ROD file

Storonske Cooperage Site

Rensselaer County, New York
Site Number 4-42-021

New York State
Record of Decision

March 1992

PREPARED BY:

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

Storonske Cooperage Site
Rensselaer County
Schodack, New York

Site No. 4-42-021

RECORD OF DECISION

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New York State
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DECLARATION STATEMENT - RECORD OF DECISION

SITE NAME AND LOCATION:

Storonske Cooperage Site
Town of Schodack
Rensselaer County, New York
Site ID #: 4-42-021
Funding Source: 1986 Environmental Quality Bond Act Responsible Party

STATEMENT OF PURPOSE:

This Record of Decision sets forth the selected remedial action plan for the Storonske Cooperage Site Operable Unit No. 1 On-Site Soils. This remedial action plan was developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and the New York State Environmental Conservation Law (ECL).

STATEMENT OF BASIS:

This decision is based upon the Administrative Record for the Storonske Cooperage Site and upon public input to the Proposed Remedial Action Plan (PRAP). A copy of the Administrative Record is available at the New York State Department of Environmental Conservation, 50 Wolf Road, Albany, New York. A Document Repository is located in the Town of Schodack Town Hall and the East Greenbush Library in Schodack and East Greenbush, New York respectively. A listing of those documents included as part of the Administrative Record is contained in Appendix B. A Responsiveness Summary that documents the public's expressed concerns and related correspondence from other State and local government agencies has been included as Appendix A.

DESCRIPTION OF THE SELECTED REMEDY:

The final screening of remedial alternatives as presented in the RI/FS included alternatives, of which Alternative #3, In-situ Vacuum Extraction; and off-site disposal of soils contaminated with heavy metals is preferred by the NYSDEC as appropriate for the Storonske Cooperage site wastes and site conditions for the on-site soils.

The selected remedy is for Operable Unit #1 only and addresses on-site soil contamination/source control. A separate decision document will be prepared at the completion of the State's investigation of the groundwater contamination, (Operable Unit #2). However, it may be appropriate to concurrently design and/or construct the remedial measures chosen under these two separate Operable Units to enhance the performance of the overall remedial program.

The major components of the selected remedy include the following:

1. Pre-design pilot testing to determine the number and locations of vacuum extraction wells.

2. Design and installation of a vacuum extraction system to remove and treat contaminants from the soils. Methods for enhancing the removal of contaminants be evaluated.

3. Additional soil sampling to determine the areal extent of soil contaminated with lead above 200 parts per million (ppm) would be performed before excavating the areas identified.

4. Soils contaminated with metals, PCBs, and semivolatiles will be excavated and removed from the site. Testing would be performed to ensure that the soil meets the applicable disposal facility requirements.

5. Sampling will be performed to verify that the cleanup levels have been achieved.

6. The excavated areas will be backfilled with clean soil and the overall site would be covered with six inches of clean soil, regraded to promote drainage, and revegetated to prevent erosion.

7. Groundwater sampling program to monitor the effectiveness of the overall remedial actions taken under Operable Unit No. 1 and No. 2.

DECLARATION

The selected remedy is designed to be protective of human health and the environment, is designed to comply with applicable State environmental quality standards and is cost effective. This remedy satisfies the Department's preference for treatment that reduces the toxicity, mobility or volume of hazardous substances, pollutants or contaminants as the principal goal.

3/31/92
Date

Michael J. O'Toole for
Edward O. Sullivan
Deputy Commissioner

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I. Site Location and Description

The Storonske Cooperage Site is located in Rensselaer County, New York in the Town of Schodack. The 3.5 acre site is located on the north side of Kraft Road immediately east of its intersection of Routes 9 and 20. Figure 1 shows the general location of the site.

The site is situated immediately adjacent to both residential and commercial establishments: to the north is a trailer park (Rensselaer Estates); to the east is a low lying wooded area and a small apartment complex (on Lisa Lane); to the south are seven residences on Kraft Road with private well water supplies and the Schodack Plaza water supply; and to the west there are businesses on Route 9 and 20 (see figure 2).

There is no municipal water service in the areas surrounding the Storonske Cooperage Site. All residences and commercial establishments rely on either the overburden or bedrock aquifer for water supply. The site has contaminated local groundwater. Individual treatment units have been installed on private well supplies where appropriate.

II. Site History

The earliest known use of the Storonske Cooperage Site was as a bus garage and depot. The building was constructed by the Albany-Nassau Bus Company in 1968 and was maintained as a bus garage until its purchase by N. Storonske Cooperage in 1973. The bus company may have used waste oil as a dust suppressant in parking areas and driveways during this period from 1968 to 1973. Other than the allegation of on-site utilization of waste oil as a dust suppressant, very little information exists regarding activities at the site during that period.

In 1973, the property was purchased from the Albany-Nassau Bus Company by N. Storonske Cooperage, Inc. Since 1973, the operations at the Storonske Cooperage have included the reclamation, cleaning, reconditioning and sale of 55-gallon steel drums and other types of containers. Drums that were determined to be unfit for reuse were sent to a drum crusher which was located on-site. The primary operation at the site consisted of a drum cleaning and reconditioning process. The rinse water from the drums was sent to an unlined concrete block wastewater settling lagoon. The dimensions of the unit were approximately 16' width x 40' length x 4' depth. This unit was reported to have been constructed in 1975. In addition, the site had two above ground storage tanks with 12,000 and 25,000 gallon capacities, a subsurface concrete septic tank and leaching field and three underground fuel storage tanks.

The earliest known concern regarding the Storonske Cooperage Site occurred in 1979. The Rensselaer County Department of

Health was concerned that the drums stored and processed on site represented a possible source of contamination. It was reported that soil samples collected on the site in 1980 showed elevated levels of benzene and xylene. Samples were also collected at the site by the United States Environmental Protection Agency in 1983.

In March 1984, the NYSDEC conducted a facility inspection under the RCRA (Resource Conservation and Recovery Act) Program. The sludge in the former wastewater lagoon was sampled and found to fail the EP Toxicity test for lead. This resulted in N. Storonske Cooperage, Inc., entering into a Consent Order with the State of New York in March 1986 to remove the lagoon from operation and to conduct an investigation of the impacts of the lagoon.

Since 1984, four investigations have been conducted at the site. The investigations were commissioned by the site owner. The investigations provided initial information on the extent of contamination at the site and formed a basis for additional data gathering.

The State of New York is currently supplementing these investigations with a Focused RI/FS of the groundwaters (Operable Unit #2).

III. Current Status

A. Focused Remedial Investigation

In 1988 and 1989, as part of a Focused Remedial Investigation, primarily to address on-site contamination and remediation, a soil sampling program was undertaken by Malcolm Pirnie to better delineate the horizontal and vertical extent of soil contamination on the Storonske Cooperage Site. In addition, magnetometer and ground penetrating radar (GPR) surveys were conducted in the eastern portion of the site and a sediment sample was obtained from the drainage ditch that transects the northern part of the site. Detailed descriptions of the investigation are contained in the Malcolm Pirnie reports entitled "Focused RI/FS Work Plan, April 1989" and "Focused Remedial Investigation, April 1990."

In 1990, Malcolm Pirnie submitted a focused Remedial Investigation Report and Focused Feasibility Study. This focused RI/FS was supplemented by field investigations conducted in October, 1991 during which test pits and/or trenches were excavated to investigate anomalies in the magnetometer survey and to determine if drums were buried at the site. The responsible party's consultant was scheduled to submit a report concerning the anomaly excavations on December 2, 1991. However, the untimely death of the site owner has delayed the submittal of this report.

The results of the Remedial Investigation Report are as follows:

- o There are an estimated 7,000 to 10,000 cubic yards of contaminated soil on-site. Approximately 6500 cubic yards of soil are known to be contaminated (approximately 3,500 suspected to be contaminated) with volatile organic compounds (e.g. tetrachloroethene, 1,1,1 trichloroethene, ethylbenzene, xylene and toluene). The remaining 500 cubic yards of soil is contaminated with phenols, heavy metals, and PCBs at levels which need to be addressed. Additional volumes may be determined during the remedial design and actual remediation. For a more complete summary of the soil contamination see Table 2.

- o The soils with the highest levels of contamination appear to be confined to the area of the former wastewater storage lagoon and eastward to the site's eastern boundary. Other areas have been identified to contain contaminants in the soil at lower concentrations.

- o The depth of contaminated soil varies with respect to on-site location and class of contaminant. Volatile organic compounds (VOCs) were detected in both the surficial soils and in soils which are permanently or seasonally below the groundwater table. However, the majority of the VOC contamination is above the groundwater table.

- o The boundaries of contamination may need to be refined to properly implement the selected remedial action by additional sampling during the design phase or during construction.

- o The areas of most significant soil contamination are depicted on Figure 5.

B. Feasibility Study

1. Scope of the Proposed Alternative

The remedial action proposed in this plan addresses the on-site contaminated soils, Operable Unit #1. As discussed in more detail in the Focused RI and FS reports, the media contaminated at the site include soils and remnants of the concrete lagoon. Contaminants are leaching from soils adjacent to the lagoon and eventually contaminate the groundwater. Some contaminants volatilize into the air. Contaminated groundwater movement is the principal threat at the site. The exposure pathway of greatest concern is the use of contaminated groundwater as a source of drinking water.

