Division of Hazardous Waste Remediation

Record of Decision

Maestri Site

Town of Geddes, Onondaga County

Site Number 7-34-025

March 1995

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

DECLARATION STATEMENT - RECORD OF DECISION

"Maestri" Inactive Hazardous Waste Site
Onondaga County, New York
Site No. 7-34-025

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Maestri 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 Maestri 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 Maestri Site, and the criteria identified for evaluation of alternatives, the NYSDEC has selected excavation of soil contaminated with Xylene in excess of site cleanup levels followed by on-site treatment utilizing vacuum extraction supplemented by biological treatment. The components of the remedy are as follows:

1. A remedial design program to verify the conclusions of the conceptual design, and provide the details necessary for construction, operation, maintenance and monitoring of the remedial program.

2. Excavation and preparation for treatment of soils that contain contaminants in excess of soil cleanup objectives. This will involve an estimated 8,000 cubic yards of contaminated soil.

3. Treatment of the soil utilizing ex-situ piles that combines vapor extraction and biological degradation of organic contamination, and collection and treatment of air discharges from the soil treatment process.

4. Redeposition of treated soils on-site. Placement of 6 inches of clean top soil over the soil redeposition areas, site regrading, and restoration.

5. Continued operation of the on-site groundwater collection and treatment system with an evaluation annually until concentrations of site contaminants can no longer be effectively removed or cleanup objectives are met. Treatment is by carbon adsorption with discharge to a nearby storm sewer.

6. Monitoring of the soil treatment, water treatment, air discharges and groundwater to ensure compliance with clean up objectives.

New York State Department of Health Acceptance

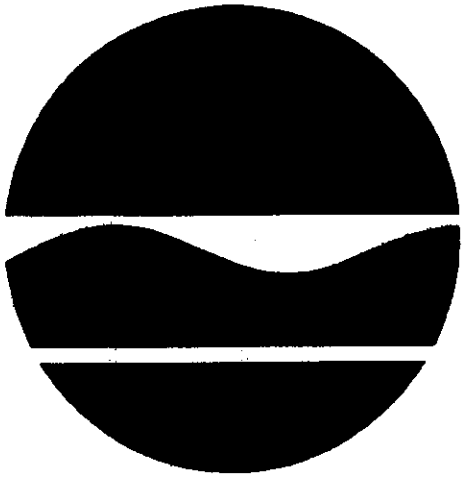
The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

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.

3/23/95
Date

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



NEW YORK STATE
DEPARTMENT OF

ENVIRONMENTAL
CONSERVATION

DIVISION OF HAZARDOUS
WASTE REMEDIATION

RECORD OF DECISION

MAESTRI SITE

SITE #7-34-025

TOWN OF GEDDES, ONONDAGA COUNTY

March 1995

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RECORD OF DECISION

"MAESTRI SITE"
Town of Geddes, Onondaga County, New York
Site No. 7-34-025
MARCH 1994

SECTION 1: SITE LOCATION AND DESCRIPTION

The Maestri Site, located at 904 State Fair Boulevard in the Town of Geddes, Onondaga County, New York, is approximately 3 miles northwest of Syracuse, New York. A site location map is included as Figure 1. The site, depicted in Figure 2, is approximately 7 acres in area. Onondaga Lake, located 1500 ft. northeast of the site, is the nearest surface water body to the site. Topography of the site is characterized by gently sloping grades which fall to the northeast at slopes up to 5 percent. The site is bordered by State Fair Boulevard to the southwest and the residences along Alhan Parkway to the northeast. Vacant lots that border the site on the northwest and southeast are heavily wooded.

Presently a 2.8 acre portion of the site near Alhan Parkway is cleared and secured with an 8-ft high chained link fence and two locked gates. A gravel road extends from State Fair Boulevard to the secured portion of the site. A ground water treatment building, concrete pads, monitoring wells, recovery wells, piezometers, and former drum disposal areas at the site are indicated on Figure 3.

SECTION 2: SITE HISTORY

2.1 Operational/Disposal History

* 1970's - Drums containing industrial waste materials allegedly generated by Stauffer Chemical Company were buried at the site.

* 1987 - The site owner, Mr. Bert Maestri reportedly excavated soil and drums from an area of the site indicated on Figure 3. Following characterization by the New York State Department of Health (NYSDOH), the material was disposed of at an off site secure landfill.

* 1987 - Samples collected by NYSDOH from a residential basement sump revealed the presence of contaminants from the site. Additional samples collected by NYSDOH from neighboring residential sumps indicated that only the original basement sump was impacted by the site.

* 1987 - Malcolm Pirnie, Inc. conducted a limited site investigation on behalf of the Onondaga County Health Department (OCHD) to evaluate the environmental effects of the former waste disposal area.

* 1987 - NYSDEC listed the site on the NYS Registry of Inactive Hazardous Waste Disposal Sites as site # 7-34-025.

2.2 Remedial History

* October 1988 - NYSDEC and Stauffer Management Company (SMC) executed an Order on Consent for development and implementation of site Interim Remedial Measures (IRM).

* June 1989 - Site investigations began, which included: soil vapor survey, geophysical survey, monitoring well installation, soil boring completion, air sampling, and sampling of surface soil, subsurface soil, and ground water. A magnetic anomaly discovered during the investigation was identified as buried drums.

* December 1990 - SMC completed the first drum excavation. Approximately 100 drums are removed from the site

* February 1991 - An indoor air monitoring program required by NYSDOH for selected residences located on Alhan Parkway, downgradient of the site, was implemented by O'Brien & Gere Engineers on behalf of SMC

* January 1992 - SMC submitted Basis of Design Report to NYSDEC for a ground water recovery and treatment system.

* May 1992 - Operation of the ground water recovery and treatment system began.

* September 1992 - SMC submitted a final report on the results of the field investigations and development of the site IRMs.

* December 1992 - NYSDEC and SMC executed an Order on Consent for performance of a Focused Remedial Investigation/Feasibility Study (RI/FS).

* December 1993 - Second drum removal occurs. Approximately 200 drums found during the focused RI, and containing industrial waste were excavated and disposed off site by SMC.

* February 1994 - SMC submitted the Focused Remedial Investigation Report to NYSDEC.

* September 1994 - SMC submitted the Maestri Site Feasibility Study to NYSDEC.

SECTION 3: CURRENT STATUS

Under terms of an Administrative Order on Consent with the NYSDEC, SMC initiated a Remedial Investigation/ Feasibility Study (RI/FS) in December 1992 to address the residual contamination at the site. Field work for the RI was completed in May 1993. The Focused RI Report was submitted by SMC in February 1994 and the report was approved in July 1994. A public meeting to present the results of the RI was held at the Geddes Town Offices on September 22, 1994. The site FS was submitted on September 24 1994. The Proposed Remedial Action Plan was subject to a public meeting on January 19, 1995.

3.1 Summary of the Remedial Investigation

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

The focused RI was conducted in a single phase. The field work was conducted between January 1993 and May 1993. A report entitled Maestri Site Focused Remedial Investigation has been prepared describing the field activities and findings of the RI in detail. A summary of the RI follows.

The RI activities consisted of the following tasks completed in accordance with the approved RI Workplan:

1) An on-site passive soil vapor survey to detect potential areas of subsurface soil contamination was conducted.

2) Two geophysical surveys were conducted, originally one in the area of the soil vapor survey and a second confirmatory survey over the remainder of the site after the detection of an anomaly in the soil vapor area.

3) 12 on-site test pits, located based on the soil vapor and geophysical survey results

4) Installation of 4 soil borings

5) On-site and off-site groundwater quality screening, consisting of sampling points GW-1 through GW-16, was performed to evaluate the horizontal extent of groundwater contamination downgradient of the site.

6) Installation and hydraulic conductivity testing of 2 additional off-site ground water monitoring wells.

7) Collection and chemical analysis of 18 groundwater samples for site specific parameters.

8) Completion of a human health risk assessment.

9) Summary of all RI results, previous investigations, and remedial work performed during the IRM's, including the performance of the groundwater recovery and treatment system, in a Focused RI Report.

10) A Fish and Wildlife Survey was conducted at the site and documented in the Fish and Wildlife Impact Analysis Report dated July 1994.

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

Based upon the comparison of results of the remedial investigation to the SCGs and evaluation of potential public health and environmental exposures, certain areas and media of the site require remediation.

During the course of the site investigation conducted under the initial IRM (1988) Order with SMC, sufficient data was collected to establish that there are no remaining significant impacts to the site surface soils, surface water, ambient air, or residential indoor air quality resulting from the former drum disposal activities at the site. As a result the RI was focused to delineate the extent of the off site groundwater plume and to determine the vertical and horizontal extent of subsurface soils containing site contaminants in excess of cleanup goals.

