Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Rando Machine Corporation Site
Town of Macedon, Wayne County
Site Number 8-59-014

March 1998

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* JOHN P. CAHILL, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Rando Machine Corporation Inactive Hazardous Waste Site
Town of Macedon, Wayne County, New York
Site No. 859014

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Rando Machine Corporation 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 Rando Machine Corporation 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 releases of hazardous waste constituents from this site were addressed by the removal of contaminated soils from a waste disposal area. This ROD addresses the need for continued monitoring of the Site to confirm that no potential threat to public health or the environment develops.

Description of Selected Remedy

Based upon the results of the Remedial Investigation/Feasibility Study (RI/FS) for the Rando Machine Corporation site and the criteria identified for evaluation of alternatives the NYSDEC has selected no further remedial construction activities beyond the completed source removal action. The components of the remedy are as follows:

- periodic monitoring (semi-annual for five years and annual thereafter) of selected on-site and off-site monitoring wells to measure the effectiveness of the source removal completed, and continuing degradation of groundwater contaminants over time at the site.
- review of monitoring results to determine if future monitoring or action is needed; and
- applying administrative controls on the Rando property to restrict public access to contaminated groundwater.

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.

The selected remedy is conditioned on the expectation that the groundwater contaminant concentrations will continue to decrease, and the fact that the Village of Macedon is not interested at this time in utilizing its affected wells for public water supply. If groundwater contaminant concentrations do not continue to decrease as expected, or if the Village of Macedon decides to return its water supply wells to service, the selected plan will need to be reevaluated. Additional remedial alternatives will need to be evaluated, including wellhead treatment on the Village of Macedon wells.

3/27/98
Date

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

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RECORD OF DECISION

RANDO MACHINE CORPORATION

Town of Macedon, Wayne County, New York
Site No. 859014
March 27, 1998

SECTION 1: SITE DESCRIPTION

Rando is located immediately north of New York State Route 31 in an industrial park known as The Commons, in the Town of Macedon, Wayne County. The Rando property is bounded on the north by Nu-Kote International, on the west by commercial property, on the south by Route 31 and commercial property across Route 31, and on the east by a farmed field. The Village of Macedon well field is located approximately ¼ mile north-northeast of the Rando property. A regulated Class III wetland is located ¼ mile north and the Barge Canal is located approximately one mile north of Rando. Please refer to Figure 1 for the general site location and Figure 2 for a site plan.

Contamination detected at a Village of Macedon municipal water supply well with 1,1,1-trichloroethane (TCA), an industrial degreaser, led to the site investigation at Rando.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

Rando manufactures and assembles machines that produce industrial non-woven fabrics such as air filters. The majority of machine parts are produced off-site, brought to the facility and assembled. The machines are then cleaned, painted, packaged and shipped from the facility. The cleaning and painting process utilized 1,1,1-trichloroethane (TCA), a degreaser. Reportedly, between the early 1970s and mid-1980s, floor drains from the TCA storage area drained into a buried container, also called a dry crock, located immediately outside the northeast corner of the building (Figure 2). During its past operation, contents of the dry crock were reportedly removed for off-site disposal.

2.2: Remedial History

A chronology of the remedial history is given below.

1986: Analytical results from a NYSDOH sampling event detected 600 parts per billion (ppb) of TCA in the Village of Macedon municipal water supply well # 2. The NYS drinking water standard for TCA is 5 ppb. Use of this well and the nearby Village of Macedon well # 1 stopped immediately. Please refer to Figure 1 for the location of the Village of Macedon water supply wells.

The Village of Macedon began purchasing part of its drinking water from the Monroe County Water Authority (MCWA).

1987: A preliminary investigation by NYSDEC identified Rando as a potentially responsible party (PRP) with the dry crock as the likely source of TCA groundwater contamination.

Rando conducted a preliminary site investigation. It included 3 soil borings for collecting subsurface soil and groundwater samples. The results indicated contamination of soil and groundwater with TCA and trichloroethene (TCE).

1988: Rando conducted a soil vapor survey in areas between the dry crock and the Village of Macedon wellfield. The survey indicated the VOC plume extends to the eastern Rando property line and beyond.

1989: Rando conducted a subsurface investigation by installing 3 on-site and 2 off-site monitoring well clusters. A monitoring well near the dry crock indicated the highest concentration (18000 ppb) of TCA in the groundwater. Near the eastern edge of the Rando property TCA was detected at 1000 ppb. Other VOCs detected in the groundwater near the dry crock included 1,1-dichloroethene (DCE) at 1200 ppb and 1,1-dichloroethane (DCA) at 590 ppb.

A voluntary source removal under NYSDEC observation was completed by Rando. The dry crock uncovered at the site was a 55-gallon steel drum which appeared to be in sound condition with the exception of a 2-inch hole pierced in the top of the drum. The following source removal activities were conducted:

- drained contents of the dry crock into a 55-gallon drum;
- excavated and removed the dry crock and placed it into an overpack drum;
- excavated additional soil from around the dry crock location;
- sampled excavated soil and the dry crock contents to characterize the compounds present; and
- transported the dry crock, its contents, and approximately 6 cubic yards of contaminated soil for appropriate disposal.