2. Summary of Site Risks

Part of the RI/FS process included evaluating the risks presented to human health and the environment by the site. The results of this risk assessment are used to help identify applicable remedial alternatives and to select a remedy. The health risk assessment represents the health risks with the site if no remedial action work were done and if no steps were taken to reduce human exposure. (For instance, exposure to contaminated groundwater has been controlled by the installation of individual treatment units on water supplies where appropriate). The components of the risk assessment for this site include:

- Identification of site-related chemicals and media (soil contamination) of concern;
- An evaluation of the toxicity of the contaminants of concern;
- Identification of the possible exposure routes and pathways;
- Estimating the added risk of experiencing health effects;

Exposure routes are the mechanisms by which contaminants enter the body (e.g., inhalation, ingestion, absorption). Exposure pathways are the environmental media (e.g., soil, groundwater, air, etc.) through which contaminants are carried.

The selected alternative must result in a remedy which is protective of public health and the environment. In order to be protective of public health, the remedy must address the five exposure routes evaluated: ingestion of on-site soil, dermal absorption of on-site soil, inhalation of volatile emissions from soil, ingestion of contaminated drinking water, the dermal absorption of contaminated groundwater. The ingestion of contaminated drinking water will also be addressed in Operable Unit No. 2, Groundwater.

The results of the risk assessment indicate that left unremediated the site may potentially pose an increased incremental risk of developing cancer of 5 per one hundred thousand persons. That is, if one hundred thousand persons occupied areas adjacent to the site and were exposed to the highest concentrations of contaminants found in untreated drinking water for 70 years, five of those persons may be expected to develop cancer from that exposure. This increase would be in addition to all the cancers that would otherwise be expected in that population.

The risks associated with exposure to non-carcinogenic contaminants were determined using the "Hazard Index" approach. A Hazard Index is the ratio of predicted exposure levels to acceptable exposure levels. A Hazard Index greater than one suggests that adverse non-carcinogenic effects may occur, while a value below one indicates that such effects are unlikely to occur. The total Hazard Index for all exposure routes calculated ranged from 0.0536 and 0.102. This suggests that there are no significant non-cancer risks.

In summary, the risk assessment indicates that there may be a potential for increased risks of cancer in the use of untreated contaminated groundwater as a source of water supply. This conservative assessment and the exceedance of groundwater and drinking water standards indicate the need to implement a remedy to mitigate impacts of the site to the extent feasible. Actual or threatened releases of hazardous substances from this site, if not addressed by installing carbon filters and implementing the response action proposed in this PRAP, may present potential endangerment to public health, welfare, or the environment,

IV. Enforcement Status

On October 5, 1987, the Attorney General of the State of New York sued the responsible party, N. Storonske Cooperage, Inc., and its president, Michael Greenberg, for cleanup of the site and for damages for injury to the natural resources of the State. On July 6, 1989, the responsible party (N. Storonske Cooperage, Inc.) voluntarily entered into a court order which provided for the implementation and completion of an investigatory work plan dealing with on-site soil contamination. The investigation under the work plan was completed in October, 1991. The field investigations resulted in a report that discussed various remedial alternatives designed to cleanup soils on the site. Concurrently the State funded a second investigatory work plan related to on and off site groundwater contamination. That work plan will result in a report discussing various remedial alternatives designed to cleanup the groundwater on and off site.

In January, 1990, judgment against the company was entered, making it fully responsible for all costs of investigation and cleanup of the site. The New York State Attorney General is now seeking to have the responsible party implement the selected remedial alternative for the on-site soil contamination. The Attorney General is also seeking to recover all the costs of the State funded groundwater investigation as well as the selected remedial alternative for on and off site groundwater cleanup that will be chosen. The financial viability of the company to fulfill its cleanup responsibilities remains in question.

IV. Goals for Remedial Action

The overall objective of the remediation is to reduce the concentrations of contaminants and the routes of exposure to levels which are protective of human health and the environment. The site-specific goals for Operable Unit #1 (Source Control) can be summarized as follows:

- Reduce levels of volatile organic contaminants in approximately 6500 to 10,000 cubic yards of on-site soils to prevent off-site migration, especially through the groundwater.

- Remove approximately 500 cubic yards of soils contaminated with heavy metals, phenols, and PCBs and dispose of them off-site.

- Regrade and revegetate the site to prevent erosion and control migration of any residual contamination.

The recommended cleanup goal for on-site soils are selected with the goal to protect groundwater and to address public health concerns. The following goals have been established and are consistent with cleanup goals used at other similar sites in New York State:

Organic Compounds	Recommended Cleanup Goals Soil Cleanup Goal (ppm)
Tetrachloroethane	1.5
1,1,1 Trichloroethane	1.0
Trichloroethene	1.0
1,2 Dichloroethane	0.1
Ethylbenzene	5.5
Chlorobenzene	1.5
Toluene	1.5
Total Xylenes	1.2
Phenols	0.33
PCB Arochlor 1242	1.0
Metals	
Lead	200 ppm

The areas of the site requiring remediation are depicted on Figure 5.

The size of these areas may vary based on the results of predesign samples.

Operable Unit No. 2 will address contaminated groundwater separately from the source control measures to be selected under Operable Unit No. 1. However, actual design and/or construction of the remedial measures selected for Operable Units No. 1 and No. 2 may be performed concurrently to enhance the performance of the overall remedial program.

VI. Description and Comparison of Remedial Alternatives

A. Description of Alternatives

The potential alternatives for remediating the site can be grouped into the four major categories: no action; containment; excavation with treatment; in-place treatment. The following alternatives were selected for evaluation in the Focused FS Reports to address the on-site soil contamination. Present worth is the amount of money needed (in 1990 dollars and with 5% interest) to fund the construction, operation, and maintenance (O&M) of the alternative for 30 years, if needed. Capital cost mainly reflects initial construction costs. Annual O&M reflects the money needed to operate and maintain the alternative for one year. All costs are estimates. Alternatives 4 (On-Site Enhanced Volatilization), 5 (In-Situ Bioremediation) and 7 (On-Site High Temperature Thermal Destruction) were removed from further consideration during the initial screening of alternatives performed in the Focused FS report. More details of the four remaining alternatives are presented in the Focused FS Report.

1. Alternative 1: No Action & Monitoring

Present Worth:	$519,365	Annual O&M:	$31,260
Capital Cost:	$ 38,820		

The costs for this alternative would be for implementing actions intended to secure the site from future unauthorized access and to minimize the transport of contaminated soil and surface water from the site to surrounding areas. The site would be cleared of all unwanted vegetation, regraded and revegetated to control erosion. The fence on the site perimeter would be repaired and a long-term program of groundwater quality monitoring would be implemented for a period of up to 30 years. The monitoring program would involve semi-annual sampling of groundwater.

2. Alternative 2 - Partial Containment

Present Worth:	$692,787	Annual O&M:	$34,300
Capital Cost:	$165,510		

This alternative would involve the consolidation of contaminated soil and placement of an asphalt cover over the contaminated soil. The purpose is to prevent direct contact with contaminated surface soil and to reduce surface infiltration of storm water which could result in the mobilization of soil contaminants into the groundwater. The contaminated soil area would be cleared and regraded and covered with a one foot thick layer of sand. The sand layer would form a foundation on which to place the asphalt layer and would also facilitate the venting of volatile organic contaminants. The sand layer would be covered with a 3 inch layer of asphalt. The remainder of the 3.5 acre site would receive a vegetative cover. Vent pipes through the asphalt cover would release accumulated volatile chemicals which could be collected and treated.

This containment alternative would require the implementation of a long-term monitoring program (30 year) in order to monitor the effectiveness in reducing groundwater contamination and the resulting migration of contaminants from the site.

3. Alternative No. 3 - In-Situ Vacuum Extraction; Excavation and Off-Site Disposal

Present Worth:	$2,301,525	Annual O&M:	$28,300
Capital Cost:	$2,179,000		

The in-situ vacuum extraction process would be used to remove the volatile organic contamination from the unsaturated zones in the soils. Contaminant removal is accomplished through the installation of vacuum extraction wells which draw volatilizing organic contaminants from the soil. The vapors removed through the extraction wells would be piped to an air/ water separator tank where water and air phases would be treated to remove unwanted contaminants. The volatilization process may be enhanced through the injection of hot air or steam. Also, consideration could be given to depressing the water table by pumping wells or a groundwater diversion wall in the area of the vacuum extraction if it became necessary to remove soil contaminants from below the water table.

This alternative would be effective in removing the volatile organic contaminants, but may not remove the semi-volatile contaminants of concern (i.e., phenols), nor would it remove PCBs and lead. Soil containing these contaminants would be excavated and removed from the site. The soil contaminated with PCBs, phenols and heavy metals would be sampled and analyzed prior to removal and disposal at a permitted facility. The soil contaminated with metals may require on-site treatment (i.e. solidification) prior to disposal at a permitted facility.

Excavated areas will be sampled and analyzed to verify the established clean-up levels have been achieved. In addition, the excavated soils will be sampled and analyzed prior to removal to an off-site facility to determine disposal requirements. The excavated areas would be backfilled with clean soil, regraded to promote drainage and revegetated to prevent erosion.

A groundwater monitoring program would be implemented to determine the effectiveness of the overall remedial program implemented under both Operable Unit No. 1 and No. 2. It is anticipated that the monitoring program would be performed semi-annually and continue for at least five years.

4. Alternative 6 - On-Site Bioremediation

Present Worth: $2,393,385 Annual O&M: $28,300
Capital Cost: $2,270,860

This alternative proposes to excavate and treat contaminated soils on-site using a biological process to degrade the wastes. The VOC and phenol contaminated soil would be spread on a synthetic liner in lifts of 6 to 12 inches. Then a nutrient rich, oxygenated solution of microbes would be spray irrigated on the soil and mixed with a tiller to provide aeration and even distribution of the solution. The soil to be treated would be laid on a system of perforated pipe which would collect leachate and transport it to a treatment system and then recycle it. The treatment area would be covered with a green house-like enclosure to control volatile and particulate emissions and also to control the temperature and humidity within the treatment system environment.