Soil sample analytical results indicate the presence of site related contaminants in subsurface soils near the former drum disposal areas (Figure 4). Organic contaminants, predominantly xylene, were detected in the subsurface soils down to the water table (approx. 11 ft. below grade). Xylene concentrations ranged to a high of 7000 parts per million (PPM) in site subsurface soils. Other contaminants detected on site include toluene, ethlybenzene, tetrachloroethene, 2-methylphenol 2,4-dimethylphenol, and benzoic acid. Concentrations of these contaminants are substantially lower than that of xylene (Table #1).

Results of the groundwater investigations indicate the presence of site related contaminants in the shallow overburden groundwater. Movement of the shallow groundwater is in a northeasterly direction placing the homes on Alhan Parkway in the path of the off-site plume. However, all local residences are on public water, and no current or anticipated future uses of groundwater exist in the vicinity of the site. The principal organic contaminant detected in the shallow groundwater was xylene. Concentrations in excess of 30 ppm have been detected in monitoring wells on site immediately down gradient of the former drum disposal areas. No site related contaminants were detected in the bedrock groundwater. Figure 5 delineates the lateral extent of the volatile organic compound groundwater plume. Based on the results of the groundwater screening the existing groundwater recovery and treatment system installed as an IRM and in operation since May 1992 appears to have controlled the migration of the plume.

3.2 Interim Remedial Measures:

Interim Remedial Measures (IRMs) were conducted at the site based on findings as the RI progressed. An IRM is implemented when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS.

As previously mentioned an additional cache of buried drums was discovered during the course of the focused RI. To expedite the removal of this additional source of site contaminants an IRM workplan was prepared for removal of the buried drums. The excavation was conducted in November and December 1993 and resulted in removal of 200+ additional drums. Similar to the 1990 removal, most of the 1993 drums were emptied and crushed but a few of the remaining drums did contain liquid waste. The drums were cut, cleaned and stacked on a retaining platform on-site before being disposed off-site. The liquid waste was combined and disposed off-site at a commercial treatment facility. Confirmatory samples were taken from the bottom and side walls of the excavation prior to backfilling with clean soil. Excavated soils were staged on site in covered roll-offs prior to off-site disposal.

The groundwater recovery system installed in 1992 consist of six (6) pumping wells, five on-site and one off-site (Fig.3). The wells pump contaminated groundwater to the on-site treatment system. This system treats the water utilizing activated carbon prior to discharge to a nearby storm sewer. A monitoring network of over twenty (20) monitoring wells and piezometers is also in place. Water level data and groundwater quality sampling is conducted weekly. Results since the system was put in place indicate that the organic groundwater plume has been controlled by the operation of the recovery system.

3.3 Summary of Human Exposure Pathways:

A human health risk assessment was conducted during the focused RI to evaluate current and potential future health risks associated with the site. Under current conditions with restricted site access and with the groundwater recovery and treatment system operating, there are no complete exposure pathways, and the site does not pose an unacceptable risk to human health. Two receptor groups were identified under the future on-site unrestricted residential use scenario. Adult and child residents under this scenario would have complete exposure pathways for soil contact, soil ingestion, indoor vapor inhalation, and ingestion of fruits and vegetables from on-site gardening. The USEPA guidelines for hazard indices and or excess cancer risk are both exceeded for the combined impacts of the four on-site exposure pathways.

3.4 Summary of Environmental Exposure Pathways:

As part of the focused RI a Fish and Wildlife Impact Analysis (FWIA) was conducted for the Maestri Site. The FWIA was conducted in accordance with the NYSDEC Division of Fish and Wildlife's document entitled Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites (1991). Specifically, Step I - Site Description and Step IIA - Contaminant-Specific Impact Analysis, Pathway Analysis of the NYSDEC document are addressed in the report.

The FWIA concluded that the majority of the terrestrial portion of the study area is highly developed, resulting in limited biological community composition. Although complete exposure pathways were identified on-site for small mammals, such as the woodchuck, and seed/fruit eating birds, these species are expected to use the site minimally because of the poor habitat in adjacent areas. Therefore any impacts from site related contaminants to wildlife on-site are expected to also be minimal.

Downgradient surface waters (Onondaga Lake) and wetlands present in the FWIA study area are not affected by site related contaminants because migration of the contaminants is prevented by the groundwater recovery and treatment system and no other migration pathways have been identified. Therefore, off-site impacts to fish, wildlife and resources are not expected.

SECTION 4: ENFORCEMENT STATUS

The NYSDEC and the Stauffer Management Company (SMC) entered into a Consent Order on December 16, 1992. The Order obligates the responsible party to implement a full remedial program. Upon issuance of the Record of Decision, SMC has 30 days to notify the NYSDEC that it will implement the selected remedy under provisions of the existing Order on Consent.

The following is the chronological enforcement history of this site.

Date	Index No.	Subject of Order
8/31/88	A7-0139-88-01	IRM Order
12/16/92	A7-0226-90-03	Remedial Program
11/15/93	A7-0226-90-03	Mod.(Drum Removal)

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

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

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

The goals selected for this site are:

- *Reduce, control, or eliminate the contamination present within the soils on site.*
- *Eliminate the potential for direct human or animal contact with the contaminated soils on site.*
- *Prevent, to the extent possible, migration of contaminants in on-site soils to groundwater.*
- *Provide for attainment of SCGs for groundwater quality at the limits of the existing site boundary.*
- *Minimize to the maximum extent practicable long-term restrictions to future site usage*

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Potential remedial alternatives for the Maestri Site were identified, and evaluated in the report entitled "Feasibility Study - Maestri Site; Geddes, N.Y." prepared by O'Brien & Gere Engineers for SMC. The process for development of alternatives includes the development of remedial action objectives, development of general response actions, identification of volumes or areas of contaminated media, identification and screening of remedial technologies and process options, and the assembly of remedial alternatives. Seven remedial alternatives were developed to address the remedial action objectives. The preliminary screening of alternatives step was not performed in the FS because the number of identified alternatives was a manageable number for detailed analysis. The number of alternatives given consideration and evaluated in the PRAP has been further reduced by NYSDEC to three (3) as presented herein.

Fencing, groundwater recovery and treatment, and groundwater monitoring are common components of each remedial alternative for the site. The current ground water system will continue to operate as part of each remedial alternative. There is currently a fence around the site to restrict human access to the site. The fence will be maintained until completion of the site remediation. Monitoring wells that have previously been installed will continue to be used to track contaminant concentrations in site ground water.

Therefore, the assembly of process options and remedial alternatives has focused on the approximately 8,000 cubic yards of contaminated subsurface soils surrounding the former drum disposal and excavation areas on site (Figure 4). A summary of the detailed analysis follows.

6.1 Description of Alternatives

The potential remedies are intended to address the contaminated soils at the site. Approximately 8000 cubic yards of soil from an estimated area of 100 ft. x 200 ft. on-site require remediation. The predominant soil contaminant is xylene, detected in on-site soils at a concentration of up to approximately 7,000 parts per million (ppm).

Xylene concentrations have driven the selection of remedial technologies and alternatives. The NYSDEC has established a cleanup goal of 1.2 ppm for xylene in site soils. The cleanup goal is based on a particular contaminant's ability to partition off soils into groundwater. For xylene the 1.2 ppm soil level would result in concentrations in groundwater less than the 5 parts per billion (ppb) ground water standard. Due to xylene's predominance each remedial technology and alternative was initially evaluated for its ability to treat xylene to cleanup levels. The technologies evaluated for xylene may also be applicable to other site contaminants, and given the disproportion of low concentrations of other contaminants in soil to the high levels of xylene, there is a strong likelihood that the other volatile contaminants would be rendered non-detectable after treatment. This would be verified by sampling for all site contaminants at the limits of the soil excavation and prior to redeposition of treated soil.

No Further Action
Alternative #1

The no further action alternative was evaluated as a procedual requirement and as a basis for comparison. This alternative recognizes the remedial work already completed under the previously performed IRMs. Continued operation of the groundwater system, implementation of a groundwater monitoring program, fencing, and recommended site deed restrictions, would be included in the no further action alternative.

This is an unacceptable alternative as the site would remain in its present condition, and human health and the environment would not be adequately protected. Site access and potential use would continue to be restricted. Site soils would continue to be a source of ground water contamination though the off-site impacts are minimized by the operation of the ground water system.

