Department of Environmental Conservation

Division of Hazardous Waste Remediation

Gladding Cordage Site

Site Number 7-09-009
Chenango County, New York

Record of Decision

March, 1993

New York State Department of Environmental Conservation
MARIO M. CUOMO, *Governor* THOMAS C. JORLING, *Commissioner*

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Gladding Cordage Site, South Otselic, Town of Otselic, Chenango County, New York - Site ID #709009

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Gladding Cordage Site, developed in accordance with the New York State Environmental Conservation Law (ECL), and is not inconsistent with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) 42 USL Section 9601, et. seq., as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). Appendix D of this record lists the documents that comprise the Administrative Record for the Gladding Cordage Site. The documents in the Administrative Record are the basis for the selected remedial action.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Record of Decision, present a current or potential threat to public health, welfare or the environment.

DESCRIPTION OF THE SELECTED REMEDY

The major components of the selected remedy are as follows:

* Extraction of contaminated groundwater from a groundwater recovery well system with the treatment of the contaminated groundwater through an air stripper. This alternative will also aid in controlling the migration of contaminants off-site. The performance of this groundwater extraction and treatment system will be evaluated yearly with the goal of removing a significant portion of the contaminant mass. The treated groundwater will be discharged to the Otselic River.

* Long-term monitoring will be carried out to gauge the effectiveness of the selected alternative and monitor groundwater quality.

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.

March 31, 1993
Date

Ann DeBarbieri
Deputy Commissioner
Office of Environmental Remediation

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I. SITE LOCATION AND DESCRIPTION

The Gladding Cordage Site is located in the hamlet of South Otselic, which is in the town of Otselic, Chenango County, New York. The site occupies about 7.5 acres near the center of the hamlet. The site is bounded to the east by the Otselic River, to the south by Gladding Street, to the west by Ridge Road and to the north by undeveloped agricultural lands. The Gladding facilities consist of several large buildings. However, some of the buildings are in disrepair and are no longer used.

The former South Otselic Municipal Wellfield was located approximately 250 feet south of the site between the Otselic municipal office and the confluence of Ashbell Brook and the Otselic River. The wellfield consisted of two wells (designated MW-1 and MW-2) screened in glacial outwash deposits. Past disposal practices at the Gladding Cordage Site led to the contamination and closure of well MW-2 in 1986 and threatened well MW-1.

In 1990, the town of Otselic was awarded a Housing and Urban Development (H.U.D.) grant and installed a new water supply upgradient of the Gladding Cordage Site. The municipal wells impacted by the Gladding site are no longer used.

II. SITE HISTORY

The Gladding facility has been operating at its present location since 1892. The Gladding Cordage Corporation concentrated most of its production to the manufacture of various types of fishing lines and rope. This included processes for braiding, stretching, heat setting, dyeing and water proofing lines. The dyeing and water proofing processes included the use of oil-based compounds which included various solvents, primarily 1,1,1, Trichloroethane (TCA). Although process wastes were being produced, no waste treatment systems were in use.

Site investigations were initiated at the Gladding Cordage Site in 1986 when the NYSDEC responded to a complaint of red dye in the Otselic River. Initial investigations by the NYSDEC, NYSDOH and Gladding Cordage confirmed the presence of volatile organic compounds in the groundwater on-site, at the municipal wellfield and in the fish hatchery well. A facilities inspection of the Gladding Cordage plant confirmed the illegal storage and disposal of hazardous wastes on-site.

The NYSDOH notified the hamlet of South Otselic that the concentration of TCA in well MW-2 exceeded state drinking water standards. Production was switched to well MW-1. The site was placed on the New York State Registry of Inactive Hazardous Waste Sites as a class 2 site. The initial investigations performed by the Gladding Cordage Corp. included the installation of seven monitoring wells and the removal and disposal of the contents of one septic tank (outfall 008). Analysis of groundwater samples taken from these wells confirmed contamination at all well locations. The Gladding Cordage Corporation refused to commit to an approved remedial program. The site was then referred to the Office of the Attorney General. When the Gladding Cordage facility closed, the site was referred to the New York State Superfund Program.

III. CURRENT SITE STATUS

In May, 1988 a notice to proceed was issued to GHR Engineering Associates Inc. to conduct a Remedial Investigation / Feasibility Study (RI/FS) at the Gladding Cordage Site. Guidelines for the investigation were established based upon the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The primary objectives of this study were:

Remedial Investigation :

- Assess the nature, extent and the source of contamination.
- Evaluate the groundwater flow conditions and groundwater quality at the site.
- Gather the data required to evaluate the alternatives to remediate the site.
- Develop an emergency response plan in the event that the water quality of well MW-1 became unacceptable.

Feasibility Study :

- Assess the risk to public health and to the environment.
- Develop and select a cost-effective, environmentally sound, remedial action to correct the problems.

Fieldwork for the remedial investigation began in June 1988 and was completed in 1989. The remedial investigation included an electromagnetic survey, a soil gas survey, test borings, monitoring well installation, aerial photography and mapping, wetlands delineation, a habitat-based assessment, a health risk assessment, an emergency response plan and environmental sampling and analysis. Extensive sampling was performed and included air, groundwater, surface water, sediment and soil. A groundwater monitoring program has been continued by the NYSDEC and the results of this program have been incorporated into the FS. The analytical results of the monitoring program can be found in Appendix A.

The results of the RI identified a plume of contaminated groundwater extending approximately 2,000 feet down valley from the site and is up to 500 feet wide. The contamination of soils is limited and appears to be associated with past disposal practices.

The watercourse and biological assessments did not identify any adverse impacts from the site.

The Health Risk Assessment identified ingestion of contaminated groundwater and ingestion of on-site contaminated soils as the primary exposure routes at the site. However, the installation of the new municipal water supply and the installation of the treatment system at the fish hatchery has currently eliminated the groundwater ingestion exposure route and the Hazard Index for exposure to contaminated soils is well below the level at which adverse effects could be possible.

Public Health and Environmental Assessment

A risk assessment was conducted to determine whether the contaminants found at the Gladding Cordage Site could pose a significant threat to human health or the environment. Carrying out a risk assessment requires identification of the following:

* Contaminants of potential concern at the site
* Potential pathways of exposure and potentially exposed populations

The primary contaminant of concern is 1,1,1 Trichloroethane (TCA). A detailed description of all contaminants present at this site can be found in the RI/FS. Potential pathways of exposure and associated Hazard Indices have been identified as follows:

1. Ingestion of contaminated groundwater by future on-site workers and future residents.

   The concentrations of TCA currently in the groundwater at the site are in excess of the NYS Water Quality and Drinking Water Standards. It is estimated that the concentrations of TCA will remain above standards for 60 to 70 years without active remediation. The town still has the old municipal well (MW-1) designated as the emergency backup water supply for the community. Trace levels of TCA have been detected in this well during past sampling events.

2. On-site soil contact and ingestion

   Under this pathway, exposure routes would include dermal contact for on-site workers, future residents and trespassers. The estimated Hazard Index associated with exposure to on-site soils was calculated as 0.0005. The risks for these pathways do not exceed 1.0, the lowest level generally considered unacceptable by regulatory agencies.

