: Singer-Link (now CAE-Link) Flight Simulator Division, Hillcrest Facility
Town and County: Town of Fenton, ~~Chenango~~ Broome County

Prepared By: Division of Hazardous Waste Remediation, NYSDEC, based upon the RI/FS performed by H2M Engineers for the PRP, CAE Link.

Description of Problem:

- Subsurface discharges of industrial wastewaters to a system of leaching pits on the site has caused groundwater and subsurface soil contamination.
- Groundwater contamination has spread off-site to the west in the shallow aquifer.
- One residential well remains in use within the area impacted by contaminants from the site.
- The nearby municipal wellfield has not been impacted, and is expected to remain unimpacted by site contaminants.

Description of Remedy:

- The selected remedy for the contamination at the subsurface outfalls is a combination of removal and off-site disposal for sludges at the base of each leaching pit, and in-situ solidification/chemical fixation for the contaminated soils associated with each outfall.
- The selected remedy for the contaminated groundwater is continued monitoring of groundwater and nearby surface water where the groundwater discharges. It is expected that the remediation of the sources of contaminants (the subsurface outfalls) will allow for natural attenuation of the groundwater contaminant plume.
- The one residence on a private well will be hooked up to the public water supply.

Cost of the Selected Alternatives:

- $ 266,000 for remediation of the subsurface outfalls
- $ 290,000 for the monitoring of the groundwater and surface water associated with the site.

Issues:

- The selection of monitoring as the remedy for the groundwater contamination is based on the lack of human health exposure once the water supply is connected to the residence, the estimated slight impact to surface water bodies near the site (primarily the Chenango River), the great disparity in costs between monitoring and groundwater recovery/treatment, and the anticipated benefit of source control via the remedial program at the former subsurface outfall.

SINGER LINK FLIGHT SIMULATOR DIVISION
HILLCREST FACILITY

TOWN OF FENTON, ~~CHENANGO~~ BROOME COUNTY
SITE NO.: 704015

RECORD OF DECISION
MARCH 1994

PREPARED BY:

NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION

DECLARATION STATEMENT - RECORD OF DECISION

SINGER LINK FLIGHT SIMULATOR DIVISION, HILLCREST FACILITY
Inactive Hazardous Waste Site
Town of Fenton, Broome County, N.Y.
Site No. 704015

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Singer-Link Flight Simulator Division, Hillcrest Facility inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Singer-Link Flight Simulator Division, Hillcrest Facility Inactive Hazardous Waste Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

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

Description of Selected Remedy

Based upon the results of the Remedial Investigation/Feasibility Study (RI/FS) for the Singer-Link Flight Simulator Division, Hillcrest Facility and the criteria identified for evaluation of alternatives, the NYSDEC has selected excavation of contaminated sludges, in-situ fixation of contaminated soils, a water service connection to serve one residence, and continued groundwater and surface water monitoring as the remedy for this site. The components of the remedy are as follows:

- excavation and proper off-site disposal of sludges contained within the twelve subsurface outfalls on the site which are continuing sources of contamination to the groundwater.

- in-situ fixation/chemical stabilization of the contaminated soils beneath the twelve subsurface outfalls to prevent future mobilization of the contaminants into the environment.

- Connection of one residence on West Arterial Road to the public water supply.

- Continuing groundwater and surface water monitoring to allow for evaluation of the effectiveness of the remedial action.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

March 30, 1994
Date

Ann Hill DeBarbieri
Deputy Commissioner

TABLE OF CONTENTS

SECTION 1: SITE LOCATION AND DESCRIPTION

The Link Hillcrest Facility is located at 11 Beckwith Avenue in the Town of Fenton, ~~Chenango~~ Broome County. This 15 acre facility is located in a mixed industrial/commercial/ residential community approximately 1000 feet east of Interstate 88 and 2000 feet east of the Chenango River. The site is bordered on the east by rail lines and the Chenango Valley Cemetery, and on the north, west, and south by residential and commercial property. A small stream, Phelps Creek, exists approximately 300 feet south of the site. (See Figure 1).

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

This facility has produced aviation related products (primarily flight simulators and related equipment) since 1940. Generally, the eastern portion of the building complex is used for manufacturing, and the western portion for offices.

Prior to July 1986, industrial and other waste waters were discharged to a subsurface leaching system (004 outfall) regulated by a State Pollutant Discharge Elimination System Permit (SPDES). Processes (including contaminants) at the site which contributed to the wastewater discharge included plating (chromium, cadmium, silver, zinc, copper, nickel, rhodium, gold, and tin/lead alloy), degreasing and paint stripping (trichloroethene, 1,1,1-trichloroethane, methylene chloride).

2.2: Site Remedial History

October 1983 - Leaching pits A, B, C, and D of the 004 outfall were put out of service, excavated, and removed.

July 1986 - Discharge of all industrial process water, boiler blowdown, sanitary, and cafeteria wastewaters at the Hillcrest Facility was transferred to the Johnson City Sewer District.

During early 1988, samples were collected from a number of private drinking water supplies serving commercial establishments along the Brandywine Highway (Route 7) to the west of the Singer Link property. All the wells sampled were found to be contaminated with volatile organic chemicals common to the Singer Link groundwater contamination. Singer Link was asked to provide an alternate drinking water supply to these facilities and declined to do so.

Groundwater investigations in this area were required of Singer Link as a part of the RI/FS, and the wells in question are located within the area impacted by the Singer Link plume. The Town of Fenton has extended a water main into the area and connections have been made by these businesses.

SECTION 3: CURRENT STATUS

The New York State Department of Environmental Conservation (NYSDEC) and the CAE Link Corporation (Link) entered into an Administrative Consent Order in February 1988 which required Link to conduct a Remedial Investigation/Feasibility Study (RI/FS) at its Hillcrest Facility to address the contamination at the site. The Hillcrest Facility had been the subject of prior investigations, as summarized below.

April 1985 - Report on "Hydrogeological Conditions at the Singer Company, Link Flight Simulator Division, Hillcrest Facility (H2M).

May 1986 - Phase II Report, Groundwater Investigation at Singer Link Company, Hillcrest Facility (H2M).

September 1987 - Phase III Report, Groundwater Investigation at Singer Link Company, Hillcrest Facility (H2M).

3.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of contamination at the Hillcrest facility and to gather information necessary to select remedy. The Remedial Investigation was conducted from July 1989 to September 1992. Reports entitled "Remedial Investigation, Link Flight Simulation Division, Hillcrest Facility" (H2M, 1990) and "Addendum to Remedial Investigation, Hillcrest Facility" (H2M, 1993) have been prepared describing the field activities and findings of the RI in detail. A summary of the RI follows.

The RI activities consisted of the following:

1. Contamination Source Investigation - The 12 former subsurface leaching pits in the 004 outfall system were investigated by drilling soil borings and collecting and analyzing soil samples.

2. Additional groundwater monitoring wells were installed to determine the extent of groundwater contamination associated with the Hillcrest Facility.

3. Hydrogeological investigations were conducted to confirm the lateral and vertical continuity of a silt layer below the contaminant plume.

4. A soil gas investigation was performed in the residential area adjacent to the Hillcrest Facility to evaluate the potential for the subsurface migration of volatile organic compounds.

The analytical data obtained from the RI was compared to Applicable Standards, Criteria, and Guidance, (SCGs), in determining remedial alternatives. Groundwater, drinking water and surface water SCGs identified for the Singer Link Flight Simulator Division Site were based on NYSDEC Ambient Water Quality Standards and Guidance Values, Part 703 and Part V of the NYS Sanitary Code. For the evaluation and interpretation of soil and sediment analytical results, NYSDEC soil cleanup guidelines for the protection of groundwater, background conditions, and risk based remediation criteria were used to develop remediation goals.

Based on the results of the remedial investigation and in comparison to the SCGs and potential public health and environmental exposure, certain areas and media of the site require remediation.