Present Worth:	$ 1,590,000
Capital Cost:	$ 20,000
Annual O&M:	$ 100,000
Time to Implement	30 years

In Situ Soil Vapor Extraction
Alternative #2

A series of wells would be installed in the soil to lower the water table and to draw air containing site related organic contaminants from the impacted soils. Since the contamination extends below the water table to an estimated depth of 14 ft. the area would need to be dewatered to allow the passage of air through the full extent of contamination.

The Soil Vapor Extraction (SVE) vacuum unit would draw air through the soil. The air in turn would strip the VOCs from the soil and transport the contaminants to the SVE extraction wells. The off gas from the SVE extraction wells would be directed through a treatment unit such as a carbon adsorption unit. The SVE

vacuum unit would also serve to promote bioventing in the soil. As air is pulled through the soil, oxygen availability to microorganisms would increase, thus enhancing the effectiveness of biodegradation of semi-volatile organics (those site contaminants whose vapor pressure would not be amenable to vapor extraction).

Present Worth:	$1,770,000
Capitol Cost:	$ 710,000
Annual O&M:	$ 150,000
Est. Time To Implement	10 years

Ex Situ Biological Treatment/Ex Situ Soil Vapor Extraction
Alternative #3

This alternative includes excavation of all on-site soils with contaminant concentrations in excess of site cleanup goals, on-site ex situ biological/vapor extraction treatment, and replacement of the treated soils. The soil vapor extraction component would address the volatile (VOC) fraction of the site contaminants and the biological enhancement would treat the semi-volatile organic contaminant (SVOC) fraction. Excavated soils would likely require blending and screening inside a controlled process enclosure prior to placement in windrow piles approximately 20 ft. wide and 8 ft. high. The soil piles would be underlined and covered with a flexible membrane to promote proper drainage.

In order to maintain the proper bioreactive environment, three additives to the soil piles would be provided: oxygen, water, and nutrients. Perforated piping would be placed horizontally within the piles to allow for circulation of oxygen. Provisions would be made to add moisture and nutrients to the pile as needed. A vacuum would be used to actively extract organic vapors from the pile. Drawing air through the soil and controlling moisture content and nutrients would promote biodegradation activity of site contaminants. Off gases from both the soil handling enclosure and the vapor extraction process would require treatment prior to discharge.

Treated soil would be redeposited on site and covered with a minimum of six (6) inches of clean soil. The site will then be regraded and restored, and the site fence removed.

Present Worth:	$1,570,000
Capital Cost:	$1,200,000
Annual O&M:	$ 150,000
Est. Time To Implement	5 Years

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.

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.

Alternative #1, through natural attenuation and operating the existing ground water system over many years, may provide for attainment of NYS Class GA ground water standards for the off site groundwater plume. The alternative would not comply with NYSDEC recommended soil cleanup levels for organic contaminants.

Alternative #2 would provide for attainment of ground water standards and is expected to meet cleanup levels for Volatile Organic Contaminants (VOC) in soils over a 7-10 year period. In situ biodegradation of Semi-Volatile Organic Contaminants (SVOC) to levels meeting soil cleanup levels is uncertain for this site due to difficulties in providing sufficient oxygen and nutrients to the heterogeneous soils.

Alternative #3 would provide attainment of both Class GA ground water standards as well as on- site soil cleanup goals for both VOCs and SVOCs in a 3-5 years after the soil cleanup is completed.

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.

Alternative #1 would be protective of human health and the environment through site use restrictions and fencing that would restrict access and potential for contact. This Alternative would provide for continued control of the groundwater plume, but does not reduce contaminants in soil from migrating to the groundwater. The risks associated with unrestricted use would remain in excess of USEPA guidelines. However, the existing conditions currently pose little potential risk to the environment.

Alternative #2 may reduce concentrations to levels which do not present unacceptable risk to human health. However, the timeframe to attain clean up levels is uncertain and some residual contamination would remain. Site fencing would be maintained throughout the remediation. Alternative #2 does not pose unacceptable risk to the environment.

Alternative #3 would reduce the risks to human health for all exposure scenarios. Concentrations of all contaminants of concern would be reduced to levels which may support future use. The time frame to attain the target clean up levels for groundwater is estimated as 3-5 years after soil cleanup. Site fencing would be maintained throughout the remediation. Following remediation the fence could be removed because access restrictions would no longer be necessary. The alternative does not pose unacceptable risk to the environment.

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.

Alternative #1 involves no further remedial action other than (O&M) and monitoring. Workers performing O&M are required to wear personal protective equipment to minimize potential hazards during sampling and maintenance activities. There are no additional short-term impacts to the local community or the environment.

Alternative #2 involves a small amount of soil disturbance. As such there is a limited potential for short-term contact with soils and ground water containing contaminants during installation of the vapor extraction system. Workers would be required to wear personal protective equipment and adhere to safe construction practices

to minimize potential hazards. A network of air monitoring would be set up to ensure community protection. It is expected that the cleanup of both soils and ground water would take 7-10 years.

Alternative #3 involves excavation and handling of contaminated soils. As such, the potential for worker exposure is high. Workers would be required to wear personal protective equipment and adhere to safe construction practices to minimize potential hazards. Potential community exposure to vapors would need to be carefully addressed. An air monitoring network would be set up to ensure community protection from release of both particulate (dust) and VOC's. During design an evaluation would be made as to the feasibility to house the excavation and/or the soil processing and piles. It is estimated that the cleanup of soils would take 1-2 years and groundwater would take 3-5 years thereafter.

4. Long-term Effectiveness and Permanence.

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

Alternative #1 provides for deed restrictions and site access restrictions that minimize the magnitude of the residual risks to site contaminants. Risks associated with off-site migration of contaminated ground water would continue to be mitigated. The existing ground water system is adequate and reliable for collecting and remediating ground water with site contaminants. Potential risks to on-site users would remain.

Alternative #2 has uncertainties whether the in situ soil vapor extraction could minimize risks associated with potential residential use scenario, due to dense tight soils limiting the treatment capability for semi-volatiles. The site conditions create effectiveness and reliability uncertainties. The existing fencing is adequate and reliable for restricting site access, and the existing ground water system is adequate and reliable for collecting and remediating ground water with site contaminants.

Alternative #3 would effectively minimize risks associated with the potential future residential scenario. Risks associated with the off-site migration of ground water continue to be mitigated. Excavation and ex situ biological/vapor extraction treatment of site soils are expected to be adequate and reliable. Existing fencing is reliable in restricting access during remediation. The existing groundwater system is adequate and reliable for collecting and remediating groundwater containing site related contaminants.

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.

Alternative #1. The current ground water system would continue to reduce the toxicity, mobility, and volume of site related contaminants in ground water. Reduction of contaminants in site soils above the water table through natural attenuation would be minimal.

Alternative #2. In situ vapor extraction treatment would likely reduce toxicity and mobility of organic contaminants in soils. Both the timeframe and overall ability to reduce toxicity and mobility of VOCs and SVOCs to cleanup levels is uncertain due to dense site soils. The current ground water system would continue to reduce the toxicity, mobility and volume of site related contaminants in ground water. The soil vapor extraction and groundwater treatment systems would be irreversible.

Alternative #3. Ex situ vapor extraction/biological treatment within a soil pile would reduce toxicity, mobility and volume of VOC and SVOC contamination in site soils to target clean up levels. The current groundwater system will continue to reduce the toxicity, mobility, and volume of site related contamination in groundwater. The ex situ vapor extraction/biological soil, and ground- water treatment systems would both be irreversible.

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

Alternative #1 continues the current ground water remedial system and is easily implemented. The existing discharge limits remain in effect. Existing monitoring wells would continue to be used to evaluate the effectiveness of the system. Long term site restrictions and access agreements are required between the site owner and Responsible Party.

Alternative #2, the in-situ vapor extraction system is readily available technology and easily installed. The reliability of the technology is limited by the nature of the contaminants and by the site's low permeability and heterogeneous nature of the soils. The effectiveness of the remedy could be easily monitored by implementation of a general site monitoring program as presented in the FS. Influent and effluent monitoring of the vapor extraction and ground water systems would be required. Substantive compliance with air and water discharge limits would also be required. Coordination and access agreements with the site owner may be necessary to allow operation and maintenance of the treatment systems.

Alternative #3 would include excavation of soils to an approximate depth of 15 feet, which is well within the limits of standard practice and construction equipment. Soils would be excavated, treated in piles, and backfilled into the excavation areas. Appropriate measures would be taken to ensure that the backfilled soils would not come in contact with contaminated soil or groundwater. Groundwater infiltrating into the excavation would be collected and treated. The effectiveness of the remedy is easily monitored by implementation of a general site monitoring plan as presented in the FS. Confirmatory samples from the side walls and bottom of the excavation would determine the limits of the excavation. Influent and effluent monitoring of the ground water and soil treatment systems would be required. Substantive compliance with air and water discharge limits would also be required. Coordination and access agreements with the site owner may be necessary to allow operation and maintenance of the treatment systems.