IV. ENFORCEMENT STATUS

The NYS Attorney General's office and the current site operators (Gladding Braided Products) have reached an agreement. The AG and the former owner of Gladding Cordage Corporation have agreed to a monetary settlement and the former manager of Gladding Cordage Corporation was convicted of illegal disposal of hazardous wastes and falsifying documents.

V. GOALS FOR REMEDIATION

One of the goals of a RI/FS is to identify remedial action objectives for the site which are protective of human health and the environment and are consistent with the Superfund Amendments and Reauthorization Act (SARA) and NYS Standards, Criteria and Guidlines (SCG's). The remedial action objectives identified for the Gladding Cordage Site are as follows:

1. Minimize the potential for human exposure to the site-related contaminants;

2. Minimize the potential for off-site migration of site-related contaminants;

3. Permanently contain, treat and/or dispose of contaminated media in a manner consistent with State and Federal regulations.

The focus of the RI/FS was to address these remedial action objectives. The alternatives developed during the feasibility study are focused on the potential for off-site migration of contaminated groundwater (the greatest potential for human exposure) and the various treatment options for the contaminants.

The alternatives under consideration for remediation of the Gladding Cordage Site, including the NYSDEC preferred alternative, are in accordance with the New York State Environmental Conservation Law (ECL) and are consistent with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), 42 USL Section 9601, et.seq., as amended by the Superfund Amendment and Reauthorization Act of 1986 (SARA). The alternatives that were retained after the initial screening had to meet the following two screening criteria:

Effectiveness. This criterion addresses both the potential effectiveness of the technologies in handling the estimated areas or volumes of each media and in meeting the remediation goals identified in the remedial action objectives as well as the potential impacts to human health and the environment during the construction and implementation phase. Furthermore, it considers how proven and reliable the process is in remediating the contaminants of concern.

Implementability. This criterion encompasses both the technical and administrative feasibility of implementing a remedial technology.

Following the individual analyses, the alternatives remaining are compared and contrasted, and a preferred remedy is recommended.

VI. SUMMARY OF THE EVALUATION OF ALTERNATIVES

A. Selection of Initial Alternatives

The feasibility study examined remedial alternatives for the two contaminated media identified during the RI. The media are: the contaminated soils on-site; and the plume of contaminated groundwater. These alternatives were divided into source control measures and migration control measures. Four remedial alternatives were considered for source control and three were considered for migration control. These alternatives passed the initial screening process using the two above-described criteria and are presented below. This list excludes technologies which were considered inappropriate and infeasible at the onset of the screening process. The reasons for eliminating these technologies are covered in detail in the Feasibility Study.

The four alternatives developed for Source Control are numbered to correspond with the RI/FS report and are as follows:

1. No Action;

2. Capping;

3. Excavation and disposal;

4. Vapor extraction.

The three alternatives developed for Migration Control are:

1. No action/natural attenuation;

2. natural attenuation with continued monitoring;

3. On-site groundwater recovery/treatment with effectiveness monitoring.

Those wishing to learn more about the initial screening process and development of the above alternatives are encouraged to review the RI/FS.

B. Description of Alternatives Retained after Initial Screening

Source Control Alternatives

Alternative 1 - No Action

The no action alternative was developed for the site and carried throughout the evaluation process to provide a baseline for comparison with other alternatives. It is also a viable option on its own. The health risk assessment calculated a very low Hazard Index for this route of exposure. Generally, remedial actions are justified when the Hazard Index for an exposure route is greater than or has the potential of exceeding one. The Hazard Index for the ingestion of on-site soils is 0.000516. The no action alternative would not be a permanant remendy because contaminated soils would remain on-site. However, the residual concentrations would decrease in time due to volatilization and passive soil washing.

Alternative 2 - Capping

The potential adverse effects from the area of soil contamination are ingestion and possible migration of residual contaminants. A capping alternative would prevent exposure to the soil via direct contact and prevent possible migration by volatilization, dust generation or surface runoff. A capping alternative would not be a permanent solution because the contaminated soils are left in-place.

Alternative 3 - Excavation and Disposal

This alternative involves the excavation of the area of contaminated soils and the off-site disposal or incineration of the soils . This alternative would be a permanent source control measure. It would require that a sampling program be developed to precisely define the dimensions of the area to be excavated, the depth of the excavation and various disposal options. It would also require the restoration of the excavated area.

Alternative 4 - Vapor Extraction

This alternative involves installing perforated pipes within the unsaturated soils. The venting pipes would then be connected to a vacuum source. A vacuum would be applied to induce air flow through the soil pores removing contaminants as they volatilize. This technique has worked successfully with contaminants such as TCA. This alternative would require that a sampling program be developed to define the dimensions of the area and to confirm when remediation is complete.

Migration Control

Alternative 1 - No Action/Natural Attenuation

The no action alternative was developed for the site and carried throughout the evaluation process to provide a baseline for comparison with other alternatives. It could also be a viable option on its own. The Town of Otselic has developed a new wellfield upgradient of the Gladding site and the old wellfield is no longer in operation. Under this alternative, NYSDEC would take no further action at the site to remediate contaminants in the groundwater. However, without further monitoring the rate of attenuation would remain unknown.

Alternative 2 - Natural Attenuation, Monitoring

Under this alternative, NYSDEC would take no further action at the site to remediate contaminants in the groundwater. A long-term groundwater monitoring program would be implemented to monitor the attenuation of the contaminants remaining within the aquifer. This data would be used to evaluate the effectiveness of this alternative and to determine if an on-site treatment system would be required in the future to obtain compliance with water quality standards or if future water use changes.

Alternative 3 - On-site Groundwater Recovery, Treatment, Effectiveness Monitoring.

This alternative would include drilling a series of groundwater extraction wells for the purpose of groundwater treatment in the area of the highest concentration of contaminants. These wells would be located in the vicinity of monitoring well cluster TW-5. This would be done to reduce the total mass of contaminants present in the aquifer as quickly as possible. Groundwater recovery is a proven and effective technology for controlling the migration of contaminated groundwater. The groundwater would require treatment prior to discharge. A long term monitoring program would be developed to evaluate the effectiveness of this remedial alternative.

C. Final Screening of Alternatives

In this section, the relevant information for the selection of a remedy is presented. Each of the alternatives retained by the screening process is analyzed with respect to the seven criteria specified by the NYSDEC in its Technical and Administrative Guidance Memorandum (TAGM) #4030 Selection of Remedial Actions at Inactive Hazardous Waste Sites. These criteria encompass statutory requirements and include other gauges of the overall feasibility and acceptability of remedial alternatives. Each criterion is examined both qualitatively in the text and tables as well as quantitatively in the NYSDEC alternative evaluation scoring sheets. The goal of the Feasibility Study is to select alternatives which meet the following seven screening criteria:

Cost

Detailed cost analysis of the selected remedial alternatives will include the following steps:

* Estimation of capital, operations and maintenance (O&M), and institutional costs; and
* Present worth analysis.

Costs developed during the FS are expected to provide an accuracy of +50% to -30%.

D. Description of Remedial Alternatives

The Feasibility Study identified four remedial alternatives for source control and three alternatives for migration control to undergo final screening. Three of the four alternatives for source control are active remedial alternatives while one of the three alternatives for migration control is an active remedial alternative. The no action alternative was also retained following the initial screening process. Table 1 identifies these alternatives along with their associated costs.