Areas of Concern

1. The sludges and soils associated with twelve leaching pits which make up the former 004 outfall system contain significant levels of the heavy metals; cadmium, chromium, copper, nickel, zinc and lead. The range of concentrations is listed below:

   Concentration Range (in milligrams per kilogram, or in parts per million)

   Contaminant

Cadmium	3.7 to 4,020 mg/kg
Chromium	45.9 to 8,410 mg/kg
Copper	135 to 14,700 mg/kg
Nickel	39.1 to 4,690 mg/kg
Zinc	87.8 to 6,110 mg/kg
Lead	29.5 to 1,070 mg/kg

The total volume of contaminated sludges in the bottoms of the various leaching pits is estimated at 40 cubic yards. The volume of contaminated soils surrounding the leaching pits is estimated at 1,400 cubic yards.

2. As a result of discharges through the former 004 outfall system the groundwater in the shallow aquifer beneath the Hillcrest Facility is contaminated, above New York State Standards for cadmium, chromium, trichloroethene, 1,1,1-trichloroethane, dichloroethene and dichloroethane (volatile organic contaminants

or VOCs).

Concentrations of these contaminants in the groundwater are summarized below:

Concentration Range (in micrograms per liter, or parts per billion)

Contaminant On-Site	Range	RI Average	Standard
Cadmium	0-7,290 ug/l	1782 ug/l	10 ug/l
Chromium	0-21,900 ug/l	3761 ug/l	50 ug/l
Hexavalent Chromium	0-1,800 ug/l	332 ug/l	50 ug/l
Cyanide	0-395 ug/l	46 ug/l	200 ug/l
Trichloroethene	0-1,600 ug/l	219 ug/l	5 ug/l
Dichloroethene	0-620 ug/l	13 ug/l	5 ug/l
1,1,1-Trichloroethane	0-23 ug/l	9 ug/l	5 ug/l

Concentration Range (in micrograms per liter, or parts per billion)

Contaminant Off-Site	Range	RI Average	Standard
Cadmium	0-85 ug/l	28 ug/l	10 ug/l
Chromium	0-1090 ug/l	459 ug/l	50 ug/l
Hexavalent Chromium	0-330 ug/l	30 ug/l	50 ug/l
Cyanide	0-290 ug/l	6 ug/l	200 ug/l
Trichloroethene	0-594 ug/l	36 ug/l	5 ug/l
Dichloroethene	0-30 ug/l	1 ug/l	5 ug/l
1,1,1-Trichloroethane	0-36 ug/l	8 ug/l	5 ug/l

Concentrations of chromium in groundwater are highest in Monitoring Well MW-10, located east of the plant buildings adjacent to one of the leaching pits in the former 004 outfall system, suggesting that the leaching pits are a continuing source of chromium to the shallow groundwater.

Concentrations of VOCs in groundwater are highest in the north-central portion of the Hillcrest Facility, and have decreased slowly through the period of study suggesting that the source of VOCs to the shallow aquifer has been reduced or eliminated, and that the contaminant plume is dissipating and moving downgradient.

The contaminant plume emanating from the Hillcrest Facility extends to the northwest beneath Chenango Street and I-88. Groundwater from the contaminant plume discharges to the Chenango River. The northern end of the contaminant plume does not extend within the influence of the Town of Fenton Municipal water supply wells, and is south of the southern end of Cornell Avenue. The southern extent of the contaminant

plume is in the vicinity of Hastings Street. (See Figure 2).

The heavy metal and VOC contamination in groundwater exists only in the shallow aquifer. The geology in the Hillcrest area is described in the RI as follows: The overburden formation is composed of sands and gravels and glacial outwash deposits overlying silts and clays. The upper ten to thirty feet of saturated aquifer material ranges from medium sand to cobbles more than six inches in diameter, and contains layers of compact silty sands and gravel, generally less than one foot thick and discontinuous. The underlying silt unit ranges in thickness from approximately 125 to 160 feet. Highly permeable sand and gravel terrace deposits are found below the silt unit, above Upper Devonian bedrock. The Town of Fenton municipal water supply is drawn from three wells screened in the lower sand and gravel. Groundwater flow is westward, towards the Chenango River which is the ultimate receptor of shallow groundwater leaving the Link site. (See Figure 3).

Since the Municipal water supply wells pump water from the lower aquifer which is separated from the upper shallow aquifer by the thick, relatively impermeable silt layer, the heavy metals and VOCs should not impact the municipal water supply. Also, the contaminant plume in the shallow aquifer does not extend to the vicinity of the Town wells. (See Figure 4).

3.2 Summary of Human Exposure Pathways

The primary human exposure pathways identified in the RI, for the contaminants associated with the Hillcrest facility are (1) direct contact with the contaminated sludges and soils in and around the leaching pits, (2) consumption of contaminated groundwater, (3) air releases during remediation activities, and (4) ingestion of surface water from the Chenango River.

There are two routes of exposure which are completed, (that is, where people are currently potentially exposed to site-related contaminants) the surface water route and one apartment building at 1069 Arterial Highway. Based upon the Risk Assessment performed in the Remedial Investigation, the risks due to either carcinogens or non-carcinogens do not exceed the reference values or hazard indices established for these compounds. Therefore, using these criteria, no increased risk is evident due to impacted groundwater discharging into the Chenango River. The risk to the apartment building can be mitigated through a water service connection to provide public water. The remainder of the area impacted is served by public water.

An exposure which is considered conditionally completed is exposure to excavated contaminated soils by remediation workers, and near-by inhabitants could be at risk during soil excavation and stockpiling if appropriate controls are not taken. However, the Health and Safety Plan to be developed for remediation activities would include controls

(stockpile covering, soil wetting to prevent dust generation, monitoring, etc.) to prevent airborne contaminant transport.

3.3 Summary of Environmental Exposure Pathways

The route of environmental exposure completed for site-related contaminants is through discharge of impacted groundwater to the Chenango River. Although the Chenango River was not sampled as a part of the RI/FS, it is anticipated that only small regions of the river could exceed surface water standards. However, considerable adverse potential impacts to benthic organisms may be possible because this community would receive site related contaminants undiluted, that could greatly exceed concentrations which would be protective of these organisms.

Therefore, monitoring will be performed during and after remediation, including surface water, sediment, and sediment pore water sampling, to define potential impacts of the discharge of contaminated groundwater and as a control on changing conditions. However, the loadings to the Chenango River from the discharge of impacted groundwater should not cause a violation of surface water standards for the contaminants of concern for the aquatic ecosystem (chromium and cadmium).

SECTION 4: ENFORCEMENT STATUS

The NYSDEC and the Singer Link Flight Simulator Division (now CAE Link) entered into a Consent Order in 1988. The Order obligates the responsible party to implement a Remedial Investigation/Feasibility Study for the Hillcrest Facility. Upon issuance of the Record of Decision the NYSDEC will approach the responsible party to design and implement the selected remedy under a new Order on Consent.

The following is a chronological enforcement history of this site:

May 1985 - Order #7-0814
Link required to investigate effects of SPDES violations

January 1989 - Order #7-0143-88-02
Link required to do an RI/FS

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

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

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

The goals selected for this site are as follows:

- Reduce, control, or eliminate the contamination present within the former leaching pits and the related contaminated soils to the level approved by the Department.

- Eliminate the potential for direct human or environmental contact with the contamination present within the 12 former leaching pits and the related contaminated soils.

- Mitigate the impacts of contaminated groundwater on human health and the environment.

- Provide for attainment of SCGs for groundwater quality in the area impacted by site-related contaminants.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Potential remedial alternatives for the Hillcrest Facility were identified, screened, and evaluated in the Feasibility Study (FS). This evaluation is presented in the report entitled "Feasibility Study, CAE-Link Corporation, Hillcrest Facility", written by H2M Associates on the behalf of CAE-Link Corp. A summary of the detailed analysis follows.