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

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan have been evaluated. The NYSDEC and NYSDOH conducted a public meeting regarding the PRAP on January 19, 1995. There were no public objections to the proposed remedy made at the meeting. In general the public was in strong support of the permanent treatment aspect of the remedy. Concerns raised during the meeting focused on the implementation details of the excavation component and how that may affect adjacent homeowners. The NYSDEC accepted written comments on the PRAP though February 11, 1995. One set of written comments was received from the homeowners on Alhan Parkway that

abut the site. A " Responsiveness Summary" was prepared that addresses the public comments received and briefly describe what measures could be taken during remediation to address the concerns raised. The Responsiveness Summary is included herein as Appendix A. The final remedy selected does not differ significantly from the proposed remedy.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 6, the NYSDEC has selected Alternative #3 as the remedy for this site.

This selection is based upon an evaluation of the two threshold criteria and five balancing criteria as presented in Section 6. Alternatives #1 & #2 are not fully protective of human health and the environment under the unrestricted use scenario. Alternative #2 has difficulties in meeting soil clean up objectives particularly for SVOC contamination, and the timeframe for operating the system is uncertain due to site soil conditions. Alternative #3 is effective in meeting site cleanup objectives, and protective in the long term. Short term impacts would be a potential concern but could readily be mitigated through proper controls on excavation, air monitoring, and the use of personal protective equipment for site workers. Alternative #3 uses readily implementable technology that minimizes the timeframe for remedial action objectives. Alternative #3 will result in greater than 95% reduction of all site contamination contained in both ground water and soils. Though higher in initial capital expenditures Alternative #3 is cost effective in that the time required to operate and then monitor the site is substantially less than for Alternatives #1 & #2. Alternative #3 provides the added benefit of allowing future site use with minimal restriction once all remedial activities are completed.

The estimated present worth cost to implement the proposed remedy is $1.57 million. The cost to construct this remedy is $1.20 million and the annual operation and maintenance cost for the 3-5 year operating period is $150,000/yr.

7.1 The Elements Of The Selected Remedy Are As Follows:

1. A remedial design program to verify the conclusions of the conceptual design, and provide the details necessary for construction, operation, maintenance and monitoring of the remedial program.

2. Excavation and preparation for treatment of soils that contain contaminants in excess of soil cleanup objectives. This would involve an estimated 8,000 cubic yards of contaminated soil.

3. Treatment of the soil utilizing ex-situ piles that combines vapor extraction and biological degradation of organic contamination, and collection and treatment of air discharges from the soil treatment process.

4. Redeposition of treated soils on site. Placement of 6 inches of clean top soil over the soil redeposition areas, site regrading, and restoration.

5. Continued operation of the on-site groundwater collection and treatment system with an evaluation annually until concentrations of site contaminants can no longer be effectively removed or cleanup objectives are met. Treatment will be by carbon adsorption with discharge to a nearby storm sewer.

6. Monitoring of the soil treatment, water treatment, air discharges and groundwater to ensure compliance with clean up objectives.

7.2 Documentation of Significant Changes

There are no significant changes from the Proposed Remedial Action Plan.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

Document repositories were established at the following locations for public review of project related material:

* Geddes Town Hall Woods Road Solvay, N.Y.	*NYSDEC 50 Wolf Road Albany, N.Y. 12233-7010 Attn: Mr. Gary Kline, P.E.	*NYSDEC Region 7 Office 615 Erie Boulevard West Syracuse, N.Y. 13204 Attn: Mr. Charles Branagh, P.E.

The following citizens participation activities were conducted:

- Fact Sheet, September 1994; Described results from RI activities and identified document repositories.

- Public meeting held September 22, 1994; Presented results of the RI and accepted public inquiry.

- Fact Sheet, December 1994; summarized PRAP and announced public meeting on same.

- Public Meeting held January 19, 1995; Presented results of the FS and PRAP for public comment.

- Public Comment period open from December 29, 1994 through February 11, 1995 to receive comments on the PRAP.

Table 1

SUMMARY OF CONTAMINANTS IN SOIL

Focused Remedial Investigation
Maestri Site
904 State Fair Blvd.
Town of Geddes, NY

Compound	Average Soil Concentration (mg/kg)	Upper Bound Soil Concentration (mg/kg)
PCE	28.4	156
Toluene	7.7	45.3
Ethylbenzene	2.2	11.7
Xylene	1360	7070
2-Methylphenol	1	3.7
2,4-Dimethylphenol	2.3	14.7
Benzoic Acid	12.8	71.5

TABLE 2
COST ESTIMATES FOR REMEDIAL ALTERNATIVES
MAESTRI SITE
SITE # 7-34-025
NOVEMBER 1994

ALTERNATIVE #1-NO FURTHER ACTION

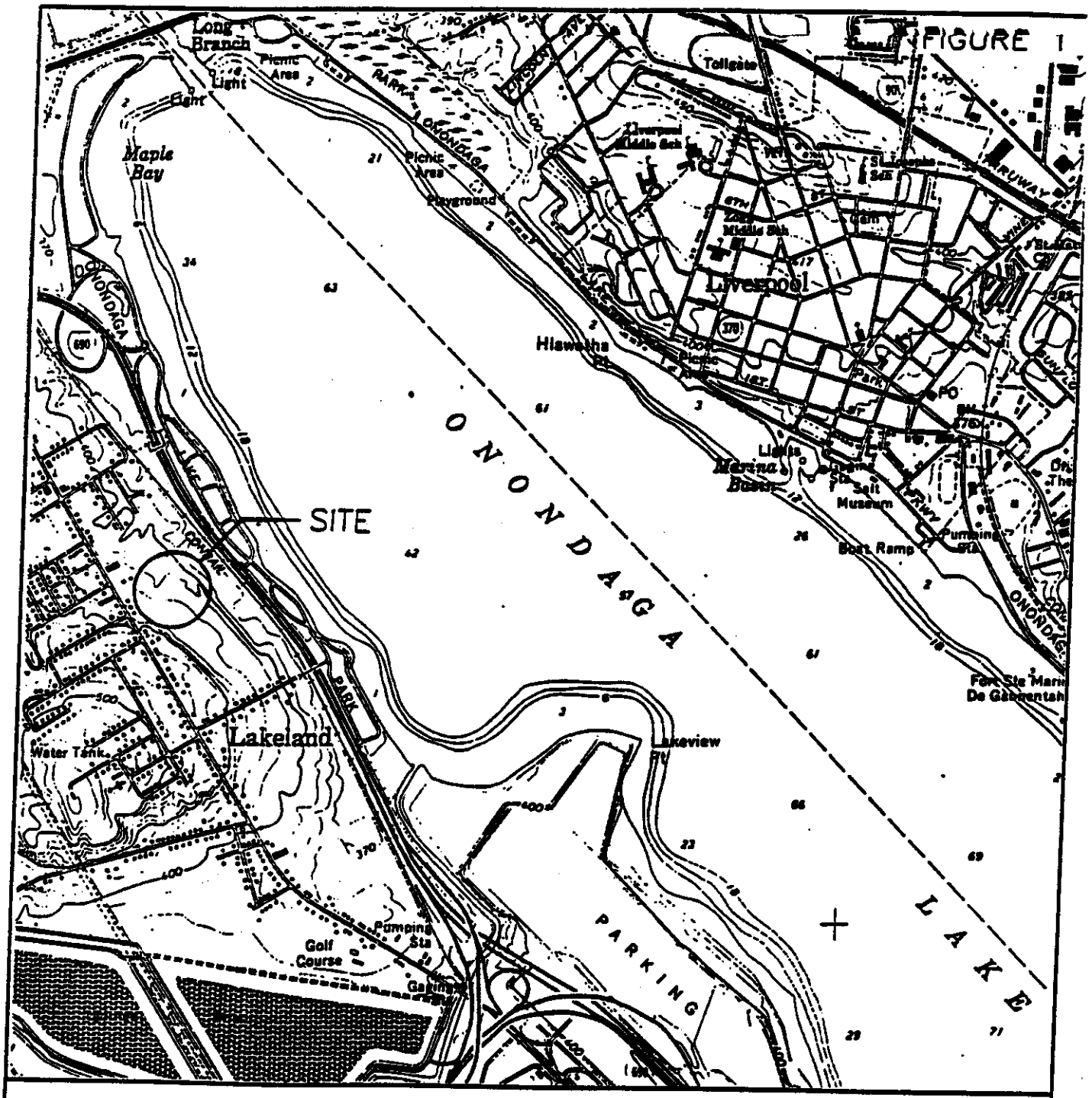
CAPITAL (construction) COST	- $ 20,000
EST. O&M COST	- $ 100,000/yr
TIME TO IMPLEMENT	- 30yrs
TOTAL PRESENT WORTH	- $1,590,000