Overall Protection of Human Health and the Environment

This criterion will provide a final check to assess whether each alternative provides adequate protection of human health and the environment. The overall assessment of protection draws on the assessments conducted under other evaluation criteria, especially long-term effectiveness and permanence, short-term effectiveness and compliance with applicable standards.

Evaluation of the overall protectiveness of an alternative will focus on whether a specific alternative achieves adequate protection and will describe how site risks posed through each pathway being addressed by the FS are eliminated, reduced, or controlled through treatment, engineering, or institutional controls. This evaluation will allow for consideration of whether an alternative poses any unacceptable short-term or cross media impacts.

Compliance with SCG's

This evaluation criterion will be used to determine whether each alternative will meet all of its identified federal and state requirements. The detailed analysis will summarize which requirements are applicable, relevant, and appropriate to an alternative and describe how the alternative meets these requirements.

Long-Term Effectiveness and Permanence

The evaluation of alternatives under this criterion will address the results of the remedial action in terms of the risk remaining at the facility after response objectives have been met. The primary focus of this evaluation will be the extent and effectiveness of the controls that may be required to manage the risk posed by treatment residuals and/or untreated wastes. Such an evaluation is particularly important to all alternatives.

Reduction of Toxicity, Mobility, or Volume through Treatment

This evaluation criterion will address the regulatory preference for selecting remedial actions that employ treatment technologies permanently and significantly reducing the toxicity, mobility, or volume of the contaminants. This preference is satisfied when treatment is used to reduce the principal risks at a site through destruction of contaminants, for a reduction of total mass of contaminants, to attain irreversible reduction in mobility, or to achieve reduction of the total volume of contaminated media.

Short-Term Effectiveness

This evaluation criterion will address the effects of the alternatives during the construction and implementation phase until remedial response objectives are met. Under this criterion, alternatives will be evaluated with respect to their effects on human health and the environment during implementation of the remedial action.

Implementability

The implementability criterion will address the technical and administrative feasibility of implementing an alternative and availability of various services and materials required during its implementation.

Table 1

Remedial Alternative	Present Worth (Including Capital Cost, Operation and Maintenance Expenses).*
SOURCE CONTROL	
1. No Action	$ 0
2. Capping	$3,500
3. Excavation and Disposal	$10,000-$27,000
4. Vacuum Extraction	$70,000-$100,000
MIGRATION CONTROL	
1. No Action	$ 0
2. Natural Attenuation/ monitoring	$130,000
3. On-site Groundwater Recovery/ Effectiveness Monitoring	$929,500

* Figures are based on a 5-year period, at a discount rate of 5%.

E. Selection of the Preferred Alternatives

The preferred remedial actions for the Gladding Cordage Site are:

Source Control; Alternative 1, No Action

The residual soil contamination at the site is limited to a 30 ft. by 30 ft. area by the parking lot of the plant. The health risk assessment for direct contact calculated a baseline risk using concentrations that were higher than those found on-site. The data used for the Health Risk Assessment (500 ppm) was later determined to be invalid. The actual concentration of TCA in this area is approximently 3 ppm. The assessment, even at these higher levels, was within acceptable levels. The low residual concentration of TCA remaining and the limited area of contamination do not represent a significant source for further groundwater contamination. Therefore, no remedial actions are needed to address the remaining soil contamination.

Migration Control; Alternative 3, On-site Groundwater Recovery with Effectiveness Monitoring.

The past disposal practices of the Gladding Cordage Corporation have resulted in a plume of contaminated groundwater emanating from the site which resulted in the closure of the municipal wellfield and the contamination of the fish hatchery water supply. The development of an alternate water supply by the community and the treatment system at the hatchery has eliminated any current exposure to contaminated water. However, the concentrations of TCA in the groundwater exceed the State Water Quality Standards and is expected to do so for many years despite the general downward trend in contaminant levels. The town still has the old municipal well (MW-1) designated as the emergency backup water supply for the community. Trace levels of TCA have been detected in this well during past sampling events.

A groundwater recovery system located in the area of the highest TCA concentrations could significantly reduce the contaminant loading to the aquifer and enhance the natural degradation of the plume. Attempting to fully remediate the groundwater with an active system is not considered practical due to the extent of the plume, the low concentrations downgradient of the site and the extensive pumping requirements. Therefore, a short term on-site groundwater recovery and treatment system is proposed for the site. An effectiveness monitoring program will determine if the operation of this system is warranted after the five years.

A detailed assessment of the costs associated with Alternative 3 is presented in Table 3. Based on an evaluation of existing data, these remedial alternatives best meet the response objectives as outlined in the RI/FS and best satisfy the seven screening criteria, meeting the NYS Superfund objective of protecting human health and the environment.

Table 2

Alternative 3: Groundwater Recovery
On-site Treatment
Effectiveness Monitoring

Capital Costs:	Costs ($)
1. Well Drilling	10,000
2. Site Preparation	20,000
3. Concrete Pad, Piping, clearwell	42,000
4. Air Stripping Towers	30,000
5. Pumps, Controllers	32,000
6. Vapor Phase Carbon System	10,000
7. Building and Access.	60,000
8. Design and Contingency	150,000
9. Start up and Miscellaneous	30,000
TOTAL CAPITAL COSTS:	**$384,000**
Annual O&M Costs:	
1. Operating Labor	24,000
2. General Maintenance	15,000
3. Utilities	20,000
4. Carbon Replacement	4,000
5. Sampling and Analyses (includes long-term monitoring)	50,000
6. Administration and Contingency(15%)	17,000
Total Annual O&M Costs	**$126,000**
TOTAL PRESENT WORTH	**$929,500**

VII. SUMMARY OF THE GOVERNMENT'S DECISION

The preferred remedial alternatives, no-action for the on-site soils and a groundwater recovery and treatment system include proven remedial technologies. The recommended groundwater alternative is expected to effectively reduce the contaminant mass remaining in the aquifer through the collection and treatment of contaminated groundwater thus increasing the attenuation rate and reducing further migration. The collection system would be designed with the goal of removing a significant portion of the contaminant mass within the contaminant plume. It is predicted that this system could remove over sixty pounds of TCA during its first year of operation.

The use of an air stripper with carbon adsorption should effectively treat groundwater contaminants to below NYS Groundwater Quality Standards.

The remedy selected represents a sound balance of cost considerations with the need to protect public health and the environment by eliminating, reducing or controlling risk through the collection and treatment of the contaminants remaining on-site. Long-term monitoring would ensure the performance of the remedial action.

VIII. Public Participation

As part of the RI/FS, a Citizen Participation Plan was prepared in June, 1988. Citizen participation promotes public understanding of the Department's responsibilites, planning activites, and remedial activites at inactive hazardous waste sites. It provides an opportunity for the Department to learn from the public and enables the Department to develop a comprehensive remedial program which is protective to both public health and the environment.

The following public participation activities were carried out:

1. Document repositories were established at the Otselic Town Hall and the NYSDEC Kirkwood office. Pertinent reports and documents related to the RI/FS have been placed there during the project.

2. A public meeting was held in June, 1988 to discuss the proposed work plan for the RI.

3. A public meeting was held in June, 1990 to present the findings of the first phase RI and the work proposed to complete the project.