6.1 Description of Alternatives

The potential remedial alternatives are intended to address the contaminated former leaching pits (004 outfall) and associated soils, and contaminated groundwater.

Soil Remedial Alternatives

For the former leaching pits and associated soils, the following remedial alternatives were evaluated:

Alternative S-1: No Action with groundwater monitoring

Present Worth Cost:	$	0
Capital Cost	$	0
O&M Cost:	$	0

(Present Worth calculated over 30 years)

The no action alternative is evaluated as a procedural requirement and as a basis for

comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state.

This is an unacceptable alternative as the site would remain in its present condition, and human health and the environment would not be adequately protected.

Alternative S-2: Sludge Removal, Excavation and Off-Site Disposal

Present Worth Cost: $2,021,000
Capital Cost: $2,021,000
O&M Cost: $ N/A
(Present Worth calculated over 30 years)

This remedial action alternative consists of removal of sludges from the bottom of the leaching pits, and excavating contaminated soils that are present at concentrations which exceed SCGs. Under this remedial approach, the sludges in the bottom of the leaching pits and contaminated soils surrounding them would be removed. Sludge removal can be accomplished using a high powered vacuum tanker truck. Soils from beneath and immediately adjacent to the leaching pits which contain contaminants above applicable soil cleanup levels for this site would be removed. Soils from the majority of these pits, with the exception of leaching pits, E, N and J. primarily contain cadmium, chromium, and copper above cleanup levels. Leaching pits E, N, and J also contain elevated levels of 1,1,1-trichloroethane, acetone, and 1,1-dichloroethane in the sludges.

(As noted on page 2, Site Remedial History, leaching pits A,B,C, and D were excavated and backfilled in 1983).

Since the objective of the soil remediation program is to remediate to levels which are protective of human health and groundwater, soil excavation would proceed to a maximum depth of the groundwater table.

Following soil removal, the excavation would be backfilled with clean fill, and the area would be paved. Soils which are below the soil cleanup objectives would remain at the site. It is anticipated that since the top four feet of soils from grade level to the top of the leaching pits have not been affected with metals or volatile organic contaminants, these soils would remain on-site.

Excavated soils and sludges would be disposed of or treated at a RCRA permitted Treatment, Storage, and Disposal (TSD) facility. Some stabilization of the waste sludges and soils would be required prior to any land disposal.

Confirmatory soil sampling of the soils at the bottoms and sidewalls of the excavations would be conducted during soil excavation to help delineate the extent of soil removal.

Testing can be conducted on-site by a mobile laboratory or by the use of field instrumentation such as X-ray fluorescence, or at an off-site analytical laboratory. In addition, controls would be taken to minimize dust migration and to prevent runoff from the stockpiled soils during precipitation events. Any soils temporarily stockpiled on site would be secured between plastic to minimize the potential for dust and runoff releases.

Alternative S-4: In-Situ Stabilization/Chemical Fixation

Present Worth Cost:	$266,000
Capital Cost:	$266,000
O&M Cost:	N/A

Under this alternative, contaminated sludges in the former subsurface outfalls would be removed and disposed off-site, and soils would be stabilized in place by chemical fixation/stabilization techniques. The objective of the stabilization process is to reduce the overall leachability of the contaminants such that contaminated soils can be left in place and not pose any threat to the public health or the environment. Utilizing the soil stabilization process, chemicals are used to fixate the contaminants within the soils, thereby reducing the overall solubility, toxicity and/or mobility of the contaminants. Metals are immobilized into insoluble compounds within the soil matrix, and organic contaminants are immobilized, and then chemically altered into innocuous complexes. The effectiveness of the treatment process can be evaluated using the USEPA Toxic Contaminant Leaching Potential, (TCLP), Synthetic Leaching Procedure (SLP) or other extraction procedure. Leachability test methods would be used as an indication of the potential concentration of contaminants leaching from the soils to the underlying groundwater. Following in-situ stabilization, the ground surface would be paved to redirect surface drainage and rainwater infiltration away from the treated areas.

Groundwater Remedial Alternatives

The following remedial alternatives were evaluated for the groundwater contamination associated with the Hillcrest Facility.

Alternative GW-1: No Action with Monitoring

Under the no action alternative, no groundwater remedial action would be undertaken at the site.

Groundwater affected by volatile organic and inorganic compounds would be allowed to remain on-site and off-site undergoing natural attenuation with eventual discharge to the Chenango River, downgradient of the site. Periodic sampling of selected monitoring wells which adequately define the plume would be performed to assess contaminant levels and migration.

Present Worth Cost:	$290,000
Capital Cost:	$ 0
O&M Cost:	$290,000

Alternative GW-2: Groundwater Extraction and Treatment

Under this alternative groundwater would be collected via extraction wells and treated to remove volatile organic compounds and metals to levels in compliance with NYSDEC standards. The treated water would then be discharged on or off-site. Periodic monitoring of groundwater as described in the "No Action" alternative would be conducted in order to observe groundwater cleanup progress and to ensure capture of the contaminant plume. Additional monitoring of influent and effluent groundwater with respect to the treatment system would also be conducted to monitor treatment system efficiency and compliance.

Numerous pumping wells would be required to recover the contaminants in the groundwater due to the large areal extent of the plume and small saturated thickness of the shallow unconfined aquifer. Extraction wells installed near the facility in the vicinity of the highest concentration of contaminants would prevent further migration of contaminants from this area, thus accelerating aquifer rehabilitation. Additional extraction wells would be sited at the downgradient edge of the plume, immediately upgradient of the Chenango River. Since there are other confirmed sources of groundwater contamination present between the CAE-Link facility and the river, CAE-Link would be mitigating groundwater contamination caused by other responsible parties. Multiple extraction wells with overlapping cones of influence would be necessary to create a hydraulic boundary between the Chenango River and the plume, due to the width of the plume at this location. Pump tests would be conducted during the remedial design phase to better determine aquifer characteristics, suitable locations and pumping rates for each extraction well.

Present Worth Cost:	$5,802,000
Capital Cost:	$1,187,000
O&M (Present Worth)	$4,615,000

6.2 Evaluation of Remedial Alternatives

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

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

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs): Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance.

A. Soil Remedial Alternatives

Alternative S-1: No Action

This alternative does not meet New York State (NYS) SCGs (USEPA HEAST concentrations for metals, and NYSDEC soil cleanup objectives).

Alternative S-2: Excavation and Off-Site Disposal

This alternative would meet NYS SCGs.

Alternative S-4: In-Situ Stabilization and Chemical Fixation

This alternative would meet (NYS) SCGs.

B. Groundwater Remedial Alternatives

Alternative GW-1: No Action with Monitoring

The groundwater standards would not be achieved in the short-term. Concentrations of metals and VOCs would persist for some years as natural attenuation occurs and concentrations decline.

Alternative GW-2: Groundwater Extraction and Treatment

This alternative would allow for attainment of the NYS groundwater standards in a shorter time, and would comply with SCGs.

2. Protection of Human Health and the Environment

This criterion is an overall evaluation of the health and environmental impacts to assess whether each alternative is protective.

A. Soil Remedial Alternatives

Alternative S-1: No Action

The no action alternative would result in the continuing potential exposure of contaminants to people and to groundwater, and would not be protective of human health and the environment.

Alternative S-2: Excavation and Off-Site Disposal

This alternative would be protective. The potential for human exposure to contaminated soils would be eliminated, and the soils would no longer be a source of VOCs and heavy metals to the groundwater.

Alternative S-4: In-Situ Stabilization/Chemical Fixation

This alternative would be protective. The potential for human exposure to contaminated soils would be eliminated, and the soils would no longer be a source of VOCs and heavy metals to the groundwater.