ALTERNATIVE #2-INSITU SOIL VAPOR EXTRACTION

CAPITAL (contruction) COST	- $ 710,000
EST. O&M COST	- $ 150,000/yr
TIME TO IMPLEMENT	- 10yrs
TOTAL PRESENT WORTH	- $1,770,000

ALTERNATIVE #3-EX SITU SOIL VAPOR EXTRACTION w/ BIOREMEDIATION

CAPITAL (construction) COST	- $1,200,000
EST. O&M COST	- $ 150,000/yr
TIME TO IMPLEMENT	- 5yrs
TOTAL PRESENT WORTH	- $1,570,000



FEASIBILITY STUDY
MAESTRI SITE
904 STATE FAIR BLVD.
TOWN OF GEDDES, NEW YORK

SITE LOCATION MAP

0 2000 4000

APPROX. SCALE IN FEET

ADAPTED FROM U.S.G.S. SYRACUSE WEST, NEW YORK QUADRANGLE 7.5 MINUTE SERIES

5618.001-05F
May/09/94

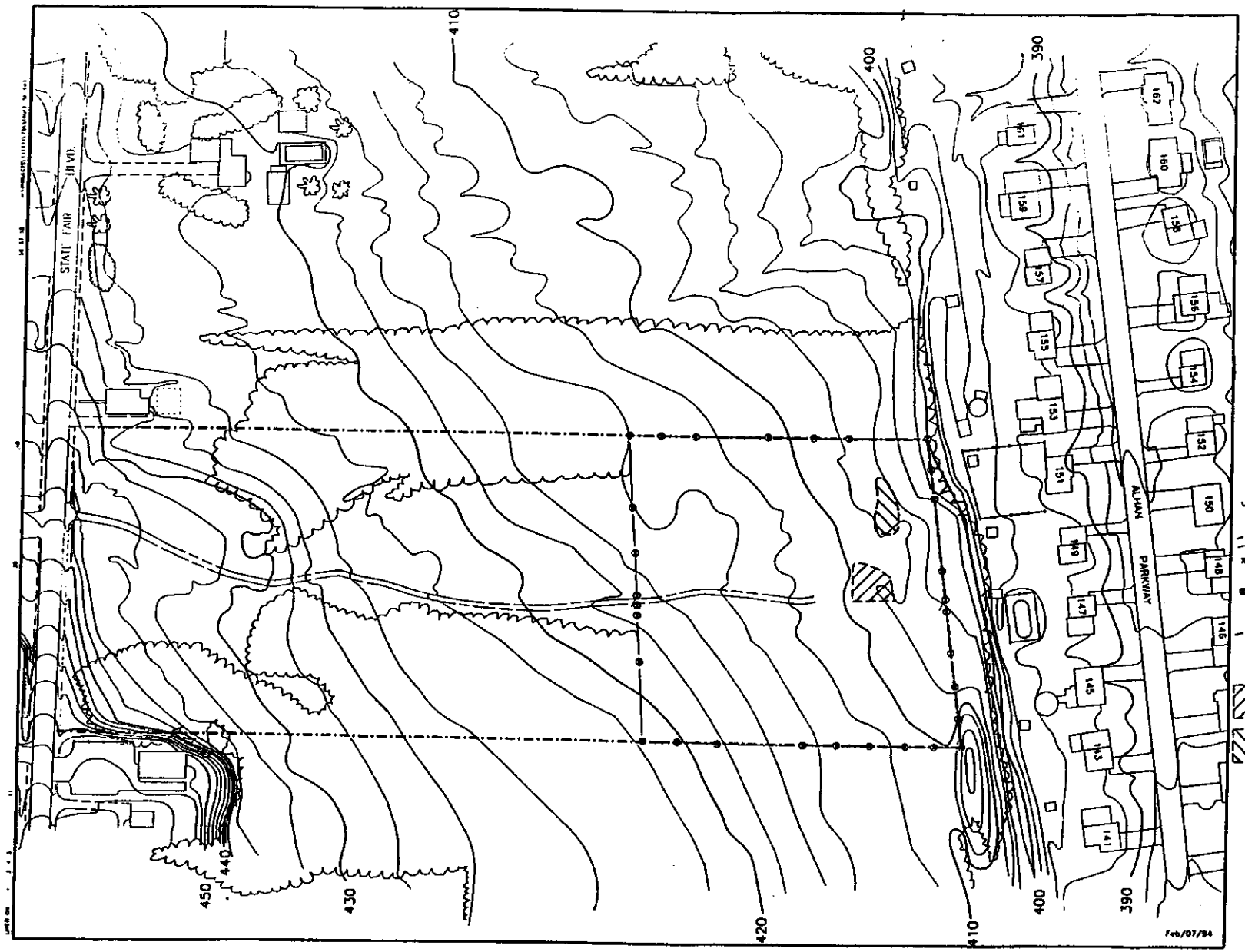


FIGURE 2

FOCUSED REMEDIAL INVESTIGATION
MAESTRI SITE
904 STATE FAIR BLVD.
TOWN OF GEDDES, NEW YORK

SITE TOPOGRAPHIC MAP

LEGEND

- TREE LINE
- ACCESS ROAD
- FENCE
- 8' HIGH SECURITY FENCE
- MAESTRI SITE PROPERTY BOUNDARY
- 150 RESIDENCE
- APPROXIMATE LIMITS OF 1987 EXCAVATION
- APPROXIMATE LIMITS OF 1990 EXCAVATION

0 100 200

SCALE IN FEET

5618.001.136

O'BRIEN & GERE
ENGINEERS, INC.

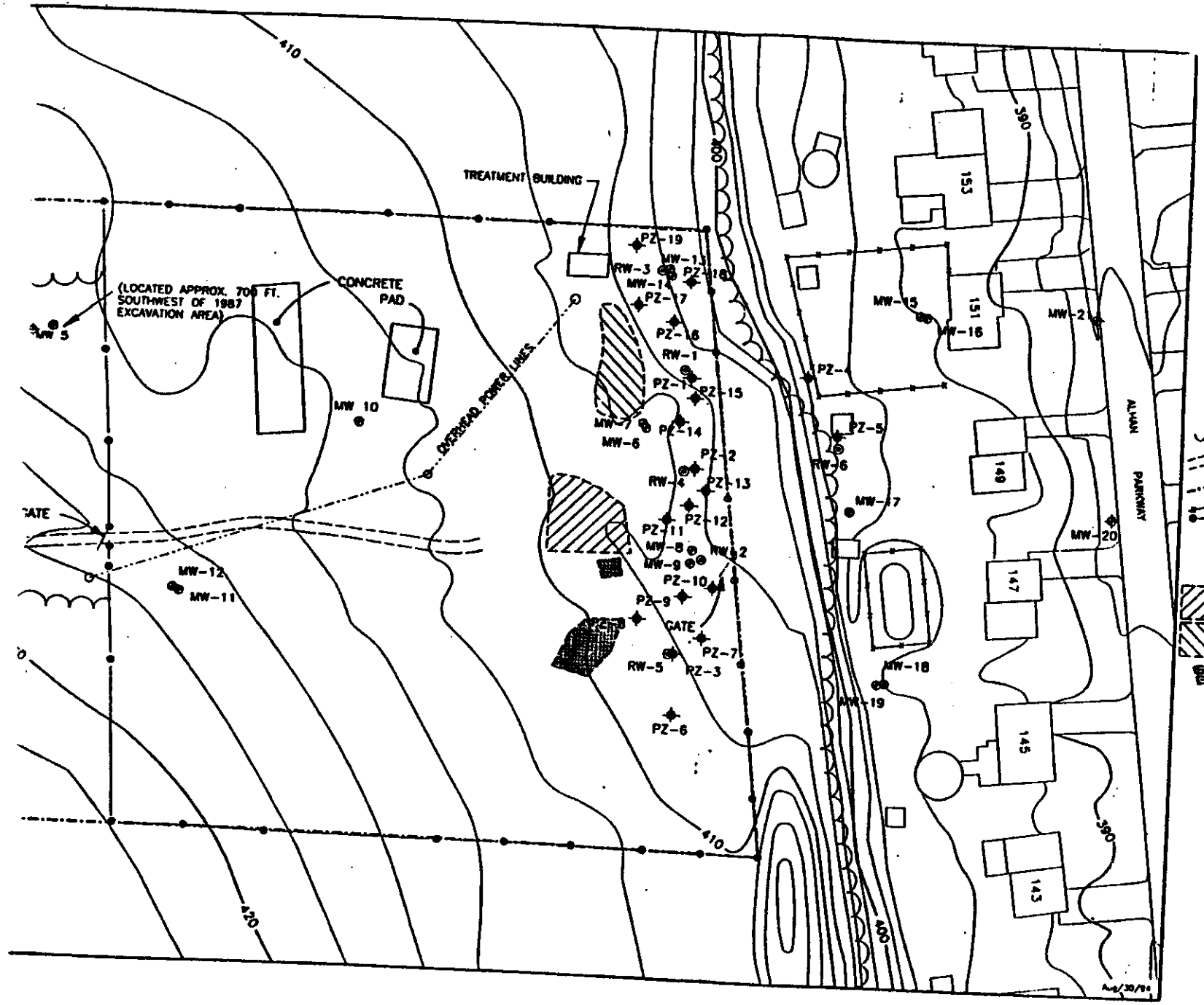


FIGURE 3

FEASIBILITY STUDY

MAESTRI SITE
904 STATE FAIR BLVD.
TOWN OF GEDDES, NEW YORK

SITE MAP
(ENLARGED)

