Department of Environmental Conservation

Division of Hazardous Waste Remediation

Record of Decision

Korkay, Inc. Site
Village of Broadalbin, Fulton County
Site Number 5-18-014

March 1996

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* MICHAEL D. ZAGATA, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Korkay, Inc. Inactive Hazardous Waste Site
Village of Broadalbin, Fulton County, New York
Site No. 5-18-014

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Korkay Inc. 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 Korkay Inc. 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 Korkay Site and the criteria identified for evaluation of alternatives the NYSDEC has selected: excavation and off-site disposal of the top 6 inches of contaminated surface soil; backfill excavated areas with clean soil and cover with soil vegetation; soil vapor extraction system with optional air sparging or site dewatering (six months of operation); site environmental monitoring for 5 years.

The components of the remedy are as follows:

- 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 during remedial design/construction.

- Excavation and off-site disposal of approximately 145 cubic yards of contaminated surface soil. (see Figure 4).
- Backfilling excavated areas with clean fill that will be compacted, graded and covered with vegetation to reduce infiltration of rainwater and reduce erosion;

- Conduct Soil Vapor Extraction (SVE) (with optional air sparging or site dewatering) for a period of up to six months. The SVE system will be conducted in Area 1, the alcove area with the highest contaminant levels.

- The site owner will be asked to impose deed restrictions to exclude the use of site groundwater for residential or industrial use. Failing this, a deed notification will be filed with the county clerk's office.

- Building demolition and disposal.

- Annually monitor, for a period of five years, the groundwater from two wells for VOC's, SVOCs, and pesticides. The site will be reevaluated at the end of the five year period to determine the effectiveness of the remedy performed.

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.

3/26/96
Date

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

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SECTION 1: SITE LOCATION AND DESCRIPTION

The site is located at 70 West Main Street in the Village of Broadalbin, Fulton County, New York. The Village of Broadalbin, approximately one square mile in size, is located almost entirely within the limits of the Town of Broadalbin. Land uses surrounding the site include a lumber yard/residences to the north, a residence to the west, a church to the east, and West Main Street to the south.

Kenneyetto Creek is the nearest surface water body, located on the south side of West Main Street, approximately 600 feet south of the site.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

Korkay Inc. was a chemical supply company which bought and stored bulk chemicals from other major chemical companies in 1969-1980 and blended these chemicals (detergents, solvents, etc.) into products such as car waxes, spray cleaners and hand cleaners.

Between 1969 and 1980, Korkay obtained previously used barrels, the former contents of which were unknown, and stored, washed, and relined the barrels on site. Barrel washwaters, with washwaters from spill cleanups and vat cleaning were discharged to on-site septic systems which was believed to have resulted in soil and groundwater contamination.

In 1979, following complaints from the neighboring property owners, personnel from the NYSDEC and NYSDOH conducted an inspection of the facilities. At the inspection, it was observed that residue from the stored barrels leaked onto the ground creating puddles of unknown chemicals.

Analysis of samples collected by EA Science and Technology from on-site monitoring wells installed during preliminary assessment detected several organic compounds including acetone and trichloroethene in contravention of the NYSDEC groundwater standards and criteria.

2.2: Remedial History

As a result of the inspection conducted by the NYSDEC and NYSDOH, Korkay Inc. installed a 4,000-gallon holding tank in 1980 to contain vat cleaning and spill cleanup washwater. In 1985, Korkay Inc. replaced two buried tanks used for storing fuel oil and bulk chemicals with an above ground tank.

During 1992 and 1993, the NYSDEC conducted another site inspection which resulted in an Interim Remedial Measure (IRM). Drums of hazardous wastes were stored and secured and a fence was erected around the rear of the property to control unauthorized access to the property. In 1993, the NYSDEC contracted with Camp, Dresser & McKee, a consulting engineer to conduct Remedial Investigations and Feasibility Study of the Hazardous Waste at the Korkay site.

SECTION 3: CURRENT STATUS

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

3.1: Summary of the Remedial Investigation

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

The RI was conducted in two phases. The first phase was conducted between September 1993 and April 1994 while the second phase was conducted between October 1994 and May 1995. The reports entitled Final RI Report dated April 1994 and Final Phase II RI Report dated May 1995 have been prepared describing the field activities and findings of the RI in detail.

The RI activities consisted of the following:

- Installation of monitoring wells for split spoon soil and groundwater sampling and analysis.
- Building inspection.
- Soil sampling and analysis (includes surface and subsurface soil).
- Sampling of nearby private water supply wells.
- Above ground and underground storage tank sampling to determine presence, if any, of hazardous materials.
- Habitat walk-over survey/mapping.
- Human Health Risk Assessment.
- Establishment of an ongoing public outreach and citizen participation program.
- Installation and sampling of hydropunch wells.

To determine which media (soil, groundwater, etc.) contain contamination at levels of concern, the analytical data obtained from the RI was compared to Environmental Standards, Criteria, and Guidance (SCGs). Groundwater, drinking water and surface water SCGs identified for the Korkay site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of 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 for soil. Based upon the limited amount of data generated from

on-site air quality monitoring during the Site Remedial Investigation (RI), ambient air quality does not appear to be adversely affected by the site at this time. However, due to the close proximity of neighboring residences, air quality monitoring will be required during remedial construction.

Acceptable air quality parameter levels during remedial construction will be based on health and safety criteria for both on-site workers and nearby residents.

Based upon the results of the Remedial Investigation in comparison to the SCGs and potential public health and environmental exposure routes, certain areas and media of the site require remediation. These are summarized below. More complete information can be found in the RI reports.

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

The site was divided into six study subareas as shown in Figure 2.

Soils

Area 1 (southwest quadrant of site) This is the most contaminated portion of the site. Volatile Organic Compounds (VOCs) detected in Area 1 soil samples include trichloroethene, xylene, ethylbenzene and toluene with concentrations ranging from 2.6 to 78 ppm. Semi-volatile organic compounds (SVOCs) detected include
di-n-butylphthalate, benzo(a) pyrene, dibenzo (a,h) anthracene and phenol with concentrations ranging from 0.07 to 27 ppm.

Area 2 (northwest quadrant of site) A portion of Area 2 adjacent to Area 1 is contaminated with pesticides and VOCs. VOCs detected in Area 2 soil samples include xylene (total) and acetone at concentrations ranging from 0.2 to 7.8 ppm. Pesticides detected include gamma-chlordane, aldrin, heptachlor epoxide, endrin (total) and dieldrin with concentrations ranging from 0.03 to 8.9 ppm.