B. Groundwater Remedial Alternatives

Alternative GW-1: No Action with Groundwater Monitoring

This alternative does not provide for active cleanup of the groundwater contamination associated with the site. An extended time period would elapse before natural processes (flushing, attenuation, degradation) reduces contaminant levels to standards. However, human health and the environment would still be protected.

Alternative GW-2: Groundwater Collection and Treatment

This alternative would accelerate the time required to achieve standards, and is considered protective.

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

3. Short-term Effectiveness

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

A. Soil Remedial Alternatives

Alternative S-1: No Action

This alternative has a high short-term effectiveness, in that there are no adverse impacts due to any remedial activities.

Alternative S-2: Excavation and Off-Site Disposal

Some potential exists for short-term impacts to site workers and the community from soil excavation activities. These impacts can be minimized or eliminated through the application of administrative and engineering controls, such as soil wetting, stockpile covering, and monitoring activities.

Alternative S-4: In-Situ Stabilization/Chemical Fixation

Except for the sludge removal portion of this alternative, the short-term effectiveness is very high. The soil treatment would be done in the subsurface limiting potential releases during remediation. Sludge removal would be done with a vacuum truck, which would also minimize exposure to site workers and the community.

B. Groundwater Remedial Alternatives

Alternative GW-1: No Action with Monitoring

This alternative would result in no short-term impacts to workers or the community.

Alternative GW-2: Groundwater Recovery and Treatment

Short-term impacts to the site workers would be low in this alternative. Impacts to the community would be focused on the disruption (traffic etc.) during the installation of piping from the recovery wells to the treatment plant.

4. Long-term Effectiveness and Permanence

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

A. Soil Remedial Alternatives

Alternative S-1: No Action

This alternative does not result in a reduction of risk from current conditions. The contaminants in the soils could pose a risk to workers or the community if disturbed, and leaching of contaminants to the groundwater would continue. Controls to limit exposure to the contaminated soils could be implemented.

Alternative S-2: Excavation and Off-Site Disposal

This alternative provides for complete removal of the contaminated soils above the action levels established for the site, and requires no long-term controls to limit further risk.

Alternative S-4: In-Situ Stabilization/Chemical Fixation

This alternative provides a long-term solution to the contaminants in the soils, which would be treated in-place. Some long-term monitoring would be required to check effectiveness, but this is easily implemented.

B. Groundwater Remedial Alternatives

Alternative GW-1: No Action

This alternative has limited long-term effectiveness, since a long time period would elapse before groundwater standards would be achieved. Controls required would include restrictions on future groundwater usage in the contaminated area, and long-term monitoring.

Alternative GW-2: Groundwater Extraction and Treatment

This alternative would allow for a reduction in the time required to achieve groundwater standards. Controls required would be the same as in alternative GW-1, but over a shorter time period.

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

A. Soil Remedial Alternatives

Alternative S-1: No Action

This alternative provides for no reduction in toxicity, mobility, or volume of the

contaminants at the site.

Alternative S-2: Excavation and Off-Site Disposal

This alternative reduces greatly the volume of wastes at the site through removal.

Alternative S-4: In-Situ Stabilization/Chemical Fixation

This alternative permanently reduces the toxicity and mobility of the contaminants in the soils. Heavy metals would be rendered less soluble and unavailable for leaching to groundwater. Hexavalent chromium would be reduced to less toxic trivalent chromium.

B. Groundwater Remedial Alternatives

Alternative GW-1: No Action

No reduction in toxicity, mobility or volume of contaminants would be achieved other than from natural processes.

Alternative GW-2: Groundwater Extraction and Treatment

This alternative would actively reduce the volume of contaminants in the groundwater.

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

A. Soil Remedial Alternatives

Alternative S-1: No Action

This alternative is easily implemented as no action is required.

Alternative S-2: Excavation and Off-Site Disposal

This alternative is technically feasible and implementable. Sheeting and shoring would be required, however, to prevent sidewall collapse (due to the loose, granular nature of the soils), and to protect the structural integrity of nearby

buildings during excavation. The problem of limited available space on-site for staging areas would also need to be addressed.

Alternative S-4: In-Situ Stabilization/Chemical Fixation

Because this technology is still relatively new, and requires specialty equipment and chemicals, there are a limited number of vendors, at present offering these services. The number of vendors is growing as this technology continues to develop, and becomes more widely used.

In-situ stabilization/chemical fixation can be implemented using an auger soil mixing system. The slurries and chemical reagents used would be injected and mixed with the contaminated soil using the auger blades. In-situ soil mixing can be readily accomplished down to 18 feet below grade (the average depth of the groundwater table). If necessary, this treatment technology is capable of treating soils at much greater depths. The void space provided by the center of the dry wells will facilitate soil mixing and allow for soil expansion. Treatability and pilot testing must be performed to identify the most effective chemical reagent mixtures for the contamination at this site.

B. Groundwater Remedial Alternatives

Alternative GW-1: No Action with Monitoring

This alternative is easily implemented as no action is required.

Alternative GW-2: Groundwater Extraction and Treatment

This alternative involves the construction of groundwater extraction wells, underground piping, and construction of a leaching field on the CAE Link property. Installation of the groundwater collection system would utilize conventional well drilling and construction methods. Contractors and materials are readily available. Extensive lengths of underground piping (12,000 linear feet) including a pump station would be necessary to transfer extracted groundwater from the recovery wells from off-site locations back to the centralized treatment system to be located at the CAE Link property. If a leaching system is constructed for site recharge, the leaching field would be approximately 54,000 square feet in size to accommodate the 30 gpm (43,200 gallons per day) discharge. Locating a leaching system of this size at the CAE Link facility would be difficult, and may require relocating site utilities or other underground structures to allow for construction of the leaching field. Other alternatives for discharge, including the sewer system, Phelps Creek, or the Chenango River, would also have to be considered.

Process equipment for the various treatment technologies evaluated are also readily available and easily installed. Metals removal using Ph adjustment/chemical coagulation is widely used in industrial wastewater treatment. Air stripping, Granular Activated Carbon Filters (GAC), and Ultra Violet (UV) oxidation are all effective in reducing VOCs in water.

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

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

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

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and evaluations presented in Section 7, the NYSDEC has selected Alternative S-4, In-situ Stabilization/Chemical Fixation, and Alternative GW-1, No Action with continued monitoring, as the remedies for the Hillcrest Site.

The selection of Alternative S-4 is based upon the Department's preference for long-term permanent remedies utilizing treatment, such as this alternative, the ability for the alternative to meet SCGs and be protective of human health and the environment, and the alternative's cost-effectiveness.

The selection of Alternative GW-1, No Action with continued monitoring, is based upon the ability of the remedy to be protective of human health and the environment, the remedy's implementability, and cost effectiveness. Alternative GW-2 would result in reaching groundwater standards sooner, but would be more difficult to implement, have an order of magnitude higher cost, and still result in the need for controls on groundwater usage for a period of time.

The NYSDOH has identified an apartment building located at 1069 Arterial Highway that is not yet connected to public water. This information was not known prior to the completion of the RI/FS studies and was not addressed in those reports. Consequently,

NYSDEC's selection of groundwater alternative GW-1 is predicated upon the construction of a water service line to this residence.

The estimated present worth costs to implement these remedies are: Alternative S-4, $266,000; and Alternative GW-1; $290,000.

The elements of the selected remedy are as follows:

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

2. Construction of a water service to the impacted residence, and provide bottled water, if desired, in the interim.

3. Removal of sludges at the base of the former subsurface leaching pits (004 outfall) and off-site disposal.

4. Injection of stabilization/fixation agents into the contaminated soils to fixate the contaminants within the soils, thereby reducing the overall solubility, toxicity and/or mobility of the contaminants. Metals are immobilized into insoluble compounds within the soil matrix, and organic contaminants are immobilized, and then, chemically altered into innocuous complexes.