4. On March 18, 1993 a public meeting was held to review the findings of the RI, present the Proposed Remedial Action Plan and solicit public comment on NYSDEC's chosen remedial alternative. Questions and answers from this meeting and comments recieved during the thirty day comment period (Februay 24, 1993 to March 26, 1993) were used to develop the Responsiveness Summary, presented in this document.

APPENDICES

APPENDIX A FIGURES

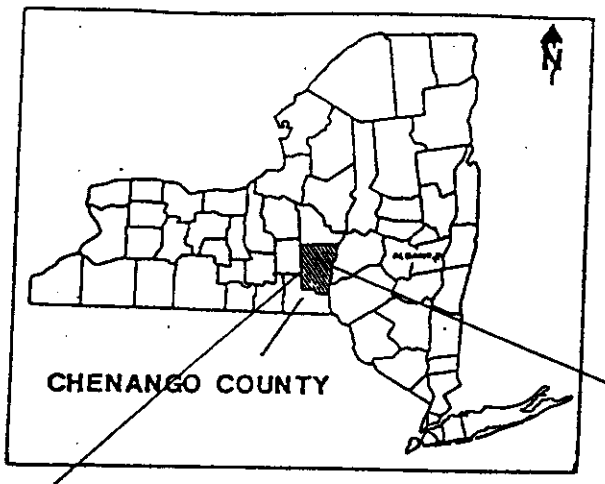
APPENDIX B CONCEPTUAL DESIGN

APPENDIX C RESPONSIVENESS SUMMARY

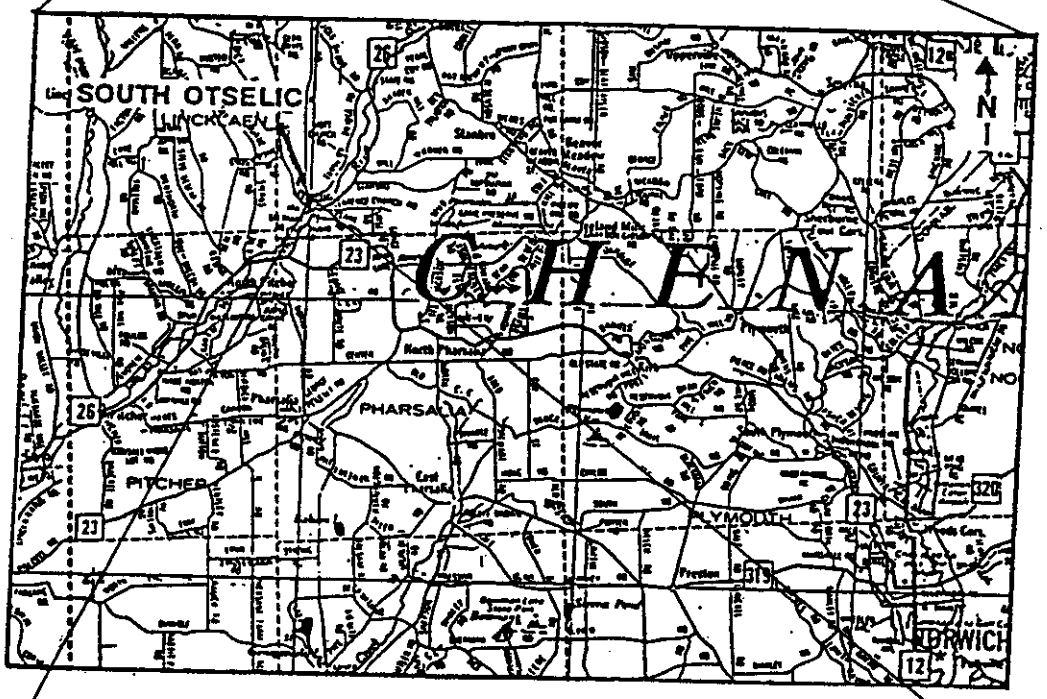
APPENDIX D ADMINISTRATIVE RECORD

APPENDIX A

FIGURES



LOCATION OF CHENANGO COUNTY, NEW YORK



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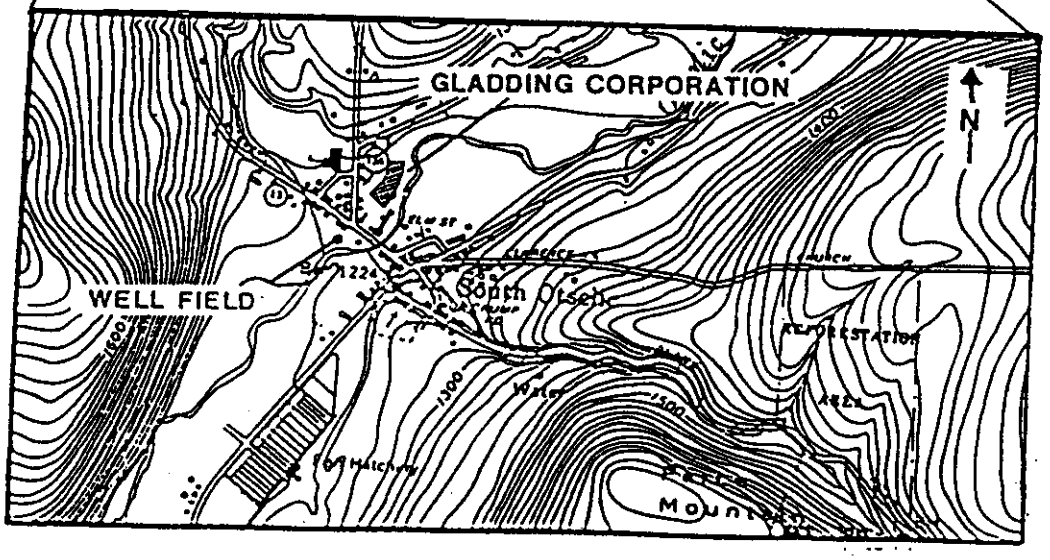
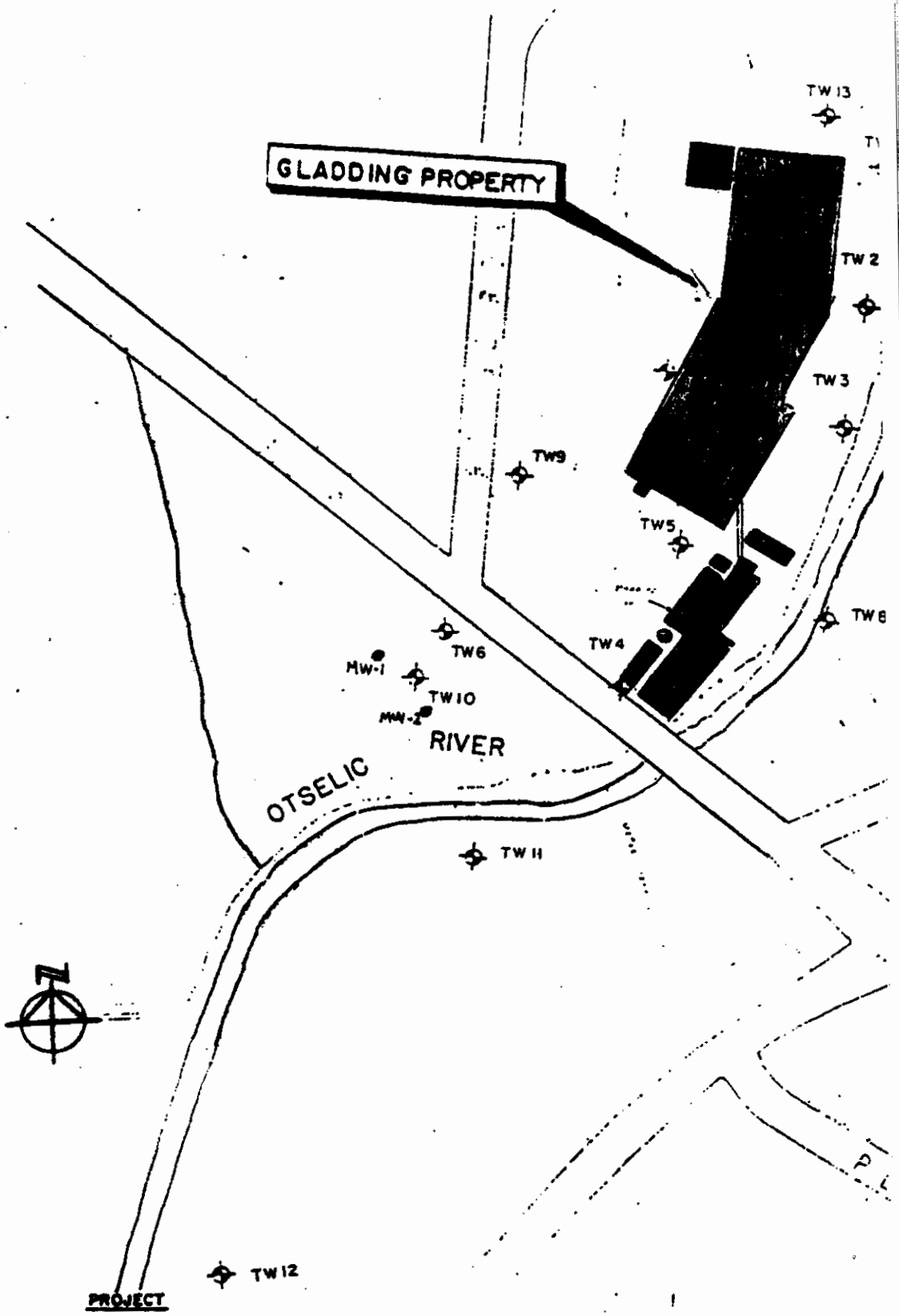