Area 3 (northeast quadrant of site) Area 3 soil samples showed no significant contamination above criteria. There was a single detection of xylene (total) at a concentration of 1.9 ppm. Phenol was detected at concentrations ranging from 0.08 to 0.11 ppm.

Area 4 (southeast quadrant of site) Soil samples were not obtained from this area as it is a paved parking lot. The area is not suspected to be contaminated.

Area 5 (Hayes property) Soil samples obtained from Area 5 showed traces of VOCs but at levels below criteria. SVOCs detected in Area 5 include benzo (a) pyrene, dibenzo (a,h) anthracene and phenol at concentrations ranging from 0.03 to 0.2 ppm. The level of SVOCs contamination is not significant when compared with the criteria.

Area 6 This is an off-site location where background samples were taken.

Groundwater

Site related contaminants in groundwater above class GA groundwater standards included: (See Table 2) VOCs - Trichloroethene, 1,2 - Dichloroethene, Xylene and Ethylbenzene with concentrations ranging from 6 to 800 ppb; SVOCs - Naphthalene, 1,2 - Dichlorobenzene, 2-Methylphenol and Di-n-butylphthalate with concentrations ranging from 4 to 100 ppb; Pesticides - Aldrin, Heptachlor Epoxide, Dieldrin and 4-DDE with concentrations ranging from 0.1 to 0.8 ppb.

Two private water supply wells upgradient of the site were sampled by NYSDOH and are not impacted by the contaminated groundwater at the site. All other residences in the area are serviced by public water.

Average and maximum concentration values for chemicals of concern in soil and groundwater are shown in Tables 1 and 2.

3.2 Interim Remedial Measures

As part of its Interim remedial measures, the NYSDEC assembled drums of hazardous wastes and sent them off site for disposal. A fence was erected around the rear of the property to control unauthorized access to the property.

3.3 Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the health risks can be found in a report entitled Final Risk Assessment dated May 4, 1994. The contaminants of concern can be found in Table 3.1 of the report.

An exposure pathway is the process by which an individual comes into contact with a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media and transport mechanisms; 3) the point of exposure; 4) the route of exposure; and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

Completed exposure pathways at the site are incidental ingestion of surface and subsurface soil, dermal absorption of contaminants from surface and subsurface soil, ingestion of shallow groundwater, inhalation of organics from shallow groundwater and dermal absorption of contaminants from shallow groundwater. (However, exposure to groundwater is unlikely since no one is currently using the contaminated aquifer of concern). Trespassers to this site are potential receptors. Currently, the fence erected around the property controls easy access to the site. The buildings are also secure and locked up.

According to the May 4, 1994 Final Risk Assessment report the risks associated with the exposure pathways at the Korkay Inc. site are:

- Inhalation of organic contaminants from groundwater - Lifetime carcinogenic risk of one person in one million, which means that if one million persons are exposed to the contaminants at Korkay site through inhalation, 365 days per year for 70 years, there is a possibility that one person is likely to develop cancer. (New York State considers risks to be excessive when they are greater than one in one million).

- Ingestion of contaminated groundwater (if used for potable water supply) - Carcinogenic risk of 170 persons in one million.
- Dermal exposure to contaminated groundwater - Carcinogenic risk of 87 persons in one million.
- Ingestion of contaminated soils - Carcinogenic risk of 15 persons in one million.
- Dermal exposure to contaminated soils - Carcinogenic risk of less than one person in one million.

3.4 Summary of Environmental Exposure Pathways:

This section summarizes the types of environmental exposures which may be presented by the site. The Habitat Based Assessment included in the RI presents a more detailed discussion of the potential impacts from the site to fish and wildlife resources. The following pathways for environmental exposure have been identified:

Based on information presented in the RI report (CDM, April 1994), contaminants from the Korkay Inc. site were detected in on-site groundwater and soils. Shallow groundwater from the site moves toward Kennyetto Creek. However, in order for aquatic and terrestrial organisms to be exposed to contaminants in groundwater, the contaminants must migrate to sediments and surface water in significant concentrations. To date, there is no evidence that this has occurred.

SECTION 4: ENFORCEMENT STATUS

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

The Potential Responsible Party (PRP) for the site, documented to date, is: Korkay Inc./Perma Glaze Chemical Corp., 70 West Main Street, Broadalbin, NY 12025.

The PRP failed to conduct the RI/FS at the site when requested by the NYSDEC. After the remedy is selected, the PRP will again be contacted for the opportunity to assume responsibility for the remedial program. If an agreement cannot be reached with the PRP, the NYSDEC will consider further action under the State Superfund to remedy the site. The PRP is subject to legal actions by the State for recovery of all response costs the State has incurred.

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. These goals are established under the overall goal 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 the public health and to the environment presented by the hazardous waste disposed at the Korkay site through the proper application of scientific and engineering principles.

The goals selected for this site are:

- To eliminate, to the greatest extent possible, on-site soils as a source of groundwater contamination.

- To eliminate or reduce human exposure to on-site soils contamination.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Potential remedial alternatives for the Korkay site were identified, screened and evaluated in a three-phase Feasibility Study. This evaluation is presented in the reports entitled Final Phase I & II Feasibility Study February 1995 and Feasibility Study (Detailed Analysis) August 1995. A summary of the detailed analysis follows.

6.1: Description of Remedial Alternatives

The potential remedies are intended to address the contaminated surface and subsurface soils and groundwater at the site.

The following is a brief description of each of the five (5) remedial alternatives proposed for the site:

Alternative 1 - No Action: The no action alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state.

Under this alternative the site would remain in its present condition and human health and the environment would not be provided any additional protection.

The No Action alternative would not provide any proactive actions or activities to promote the remediation of the contaminated media. The only means of remediation would be natural attenuation of the contaminants at the site. However, the existing site fencing would remain intact and would prevent unintentional site trespassing. Groundwater would be monitored for VOCs, SVOCs and pesticides.

The cost to implement Alternative 1 has been estimated as follows based on a nominal 3% interest after inflation and a projected life cycle of 30 years.

Capital Cost:	0
Annual O&M Cost:	$9,500
Total Present Worth Cost:	$183,000
Time to Implement:	0-6 months

Alternative 2 - This alternative is similar to Alternative 1 but would also address direct human contact with contaminated surface soils by excavating and removing the top 12 inches of contaminated soil from Areas 1, and 2 as indicated in Figure 3 "Soil Removal Plan for Alternatives 2 & 3. This alternative includes the following components:

- Excavation and off-site disposal of the top 12 inches of contaminated surface soil, backfill excavated areas with clean soil and cover with soil vegetation.