Groundwater collected in the dewatering of the soil would be treated and used to supplement the make up water used in the nutrient solution. Following treatment, the soil would be sampled and analyzed to insure the treatment achieved the cleanup levels before replacing the soil in the original locations. The site would then be regraded to promote proper drainage and will then be revegetated. This alternative would require pilot testing to determine its effectiveness and operating parameters.

As with the other treatment alternatives, a five year post remediation groundwater monitoring program would be implemented with semi-annual sampling and analysis.

B. Criteria Used to Evaluate the Alternatives

The remedial alternatives proposed for the site by the responsible party and accepted by the Department were developed in accordance with the New York State Environmental Conservation Law (ECL) and is consistent with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 USC Section 9061, et., seq., as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). The criteria used in evaluating the potential remedial alternatives can be summarized as follows:

1. Compliance with Applicable or Relevant and Appropriate New York State Standards, Criteria and Guidelines (SCGs)-- SCGs are divided into the categories of chemical-specific (e.g., groundwater standards), action-specific (e.g., design of a landfill), and location-specific (e.g., protection of wetlands).

2. Protection of Human Health and the Environment--This criterion is an overall and final evaluation of the health and environmental impacts to assess whether each alternative is protective. This is based upon a composite of factors assessed under other criteria, especially short/long-term effectiveness and compliance with SCGs.

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

4. Long-term Effectiveness and Permanence--If wastes or residuals will remain at the site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude and nature of the risk presented by the remaining wastes; 2) the adequacy of the controls intended to limit the risk to protective levels; and 3) the reliability of these controls.

5. Reduction of Toxicity, Mobility, and Volume--Department policy is to give preference to alternatives that permanently and significantly reduce the toxicity, mobility, and volume of the wastes at the site. This includes assessing the fate of the residues generated from treating the wastes at the site.

6. Implementability--The technical and administrative feasibility of implementing the alternative is evaluated. Technically, this includes the difficulties associated with the construction and operation of the alternative, the reliability of the technology, and the ability to effectively monitor the effectiveness of the remedy. Administratively, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining special permits, rights-of-way for construction, etc.

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

C. Comparison of Remedial Alternatives

Alternative 1, No Action & Monitoring - would include access control, regrading, revegetation, and long-term monitoring. This alternative would not control or reduce the source of contamination in the soils, and allows for the possible continued migration of the contaminants in the groundwater. Alternative 1 would not protect human health and the environment nor would it meet applicable standards and criteria. Short-term impacts and effectiveness would be minimal. The long-term effectiveness and permanence would rely on natural attenuation. There would be no reduction of toxicity, mobility, or volume of contaminants. This alternative could be easily implemented.

Alternative 2, Partial Containment - involves consolidation of contaminated soil, placement of an asphalt cover, regrading, revegetation, and monitoring. Some passive venting of volatile contaminants occur through a sand layer and associated piping. Contaminants would be consolidated and the asphalt cap would prevent direct contact with precipitation. However, contaminated soils would still be in contact with groundwater. This alternative would provide the same protection of human health and the environment as Alternative No. 1. It is likely that contamination of the groundwater leaching from soils below the water table would not comply with SCGs. The short-term impacts could be minimized through proper controls. The time period to implement would be approximately six to eight months. The long-term effectiveness and permanence would be maintained through proper maintenance. The mobility of contaminants would be reduced by the asphalt cover minimizing the surface infiltration of water through the contaminated soils. Contaminants in contact with the groundwater would still be a source of groundwater contamination. Any reduction in volume of the contaminated soil would rely on passive venting and natural attention. Implementability would require additional effort beyond the no-action alternative, but would not be difficult for this alternative.

Alternative 3, In-situ Vacuum Extraction - includes the use of vacuum extraction wells to remove volatile organic chemicals from contaminated soils in both the unsaturated and saturated zones in the soils. Pilot testing, removal of soils contaminated with metals, phenol and PCBs, covering and grading the site with 6" of clean fill, and revegetation would also be performed. This alternative would provide a high level of protection to human health and the environment and would address all of the remedial action objectives. By removing the soil contamination to the specified clean-up levels, this alternative would also comply with the SCGs. The short-term impacts would be minimal and can be controlled through engineering controls. The time period to implement this alternative is estimated to take ten to twelve months with an additional four to six months for design and contractor procurement. The long-term effectiveness would be achieved by reducing the levels of contamination to the targeted clean-up levels. Treated soil would be sampled to demonstrate the cleanup levels. The successful implementation of this alternative would be permanent and would not require long-term management of the site.

The combination of the in-situ vacuum extraction of volatile organic compounds, removal and disposal of metal contaminated soils and off-site disposal of PCBs and phenols would permanently and significantly reduce the toxicity, mobility and volume of these contaminants on the site. The implementability for the excavation and off-site disposal of PCBs, metals and phenols is readily achieved. Excavation of soils will create a concern for the potential exposure due to particulate and volatile emissions. However, excavation after removal of the VOCs from the soil would mitigate a major part of this concern. In-situ vacuum extraction would require pilot testing before final design of the full scale system.

Alternative No. 6, On-site Bioremediation - would require excavation and treatment of contaminated soils on the surface in an enclosure. The excavation of soils will create a concern for potential exposure due to particulate and volatile emissions. This alternative would provide protection of human health and the environment by reducing levels of organic chemical contaminants in the on-site soils which may leach into the local groundwaters. The short-term impacts would be high because of the exposure to fugitive particulates and volatile emissions during excavation of a large volume of contaminated soil. The time needed to achieve the remedial objectives would be determined following bench-scale testing. Implementation would take between one and half to two years including design and contractor procurement.

Bench scale testing would be performed to determine optimized treatment conditions. The successful implementation of this technology would significantly reduce the toxicity, mobility, and volume of organic contaminants. However, the implementability is questioned until bench-scale studies are performed to further evaluate the impacts of heavy metal contamination on the treatment process.

Alternatives 1 and 2 are removed from consideration because they would continue to allow the contamination to be released to the groundwater. These alternatives would not comply with the applicable or relevant and appropriate New York State Standards, Criteria and Guidelines and would not provide adequate protection of Human Health and the

Environment. The two remaining alternatives (3 and 6) were evaluated as providing a permanent solution which would comply with ARARs and would be protective of human health and the environment. Alternative 6 would be somewhat uncertain until bench scale testing was performed. Alternative 3 does not contain this uncertainty since vacuum extraction technology is being used successfully in similar situations. The costs of the two alternatives are very compatible.

VII. Summary of the Government Decision

Based upon the results of the Focused Remedial Investigation and Feasibility Study (RI/FS) performed by Malcolm Pirnie, Inc. and the criteria for selecting a remedy, the NYSDEC has selected Alternative 3 (In-situ Vacuum Extraction and excavation of soils contaminated with semi volatiles, metals, and PCBs) as the appropriate remedy for the on-site soils and lagoon areas, Operable Unit No. 1. The estimated total cost to implement the remedy (present worth) is $2,301,525. The capital cost to construct the remedy is estimated to be $2,179,000 and the average annual operation and maintenance cost is estimated to be $28,300.

A. Rationale for Selection

The remedy was chosen based on a number of factors. The major source of contamination exists in the lagoon area. The majority of the contamination based on the sampling results is volatile organic contaminants which are near the former lagoon and other areas shown on Figure 5. Vacuum extraction was considered the best method to remove the volatile organic contaminants. Another alternative which was favorably considered was bioremediation. However, bioremediation would require specialized vendors and would be somewhat uncertain until special testing was completed. The bioremediation process could also be adversely impacted by heavy metals in the contaminated soils. Therefore, vacuum extraction was chosen to remove volatile organic contaminants.

The soil removal and off-site disposal for PCB, metals, and phenols was based on the sampling results which identified certain areas contaminated with these constituents at concentrations of potential concern. The total area of the site is approximately 3.5 acres. The responsible party's consultant recommended cleanup levels for lead and PCB (600 ppm and 1.96 ppm) which were lowered to 200 ppm and 1.0 ppm respectively based on a number of factors. The cleanup levels identified previously in the PRAP, and now in the ROD, are consistent with cleanup at other similar sites in New York State. They were selected to protect groundwater and to address public health concerns. The covering of the site with six inches of soil is to reduce the direct contact with soil which may have remaining contamination.

B. Detailed Description and Cost Estimate of Remedy

The remedial action plan chosen (Alternative No. 3) for the Storonske Cooperage Site involves a number of components. In brief, the plan is comprised of the following:

1. Pre-design pilot testing to determine the number and locations of vacuum extraction wells.

2. Design, installation, and operation of a vacuum extraction system to remove and treat contaminants from the soils. This system would be designed after pilot testing was completed. The pilot testing and design of the vacuum extraction system will evaluate methods to improve the efficiency and effectiveness for enhancing the removal of contaminants. These methods will have been demonstrated to work and be appropriate for the Storonske site conditions. The need to depress the water table to remove any significant soil contamination in the saturated zone will be evaluated.

3. Additional soil sampling to determine the areal extent of soils contaminated with lead above 200 ppm would be performed before excavating the areas identified.

4. Soils contaminated with metals, PCBs, and semivolatiles will be excavated and removed from the site. Testing would be performed to ensure that the soil meets the applicable disposal facility requirements. Depending on the disposal facility requirements, appropriate treatment, such as solidification, will be provided prior to disposal.