GLADDING CORPORATION SITE LOCATION

FIGURE 1-1

SITE LOCATION



GLADDING CORDAGE CO. RI/FS

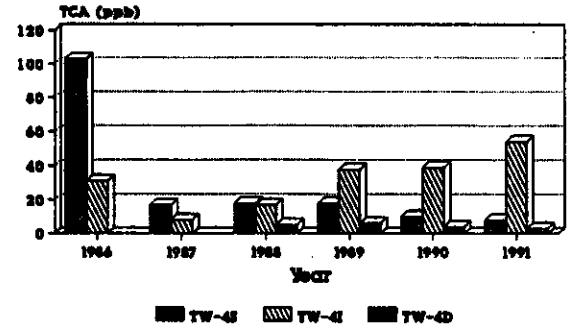
CLIENT

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DWG. TITLE

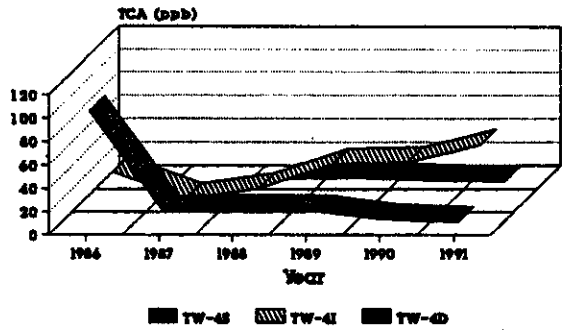
LOCATION OF MONITORING WELLS

Gladding Cordage Site
Monitoring Wells TW-4



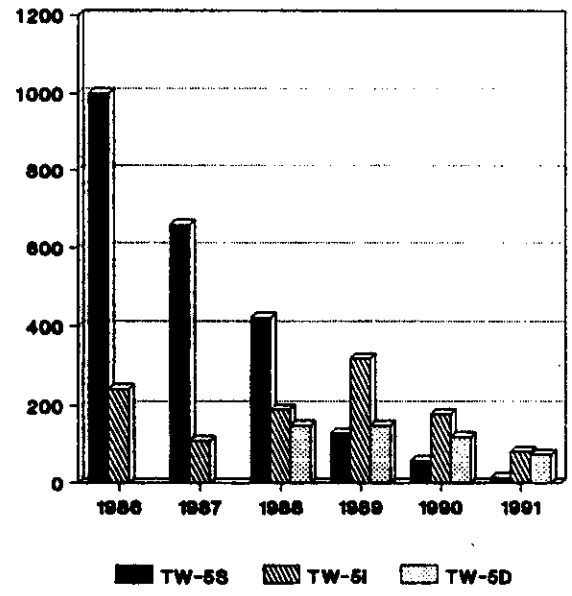
downgradient

Gladding Cordage Site
Monitoring Wells TW-4



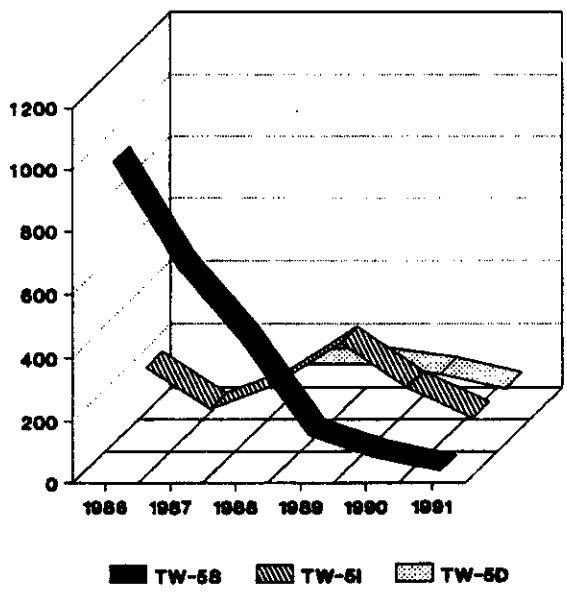
downgradient

Gladding Cordage Site
Monitoring Wells TW-5



center of plume

Gladding Cordage Site
Monitoring Wells TW-5



center of plume

GLADDING MONITORING WELL ANALYTICAL RESULTS (ppb)

date	TW-1S	TW-2S	TW-2I	TW-2D	TW-3S	TW-3I
11/86	5	37	-	-	263	-
12/86	227	497	-	-	437	-
7/87	5	11	-	-	160	-
7/88	n.d.	1	-	-	26	-
8/88	4	10	-	-	85	-
10/88	n.d.	3	11	20	32	14
1/89	-	-	15	14	34	21
1/90	n.d.	n.d.	2	4	42	8
3/91	10	39	16	6	28	16
12/91	n.d.	6	25	26	48	32