   Chemicals used in stabilization/chemical fixation process typically include Portland cement, cement kiln dust, lime, bentonite, various types of clays, sodium silicate (water glass), slag, gypsum, etc. Proprietary treatment products are also available which serve to increase the number of active pore sites/surface area for chemical bonding reactions that take place.

   In-situ waste treatment of subsurface soils would be accomplished utilizing an auger mixing system mounted on a crane, backhoe or drilling rig. Cement slurries, and proprietary mixes or dry reagents used to stabilize and fixate the soils are injected through the mixing blades and evenly blended into the soil column to produce a homogeneous mixture of soil and reagent. Reactions occur between the contaminants, reagents and organic matter in the soil, which produces a chemically and physically stabilized soil mixture. Treatability testing must be conducted to develop the most effective reagent mixture, chemical feed rate, and in-situ mixing method for this site application.

5. Monitoring of Surface Water and Groundwater.

If the remedy results in hazardous waste remaining untreated at the site, a long term monitoring program would be instituted. This program would allow the effectiveness of the selected remedy to be monitored. This long term monitoring program would be a component of the operation and maintenance for the site and would be developed in accordance with the approved design for the site.

The monitoring program will include, once sufficient data exists to define a significant trend in groundwater contaminant concentrations, an evaluation to determine if further remedial action, including groundwater recovery and treatment, is necessary to achieve the goals of the remedial program for this site.

Specifically, the monitoring program will include groundwater monitoring to confirm the reduction in contaminant concentrations over time, and sampling in the Chenango River and any other potentially impacted surface water bodies to monitor potential impacts to wildlife.

SECTION 8 HIGHLIGHTS OF COMMUNITY PARTICIPATION

The public meeting held to describe the findings of the RI/FS, solicit public comments, and answer questions from the public was held on March 14, 1994 at the Port Dickenson Elementary School. Several questions and comments were presented by the members of the public who attended the meeting, which are listed in the responsiveness summary (see below) along with the answers given at the meeting by the NYSDEC.

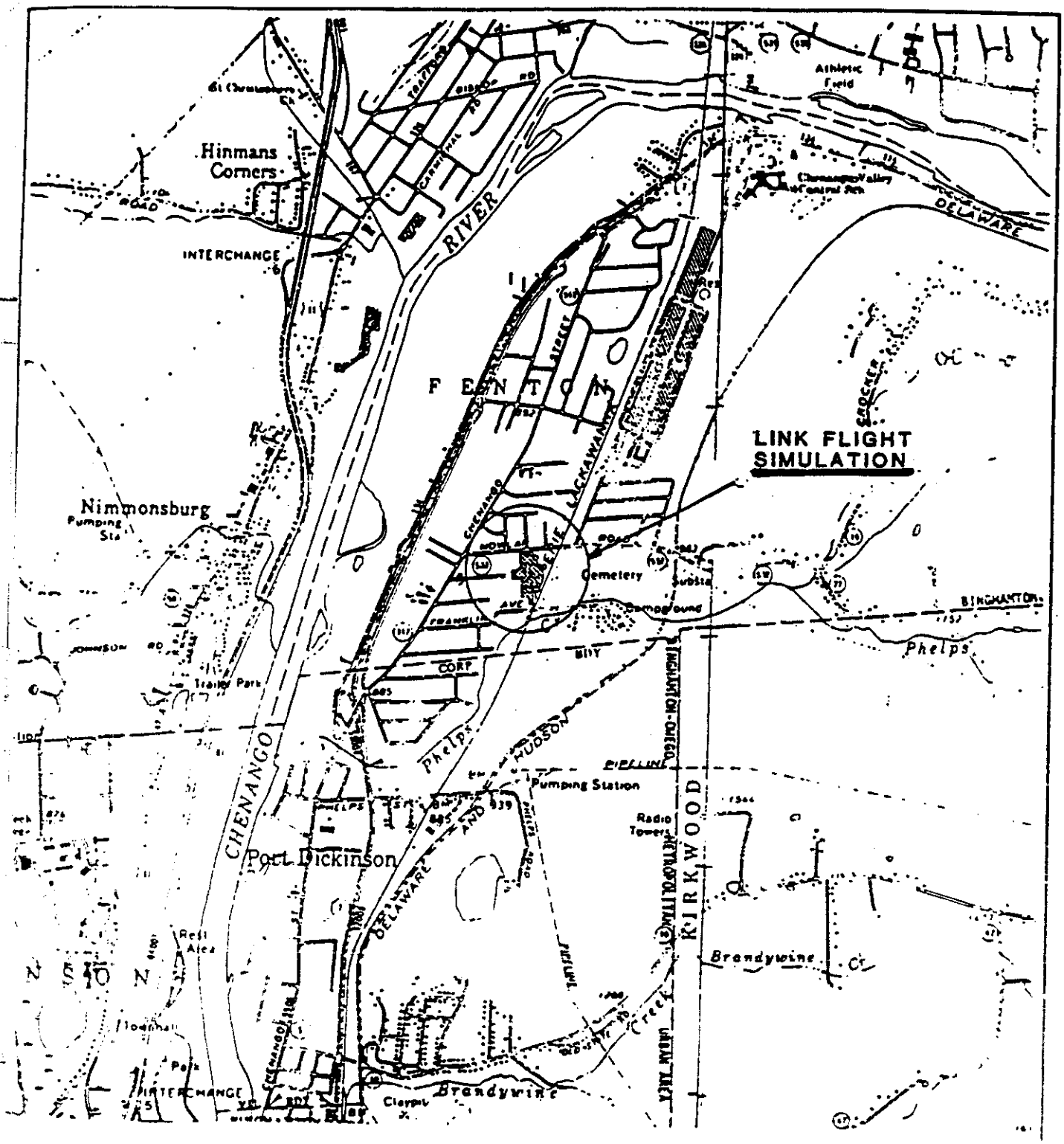
Public concerns raised at the meeting centered around potential routes of exposure, which have been addressed, as well as the need for sufficient monitoring to both confirm remedial effectiveness and to check surface water quality in the Chenango River and nearby ponds.

The Responsiveness Summary, presented in Appendix A, lists the questions and concerns voiced by the public and the responses given.

A comment letter attached to the responsiveness summary was also received from the PRP, CAE Link, in which CAE-Link challenges the requirements of the remedial program for connection of one residence to the public water supply, and for monitoring in the Chenango River.

These issues will be addressed in negotiations between the Department and the PRP for design and implementation of the selected remedy.

No comments were received which required a significant change to the selected remedy.



LOCATION MAP

H2M HOLZMACHER, McLENDON & MURRELL, P.C.
CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS and PLANNERS
MELVILLE, N.Y.
FARMINGDALE, N.Y.
RIVERHEAD, N.Y.