- Site environmental monitoring for 30 years.

Capital Cost:	$315,000
Annual O&M Cost:	$9,500
Total Present Worth Cost:	$498,000
Time to Implement:	6-9 months

Alternative 3 - This alternative is similar to Alternative 2 but includes the provision for operation of a soil vapor extraction (SVE) system to remove volatile compounds from subsurface soils in Area 1. The SVE system would remove source soil contamination that presently contributes to contamination of the shallow aquifer groundwater. This alternative includes the following components:

- Excavation and off-site disposal of the top 12 inches of contaminated surface soil, backfill excavated areas with clean soil and cover with soil vegetation. (See Figure 3 for areas of soil removal)

- Soil vapor extraction system with optional air sparging or site dewatering if necessary (One year of operation).

- Site environmental monitoring for 5 years.

Capital Cost:	$466,000
Annual O&M Cost:	$9,500
Total Present Worth Cost:	$509,500
Time to Implement:	6-9 months

Alternative 4 - This alternative is similar to Alternative 3 but with a reduced area and depth of soil excavation to address contaminants of concern at the site. This alternative would remove less soil than under Alternative 3. However, the soils removed would be those deemed significantly contaminated by the chemicals of concern. Remaining contaminated soils would be at levels that are not a threat to human health or the environment. This alternative would address direct human contact with contaminated soils by excavating and removing the top 6 inches of contaminated soil from Area 1 (source area) and a portion of Area 2 contaminated with pesticides. Area 1 and a portion of Area 2 (see Figure 4) contain significant levels of contamination determined to warrant remediation. Subsurface soils in Area 1 that are contaminated with volatiles would be treated on site through soil vapor extraction. This alternative includes the following components:

- Excavation and off-site disposal of the top 6 inches of contaminated surface soil. Backfill excavated areas with clean soil and cover with soil vegetation.

- Soil vapor extraction system with optional air sparging or site dewatering (six months of operation).

- Site environmental monitoring for 5 years.

Capital Cost:	$133,500
O&M Cost:	
- Annual (for 5 years)	$3,500
- SVE Operation for 6 months	$19,000
Total Present Worth Cost:	$168,500
Time to Implement: 6-9 months	

6.2 Evaluation of Remedial Alternatives

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (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.

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.

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

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

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.

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

6. Implementability. The technical and administrative feasibility of implementing each alternative 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..

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision. The detail costs for each alternative are presented in Tables 1 and 2.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan have been evaluated. The " Responsiveness Summary" included in Appendix A presents the public comments received and the Department's response to the concerns raised. The Town officials contest remediation of the site without the demolition and disposal of the building. Based on the town's comments at the public meeting and the town engineer finding that, the building is structurally unsound and will pose a significant threat to workers who will implement the proposed remedy, the Department of Environmental Conservation, in consultation with the Department of Health has determined that, it is prudent to demolish the building as part of the remedial action.

The four detailed alternatives that were evaluated vary in the degree to which they satisfy the above criteria.

Alternative 1 does not meet the threshold criteria of compliance with SCGs and protectiveness of human health and the environment. Alternative 2 is more protective and compliant, especially for contaminated surface soils both on-site and off-site, but would leave contaminants in the subsurface soils. Alternatives 3 and 4 are the most protective and compliant by addressing both surface soil contamination and subsurface (source) soil and groundwater contamination.

Alternatives 3 and 4 are rated higher than the other alternatives with regard to the reduction of toxicity, mobility or volume. The soil vapor extraction component of these alternatives would reduce the volume and concentration of the volatile organic compounds in Area 1 and as a result, remaining constituents would be less mobile and less toxic.

With the exception of Alternative 1 all the alternatives would provide acceptable long-term effectiveness for the contaminated surface soils at the site.

All of the alternatives are considered implementable, having no adverse administrative or technical obstacles to overcome.

Alternatives 3 and 4 would remove the exposure pathways for surface soil contamination. They also would further remove the source of VOCs from subsurface soils in Area 1 and decrease their impact on the shallow groundwater.

Short-term impacts of Alternatives 2, 3 and 4 are greater than 1 because construction activities would take place. However, this would be offset by the fact that the long term permanence and reduction of toxicity, mobility or volume for the site are much better for Alternatives 2, 3 and 4.

The total life cycle costs for Alternatives 1 through 4 are shown below:

	Capital life costs	Total O&M costs	Total cycle costs
Alt. 1	$0	$183,000	$183,000
Alt. 2	$315,000	$183,000	$498,000
Alt. 3	$466,000	$43,500	$509,500
Alt. 4	$133,500	$35,000	$168,500

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 6, and comments from the Town officials and Engineer, the NYSDEC is selecting Alternative 4 with modification to include building demolition and disposal. This modification is necessitated by the structural integrity and overall safety of the Korkay building and the hazards it poses to both DEC and its contractor's personnel involved with the remedial activities to cleanup the site.

This selection is based upon the qualitative and semi-quantitative ranking with respect to each of the seven criteria discussed in the preceding section. Alternative 4 will provide:

1) overall protection of human health and the environment;
2) an acceptable degree of compliance with SCGS;
3) permanence and long-term effectiveness; and
4) reduction in toxicity, mobility and volume of contaminants.

Alternative 4 is the most cost-effective alternative. It will remove the source of contamination and eliminate the potential exposure pathways of the remaining constituents of concern. Alternative 4, after the demolition of the structurally unsound building, will remove the threat to workers during remediation.

Alternative 4 will meet the remedial action goals and objectives for the Korkay Inc. site. When implemented, it will eliminate to the greatest extent possible, on-site soils as a source of future groundwater contamination and will protect human exposure to on-site soils contamination.

The total estimated present worth cost to implement the remedy is $259,500. The cost includes $133,500 to construct the remedy, $16,000 for 5 years of site environmental monitoring, $19,000 to operate the SVE system for a period of six months and $91,000 for the demolition and disposal of the structurally unsound building.

The elements of the selected remedy are as follows:

- 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 during remedial design/construction.

- Excavation and off-site disposal of approximately 145 cubic yards of contaminated surface soil. (see Figure 4).