	TW-3D	TW-4S	TW-4I	TW-4D	TW-5S	TW-5I
11/86	-	178/150*	11	-	340/1000*	186
12/86	-	103	31	-	475	243
7/87	-	17	8	-	659	111
7/88	-	7	11	-	150	99
8/88	-	23	8	-	422	116
10/88	5	18	17	5	270	190
1/89	5	18	38	6	130	320
1/90	n.d.	10	39	4	59	180
3/91	n.d.	8	54	3	14	83
12/91	5	175	97	9	190	180

	TW5-D	TW-6S	TW-6I	TW-6D	TW-7S	TW-7I
11/86	-	-	-	-	-	-
12/86	-	-	-	-	-	-
7/87	-	-	-	-	-	-
7/88	-	-	-	-	-	-
8/88	-	-	-	-	-	-
10/88	150	3	n.d.	n.d.	79	110
1/89	150	-	-	-	150	n.d.
1/90	120	n.d.	15	n.d.	74	150
3/91	74	n.d.	5	n.d.	10	34
12/91	150	n.d.	20	n.d.	50	185

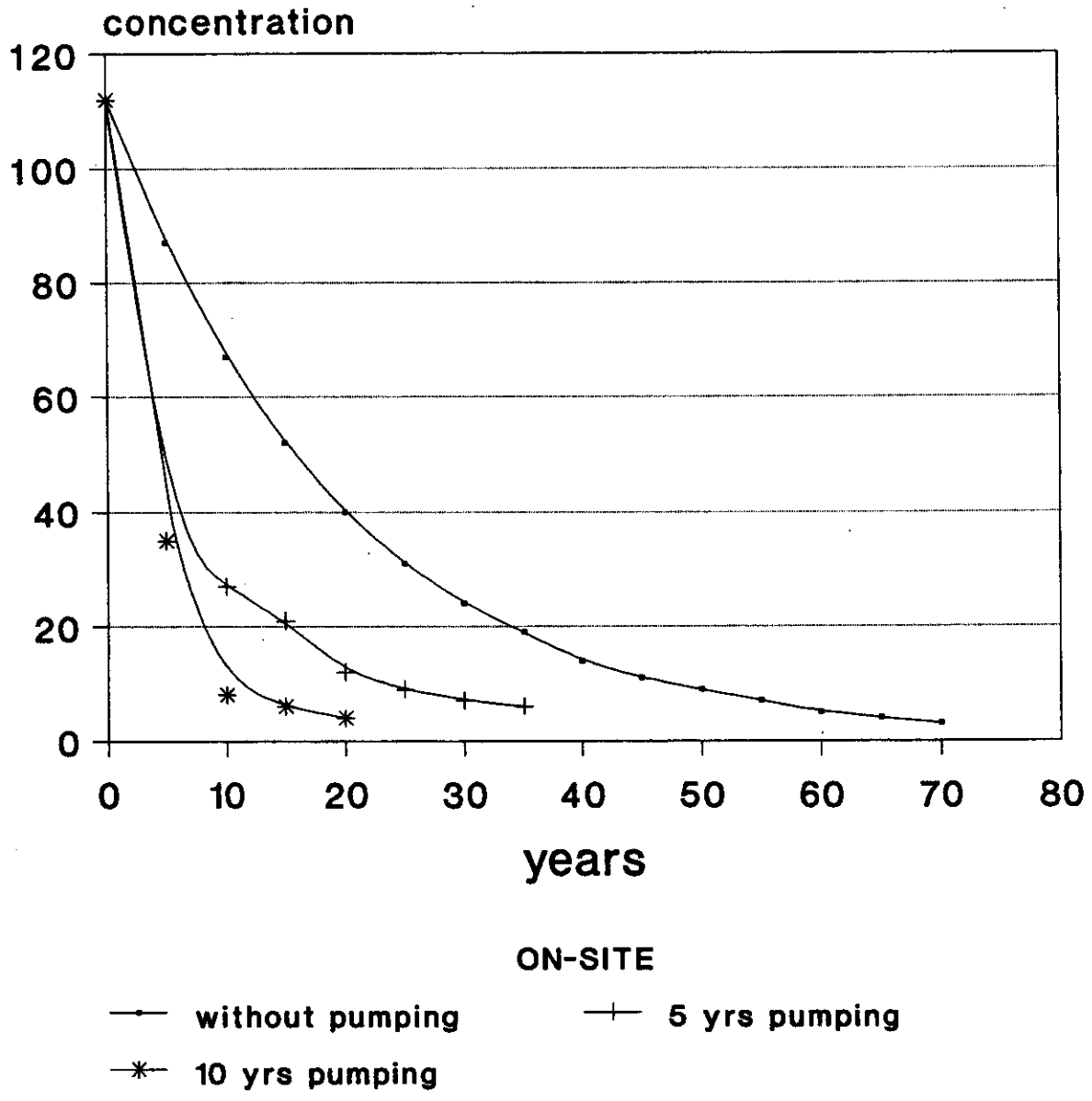
	TW-8S	TW-8I	TW-9I	TW-9D	TW-10D	TW-11S
11/86	-	-	-	-	-	-
12/86	-	-	-	-	-	-
7/87	-	-	-	-	-	-
7/88	-	-	-	-	-	-
8/88	-	-	-	-	-	-
10/88	n.d.	n.d.	3	n.d.	4	17
1/89	-	-	4	-	n.d.	n.d.
1/90	n.d.	n.d.	3	n.d.	n.d.	9
3/91	n.d.	n.d.	n.d.	n.d.	4	14
12/91	n.d.	n.d.	7	n.d.	n.d.	45

GLADDING MONITORING WELL ANALYTICAL RESULTS (ppb)

date	TW-11I	TW-12I	TW-12D	TW-13S	TW-13I
11/86	-	-	-	-	-
12/86	-	-	-	-	-
7/87	-	-	-	-	-
7/88	-	-	-	-	-
8/88	-	-	-	-	-
10/88	17	n.d.	n.d.	n.d.	n.d.
1/89	n.d.	-	-	-	-
1/90	13	n.d.	n.d.	n.d.	n.d.
3/91	9	7	n.d.	n.d.	n.d.
12/91	55	60	n.d.	n.d.	n.d.