LEGEND

- TREE LINE
- ACCESS ROAD
- MAESTRI SITE PROPERTY BOUNDARY
- FENCE
- 8' HIGH SECURITY FENCE
- MONITORING WELL
- RECOVERY WELL
- PIEZOMETER
- APPROXIMATE LIMITS OF 1987 EXCAVATION
- APPROXIMATE LIMITS OF 1990 EXCAVATION
- APPROXIMATE LIMITS OF 1993 EXCAVATION

50 0 50

APP. XX. SCALE IN FEET

Aug/30/94

GANNETT FLEMING ENGINEERS, INC.

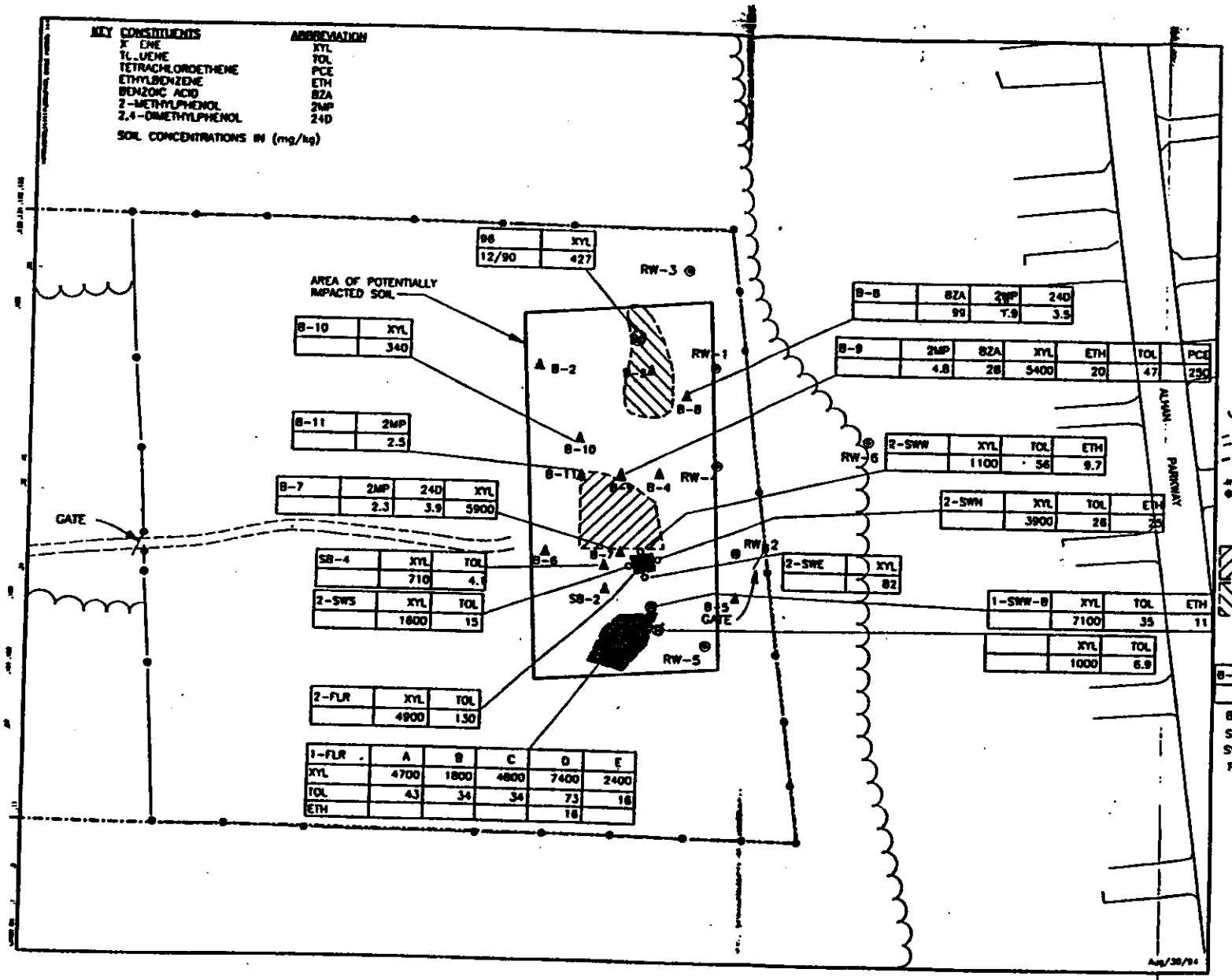


FIGURE 4

FEASIBILITY STUDY

MAESTRI SITE
904 STATE FAIR BLVD.
TOWN OF GEDDES, NEW YORK

AREA OF POTENTIALLY IMPACTED SOIL

LEGEND

- TREE LINE
- ACCESS ROAD
- MAESTRI SITE PROPERTY BOUNDARY
- FENCE
- 8' HIGH SECURITY FENCE
- SOIL BORING
- RECOVERY WELL
- APPROXIMATE LIMITS OF 1987 EXCAVATION
- APPROXIMATE LIMITS OF 1990 EXCAVATION
- APPROXIMATE LIMITS OF 1993 EXCAVATION
- SAMPLE ID

B-10	XYL	— CONSTITUENT
	340	— CONCENTRATION (mg/k

B-X SOIL BORING (8/89)
SB-X SOIL BORING (9/93)
SWW SOIL SAMPLE TAKEN @ SIDE WALL WI
FLR SOIL SAMPLE TAKEN @ EXCAVATION F FLOOR

50 0 50

APPROX. SCALE IN FEET

O'BRIEN & GERE ENGINEERS, INC.