- Backfilling excavated areas with clean fill that will be compacted, graded and covered with vegetation to reduce infiltration of rainwater and reduce erosion;

- Conduct Soil Vapor Extraction (SVE) (with optional air sparging or site dewatering) for a period of up to six months. The SVE system will be conducted in Area 1, the alcove area with the highest contaminant levels.

- The site owner will be asked to impose deed restrictions to exclude the use of site groundwater for residential or industrial use. Failing this, a deed notification will be filed with the county clerk's office.

- Demolition and disposal of the building.

- Annually monitor, for a period of five years, the groundwater from two wells for VOCs, SVOCs, and pesticides. The site will be reevaluated at the end of the five year period to determine the effectiveness of the remedy performed.

7.1 Documentation of Significant Changes:

The NYSDEC, in its public meeting held for the Korkay site, received significant comments on the Proposed Remedial Action Plan to remediate hazardous waste at the site. Several questions regarding building structural integrity were raised The Town officials contest the proposed plan without the demolition and disposal of the building. The Town engineer, in its letter to the NYSDEC asserts that, based on his inspection of the Korkay building, it will be unsafe for workers who will implement the proposed remedy due to the structurally unsound nature of the building. Based on a detailed evaluation of these comments, the NYSDEC in consultation with NYSDOH has determined that it will be necessary

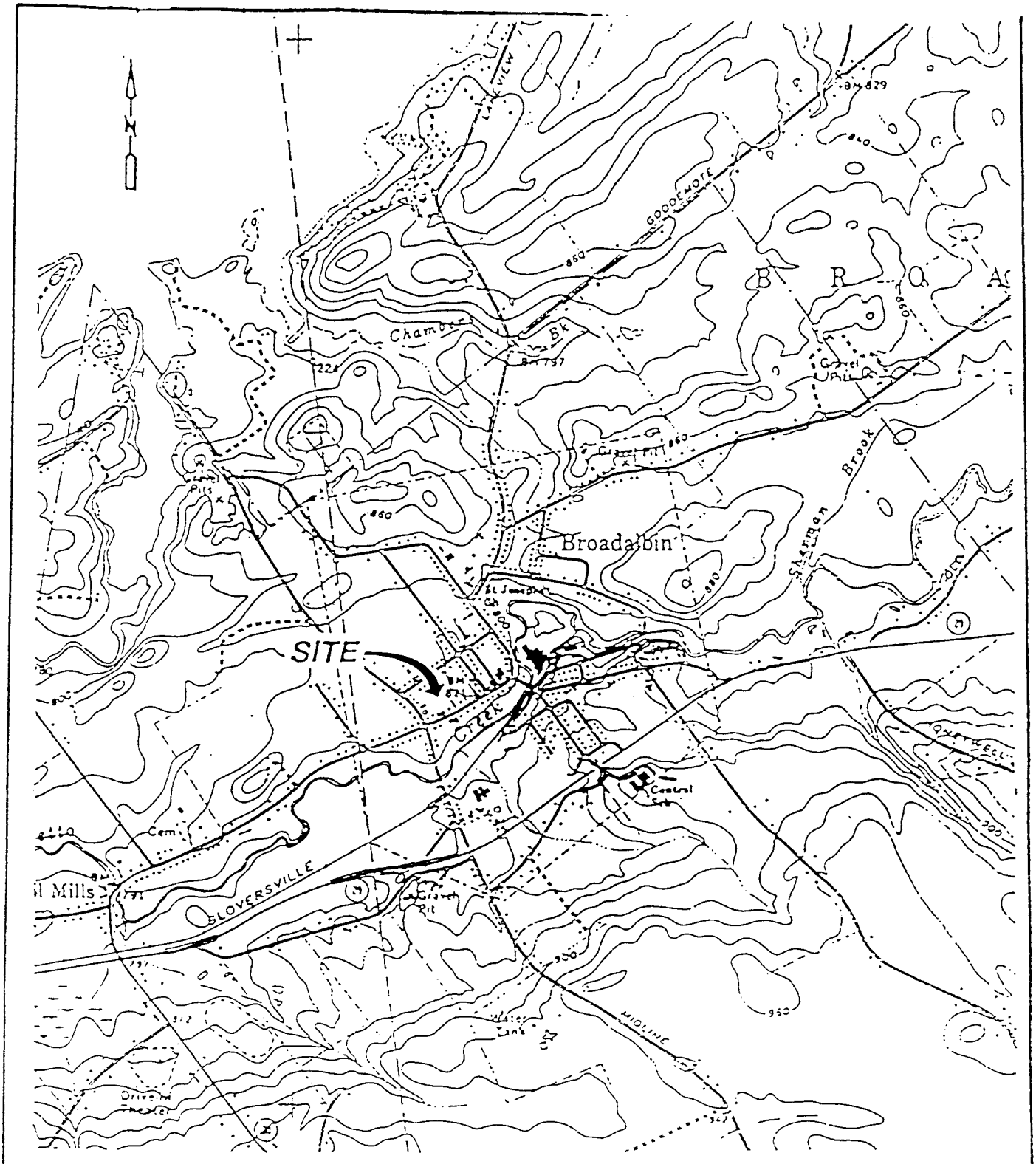
to demolish the unsound building in order to protect the workers who will be implementing the selected remedy. Based on the foregoing developments, Alternative 4 has been modified to include building demolition and disposal.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation (CP) activities were undertaken in an effort to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- A repository for documents pertaining to the site was established.
- A site mailing list was established which included nearby property owners, local political officials, local media and other interested parties.
- Fact Sheets were sent to the community to inform them of the status and current activities at the Korkay Inc., site.
- Public meetings were held at the Village of Broadalbin to inform the community of the work plan for the Remedial Activities and the Proposed Remedial Action Plan for the Korkay, Inc. site
- In March, 1996 a Responsiveness Summary was prepared and made available to the public, to address the comments received during the public comment period for the PRAP.