5. Sampling will be performed to verify that the cleanup levels have been achieved.

6. The excavated areas will be backfilled with clean soil and the overall site would be covered with 6" of clean soil, regraded to promote drainage, and revegetated to prevent erosion.

7. Groundwater sampling program will be implemented to monitor the effectiveness of the overall remedial actions taken under both Operable Unit No. 1 and No. 2. The program would involve semi-annual sampling of monitoring wells for analysis of the target compound list of organic and inorganic parameters. This program would last for five years. At the end of five years, a determination would be made to continue, modify, or cease groundwater monitoring dependent on the results.

VIII. Public Participation

As part of the RI/FS, a Citizen Participation Plan was prepared in September 1991. The principal objectives of the Citizen Participation Plan were:

1. To provide area residents with an understanding of the New York State Superfund process. Such an understanding promotes realistic public expectations about the activities, complexities and time involved with site investigation.

2. To provide accurate, understandable information concerning the RI/FS program to interested citizens. NYSDEC provided information through project updates and public meetings.

3. To provide the community with information needed to express their views and to discuss issues of concern with NYSDEC during the RI/FS process. Documents and data were made available for public review. Citizens and town officials were asked to express their views and discuss issues of concern with NYSDEC.

4. To establish a good relationship with the local media so that accurate information about RI/FS activities would be reported.

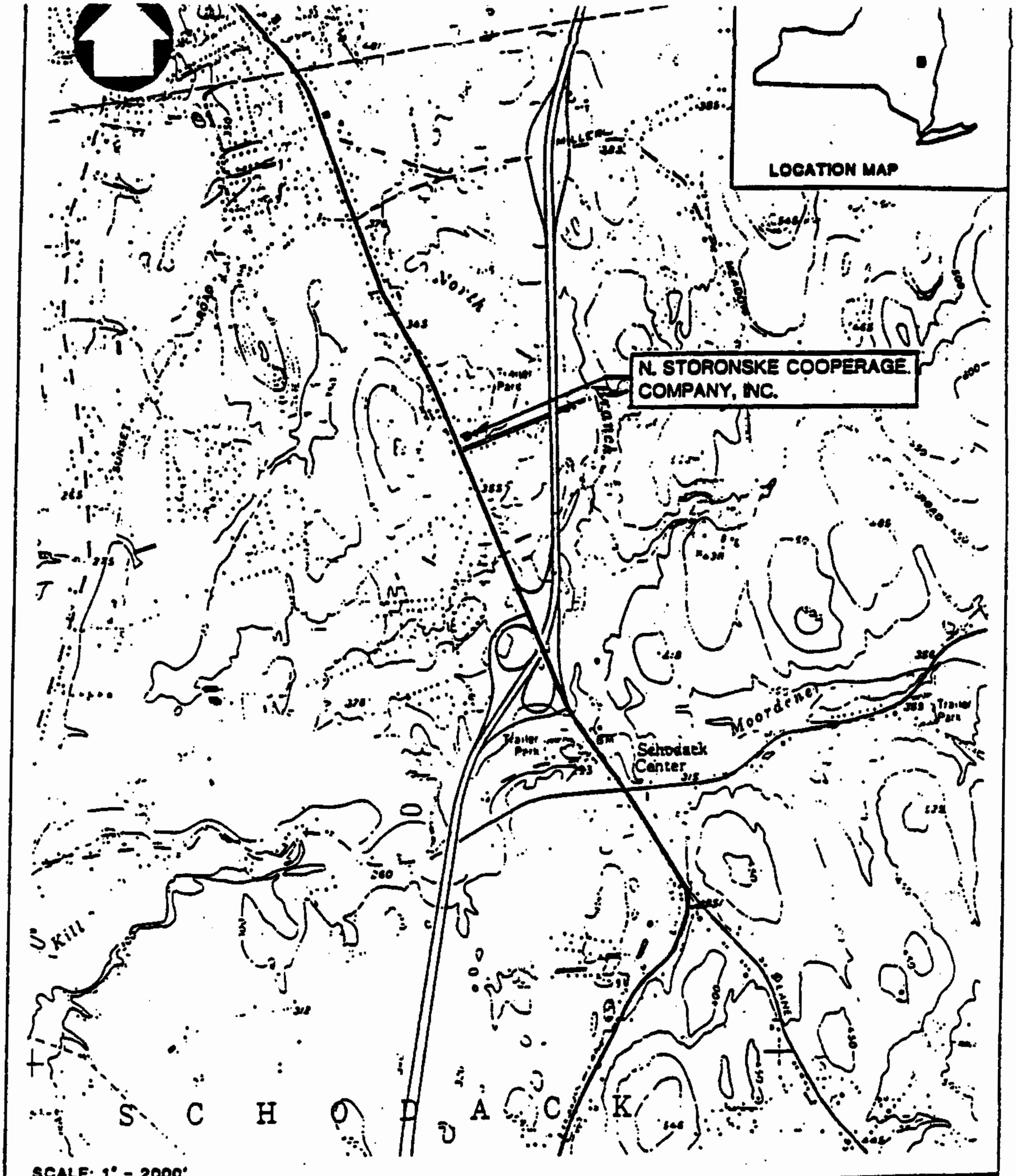
The following public participation activities were carried out:

1. Document repositories were established at the East Greenbush Town Library and the Schodack Town Hall. Pertinent reports and documents related to the RI/FS have been placed there during the project.

2. A public meeting was held on February 10, 1992 to update local residents and local government officials concerning the RI/FS.

3. On March 10, 1992 a second public meeting was held at the Schodack Town Hall to discuss the findings and conclusions of the RI/FS, to present the proposed remedial alternatives for the site and solicit public comment on NYSDEC's chosen remedial alternative. Questions and answers recorded during this meeting and responses received during the 30 day public comment period (February 19, 1992 to March 23, 1992) were used to develop the Responsiveness Summary, presented in Appendix B of this document.

4. Two notices, which summarized the purpose of the meeting and updated the project, were mailed out and were delivered to the adjacent trailer park and apartment buildings.