* Galson/DOH split
\- no analysis
n.d. non-detect

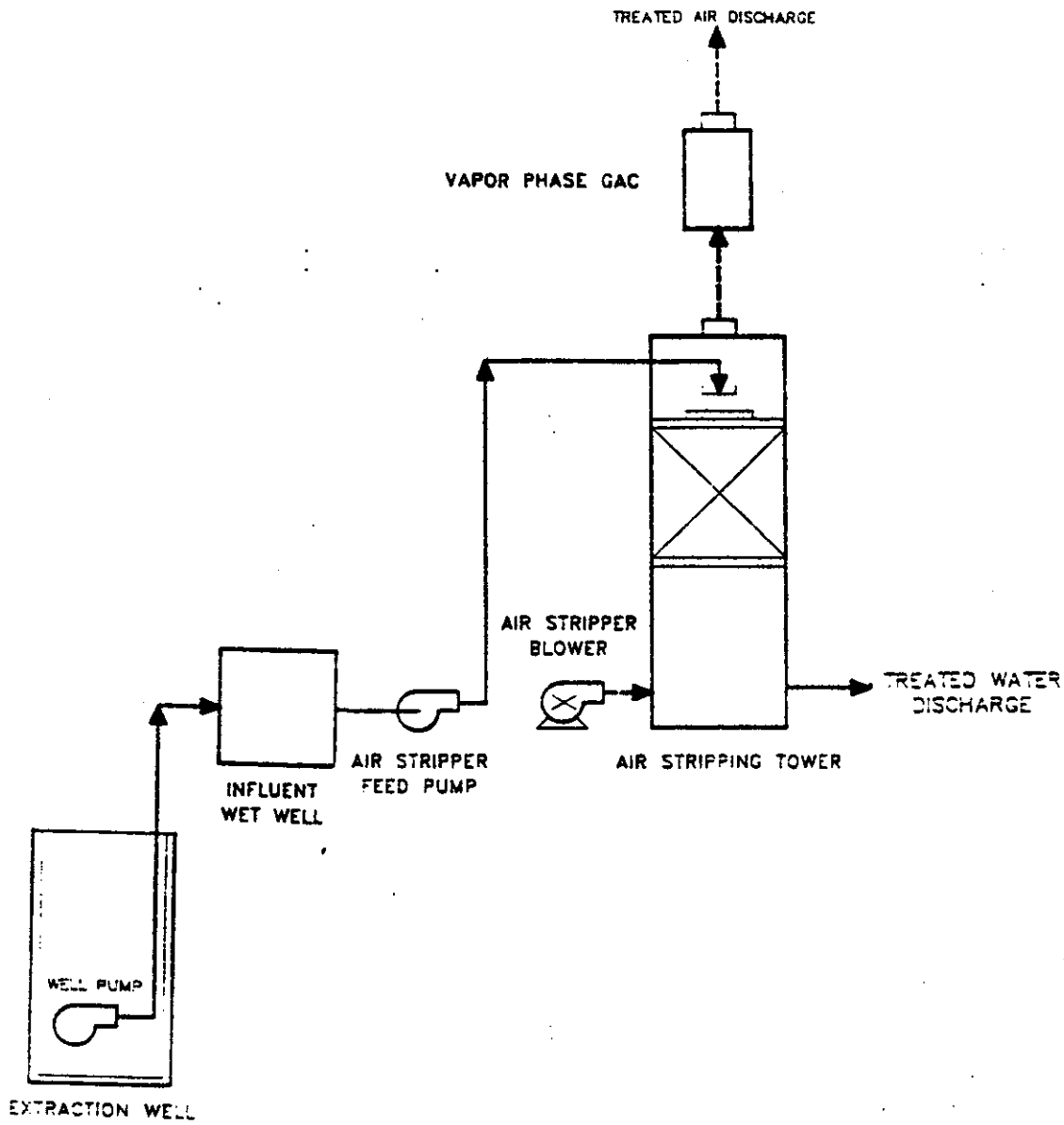
GLADDING PLUME
predicted trend



TCA(ppb)

APPENDIX B

CONCEPTUAL DESIGN



PRELIMINARY DESIGN SUBMITTAL

PROCESS FLOW SCHEMATIC

FIGURE 1

APPENDIX C

RESPONSIVENESS SUMMARY

Gladding Cordage Site
(# 7-09-009)
Town of Otselic, Chenango County, New York

RESPONSIVENESS SUMMARY

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

NYSDEC invited the public to comment about the proposal through a mailing to the site's contact list and at a public meeting held on March 18, 1993. This Responsiveness Summary addresses the significant comments received at the public meeting and during the public comment period which ran from February 24, 1993 thru March 26, 1993.

COMMENT: When was the last date of monitoring well sampling?

RESPONSE: The last round of groundwater samples were collected in December, 1991. A new round of samples will be collected by NYSDEC staff during the spring of 1993. A Long Term Monitoring Plan for this site will be finalized by the fall of 1993. This plan will require, at a minimum, yearly monitoring.

COMMENT: Why would we have to operate the pump and treat system for five years?

RESPONSE: The proposed groundwater recovery and treatment system will be evaluated yearly to determine its efficiency and effectiveness. The system will be modified, if required by this evaluation. The system will be in operation for five years in order to reduce the contaminant mass within the aquifer and reduce further migration. An evaluation of this system will be made after five years to determine if continued operation of this system is warranted.

COMMENT: Will there be any active soil remediation?

RESPONSE: No. Four alternatives for soil remediation were evaluated in the feasibility study. This evaluation and the health risk assessment performed for exposure to the soils indicated that the on-site soils do not represent significant source for further groundwater contamination or a significant health risk. The details of these evaluations can be found within the Feasibility Study.

COMMENT: Is this plan cut and dry or do you take puplic's concerns seriously?

RESPONSE: The NYSDEC and the NYSDOH do take the public's concerns seriously. That is the purpose of the public meeting and public comment period for this proposed remedial action plan. Public Participation is a requirement of the NYS Inactive Hazardous Waste Disposal Site Remedial Program 6 NYCRR Part 375-1.5.

COMMENT: How do you estimate recovery time and how good is your track record?

RESPONSE: The time estimate for natural attenuation (no active remedial program) was determined by projecting recent trends in the groundwater monitoring data over time. This projection indicates that the concentration of trichloroethane in the groundwater on-site will remain above NYS Drinking Water Standards for sixty to seventy years.

The time estimate for an active recovery system was determined by using the estimated groundwater recovery rate (100 gallons per minute), the contaminant mass still within the aquifer and the rate which the contaminants are estimated to be released from the aquifer matrix.

The time estimates for groundwater remediation have become more accurate in recent years as our understanding of contaminant fate and transport within different aquifer systems has improved.

The proposed groundwater recovery system will be evaluated to determine the accuracy of the projected cleanup times and identify ways to improve future estimates.

COMMENT: How many pumping stations will you put in this area?

RESPONSE: There is one shallow recovery well already on-site. A minimum of one additional deep recovery well will be required. The actual number of recovery well that will be required will be determined after the aquifer tests and system design is completed.

COMMENT: How do you determine the size of the aquifer?

RESPONSE: Many of the characteristics of the aquifer of concern and the dimensions of the contaminant plume were determined during the remedial investigation conducted during 1988. The size of the aquifer was determined by performing detailed soil borings and the installation of a network of monitoring wells.

COMMENT: What effect does the out of service water supply well have on the plume when it is turned on and will you sample it?

RESPONSE: The intermittent use of municipal well MW-1 for the purpose of maintaining its backup status will have no lasting effects on the contaminant plume. The sampling of well MW-1 and/or the installation of a monitoring well adjacent to MW-1 will be incorporated into the long-term monitoring plan for the Gladding Cordage site.

COMMENT: What was the time period that GHR worked for the State? Did you use any of their work?

RESPONSE: GHR Engineering Associates, Inc. was under contract to the NYSDEC for the Gladding Cordage Site from 5/11/88 to 4/16/90. During this time GHR submitted: 1) a draft Initial Investigation Summary Report, 2) a draft Remedial Investigation Report, 3) a Preliminary Data Validation Report, and 4) a draft Phase One Feasibility Study. Gradient Corporation, a subcontractor to GHR, submitted a draft baseline risk assessment. YEC Inc. submitted an Emergency Response Plan and a Comprehensive Data Validation Report was submitted by O'Brien and Gere. All of these reports were used as references for the Feasibility Study and the selection of the Proposed Remedial Action.