FIGURES



Source of map: Broadalbin, NY Quadrangle, USGS

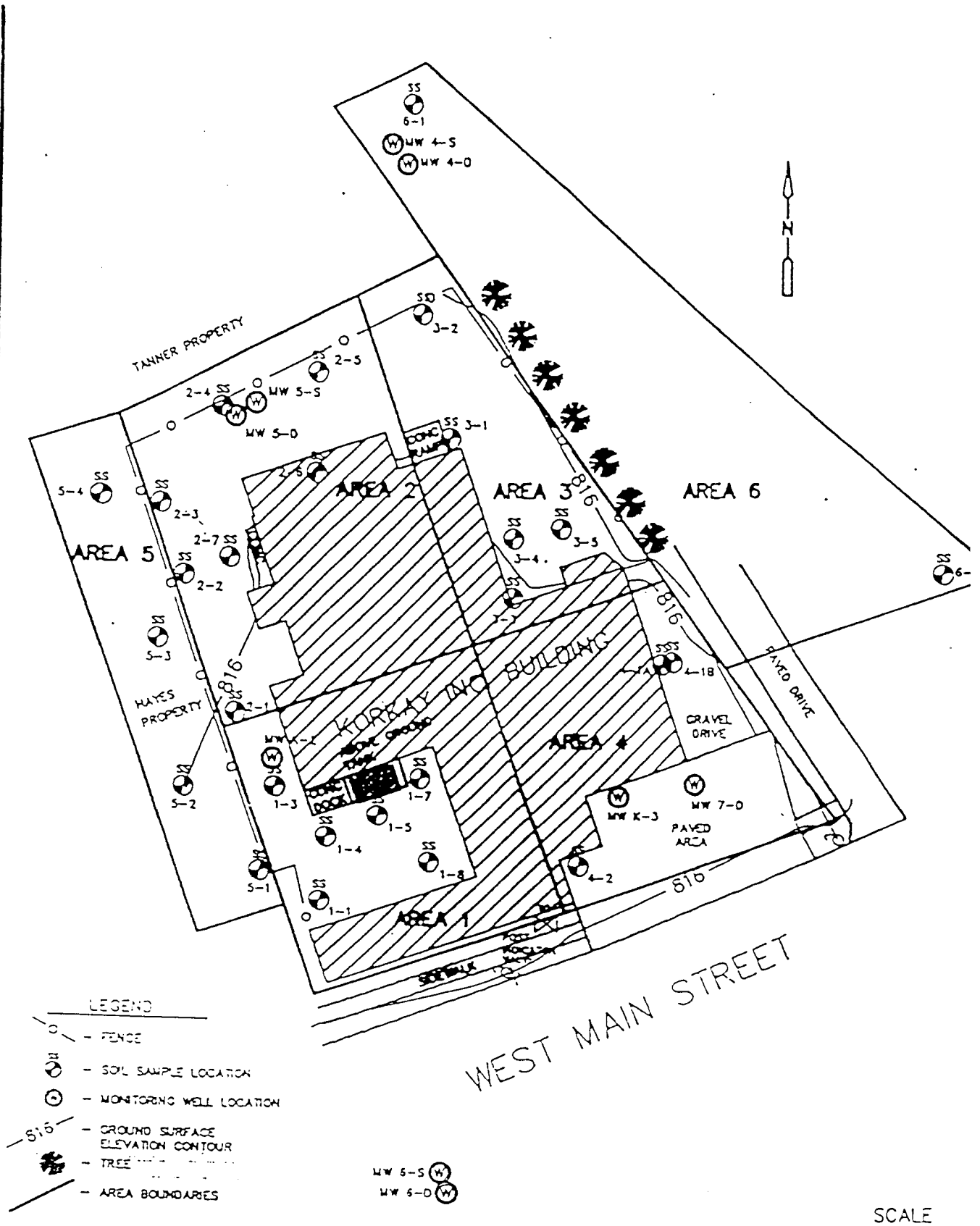
Figure 1

Location Map

CDM

environmental engineers, scientists, planners, & management consultants

Kerkay Inc. Site - Broadalbin, New York
NYSDEC Site #5-18-014



SURVEY BASE MAP PREPARED BY : MOOI ENGINEERING, P.C., CICERO, N.Y. - NOVEMBER 1993

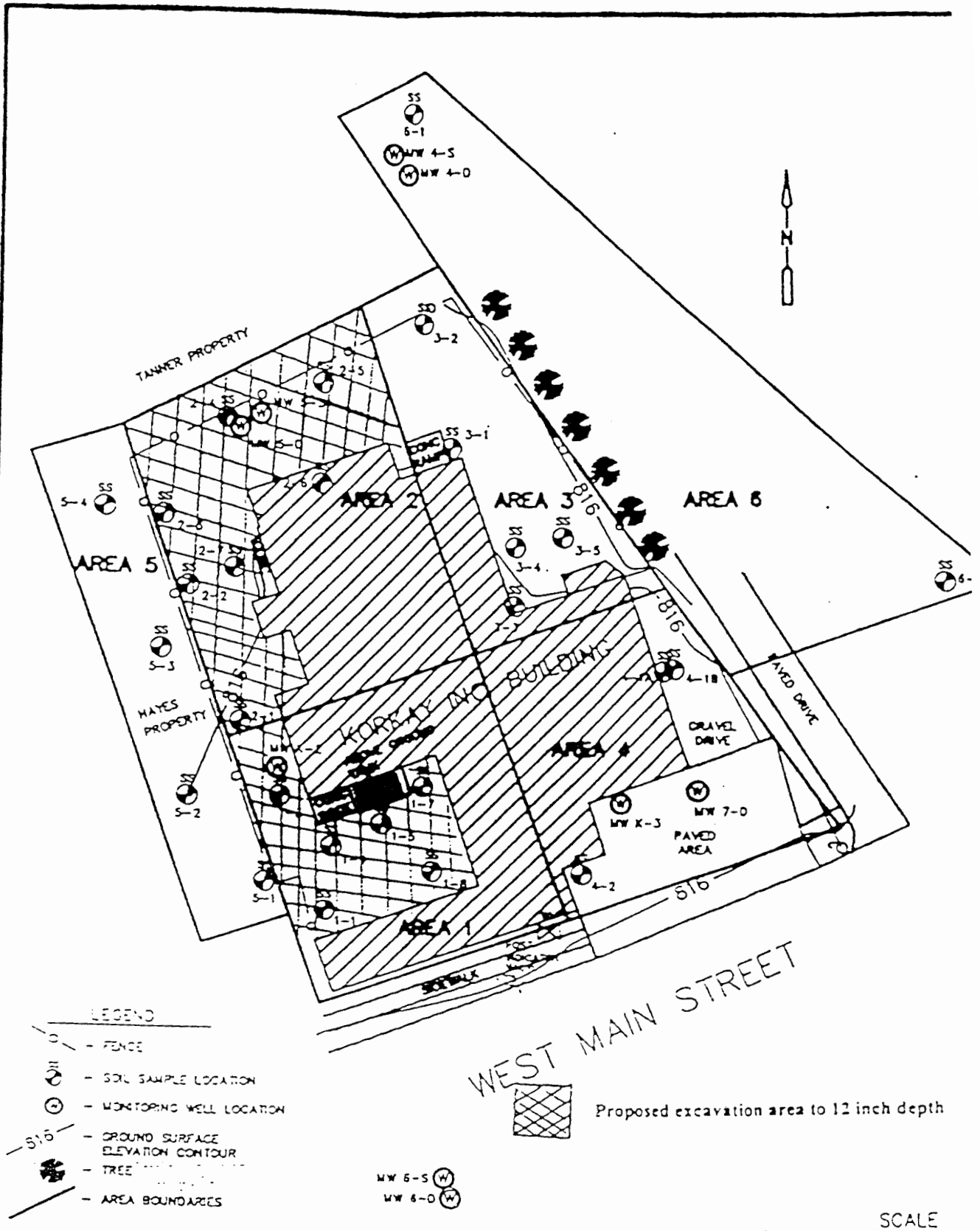
SCALE
1" = 50'