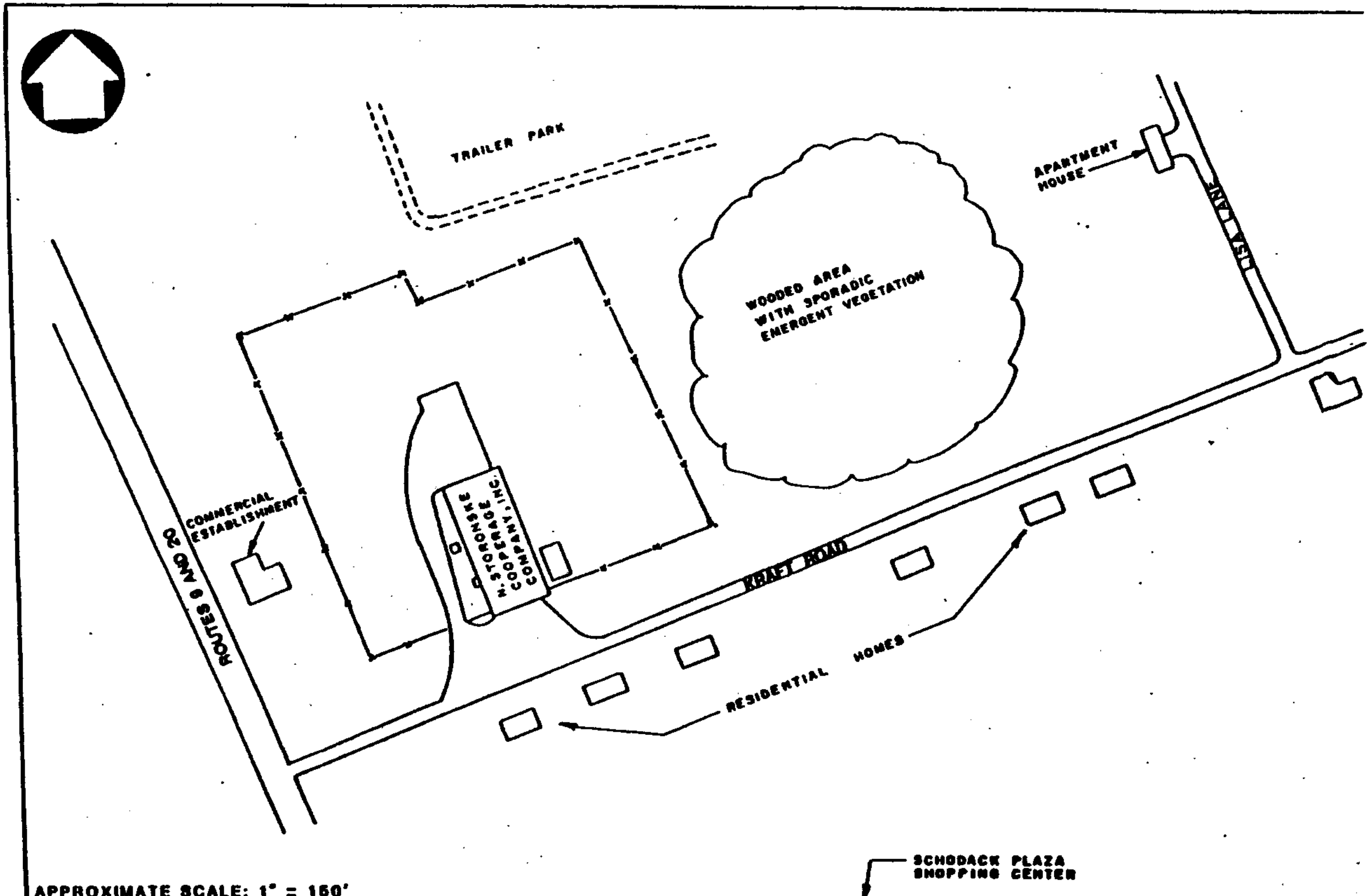


STORONSKE COOPERAGE SITE
FEASIBILITY STUDY

Dvirka and Bartilucci

SITE LOCATION MAP

FIGURE 1

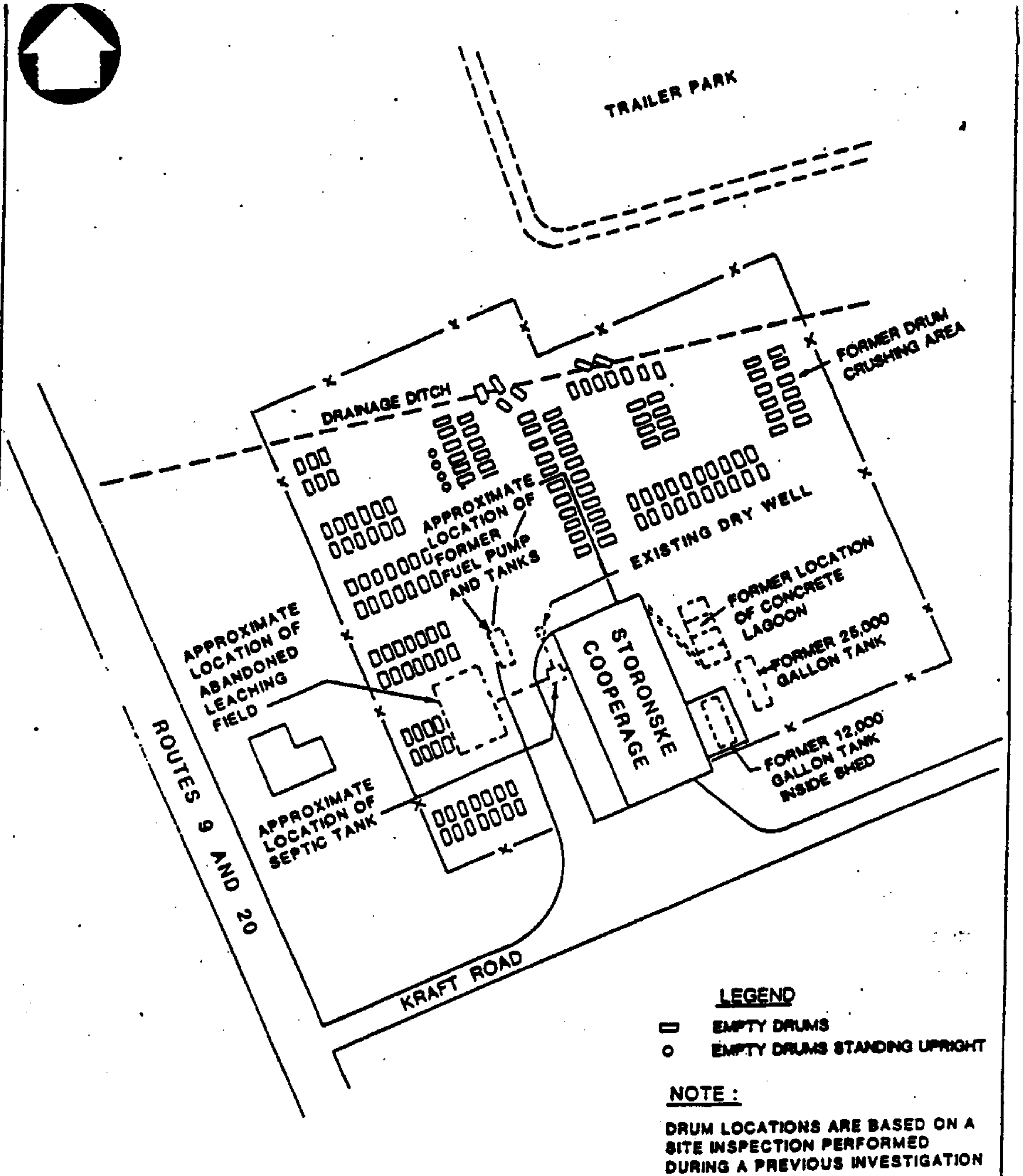


STORONSKE COOPERAGE SITE
FEASIBILITY STUDY

Dvirka and Bartilucci

FACILITY LOCATION MAP

FIGURE



APPROXIMATE SCALE: 1"=100'