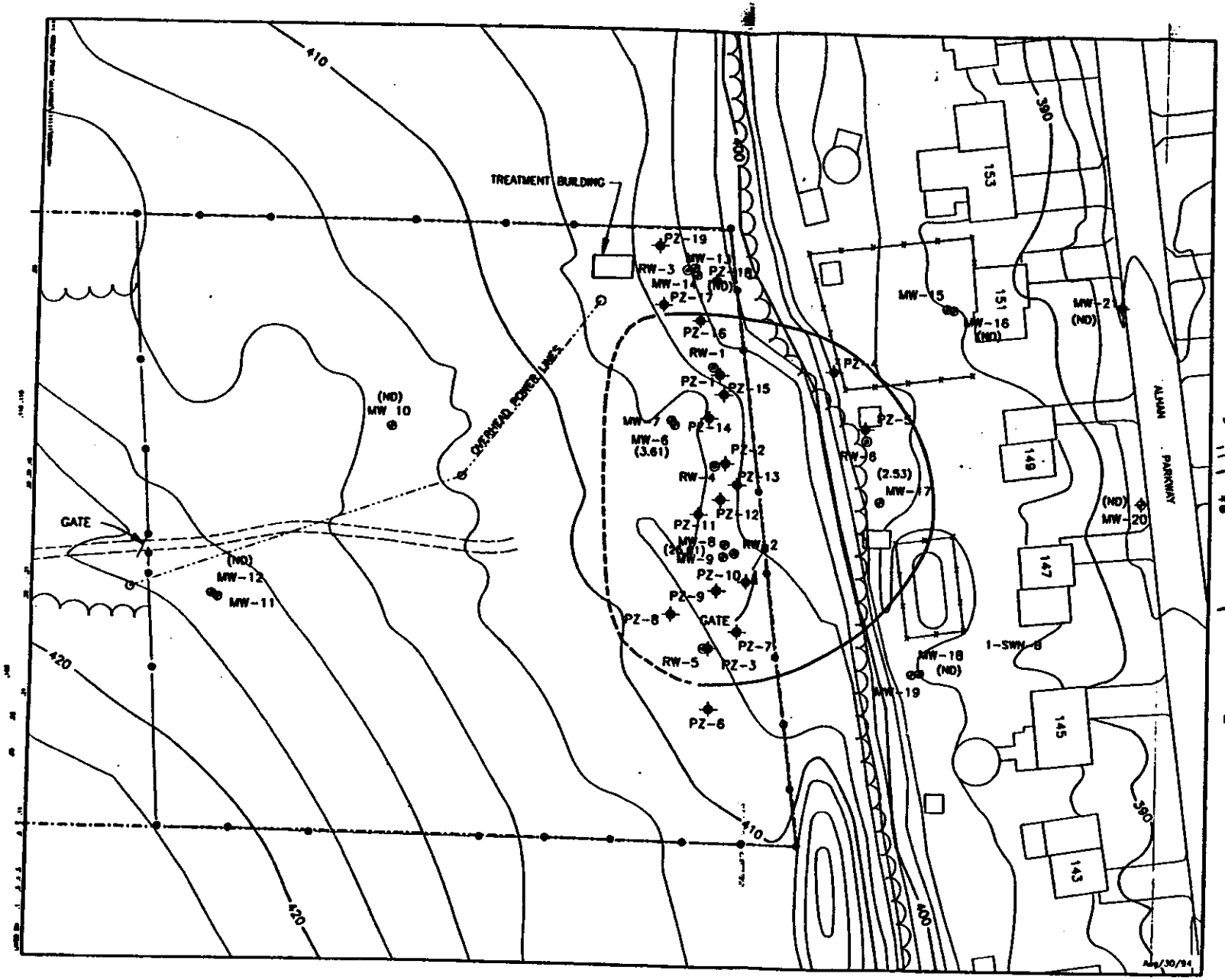


FIGURE 5

FEASIBILITY STUDY

MAESTRI SITE
904 STATE FAIR BLVD.
TOWN OF GEDDES, NEW YORK

VOLATILE ORGANIC COMPOUND
GROUND WATER PLUME
(JUNE 28, 1993)

LEGEND

- TREE LINE
- ACCESS ROAD
- MAESTRI SITE PROPERTY BOUNDARY
- FENCE
- 8' HIGH SECURITY FENCE
- MONITORING WELLS
- RECOVERY WELL
- PIEZOMETER
- APPROXIMATE LIMITS OF VOLATILE ORGANIC COMPOUND GROUND WATER PLUME (DASHED WHERE INFERRED)
- (3.61) TOTAL VOC CONCENTRATION IN (ppm)

NOTE: EDGES OF VOC PLUME ARE BASED ON GROUND WATER SCREENING AND GROUND WATER MONITORING WELL SAMPLING RESULTS.

50 0

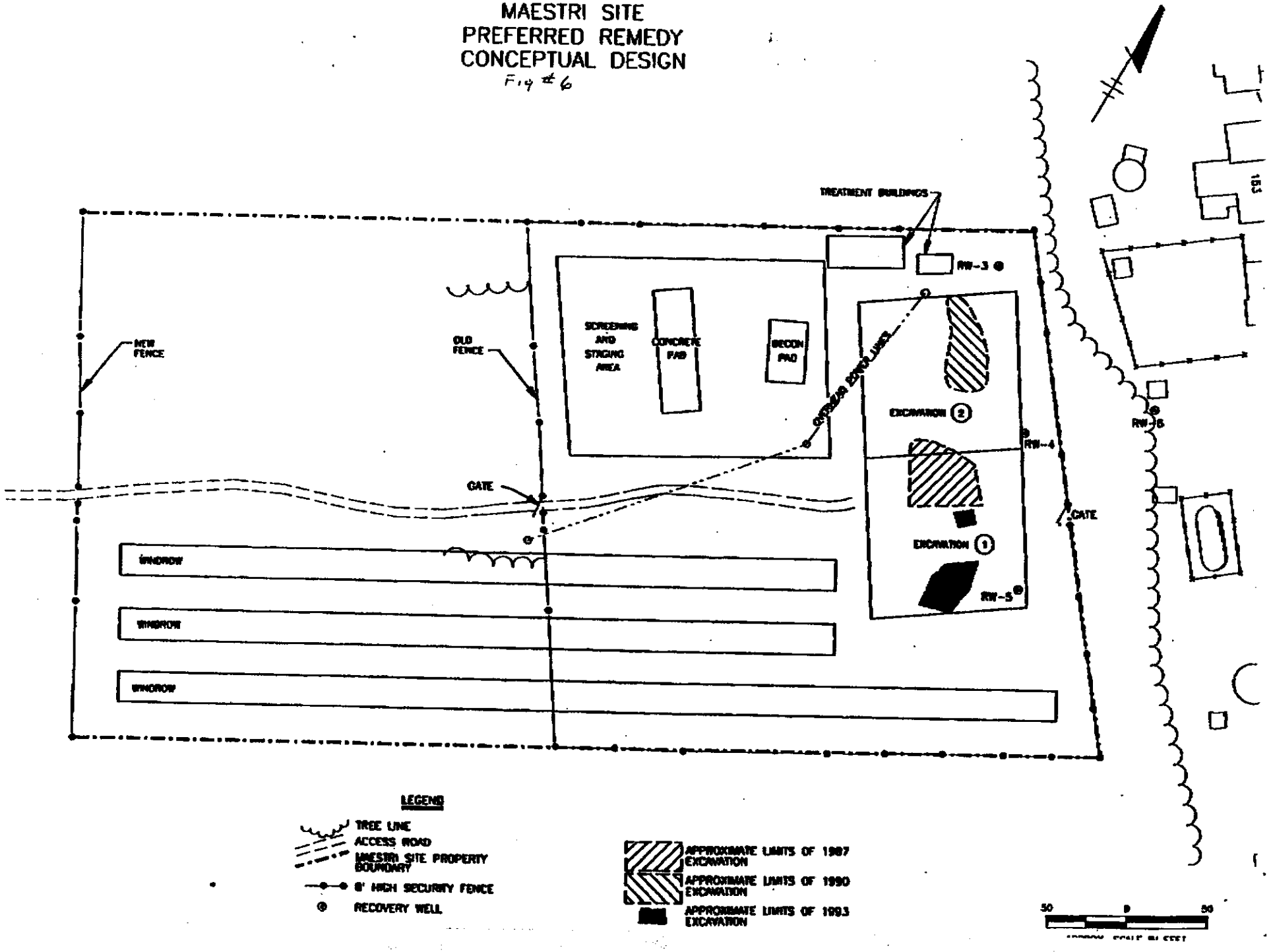
APPROX. SCALE IN FEET

9618.003-04F

O'BRIEN & GERE ENGINEERS, INC.

MAESTRI SITE
PREFERRED REMEDY
CONCEPTUAL DESIGN

Fig # 6



APPENDIX A

RESPONSIVENESS SUMMARY

INTRO: **Attachment number one to this summary is a list of questions submitted by the homeowners on Alhan Parkway during the January 19, 1995 public meeting. The questions and issues raised by the letter are similar to those raised verbally during the public meeting's question and answer session.**

Questions from the letter and meeting have been paraphrased and answered by the following Responsiveness Summary.

1. **Q.** **Was off-site disposal of contaminated soil evaluated in the Feasibility Study?**

   A. **Disposal of excavated soil off site in a landfill was evaluated in the Feasibility Study. The option was rejected due to the volume of contaminated soil, approximately 8,000 cubic yards. The cost for off-site disposal would approximately double the cost of remediation.**

2. **Q.** **What is the proposed location and nature of the process enclosures?**

   A. **Process enclosures are temporary structures that could house the soil conditioning equipment. Details of this construction is a design consideration, currently there are two additional on-site structures planned that will be equipped with air control systems to prevent migration of airborne contaminants. They will be constructed west of the current groundwater treatment building. The process enclosures are not intended to house the soil piles. The piles will be covered with a heavy plastic sheeting.**

3. **Q.** **How long will excavation last?**

   A. **The actual excavation will be short duration approximately 3-4 weeks per campaign. The site soil will be excavated and treated in two campaigns, each lasting for up to six (6) months. Plans call for one half the site to be remediated in 1996 followed by the second half in 1997.**

4. **Q.** **How will the excavated areas be controlled?**

   A. **Excavated areas during treatment may require stabilization. The use of off-site and/or on-site backfill will be considered during design. More likely the side slopes will be graded back to allow the hole to remain open and be used as a sump to collect precipitation and contaminated groundwater which**

would be periodically pumped out for treatment at the existing on-site groundwater treatment system.