Figure 2

SITE PLAN BY ARE

CDM
environmental engineers, scientists

Korkor Inc. Site - Broadalbin, New Y



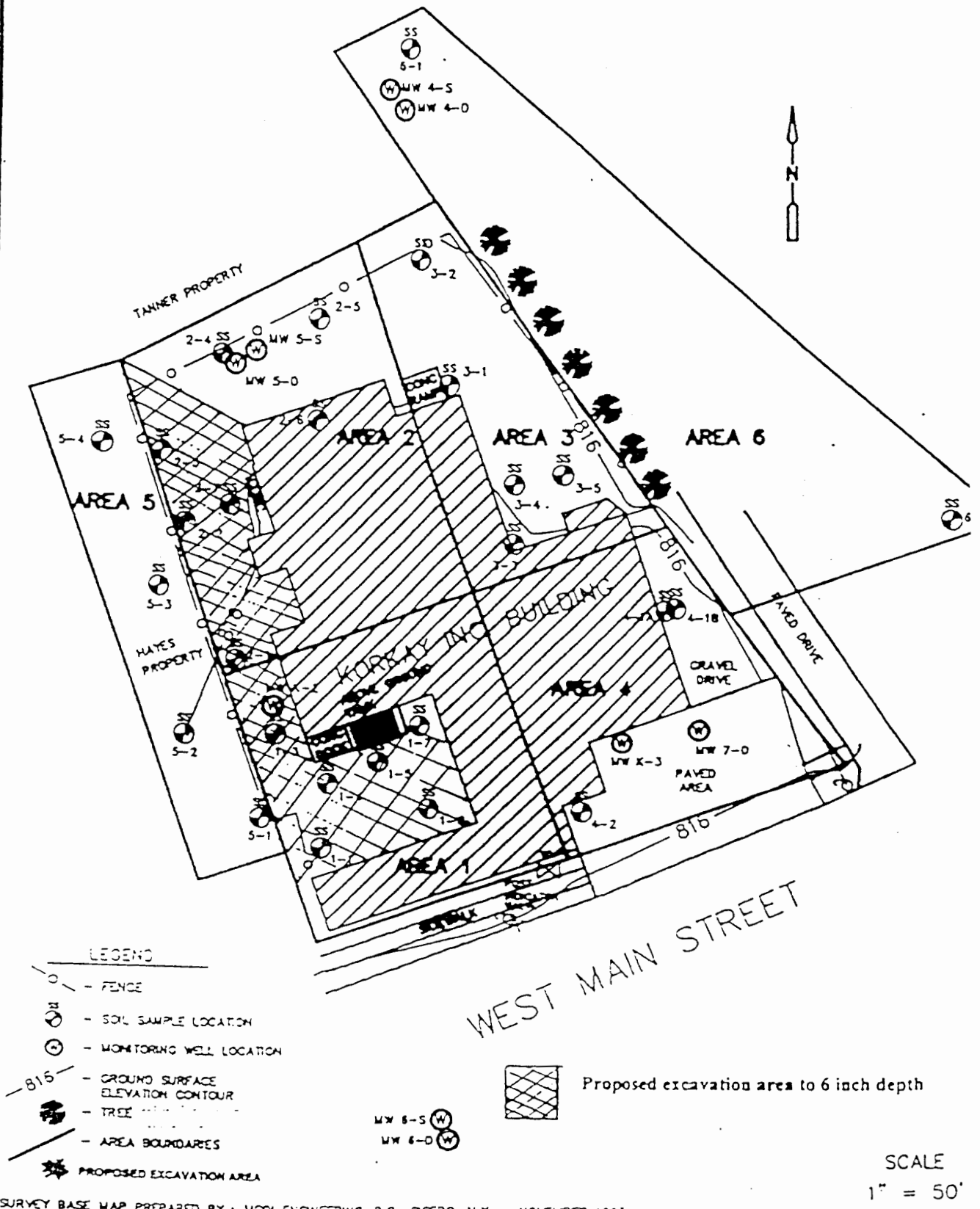
SURVEY BASE MAP PREPARED BY : WOOD ENGINEERING, P.C., CICERO, N.Y. - NOVEMBER 1993