STORONSKE COOPERAGE SITE
RENSSELAER COUNTY, NEW YORK

N. STORONSKE COOPERAGE
SITE OPERATIONS

Dvirka and Bartilucci

FIGURE 3

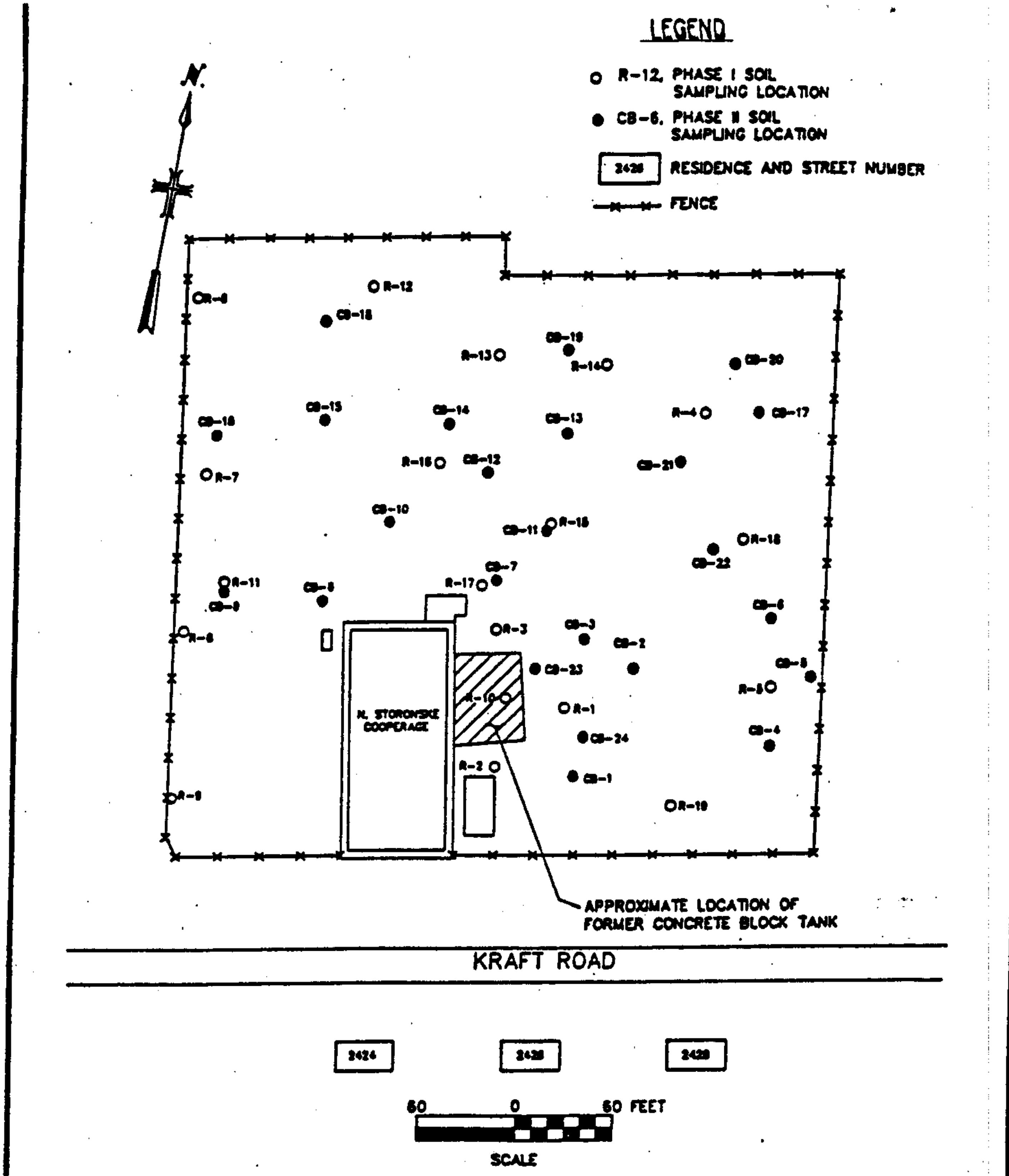


FIGURE 4

MALCOLM PIRNIE	N. STORONSKE COOPERAGE PHASE I & II SOIL SAMPLING LOCATIONS	MALCOLM PIRNIE, INC. APRIL 1990

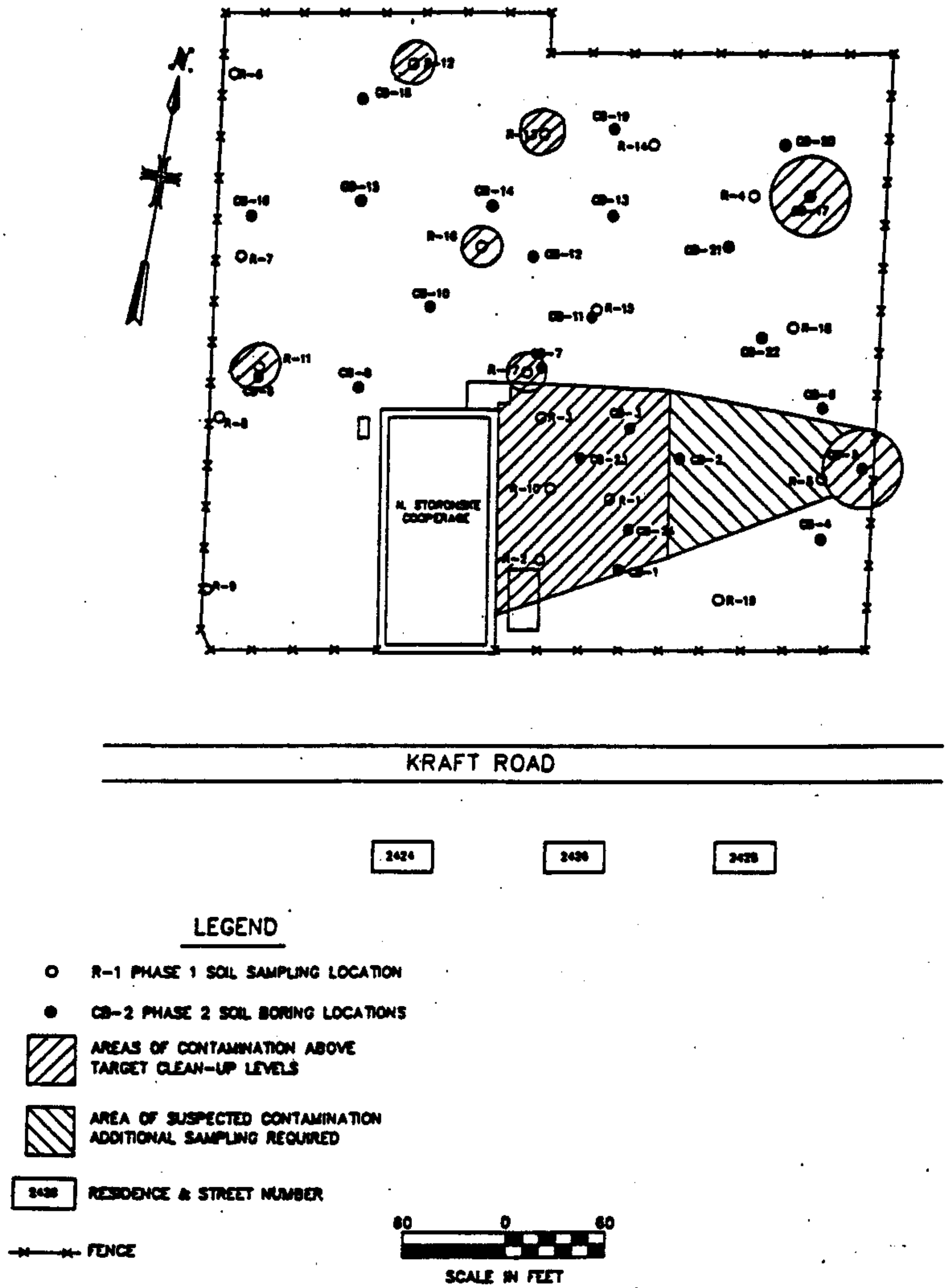


FIGURE 5

AREAS SHOWING SIGNIFICANT SOIL CONTAMINATION

Table 1

Present Worth Cost Estimates[1] for
Remedial Alternatives at the
Storonske Cooperage Site

No.	Alternatives Description	Estimated Capital Costs	O&M Costs as Present Worth	Total Estimated Cost Present Worth
1	No Action	$ 38,820	$480,545	$ 519,365
2	Partial Containment	$ 165,510	$527,277	$ 692,787
3	In-Situ Vacuum Extraction	$2,179,000	$122,525	$2,301,525[3]
6	On-Site Bioremediation	$2,270,860	$122,525	$2,393,385

1. Costs estimates calculated represent 1990 dollars. The costs were *not* adjusted for inflation because increases would not affect the evaluation of the alternatives.

2. Alternative No. 3 and No. 6 Costs are based on known and suspected volumes of contaminated soil.

3. Cost Estimates originally from Malcolm Pirnie *Focused Feasibility Study*, 1990 were revised to reflect additional clean-up for Alternative 3. The new estimates include excavation of additional areas of contamination and covering site with 6" of clean soil.

TABLE 2

Contaminants Detected in On-Site Soil

	FREQUENCY OF DETECTION	RANGE OF DETECTED VALUES (ppb)	AVERAGE OF DETECTED VALUES (ppb)
VOLATILE ORGANIC COMPOUNDS			
Tetrachloroethene	24/111	2-3500	332
1,1,1,-Trichloroethane	24/111	1-1300	172
Total Xylenes	17/111	10-58500	15029
Ethylbenzene	16/111	2-20000	5474
Toluene	14/111	12-41000	8558
Chlorobenzene	10/111	2-3900	1230
Trichloroethene	10/111	2-2600	321
1,1-Dichloroethane	7/111	1-3	1.9
Total 1,2-Dichloroethene	5/111	1-6	4.4
1,2-Dichloroethane	3/111	6-2000	792
Styrene	2/111	8900-19000	13950
Benzene	1/111	810	810
SEMI-VOLATILE ORGANIC COMPOUNDS			
Di-n-Butylphthalate	21/97	30-316000	19505
Naphthalene	19/97	41-9100	1151
2-Methylnaphthalene	17/97	41-3900	965
Phenol	16/97	130-26000	3474
Hexachlorobenzene	13/97	160-1900	655
Bis(2-ethylhexyl)phthalate	11/97	1300-12000	4255
1,2,4-Trichlorobenzene	10/97	140-1800	710
4-Methylphenol	9/97	100-1900	1050
Phenanthrene	7/97	42-800	326
Isophorone	6/97	93-1400	392
2,4-Dimethylphenol	6/97	130-1300	538
Di-n-octylphthalate	6/97	57-360	130
Butylbenzylphthalate	6/97	210-3700	1268
2-Methylphenol	4/97	390-790	610
Fluorene	3/97	73-380	224
Fluoranthene	3/97	310-830	587
Pyrene	3/97	220-560	453
Chrysene	3/97	150-420	300
Benzo(a)anthracene	2/97	310-370	340
1,2-Dichlorobenzene	1/97	440	440
Diethylphthalate	1/97	430	430
Anthracene	1/97	220	220
Benzo(a)fluoranthene	1/97	560	560
Benzo(a)pyrene	1/97	240	240

0852-13-1

TABLE 2

Contaminants Detected in On-Site Soil

	FREQUENCY OF DETECTION	RANGE OF DETECTED VALUES (ppb)	AVERAGE OF DETECTED VALUES (ppb)
PCB			
Aroclor - 1242(as PCBs)	21/87	110-20000	2035
METALS			
Cadmium	100/103	ND-317000	11290
Chromium	82/82	11.1-943000	40950
Copper	103/103	8700-15.1E4	33870
Lead	103/103	3.1E3-508E4	113130
Mercury	25/32	ND-1810	398
Selenium	3/103	ND-7500	3600
Zinc	102/102	365E2-246E4	149150

0852-13-1

Appendix A

The following documents are included in the Administrative Record:

1. N. Storonske Cooperage Company, Inc., J. Kenneth Fraser & Associates, undated (approximately 1986).

2. Preliminary Hydrogeologic Assessment, N. Storonske Cooperage, Castleton, New York, Empire Soils Investigation and Thomsen Associates, October 1986.

3. Phase I Investigation - Hydrogeologic Assessment Work Plan, Malcolm Pirnie, Inc., July, 1987.

4. Phase I Investigation - Hydrogeologic Assessment Report, Malcolm Pirnie, Inc., September 1987.

5. Phase II Hydrogeologic Investigation Work Plan, Malcolm Pirnie, Inc., October 1987.

6. Revised Phase II Hydrogeologic Investigation Work Plan, Malcolm Pirnie, Revised November 1987.

7. Epanded Phase II Hydrogeologic Investigation Work Plan, Malcolm Pirnie, Inc., July 1988.

8. Phase II Hydrogeologic Investigation Report, Malcolm Pirnie, Inc., July 1988.

9. Revised Phase II Hydrogeologic Investigation Report, Malcolm Pirnie, Inc., December 1988.

10. Remedial Action Hydrogeologic Investigation Work Plan, Malcolm Pirnie, Inc., October 1988.

11. Focused Remedial Investigation/Feasibility Study Work Plan, Malcolm Pirnie, Inc., April 1989.

12. Focused Remedial Investigation/Feasibility Study Work Plan, Malcolm Pirnie, Inc., Revised June 1989.

13. Certification of Remedial Action Hydrogeologic Investigation Results, Malcolm Pirnie, Inc., June 1989.

14. N. Storonske Cooperage Focused Remedial Investigation, Malcolm Pirnie, Inc., April 1990.

15. N. Storonske Cooperage, Inc., Focused Feasibility Study, Malcolm Pirnie, Inc., April 1990.

16. N. Storonske Cooperage Remedial Investigation, Magnetometer Survey, Report Addendum, Malcolm Pirnie, Inc., August 1990.

17. Results of Ground Penetrating Radar Survey Report dated October 19, 1990 Weston Geophysical.

18. Exploratory Excavation Work Plan, Malcolm Pirnie, March 1991.

Storonske Cooperage Site
Rensselaer County
Schodack, New York

Site No. 4-42-021

RESPONSIVENESS SUMMARY

to Comments
Received between February 19, 1992 to
March 23, 1991

Prepared by:

New York State
Department of Environmental Conservation
Division of Hazardous Waste Remediation

STORONSKE PUBLIC COMMENTS
SITE NO.: 4-42-021

The following Responsiveness Summary was prepared to answer comments received during the February 19, 1992 to March 23, 1992 Public Comment Period on the On-Site Soils Operable Unit No. 1 Proposed Remedial Action Plan.