FIGURE 2

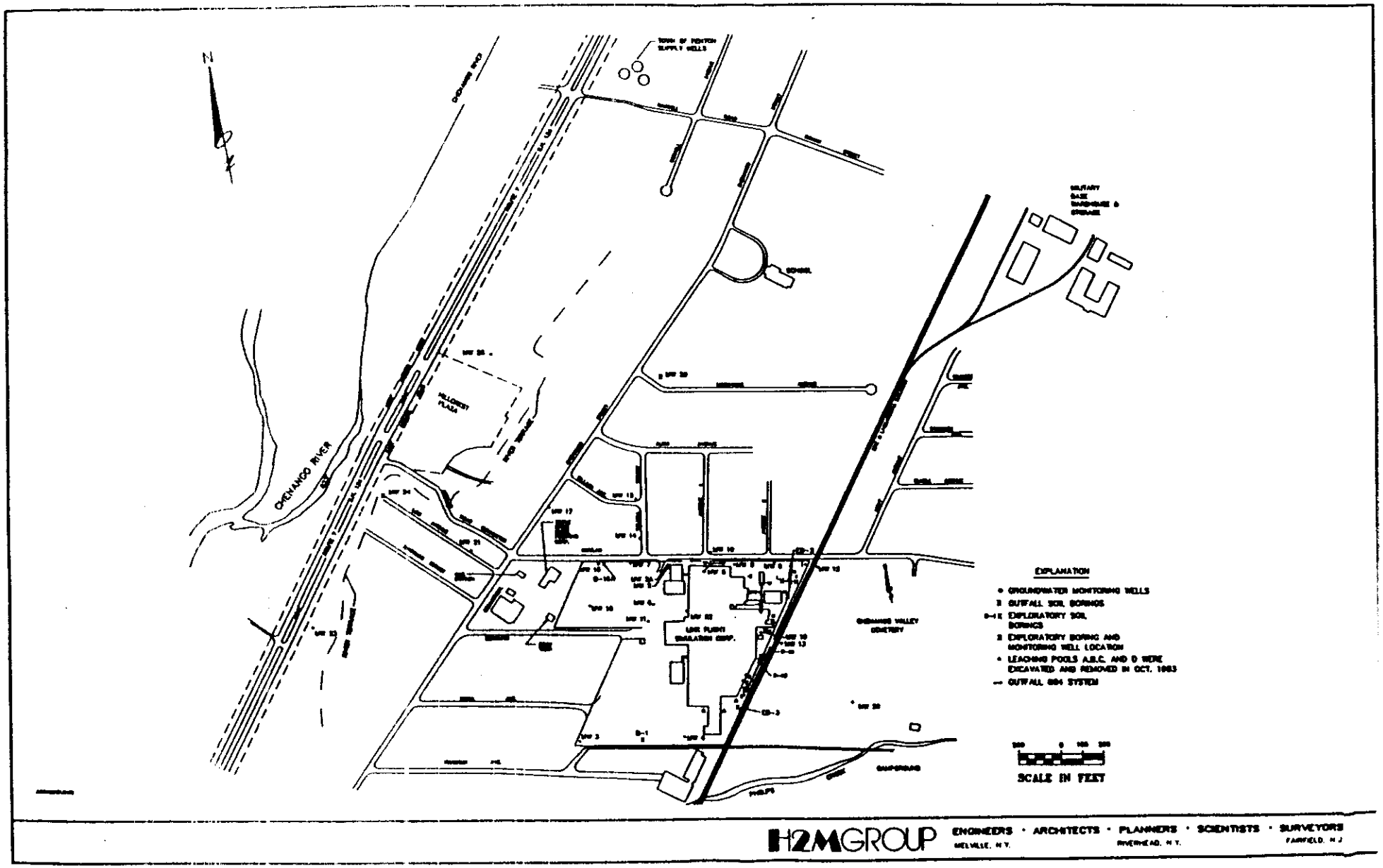

N
TOWN OF HUNTINGTON SUPPLY WELLS
OLD FIELD ROAD
CHERRYWOOD RIVER
HALLOCKS PLAIN
SCHOOL
MILITARY BASE WAREHOUSE & STORAGE
OLD FIELD ROAD
LIME PLANT SIMULATION CORP.
CEMETERY
PHILIPS
EXPLANATION
GROUNDWATER MONITORING WELLS
OUTFALL SOIL BORINGS
EXPLORATORY SOIL BORINGS
EXPLORATORY BORING AND MONITORING WELL LOCATION
LEACHING POOLS A,B,C, AND D WERE EXCAVATED AND REMOVED IN OCT. 1983
OUTFALL 004 SYSTEM
SCALE IN FEET
H2MGROUP
ENGINEERS · ARCHITECTS · PLANNERS · SCIENTISTS · SURVEYORS
MELVILLE, N.Y.
RIVERHEAD, N.Y.
FAIRFIELD, N.J.

FIGURE 3

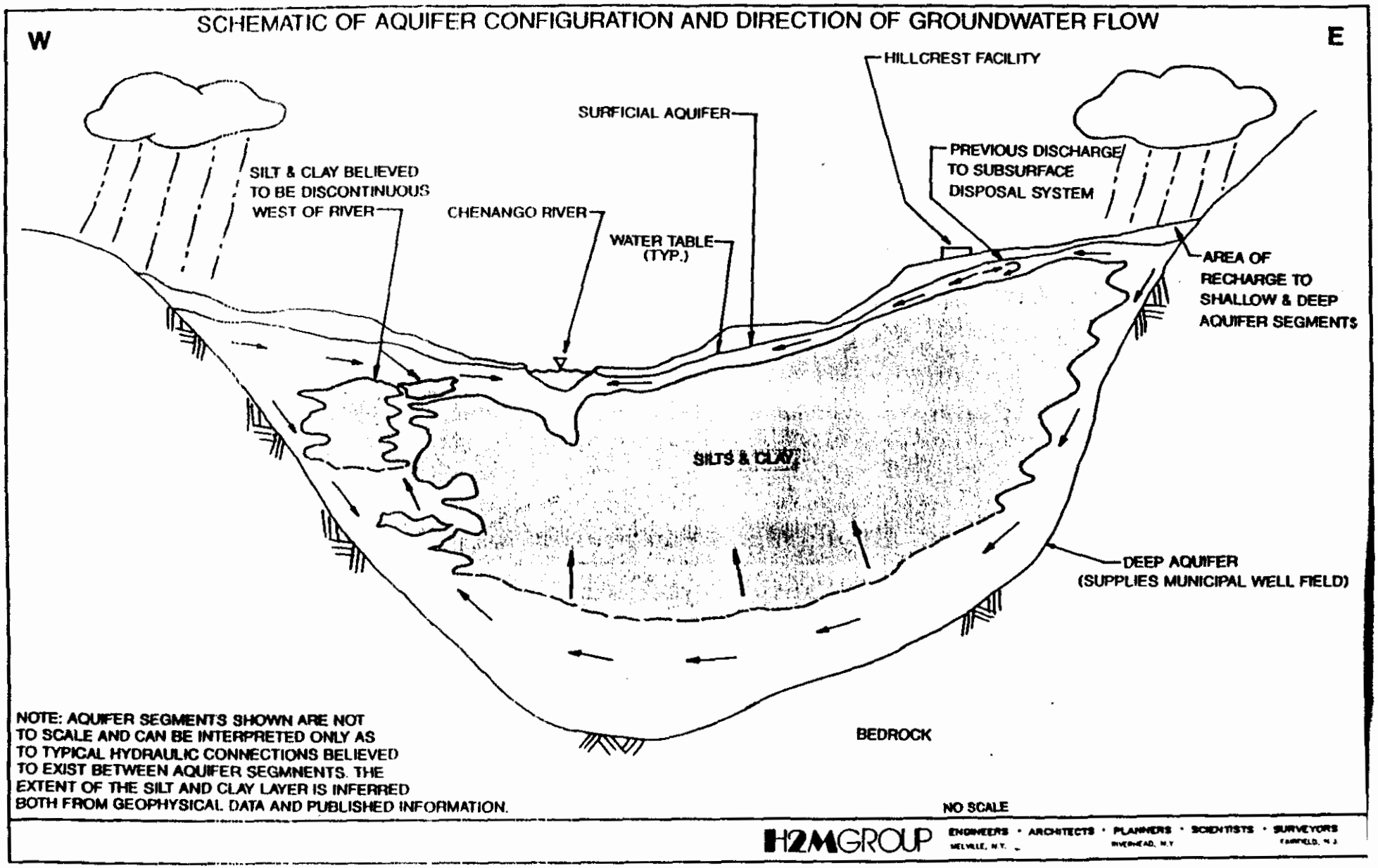
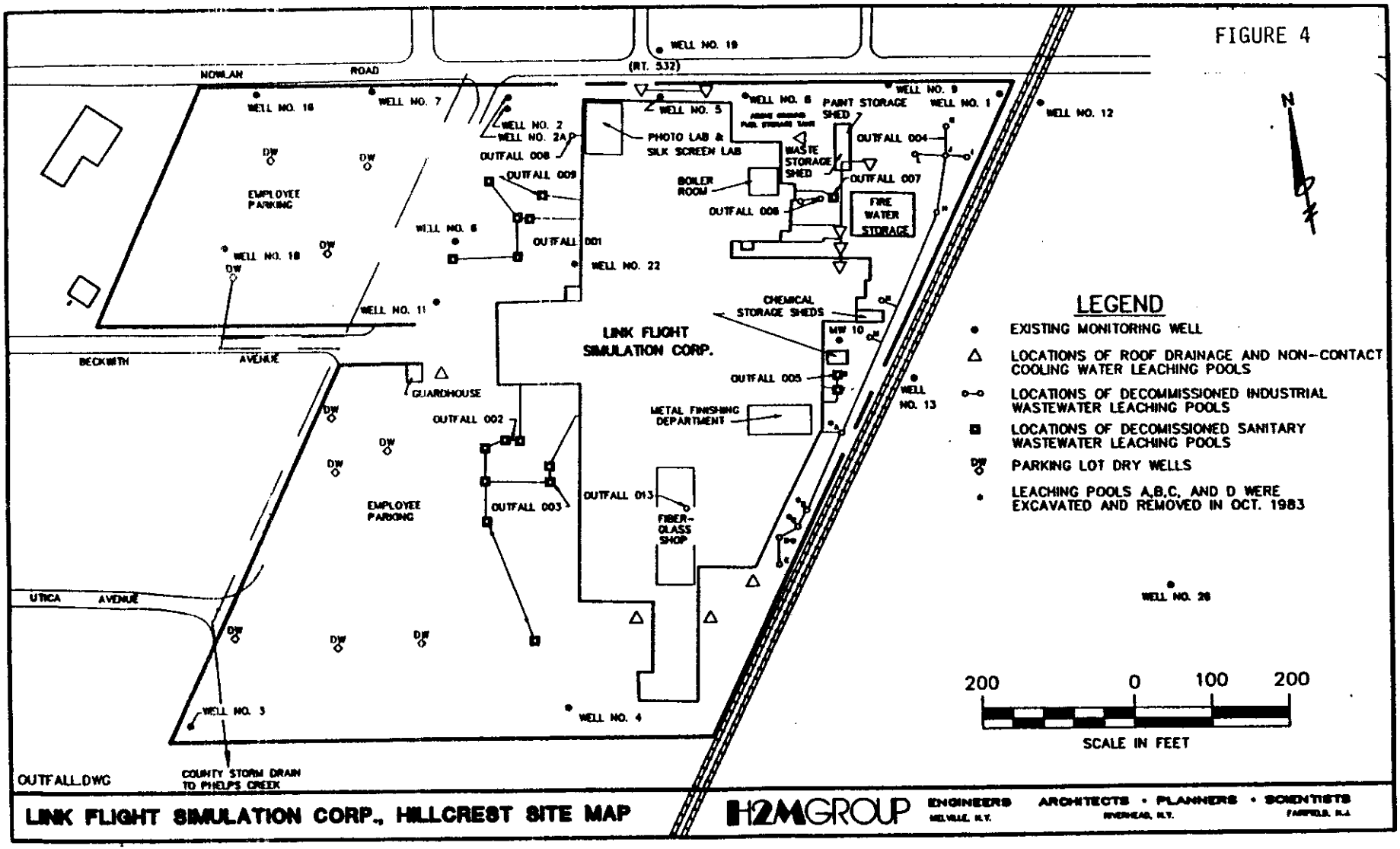