5. Q. What is the schedule for site remediation and will the neighborhood be notified?

   A. The current schedule calls for the first soil campaign to start in the Spring of 1996. The local neighborhood will be provided early notice of an anticipated start of remedial activities.

6. Q. What is the reputation and history of ex-situ bioremediation?

   A. Ex-situ bioremediation (soil piles) has been used extensively throughout the environmental industry. In particular, the oil and gasoline refinery industry has had much success remediating soil contaminated with similar compounds. Typical problems with bioremediation are usually associated with the slow down of biological activity during the cold winter months thus prolonging the remedial program.

7. Q. Will there be contingency plans for the soil treatment system? What if problems arise with odors?

   A. Contingency plans will be developed for both the excavation and treatment processes during the design stage. Air monitoring at the perimeter of the site will insure protection of the adjoining homes. Some nuisance odors during remedial activities are likely to occur. All efforts will be made to minimize problems by tight controls on the excavation through the use of plastic covers and foam, weather and wind awareness and odor control systems on the soil handling facility.

8. Q. Is there a potential for the back embankment to be undermined during the excavation? How can the homeowners be assured that there will be no property damage as a result of the remedial activities?

   A. Based on our current knowledge from past experiences excavating drums on site the embankment is believed to be sufficiently stable. A geotechnical review will be made during design to determine if the embankment and/or excavation require additional support.

9. Q. **If the excavation is left open, wouldn't the hole be come saturated with runoff?**

A. **The excavation areas if left open will be bermed to prevent runoff from entering and will be continually pumped out. Water will be directed to the existing water treatment system.**

10. Q. **Will the remediation and final site regrading affect runoff and drainage?**

A. **Site regrading will restore the site to approximately its existing conditions. It is not anticipated that drainage or runoff problems will occur.**

11. Q. **Does soil "cleaned" to 1.2 ppm xylene exhibit any odors?**

A. **In accordance with NYSDEC TAGM 4046 soil exhibiting nuisance odor, even if it meets target numerical cleanup levels, will not be considered "clean" and therefore in the case of Maestri will be left on the soil piles for further treatment.**

12. Q. **How will local homes be protected from odors and contaminants?**

A. **A Health and Safety plan has been developed for the site which addresses precautions necessary to control chemical releases during remedial activities. This plan will be updated to meet the requirements for the proposed construction work. Potential exposure to airborne contaminants will be addressed by real time air monitoring of the remedial activities and by the installation of a site perimeter monitoring network. The monitoring network will provide early warning of possible off-site migration of airborne contaminants. Tight engineering controls on the soil excavation and soil handling will reduce the chance of off-site migration. Should exceedences occur, the activities will be either modified or halted and evaluation of the cause be undertaken.**

It should be understood that odor threshold, which is one's ability to detect a volatile organic, may occur at concentrations below that which can be routinely monitored. We agree, that these " nuisance" odors are a concern for the neighborhood and efforts will be made to control them. Limiting the exposed excavation, use of plastic covers, foam, and/or water, and weather pattern awareness (temp, wind direction, etc.) are all practices which can be used effectively to limit odors. Furthermore, excavation is expected to occur during the spring and work can be done when children are in school and adults are at work. Adequate notice will be provided before the excavation

begins.

13. Q. **When remediation is complete, what will happen to the site?**

A. **Plans call for completion of both the soil and groundwater cleanup in 5-6 years. Post remedial monitoring of the groundwater to ensure effectiveness of the program may continue for some time at a select number of wells. Pending the outcome of the remediation and monitoring the site will be either delisted, or reclassified as properly closed. Wells not used for long term monitoring will be decommissioned by pulling the casing and grouting the boreholes. It is expected that the site will be available for use with minimal or no restrictions should the cleanup prove successful.**

14. Q. **Has Mr. Maestri cooperated in this program?**

A. **Mr. Maestri has not been involved during the RI/FS process.**

15. Q. **What guarantees are there that there are no other barrels?**

A. **The investigation has used the best methods available to ascertain the location and subsequent removal of drums. Magnetometer surveys, numerous test pits and test borings have been completed over the entire site during the RI/FS.**

Attachment # 2

Was disposal of the excavated soil to a landfill considered?
If it was, why wasn't it chosen?
What would be the cost of off-site disposal?

Describe the "controlled process enclosures".
What materials are they made of?
Are they temporary structures?
Where will they be?
How many will there be?
These will hold 8000 cubic yards of soil?
Will all the soil be excavated at once?
How long will the excavation take?
How will odors be controlled during the excavation process?
What will happen to the excavated areas during treatment?
Will they be backfilled with other soil?
What soil will be used to backfill excavated areas?
Where is the backfill from?
Was the backfill tested for contamination?

What time of year will the excavation happen?
Odors are worse when the weather is warm.
How much notice will the neighborhood have?
If it is planned during the cold winter months, are there alternate dates if the weather is warm?

What is the reputation of the ex-situ treatment?
Where has it been used?
What problems were encountered?
What contingency plans are in place if problems do arise?
(especially with odors)

Has consideration been given to the fact that when severe wet weather occurs the backfilled area may become oversaturated and slide down the hill onto homeowner property possibly causing heavy property damage?
The excavation area is close to the embankment directly behind 147, 149 & 151 Alhan Pkwy.
Does this bank have the structural integrity to retain saturated loose soil behind it?
Should the entire hill be regraded, including the embankment, with a terraced step-like grade?
What protection is going to be provided to homeowners to protect us from mud slides?
We would like to be assured, in writing, that any property damage resulting from the treatment process will be restored to its original form.

When the treatment process is done, the soil will be redeposited and regraded. There has been a history of storm run-off and spring-melt drainage problems in the area. The Town has been approached on several occasions to remedy drainage problems. The Town has responded with regrading and the addition of several catch basins.

How will the regrading effect what the Town has done to help the run-off problem?
Will the regrading cause new run-off problems?
Are additional catch basins planned?
How will the run-off be directed to the basins?

The clean-up level for xylenes is 1.2 ppm in the soil.

Will the cleaned soil contain this concentration?
Does 1.2 ppm of xylene have an odor?
Is there any criteria for acceptable odor levels?
As a homeowner, any odor is unacceptable.
How will exposure to odors be addressed?

What happens 5 years from now when the soil and groundwater treatment is done?

Does everyone pack-up and go home and close the book?
What happens to the monitoring wells?

What guarantees are there that there are no other barrels?

What evidence do you have that leads you to think that there are no other barrels?
Has Mr. Maestri cooperated in this evaluation?

from: Lorri Fisher
151 Albon P.

APPENDIX B

ADMINISTRATIVE RECORD
Maestri Site
Site No. 7-34-025

Maestri Site Investigation and Development of Interim Remedial Measures Final Report including Appendices A-H; O'Brien and Gere, September - 1992.

Administrative Order on Consent No. A7-0226-90-03, Site No. 3-34-025: Stauffer Management Company Respondent; Development of Remedial Program.

Work Plan including Addendum No. 1 for Remedial Investigation/Feasibility Study: Maestri Site; O'Brien and Gere, April - 1992.

Health and Safety Plan for Remedial Investigation/Feasibility Study: Maestri Site; O'Brien and Gere, revised November - 1992.

Quality Assurance/Quality Control Plan for Remedial Investigation/Feasibility Study: Maestri Site; O'Brien and Gere, revised November - 1992.

Administrative Order on Consent No. A7-0226-90-3 Modification No. 1, Site No. 7-34-025: Stauffer Management Company Respondent. Implementation of Interim Remedial Measure.

Interim Remedial Measure Work Plan Anomaly Excavation and Removal: Maestri Site; O'Brien and Gere, October - 1993.

Health and Safety Plan Anomaly Excavation and Removal: Maestri Site; O'Brien and Gere, November - 1993.

Anomaly Excavation and Removal Final Report: Maestri Site; O'Brien and Gere, November - 1994.

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10. **Focused Remedial Investigation Report:** Maestri Site; O'Brien and Gere, February - 1994.

11. **Fish and Wildlife Impact Analysis:** Maestri Site; O'Brien and Gere, July - 1994.

12. **Groundwater Recovery System Performance Test:** Maestri Site; O'Brien and Gere, August - 1994.

13. **Feasibility Study:** Maestri Site; O'Brien and Gere, September - 1994.

14. **Proposed Remedial Action Plan:** Maestri Site; NYSDEC, December - 1994.

15. **Transcript of January 19, 1995 Public Meeting and Responsiveness Summary to Public Meeting:** NYSDEC, March - 1995; included as Appendix A to the Record of Decision.