Figure 3

Soil removal plan for alternatives 2 and 3

CDM

environmental engineers, scientists,



SURVEY BASE MAP PREPARED BY : MOOI ENGINEERING, P.C., CICERO, N.Y. – NOVEMBER 1993

Figure 4

Soil removal plan for alternative 4

CDM
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TABLES

Table 1
Constituents of Concern in Soil Above Criteria

Contaminant	Phase I RI			Phase II RI			NYSDEC Soil Criteria (1) (2)	Units
	# of samples above criteria	# of samples analyzed	Range of results above criteria	# of samples above criteria	# of samples analyzed	Range of results above criteria		
Area 1								
VOCs:								
Trichloroethene	1	14	2.6	2	12	17-21	.7	ppm
Xylene (Total)	3	14	11-12	4	12	19-78	1.2	ppm
Ethylbenzene	0	14	--	3	12	5.8-11	5.5	ppm
Toluene	0	14	--	1	12	2.9	1.5	ppm
SVOCs:								
Di-n-butylphthalate	3	15	8.4-27	0	11	--	8.1	ppm
Benzo(a)pyrene	3	15	.07-.32	4	11	0.075-0.110	0.061	ppm
Dibenzo(a,h)anthracene	2	15	0.038-0.04	0	11	--	0.014	ppm
Phenol	0	15	--	4	11	0.086-0.120	0.030	ppm
Area 2								
VOCs:								
Xylene (Total)	0	14	--	1	4	7.8	1.2	ppm
Acetone	1	14	0.200	0	4	--	0.200	ppm
SVOCs:								
2,4-Dichlorophenol	1	13	0.880	0	4	--	0.400	ppm
Hexachlorobenzene	1	13	1.700	0	4	--	0.410	ppm
Phenol	0	13	--	1	4	0.075	0.030	ppm
Pesticides:								
Gamma-chlordane	10	26	0.920-8.900	4	7	0.63-4.6	0.540	ppm
Aldrin	2	26	0.051-0.081	0	7	--	0.041	ppm
Heptachlor epoxide	5	26	0.037-0.17	2	7	0.03-0.11	0.020	ppm
Endrin (Total)	0	26	--	2	7	0.13-0.22	0.100	ppm
Dieldrin	0	26	--	1	7	0.05	0.044	ppm

Table 1 continued
Constituents of Concern in Soil Above Criteria

Contaminant	Phase I RI			Phase II RI			NYSDEC Soil Criteria (1) (2)	Units
	# of samples above criteria	# of samples analyzed	Range of results above criteria	# of samples above criteria	# of samples analyzed	Range of results above criteria		
Area 3								
VOCs:								
Xylene (Total)	0	9	--	1	4	1.900	1.2	ppm
SVOCs:								
Phenol	0	9	--	3	6	0.082-0.110	0.03	ppm
Pesticides:								
Gamma-chlordane	1	10	1.000	1	7	0.780	0.54	ppm
Heptachlor epoxide	1	10	0.032	0	7	--	0.02	ppm
Area 4								
VOCs:								
No VOCs detected above criteria								
SVOCs:								
No VOCs detected above criteria								
Pesticides:								
No Pesticides detected above criteria								
Area 5								
VOCs:								
No VOCs detected above criteria								
SVOCs:								
Benzo(a)pyrene	6	10	.095-0.200	0	8	--	0.06	ppm
Dibenzo(a,h)anthracene	1	10	0.039	0	8	--	0.01	ppm
Phenol	0	10	--	0	8	--	0.03	ppm
Pesticides:								
No Pesticides detected above criteria								

* ppm = parts per million

Table 2

Constituents of Concern in Groundwater Above Criteria

Contaminant	K2		K3		4S *		4D *		5S		5D		6S**		6D**		7D		NYSDEC Criteria (1)	NYSDOH Criteria (2)	Units
	Phase I	Phase II	Phase I	Phase II	Phase I	Phase II	Phase I	Phase II	Phase I	Phase II	Phase I	Phase II	Phase I	Phase II	Phase I	Phase II	Phase I	Phase II			
VOCs:																					
Tetrachloroethene	--	--	--	--	--	--	--	--	--	6J	--	--	--	--	--	--	--	--	5.0	5.0	ug/l
Trichloroethene	21	53	--	--	--	--	--	--	12	--	--	--	--	12	--	--	--	--	5.0	5.0	ug/l
1,2-Dichloroethene (Total)	--	11	--	--	--	--	--	--	16	--	--	--	--	40J	--	--	--	--	5.0	5.0	ug/l
Xylene (Total)	110	170	--	--	--	--	--	--	7	42	--	--	61	880E	--	--	--	12	5.0	5.0	ug/l
Ethylbenzene	19	33	--	--	--	--	--	--	--	--	--	--	--	80	--	--	--	--	5.0	5.0	ug/l
Benzene	--	--	--	--	--	--	--	--	--	--	--	--	--	2J	--	--	--	--	0.7	5.0	ug/l
Toluene	--	--	--	--	--	--	--	--	--	--	--	--	6	110	--	--	--	--	5.0	5.0	ug/l
SVOCs:																					
Naphthalene	23	49	--	--	--	--	--	--	--	--	--	--	29	100E	--	--	--	--	10.0	50.0	ug/l
1,2-Dichlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	16	32	--	--	--	--	4.7	5.0	ug/l
2-Methylphenol	--	--	--	--	--	--	--	--	--	--	--	--	26	--	--	--	--	--	5.0	50.0	ug/l
Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	69	--	66	--	54	50.0	50.0	ug/l
2,4-Dichlorophenol	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0	--	ug/l
Pesticides:																					
Aldrin	.01J	--	--	--	--	--	--	--	--	--	--	--	--	0.32JN	--	--	--	--	0.01	--	ug/l
Heptachlor expoxide	0.11	0.084	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	0.2	ug/l
Dieldrin	0.02J	0.034JN	0.01J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	--	ug/l
4,4-DDE	0.21J	0.17JN	--	--	--	--	--	--	0.10J	0.019JN	--	--	--	--	--	--	--	--	0.01	--	ug/l
Endrin	--	0.24J	--	--	--	--	--	--	--	0.057J	--	--	--	--	--	--	--	--	0.01	0.2	ug/l
Gamma-chlordane	0.82J	0.51JN	--	--	--	--	--	--	0.77	--	--	--	--	--	--	--	--	--	0.1	--	ug/l
4,4-DDT	--	--	--	--	--	0.013JN	--	--	--	--	--	--	--	--	--	--	--	--	0.01	--	ug/l
Beta-BHC	--	--	--	--	--	--	--	--	0.05J	--	--	--	--	--	--	--	--	--	0.05	--	ug/l
Endosulfan I	--	--	--	--	--	--	--	--	--	0.29J	--	--	--	--	--	--	--	--	0.1	--	ug/l

Notes: (1) NYSDEC Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1) / Ambient Water Quality Standards and Guidance Values, October 22, 1993.

(2) NYSDOH Drinking Water Supply MCLs, January 5,1993.

"--" designates that compound was not detected above the criteria

"*" designates background well

"**" designates off-site well (MW-6S is downgradient of site)

"JN" - tentatively identified with approximated concentration

"J" - the associated numerical value is an estimated quantity

Table 3

Cost Estimate Summary
Alternative 4 - Selected Remedy

Item	Description	Cost
1.	Soil Excavation,Disposal,Fill and Seeding.	$48,100
2.	Soil Vapor Extraction and Installation	$85,400
3.	Building demolition and disposal	$91,000
4.	Operation and Maintenance	$35,000
	Total Present Worth Cost	$259,500

APPENDIX A

RESPONSIVENESS SUMMARY

Korkay Inc. Site
(#5-18-014)
Village of Broadalbin, Fulton County, New York

RESPONSIVENESS SUMMARY

This Responsiveness Summary was prepared to answer the public's comments about the New York State Department of Environmental Conservation's (NYSDEC's) Proposed Remedial Action Plan (PRAP) to deal with the contaminated soils and groundwater at the Korkay Site.