SCHEMATIC OF AQUIFER CONFIGURATION AND DIRECTION OF GROUNDWATER FLOW
W
E
HILLCREST FACILITY
SURFICIAL AQUIFER
PREVIOUS DISCHARGE TO SUBSURFACE DISPOSAL SYSTEM
SILT & CLAY BELIEVED TO BE DISCONTINUOUS WEST OF RIVER
CHENANGO RIVER
WATER TABLE (TYP.)
AREA OF RECHARGE TO SHALLOW & DEEP AQUIFER SEGMENTS
SILTS & CLAY
DEEP AQUIFER (SUPPLIES MUNICIPAL WELL FIELD)
BEDROCK
NOTE: AQUIFER SEGMENTS SHOWN ARE NOT TO SCALE AND CAN BE INTERPRETED ONLY AS TO TYPICAL HYDRAULIC CONNECTIONS BELIEVED TO EXIST BETWEEN AQUIFER SEGMNENTS. THE EXTENT OF THE SILT AND CLAY LAYER IS INFERRED BOTH FROM GEOPHYSICAL DATA AND PUBLISHED INFORMATION.
NO SCALE
H2MGROUP
ENGINEERS · ARCHITECTS · PLANNERS · SCIENTISTS · SURVEYORS
MELVILLE, N.Y.
RIVERHEAD, N.Y.
FAIRFIELD, N.J.

FIGURE 4



LINK FLIGHT SIMULATION CORP., HILLCREST SITE MAP

H2MGROUP ENGINEERS MELVILLE, N.Y. ARCHITECTS • PLANNERS • SCIENTISTS RIVERHEAD, N.Y. FAIRFIELD, N.J.

APPENDIX A

SINGER-LINK FLIGHT SIMULATOR DIVISION

TOWN OF FENTON, CHENANGO COUNTY, NEW YORK

SITE NO.: 7-04015

RESPONSIVENESS SUMMARY

Responsiveness Summary

1. How deep does the in-situ mixing process go?

   The mixing process depth will vary at each dry well depending upon the concentration of contaminants in the soils beneath. Estimations are that the distance may be as little as four feet below the drywell or as far as the actual water table surface.

2. How does the fixation process prevent water coming onto the site from picking up contamination as it passes through?

   The in-situ fixation process is a chemical reaction between the site contaminants and a reagent to be selected based on pilot testing. The concept is that the reagent reacts with the contaminants forming insoluble compounds that bind the contaminants in the soil mass. The fixated soils also form an impermeable mass which water cannot pass through.

3. What will be the frequency of groundwater monitoring?

   Once the remedy is in place a monitoring program will be developed. The frequency may vary from monthly, quarterly, semi-annually or annually. Much depends upon what happens. If a reduction in contaminant levels occurs the frequency is generally reduced. If contaminant levels are sporadic the frequency may be increased or kept constant.

3a. What would the monitoring program be?

   Groundwater monitoring frequency has not yet been set, however, selected monitoring wells will include upgradient, downgradient, and onsite locations. At least two surface water monitoring locations will be selected, up and down gradient of the plume at its confluence with the Chenango River.

4. Who will do the design and construction of the selected remedial action?

   CAE-Link will be approached by Department legal staff to negotiate a new Order on Consent for completing the remedial design and construction. If this effort is unsuccessful, the Department will access State Superfund monies and retain a consultant and contractor to complete the work.

5. Who will pay?

   As noted above, CAE-Link will pay for the remedial design and construction if an Order on Consent is negotiated. Failing this, State Superfund money will be utilized and the State will complete the remedial activity. Cost recovery from

CAE-Link would be initiated upon completion of construction.

6. Can we obtain the Cornell Avenue well data?

   Yes, certainly! Any data developed in the studies of the site is available. Please indicate your needs on the tablet circulating through the audience and we will provide the information promptly.

7. If CAE-Link will pay for the one remaining residence to hook-up to the water system, should they not reimburse others who have been previously connected?

   That is more of a legal question that will have to be addressed by Department and Link Attorneys during Consent Order negotiations.

8. Was a well installed at Hotchkiss Avenue, or was the public water supply sampled at that location?

   A monitoring well was installed into the shallow aquifer at Hotchkiss Avenue. It has been sampled at least twice.