COMMENT:

In evaluating the remedial alternatives, how bad is the contaminated onsite soil? Suppose you put a cover on the site--say, four to eight inches of soil, and planted over it. How dangerous would it then be?

RESPONSE:

The Department's proposal to perform vacuum extraction on the onsite soil is, essentially, a source control technique. Simply capping the site does not reduce the volume of contaminants present. Precipitation would still get through that soil and continue to leach contaminants into the groundwater. The groundwater table also rises and falls with the seasons, which also encourages continued leaching of contaminants into the groundwater.

With capping alone, natural dilution eventually will lower the concentrations of the contaminants, but that will take a long time. During that period, the contaminants will continue to contribute to the groundwater problem.

The vacuum extraction method will significantly reduce the amount of material getting into the groundwater. The Department believes this will effectively reduce or eliminate the source of the contamination problem.

COMMENT:

How long will the Department take to implement the vacuum extraction process?

RESPONSE:

Once the proposed remedial action plan is finalized, the Department will prepare a document called the Record of Decision which provides the rationale and basis for the selection. Then we will prepare another order, and will be trying to get the Potentially Responsible Party to fund the design and implementation of the selected remedial alternative. That would require about 45 days. Then, if the PRP opts to do the remediation, a schedule is set. If the PRP declines to conduct the remedial work, DEC will do it and later attempt recovery of costs from the Potentially Responsible Party.

RESPONSE (continued)

We estimate that the design and remedial work will require a total of two to three years. It is planned to begin this work during 1992. We would then monitor the contamination levels in the groundwater for a minimum of five years after remediation. At the end of five years of monitoring, the results will be evaluated and the frequency monitoring will be evaluated and possibly adjusted dependent upon the results.

COMMENT:

How much will it cost to remediate the onsite soils? The groundwater?

RESPONSE:

The Department estimates the cost to remediate the onsite soils will total $2.3 million. The capital cost to construct the remedy will be about $2.1 million, and the average annual operation and maintenance cost will be about $28,000.

We cannot yet provide an accurate estimate of the cost to remediate the groundwater. Once we complete the ongoing remedial investigation and feasibility study for the groundwater, (Operable Unit No. 2) we will issue another Record of Decision which will have the estimated costs of the selected remedial alternative.

COMMENT:

Who will pay for the work?

RESPONSE:

The Department would seek to have the Potentially Responsible Party pay for the work. If they are not willing or financially unable to perform the work, DEC would use state funding available through the 1986 Environmental Quality Bond Act. The Department then likely would seek cost recovery from the Potentially Responsible Party.

COMMENT:

How will the Department know if its onsite soil remediation effort has been successfully accomplished?

RESPONSE:

Some types of contaminants on the site cannot be removed through the vacuum extraction process. These include onsite lead, PCBs and semi-volatile contaminants--those that do not readily pass off as vapors. Target cleanup levels for these contaminants will be set. We will determine the extent of these contaminants and then excavate and remove them. Before we recover these areas and revegetate, we will resample the areas to verify that we have achieved the cleanup goals we set.

RESPONSE (continued)

For volatile chemical contamination--caused by chemicals that readily pass off as vapors--the Department will implement the vacuum extraction process. Vacuum extraction essentially helps volatile chemicals into their vapor stage. The contamination is pulled into extraction wells and then sent into the treatment system. Additional soil sampling will be performed to verify the vacuum extraction process has achieved the cleanup goals. All during this time, the Department will be implementing a groundwater monitoring and sampling program to determine the overall effectiveness of the remedial actions taken. This monitoring and sampling would take place during remediation and afterwards for a minimum of five years. Result of groundwater sampling will give the Department the information it needs to determine if eliminating the contamination source through vacuum extraction and soil excavation has restored groundwater to acceptable standards, or whether additional action will be needed.

COMMENT:

Your proposed remedial alternative calls for use of the vacuum extraction technology. When was it developed? How extensively was it tested? Are there other sites in New York where it has or is being used? How well has it worked?

RESPONSE:

Vacuum extraction has been used at other sites in New York State and has worked successfully. The vacuum extraction process currently is being installed at another site in Rensselaer County, at the Roxy Cleaner site in the Town of Wynantskill. The vacuum extraction process was also used at the Smith Corona Site in Cortlandville, New York and it is proposed for the Endicott Johnson Franklin Street Site near Binghamton, New York . This technology has been used for approximately the last five years.

COMMENT:

When DEC implements its cleanup strategy, how long will it be before the site can be used again by the community?

RESPONSE:

The Department does not want to try to forecast something like that until it has implemented the remedy and we see what sort of results we obtain from it. When the community may use the site again also depends on the proposed use. The Department would like to take a close look at the results of its cleanup effort approximately two to three years from now. At that point, we would be in a much better position to make further decisions on the use of the site.

COMMENT:

After the site is cleaned up using the vacuum extraction method and soil removal, to what uses could we put the site?

RESPONSE:

The Department sees no reason at this time why the site can't be used in the future, after it is cleaned up. However, we would not want the site to be used during remediation; this would interfere with the cleanup effort. Regarding the property, the Department likely will seek a final deed restriction, or at least a notice which accompanies the deed that describes what the property was and what was left behind. It is difficult to say exactly what the site could or could not be used for at this time. Each potential use for the site would have to be evaluated as it comes up. Some uses already seem unlikely, however. For example, use of the site for residential homes is unlikely. Digging basements into the soil cover and what's left of the contamination would not be a good idea.

COMMENT:

How will you be able to clean up the site until you get the Storonske operation off the property? Once you perform cleanup, what prevents the proprietor from operating on the site in any way he chooses in the future?

RESPONSE:

The Department, and the State in general, does not have the authority, or a law or any other instrument that let's us remove the proprietor from the property. This kind of ability is something that local municipalities are given the power to do under their zoning laws. The State has the authority to require the proprietor to apply for and operate within the bounds of different kinds of permits (air, hazardous waste, etc.) and we have the authority to enforce them.

The remediation operation on the site would be enforced. Most of the remediation the Department plans for the site would take place in the back of the facility which the proprietor presently does not use. Placement of the vacuum extraction wells and other equipment could be accomplished very easily with the proprietor still on the site. The State could obtain an easement on the property to protect the remedial activities. However, this would need to be done in conformance with laws which protect the property rights of all individuals.

COMMENT:

Has the Department done any inspections under the floor to inspect the soil under the operations building on the site? Do you think there are cracks in the concrete floor that hazardous waste can go through?

RESPONSE:

These comments certainly are pertinent, and the Department will take them into consideration. The Department can go in after the proprietor has moved and conduct a thorough inspection of the floor, to check for cracks. One of the reasons a technology such as a vacuum extraction is favored at a site such as this, is that the process can be designed to address any potentially contaminated soils under the building without demolishing the building.

COMMENT:

Several commenters made the suggestion to bring public water from other sources (i.e. East Greenbush).

RESPONSE:

This issue is currently being evaluated in the investigation of Operable Unit No. 2 which deals with groundwater and the private and public drinking water supplies. As part of that investigation, feasible options to provide an alternate water supply are currently being evaluated, including extending the East Greenbush Water Supply. This issue will be addressed in the evaluation of groundwater alternatives under Operable Unit No. 2. The evaluation will occur in late 1992 or early 1993. Operable Unit No. 1 deals with on-site soils.

COMMENT:

The content of the Administrative Record was suggested to include the documents submitted by Storonske to the New York State Department of Environmental Conservation and the New York State Department of Law. A list of such documents was provided by Mr. Kevin Young who is the lawyer representing Storonske.

RESPONSE:

The list of documents supplied was compared to the list of documents in the Administrative Record (which was prepared for the Record of Decision). Documents which are appropriate are included in the Administrative Record.

COMMENT:

Operable Unit. The Record of Decision ("ROD") on Operable Unit No. 1 should not be completed until the RI/FS on Operable Unit No. 2 is completed. The selection of a groundwater remediation system could alter the need for the treatment of on-site soils. For example, if DEC were to select a groundwater collection and treatment system with partial recycling of the treated water back to the contaminated area for enhanced soil washing, the need for a soil treatment program would be significantly reduced.

COMMENT (continued)

On behalf of Storonske, in the Summer of 1991, Malcolm Pirnie submitted to the DEC a supplemental feasibility study relating to on-site groundwater entitled: On-Site Groundwater Remedial Alternative Analysis, N. Storonske Cooperage Co., Inc., Schodack, New York, dated 1991. That report evaluates the potential remedial alternatives for on-site groundwater. Delaying the issuance of the ROD until DEC completes its review of that report and an overall remedial alternative is selected for both operable units should not significantly impact the timing of the remediation. Moreover, addressing the remediation in stages impedes the ability of the potentially responsible parties to raise the funds necessary to implement the recommended remedial alternative because no final cost estimate for the overall remediation can be developed and allocated between the potentially responsible parties at the time of implementation of the remediation of the on-site soils. At a minimum, Storonske suggests that the ROD include language indicating that the remedial alternative for Operable Unit No. 1 may have to be reevaluated when a remedial alternative, if any, is selected for Operable Unit No. 2.

RESPONSE:

The NYSDEC does not agree with the general theme of this comment, which is to delay selection of a remedy for the on-site soils until the groundwater remedial alternative is selected. The Feasibility Study prepared by Malcolm Pirnie for the responsible party selected the vacuum extraction and excavation of soils as the most appropriate remedy for the on-site soils.