COMMENT: Were your personnel on-site when the monitoring wells were installed?

RESPONSE: It is a standard practice for NYSDEC personnel to provide oversight for all field work during a RI/FS funded by the NYS Superfund Program. Oversight for the Gladding Cordage Site field work was provided by the NYSDEC project geologist or, in his absence, the NYSDEC Project Manager.

COMMENT: Did the State recieve any money from Gerald Mayer?

RESPONSE: Gerald Mayer and the State of New York have agreed to a settlement where Gerald Mayer pays the State $150,000 over two years.

COMMENT: What is the dimension of this equipment and how much noise will it make?

RESPONSE: Typically, an air stripping tower designed to handle a flow of 100 gpm at the concentrations of TCA found on-site would be approximately 2-4 ft. in diameter and 20 ft. high. The final configuration of the system will be determined during the design phase of this project. The air blower is generally housed inside a building. Noise from the system should not be excessive. This system will be simular to the system which was on-site in 1987, only larger.

COMMENT: Will there be a number of these systems or just one?

RESPONSE: It is anticipated that there will be one treatment system located on-site. However, there may be several recovery wells connected to this treatment system. The final configuration of the recovery and treatment systems will be determined during the design phase of this project.

COMMENT: Will the State change the drinking water standards?

RESPONSE: The NYSDEC and NYSDOH does not anticipate any changes to the NYS Drinking Water Standards.

COMMENT: Is there any danger to public health from air coming off of the air striping system?

RESPONSE: The water treatment system (air stripper) may require air emission controls. The emission control device that is most commonly used is vapor phase carbon adsorption. The air discharged from the stripper is passed through an activated carbon filter. The contaminants present in the air stream are adsorbed onto the carbon within the carbon vessels prior to discharge. The actual size of this treatment system will be determined during the design phase of this project.

COMMENT: Will the carbon will remove all of the contaminants?

RESPONSE: The treatment system will be designed to remove as much of the contaminants as possible. A properly designed system should easily remove over 99.9% of the contaminants present.

COMMENT: What happens to the carbon when it is removed?

RESPONSE: The activated carbon in the treatment system will need to be replaced periodically. When it becomes necessary to replace the carbon, the "spent" carbon will be shipped off-site

to a facility for regeneration. The contaminants adsorbed to the carbon will be destroyed at that time.

COMMENT: Why was the air stripper that was previously on-site removed?

RESPONSE: The air stripper which was on-site during 1987 was undersized and was not operated properly. It could have been modified to at least aid in the groundwater remediation effort. However, it is the Department's understanding that the air stripper was repossessed by the vendor for non-payment.

COMMENT: Will you do most of this work (design) in house or will it be contracted?

RESPONSE: In the State superfund program, most design and construction work is performed by engineering firms under contract with the state as standby contractors. It is anticipated that once all legal requirements are met, the Gladding Cordage site design and construction will be assigned to one of these engineering firms.

COMMENT: Is it worth a million bucks?

RESPONSE: The concentration of TCA within the aquifer at the Gladding Cordage site is above NYS Drinking Water and groundwater quality standards. It is projected to remain above standards for decades without any active remedial actions. The potential costs of monitoring the migration of contaminants for the 60 to 70 years projected for natural attenuation could far exceed the costs of the groundwater recovery and treatment system.

Groundwater contaminated with TCA at concentrations above NYS Drinking Water Standards is considered unsuitable for domestic use without prior treatment. Therefore a significant portion of the aquifer would remain unusable for years without remediation.

COMMENT: What can be done with the old plant buildings? Is the DEC still controlling the use of the buildings?

RESPONSE: The NYSDEC requested that the old plant building (referred to as building #1 in the documents) not be used because over 100 containers of waste chemicals were located inside. In october 1987, approximately 60 gallons of liquid and 20 gallons of sludges were removed from the roof by NYSDEC staff. A NYSDEC inventory followed and 115 drums of waste chemicals were located, staged, and removed from the site. This removal action was completed in 1990. Gladding Braided Products also found firms

willing to remove many of the containers of unused product abandoned by Gladding Cordage. Since the completion of these actions the use of the building has not been restricted by the NYSDEC.

COMMENT: Have any health problems shown up because of the contamination?

RESPONSE: No health problems related to the contamination are known to have occurred.

COMMENT: How far down the valley would you go to monitor the aquifer?

RESPONSE: Currently, the network of monitoring wells at the site extends to the Fish Hatchery on Route 26. The proposed Long-Term Monitoring Plan will include at least one additional groundwater monitoring location downgradient (down the valley) from the hatchery. More locations would be added, if required.

FRANK M. AULT
BROADLAWNS
SOUTH OTSELIC, N. Y. 13155
(315) 653-4435

3/15/93

Bob Edwards
NYSDEC Div of Hazardous Waste Remediation
50 Wolf Road
ALBANY NY 12233-7010

Re proposed Remedial Action plan for contaminated Ground water at Gladding cordage site in South Otselic. public meeting march 18 1993.

public comment

I submit this comment re the above.

Your notice states monitoring has shown a trend of decreasing groundwater contaminant concentrations with time.

I live in South Otselic and find the drinking water excellent.

I suggest the problem will soon be gone without your proposal to spend our one million dollars of our tax money and I recommend against the proposal.

We could use the one million dollars for much better purposes in South Otselic.

Frank M. Ault

Please drop the plans for further air stripping etc. in Gladding Area South Otselic. You must have better places for the million dollars we could use some on Roads in Earl Hinkley

MAR 25 1993

USA 19

Robert Edwards
Gladding Cordage Project Manager
N.Y.S. D.E.C. Room 224
50 wolf Road, Albany N.Y. 12233
7010

APPENDIX D

ADMINISTRATIVE RECORD

Administrative Record
Gladding Cordage Site
7-09-009

The following documents are included in the Administrative Record:

1. Groundwater Investigation Report, Gladding Cordage Corporation South Otselic, New York, John S. MacNeill, Jr., P.C., 1987

2. Work Plan for the First Phase Remedial Investigation Gladding Cordage Company, GHR Engineering Associates, Inc. 1988

3. Initial Investigation Summary Report and Well Installation Summary Report, GHR Engineering Associates, Inc. 1988

4. Draft Baseline Risk Assessment Gladding Cordage Company Site RI/FS, Gradient Corporation, 1989

5. Data Validation Gladding Cordage Project, OBG Laboratories, Inc., 1989

6. Emergency Response Plan for the Community of South Otselic, YEC, Inc., 1989

7. Data Validation; Gladding Corporation Site, GHR Engineering Associates, 1989

8. Draft Phase One Feasibility Study Report for the Gladding Cordage Company Site, GHR Engineering Associates, 1989

9. Preliminary Draft Remedial Investigation Report Gladding Cordage Company Site, GHR Engineering Associates, 1989

10. The Gladding Cordage Site Focused Feasibility Study, New York State Department of Environmental Conservation 1992

11. Gladding Cordage Site Proposed Remedial Action Plan, New York State Department of Environmental Conservation, 1993