9. What does the 60 ppb of TCE in the groundwater mean?

   The drinking water standard for TCE is 5 ppb (parts per billion). Therefore, the 60 ppb is an exceedance of the drinking water standard exists. As water is not drawn from this aquifer for potable use it is not considered a completed route of exposure. Environmentally, we are concerned with the contaminant loading to the Chenango River from the groundwater. Calculations of this impact to date, indicate that a problem does not exist at this time. The post-remedial monitoring plan will include sampling in the Chenango River.

10. Would there be any exposure to contaminants if someone were to excavate for a foundation.

    Given the type and levels of contaminants we are experiencing in the Hillcrest area, the main health impact would be from ingestion of groundwater. Inhalation from an open excavation would not be considered a problem. This is supported by the soil gas survey which was conducted during the remedial investigation. Approximately twenty locations in the plant vicinity were tested, and the plant was found not to be a source of soil vapor contamination.

11. How long will it take to evaluate the in-situ fixation process?

    Much information is documented about the technology of in-situ fixation. Therefore, we have a good deal of confidence with its performance. However, as there are many variables that can change, we envision a pilot study to begin early in the design phase to test the effectiveness.

12. Would you do a pilot study? Yes, as indicated in the above item.

13. What if the pilot study shows the process is ineffective?

    There are numerous compounds such as Portland Cement that are utilized in the in-situ fixation process along with other proprietary mixtures. Pilot testing could encompass a variety of materials. If none of the mixtures were effective we would revisit the remedy selection to review and select an alternative remedial action.

14. What about the effects upon the Chenango River?

    As noted in Item 9, calculations of the contaminant impact on the Chenango River do not indicate a problem at this time. Once the remedial action is implemented the overall concentration of contamination and their impact should be significantly reduced.

    However, river as well as groundwater monitoring will continue and future actions to further mitigate the problem will be accessed and initiated as shown necessary.

15. What about the ponds created by gravel mining east side of along the Chenango River? Were they sampled?

    No, we had no knowledge of any significance to these past mining operations.

16. The ponds are a significant habitat! As the Chenango River has flooded over the years, many fish have been deposited and thrived in these ponds. Many people fish there.

    We were unaware of this information. We will discuss it with our Division of Fish and Wildlife and initially plan on monitoring the water quality in the ponds.

17. Statement by Mr. W. Smith (Representing the Town of Fenton). Remember that the shallow groundwater that is the topic of this discussion is the same water that receives your septic tank discharges and wastes from gas stations etc.

18. Wasn't there an USEPA study of the Hillcrest area.

    Response by Mr. W. Smith - Yes, they studied the amount of pollution going into the ground from homes, commercial and industrial concerns. They made many people fix or close down groundwater discharges.

19. What about Triple Cities Chrome Plating?

    Triple Cities was never identified as violating their wastewater discharge permit as CAE-Link was. It is our information that they connected to the public sewers about the same time as Singer Link in the mid-1980s.

Statement by Mr. W. Smith. - After the USEPA Study Triple Cities installed a recirculation system as well.

20. The CAE-Link remedy will not do much for the rest of the neighborhood.

That is correct in part. There should be a measurable improvement in the groundwater quality from the CAE-Link remedial program, but their action will not help solve any of the other area problems.

21. Statement by Mr. W. Smith - During and after the USEPA study of the Hillcrest area most of the substandard systems were repaired or ceased operation.

22. What were the USEPA solutions?

Mr. Smith - Sludges were cleaned out and pits filled with concrete.

23. Did USEPA do any monitoring?

Mr. Smith - Not to my knowledge.

24. Statement by Mr. W. Smith - We ended up with a well head protection program for the Town of Fenton Water supply.

25. Who will pay for the RD/RA?

As noted in response to question 5, the State will negotiate an Order on Consent with CAE-Link to conduct the design and construction of the selected remedy. If CAE-Link and the State cannot come to an agreement we will access State Superfund for the money and retain consultants and contractors to complete the necessary work. Once the work is completed, we would seek cost recovery from CAE-Link.

CAE

CAE-Link Corporation
P.O. Box 1237
Binghamton
New York 13902-1237
Tel (607) 721-5465

March 25, 1994

MAR 29 1994

Mr. Kevin L. Farrar
Engineering Geologist
Bureau of Central Remedial Action
Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-7010

Re: CAE-Link, Hillcrest Facility
NYSDEC Site No. 704014

Dear Mr. Farrar:

First, thank you very much for the excellent presentation you made during the Public Meeting conducted on March 14, 1994 regarding the proposed remedial action plan for the CAE-Link site. I thought you covered the subject completely and impartially and that you handled the questions from the floor very well.

Secondly, we take this opportunity to go on record as challenging the requirement for CAE-Link to connect the recalcitrant owner of 1069 Arterial Highway to the local water system as proposed in Section 8, page 14 of the Proposed Remedial Action Plan made available to participants of the Public Meeting. Our rationale for this challenge includes:

- The site is currently, and has been, unoccupied for some time. It includes a dry well of its own and, according to the EPA report entitled Hamlet of Hillcrest Ground Water Protection Project, Broome County, New York, Final Report, dated August 6, 1990, the building is a former service station subsequently used for electronic design. It seems likely that the previous use of the building is at least partially responsible for any local contamination at the site.

- At their next scheduled working meeting to be held on March 29th, the Town of Fenton's Town Board plans to pursue the need to correct the

CAE

current owner's failure to connect to the town water system. It is the position of the Town's water supervisor that CAE-Link should not be held responsible for this action.

- There is no conclusive proof that Link is responsible for any contamination that may be found in the ground waters at the site. The site is nearly directly west of Link's monitoring well number 23. While samples taken from that well in 1989 show very low concentrations of a number of contaminants, this contamination cannot be conclusively shown to be the result of chemicals introduced into the ground waters by CAE-Link. In fact, the direction of flow of ground water from Link's facility would generally transit to the Chenango River north of the property in question.

In light of this analysis, CAE-Link is presently unwilling to pay for the owner of 1069 Arterial Highway to be connected to the Town's water system.

Finally, the DEC's remedial action summary also indicates that CAE-Link will be required to collect samples from the Chenango River as part of its on-going monitoring program. It is our understanding that sampling of the river is intended to monitor for any impacts to the river by contaminants from groundwater emanating from the CAE-Link facility. However, as we are all aware, there are several small commercial and industrial establishments located along the Brandywine between the CAE-Link facility and the Chenango River which are also potential sources of contamination contributing to [the regional] groundwater plume which discharges to the river. We believe that even if any contaminants are detected in the river, it can not be concluded that such contamination emanated from the CAE-Link facility. Therefore, we feel CAE-Link should not be held responsible for on-going monitoring of the river.

Sincerely,

John P. Ratcliffe
Director, Facilities

cc: D. F. Brown, H2M
M. V. Tumulty, H2M

APPENDIX B

SINGER-LINK FLIGHT SIMULATOR DIVISION

TOWN OF FENTON, CHENANGO COUNTY, NEW YORK

SITE NO.: 704015

ADMINISTRATIVE RECORD INDEX

The following documents are included in the Administrative Record:

1. Feasibility Study, CAE Link Corporation, Hillcrest Facility (H2M Associates, 1993)

2. Addendum to Remedial Investigation, CAE Link Corporation, Hillcrest Facility (H2M Associates, 1993)

3. Remedial Investigation, Link Flight Simulation Division, Hillcrest Facility (H2M Group, 1990)

4. Phase III Hydrogeologic Investigation at Singer Link Company, Hillcrest Facility (H2M Group, 1987)

5. Phase II Report, Groundwater Investigation at Singer Link Company, Hillcrest Facility, (H2M, 1986)

6. Phase I Report, Hydrogeologic Conditions at Singer Link Company, Link Flight Simulator Division, Hillcrest Facility (H2M, 1985)