The Malcolm Pirnie report entitled: On-Site Groundwater Remedial Alternative Analysis, N. Storonske Cooperage Co., Inc., Schodack, New York, dated 1991, did not address drinking water concerns of the adjacent residents and public water supplies. The NYSDEC intends to have the final design of the groundwater and on-site soils remedy compliment each other. However, additional soil sampling to determine the area of excavation and pilot testing needed to design the vacuum extraction system can be performed while the ongoing groundwater Remedial Investigation/Feasibility Study is being completed. The Department intends to issue a Record of Decision for Operable Unit No. 1 (on-site soils) now to allow work to begin as soon as possible. This will allow implementation of the remedy in a more timely manner to mitigate the continued source of the groundwater contamination.

COMMENT:

<u>Cleanup Levels for Lead, PCB and Phenols</u>. The selected cleanup levels for lead 200 parts per million (ppm), PCBs (1 ppm) and phenol (.33 ppm) are too restrictive and not justified from either an Applicable or Relevant and Appropriate (ARARs) based approach or from a risk based approach. In addition, the recommended remedial alternative for

COMMENT (continued)

soil contaminated above with those chemicals (i.e. excavation and off-site disposal) may be cost prohibitive depending upon the total volume of soil requiring excavation and off-site disposal.

A. The Cleanup Level for Lead is too Restrictive and not Justified in the Administrative Record. The Proposed Remedial Action Plan (PRAP) selects a cleanup level for lead of 200 ppm without justification. In the Focused Feasibility Study (April, 1990), Malcolm Pirnie proposed a soil cleanup level for lead at a level of 600 ppm. That level, itself, was below any risk-based level or ARAR based level developed by Malcolm Pirnie.

As part of the DEC's Draft Cleanup Policy and Guidelines (October, 1991), the Division of Hazardous Substance Regulation compiled human direct ingestion soil concentration levels based on carcinogenic slope factors and referenced doses from EPA's Health Effects Assessment Summary Tables. According to that study, the acceptable lead concentration for direct human ingestion of soil containing lead is listed as 250 ppm. Because the selected remedial alternative includes a soil cap over the entire site, the potential for human ingestion of soil at this site is significantly reduced. Moreover, the lead soils are in the middle of an industrial facility with limited site access. Storonske suggests that the DEC adopt the soil cleanup level for lead proposed by Malcolm Pirnie (i.e., 600 ppm).

B. The Cleanup Standard for PCBs is too Restrictive. The PRAP proposes a cleanup standard for PCBs of 1.0 ppm. The Toxic Substance Control Act requires decontamination of PCBs spills in soil to a level of 25 ppm, in restrictive access areas and 10 ppm, in unrestrictive access areas (40 C.F.R. 761.125).

In the Focused Feasibility Study (April, 1990), Malcolm Pirnie proposed an ARAR based cleanup standard for PCBs of 11.7 ppm. In the Focused Feasibility Study (April, 1990), Malcolm Pirnie performed a risk assessment to evaluate target soil cleanup levels for PCBs for lifetime carcinogenic risk levels ranging from 10^{-4} to 10^{-6}. At risk levels of 10^{-5} and 10^{-6}, the PCB cleanup levels ranged from 19.6 ppm to 1.96 ppm, respectively. That risk assessment, however, assumed an exposure with no soil cover while the preferred remedial alternative requires a soil cover over the entire site. In addition, the site is in the middle of an industrial plant where access is restricted.

According to the DEC Draft Cleanup Policy and Guidelines, dated October, 1991, for known or suspected carcinogens, a cleanup standard should be established at concentration levels which represent an excess of lifetime risks to an individual of between 10^{-4} to 10^{-6}. Given the mitigating circumstances identified above (i.e., soil cover and restricted access to an industrial site), Storonske suggests that the cleanup standard for PCBs be established at the level recommended by Malcolm Pirnie in the Focused Feasibility Study (April, 1990) -- i.e., 11.7 ppm.

COMMENT (continued)

C. <u>The Phenol Standard is too Restrictive</u>. The PRAP proposes a cleanup level for phenols at .33 ppm. That level is too restrictive. In the DEC's Draft Cleanup Policy and Guidelines (October, 1991), the Division of Hazardous Substance Regulation proposed a soil concentration for phenols based upon potential human direct ingestion at 50,000 ppm.

The cleanup standard proposed in the PRAP is based upon the potential for phenols in the soil to cause a contravention of the State groundwater standard (<u>i.e.</u>, .1 ppb). Except in one isolated area, phenols have not been detected in the groundwater even though the site has not been remediated. Moreover, the maximum concentration of phenols detected in the soils is only 26 ppm. In comparison, the State of New Jersey Draft Subsurface cleanup standard for phenol is 50 ppm (<u>See</u> Preliminary Draft Cleanup Standard, N.J.A.C. 7:26D, Prepared by New Jersey Department of Environmental Protection (May 7, 1991). Accordingly, Storonske proposes that the DEC adopted a cleanup standard for phenol of 50 ppm.

RESPONSE:

A. The cleanup level for lead was selected on the basis of public health concerns and is consistent with cleanup levels for lead chosen for other sites in New York State. The NYSDEC made diagrams to determine the locations and levels of contamination. The additional amount of cleanup required for the 200 ppm level is minimal based on the information presented in the focused remedial investigation. The comment, "moreover, the lead soils are in the middle of an industrial facility with limited site access" is misleading. The site is located adjacent to residential areas. Therefore the potential for access to the site was considered as a factor. The 600 ppm cleanup level recommended by the commenter and in the Feasibility Study are above the 250 ppm level in the Draft DEC Cleanup Criteria and is unacceptable.

B. The selected cleanup level for PCBs is justified and consistent with cleanup levels at other sites. The feasibility of removing the PCBs to the 1 ppm level was examined during the NYSDEC review of the remedial alternatives. The additional volume of soil for disposal is minimal based upon the locations and amounts detected. The Toxic Substance Control Act (40 C.F.R. 761.125) as referenced is used as guidance, but final cleanup is site specific. The 1.0 ppm PCB cleanup level is easily achieved at this site since the extent of PCB contamination is minimal and should be removed. The revised Feasibility Study submitted on March 22, 1991, by Malcolm Pirnie, recommended a cleanup level of 1.96 ppm.

C. The cleanup level proposed in the PRAP was taken from Malcolm Pirnie's Focused Feasibility Study which used a cleanup level of 0.33 ppm. This cleanup level is also justified to protect groundwater based on solubility calculations. The area of phenol contamination from the sampling locations appears isolated. The New Jersey Draft Subsurface Cleanup Standard should not be used for New York State inactive hazardous waste sites. We are in agreement with Malcolm Pirnie's cleanup level of 0.33 ppm.

COMMENT:

Excavation and Off-Site Disposal for PCB, Lead and Phenol Contaminated Soil is too Restrictive. Storonske is concerned that the volume of phenol, lead and PCB contaminated soil is still uncertain despite the extensive testing that has been conducted to date. Experience at other sites has shown that the quantities of impacted soil often increase during the design phase testing. In addition, as shown in the Focused Feasibility Study (April, 1990), the soil is not anticipated to be classified as a characteristic or listed hazardous waste. As a result, and depending on the quantity requiring excavation and treatment, a variety of treatment and/or disposal options are available in addition to off-site disposal. Storonske requests that the ROD provide flexibility for treating PCBs, lead and phenol contaminated soils to avoid the need to excavate and dispose of off site large quantities of low toxicity materials.

RESPONSE:

The remedial alternatives chosen was basically that recommended by the Malcolm Pirnie Feasibility Study. This comment appears to suggest that other alternatives be evaluated for treating PCBs, lead and phenols contaminated soils. The purpose of the Feasibility Study was to evaluate alternatives based on the nature and extent of contamination. Chapter 8 in the Focused Feasibility Study states, "Excavation, solidification and off-site disposal of soil contaminated with inorganics and PCBs, followed by vacuum extraction for the removal of organics is the preferred remedial alternative for the N. Storonske Cooperage site." The only flexibility that can be considered is the type of off site disposal available for this type or material. Adequate sampling and analysis must be performed to characterize the soils which will be removed for off-site disposal. The off-site disposal facility requirements must be addressed.

COMMENT:

Additional Time Should be Provided for Commenting on the PRAP. Storonske requests an additional two weeks to comment on the PRAP. At the public workshop held to discuss the PRAP, the DEC representatives indicated that remediation is not expected until 1993. Accordingly, an additional two weeks to provide comments on the PRAP should not impact the schedule for implementing the remediation.

RESPONSE:

There is no basis to extend the public comment period. The public is concerned about the previous delays. The justification for extending the public comment period has not been made. Verbal comments were made in support of the remedial alternative. In addition, the remedial alternative selected by the State is basically that recommended by the responsible party's own study. Therefore, there is no need reevaluate these alternatives.

COMMENT:

<u>The ROD should Provide Flexibility in the Implementation of the Preferred Remedial Alternative</u>. The ROD should include a statement indicating that the details of the soil gas extraction program should be determined during remedial design and pilot testing. By way of example, fracturing the till has the potential to significantly improve the efficiency and effectiveness of the soil gas extraction program. The ROD should be drafted to provide the remedial designer with sufficient flexibility to develop the most cost effective and efficient remedial program.

RESPONSE:

The NYSDEC agrees with this comment and will include the following statements to the Record of Decision:

> The pilot testing and design of the vacuum extraction system will evaluate methods to improve the efficiency and effectiveness for enhancing the removal of contaminants. These methods will have been demonstrated to work and be appropriate for the Storonske site conditions.