NYSDEC invited the public to comment on the proposal through a mailing to the site's contact list and at a public meeting held on February 28, 1996. This Responsiveness Summary addresses the most significant comments received at the public meeting and during the public comment period which ran from February 14, 1996 thru March 14, 1996.

1. Comment: How could the site be remediated effectively without the demolition of the building which occupies ¾ of the total area?

   Response: Extensive sampling was conducted within and outside the building. Test results indicate that the building itself is not contaminated by hazardous Waste. Soil contamination at the site will be effectively remediated through a combination of soil excavation and soil vapor extraction.

2. Comment: Analysis of groundwater samples revealed impacted groundwater extending from the site south across West Main Street following the direction of groundwater flow. How did the contamination get to West Main? It must pass under the building. This, of course, would indicate contamination under the building. Why was this not confirmed by tests under the structure?

   Response: Groundwater samples were taken to identify the extent of groundwater contamination and the general location of any plume. The shallow groundwater table is contaminated, with a plume extending from Areal 1 across West Main street in the direction of Kenyetto Creek. It was not necessary or practical to test the groundwater directly under the structure. The advantage of the Soil Vapor Extraction process chosen to clean the source area of the site is that it has the ability to extract contaminant mass from under the building for cleanup.

3. Comment: How could the Department claim that the building is not contaminated when 1) no wipe samples of the building walls were taken and 2) soil samples were not taken within the building including the basement?

   Response: We have taken samples since this issue was raised at the public meeting. The results of those samples indicate no contamination of concern.

4. Comment: The building is structurally unsound and poses a fire hazard. How can DEC justify leaving the building in its present form without demolition, and still claim that the site has been remediated considering the amount of money the state has spent so far in the investigation of the site?

5. Response: Based upon the village's concerns and the engineer's letter and his findings (see item #9 of this Responsiveness Summary), the Department, in consultation with the NYSDOH, has determined that it is prudent to demolish the Korkay building in order to protect both DEC and its contractor's workers who will be involved in the cleanup efforts from hazards due to the questionable structural integrity of the Korkay building.

6. Comment: How do we respond to potential fire from the site not knowing what is present at the building?

   Response: We believe that whatever plans were in place during its operation should remain in effect now or be appropriately modified to deal with an aging building.

7. Comment: If there is evidence that the building is contaminated, will State Superfund monies be available to demolish the building?

   Response: State Superfund monies could be used, if still available, should building demolition, due to contamination or other justifiable reasons, be deemed necessary.

8. **Comment Letter from adjacent property owner Mr. William D. Hayes**

   Comment: The letter contests the exclusion of Area 5, Hayes property, from the proposed remedial action plan.

   Response: The NYSDEC and NYSDOH have evaluated the data from the sample results in Area 5. Based on the evaluation, there was no scientific evidence to warrant remedial activities in Area 5. The levels of contamination were within acceptable limits of cancer risk based on USEPA guidelines.

9. <u>March 22, 1996 Letter from the Village Engineer Mr. John M. McDonald, P.E.</u>

The letter details the engineer's observation from a site visit on March 6, 1996. The engineer's observations as expressed in his letter dated March 22, 1996 include:

- The roof of the west center portion of the building has collapsed into the building and the west exterior wall is dangerously buckled.

- Several of the interior main columns are badly deformed due to excessive loadings and further structural failure and collapse is imminent.

- Interior stairways have collapsed and the floors on the upper levels are deteriorated and are unsafe.

- Supporting roof rafters are badly deteriorated due to missing roof covering, and sunlight is visible through portions of the roof in many of the other areas of the building. There is evidence of standing water inside the building and moss growing on interior floors, which is contributing to the continued structural deterioration of the building.

The engineer also expresses his professional opionion that the building is structurally unsafe and presents a public safety hazard to workers that might be required to work in or around the building as part of the cleanup efforts. The engineer urged DEC to consider the structural integrity of the building and the safety of the workers involved with the cleanup.

DEC Response:

After a careful review of the Village officials comments including the Village engineer letter and his professional opinion, the Department, in consultation with the NYSDOH, has determined that it is prudent to demolish the Korkay building in order to protect both DEC and its contractor's workers who will be involved in the cleanup efforts from hazards due to the questionable structural integrity of the Korkay building.

APPENDIX B

ADMINISTRATIVE RECORD INDEX

The following documents are included in the Administrative Record:

1. Final Work Plan, Remedial Investigation/Feasibility Study, CDM, July 1993.

2. Final Site Operations Plan/Quality Assurance Project Plan, Remedial Investigation/Feasibility Study, CDM, August 1993.

3. Final RI Report, Remedial Investigation/Feasibility Study, CDM, April 1994.

4. Final Risk Assessment, Remedial Investigation/Feasibility Study, CDM, May 1994.

5. Final Habitat Assessment- Step 1, CDM, July 1994.

6. Final Work Plan, Phase II RI, Remedial Investigation/Feasibility Study, CDM, July 1994.

7. Final Site Operations Plan/Quality Assurance Project Plan, Phase II RI, Remedial Investigation/Feasibility Study, CDM, September 1994.

8. Final Phase I & II Feasibility Study Report, Remedial Investigation/Feasibility Study, CDM, February 1995.

9. Final Addendum to Human Health Baseline Risk Assessment, CDM, May 1995.

10. Final Phase II RI Data Usability Report, Remedial Investigation/Feasibility Study, CDM, August 1995.

11. Final Phase II RI Report, Volume I & II, Remedial Investigation/Feasibility Study, CDM, August 1995.

12. Final Feasibility Study (Detail Analysis), Remedial Investigation/Feasibility Study, CDM, August 1995.

13. Supplement to Final Feasibility Study (Detail Analysis), Remedial Investigation/Feasibility Study, NYSDEC, February 1996.

14. Comment letter from adjacent property owner Mr. William D. Hayes which contests the exclusion of Area 5, Hayes property, from the Proposed Remedial Action Plan.

15. Letter dated March 22, 1996 from the Village engineer indicating that Korkay building poses hazards to workers who will be required to implement the proposed remedy.