1990: Sampling of the only other Village of Macedon well, well #3, detected toluene (26 ppb) and TCA (11 ppb). The Village of Macedon began purchasing all its water from the MCWA in March 1990. The contamination at well # 3 is considered unrelated to Rando.

Based on observations made from the above investigations, an RI/FS work plan was developed and the consent order between Rando and the NYSDEC became effective.

1991-93: Five on-site and four off-site monitoring well clusters were installed and sampled. Also, 8 temporary borings were drilled and sampled to define the limits of off-site groundwater contamination. The results indicate the contaminant concentrations have decreased since the source removal, and the TCA plume extends onto the adjacent farmed field approximately 250 feet east of the easterly Rando property line. The highest May 1993 off-site contamination detected in the farmed field was 81 ppb of TCA.

1994-95: The remedial investigation and feasibility study for the site was approved. A PRAP that included hydraulic containment (pump and treat at the Rando property) as the preferred remedial alternative for the site was presented to the public on February 16,1995. The Village of Macedon reiterated its decision of having no interest in reactivating the Village of Macedon wells for public water supply.

Rando requested that the public comment period for the site's proposed remedy be reopened.

1996: NYSDEC reopened the public comment period and received additional comments on the PRAP.

Rando submitted the RFS Addendum.

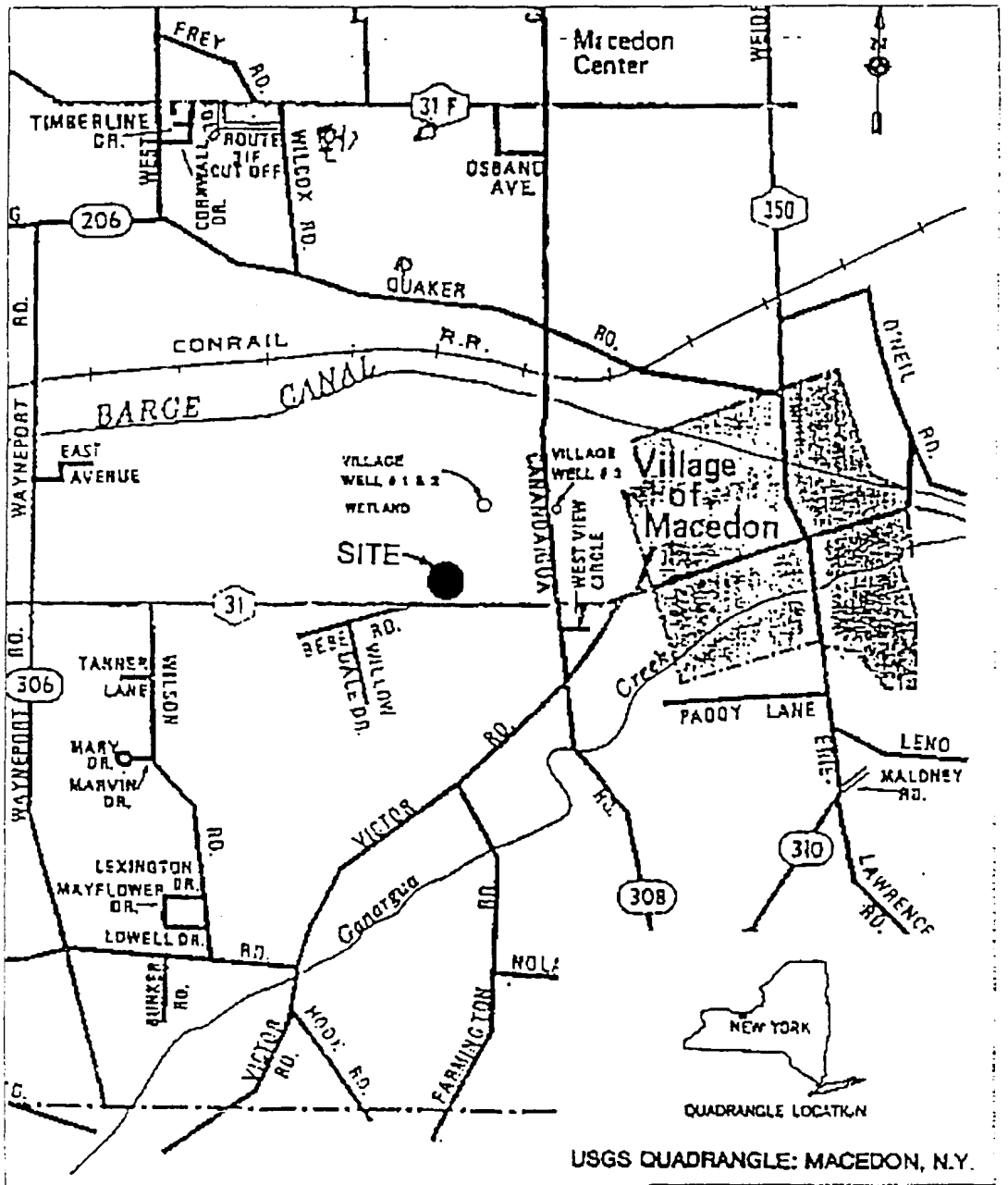

FIGURE 1

SITE LOCATION PLAN

Rando Machine Corporation, Site ID # 859014
Proposed Remedial Action Plan (Revised)

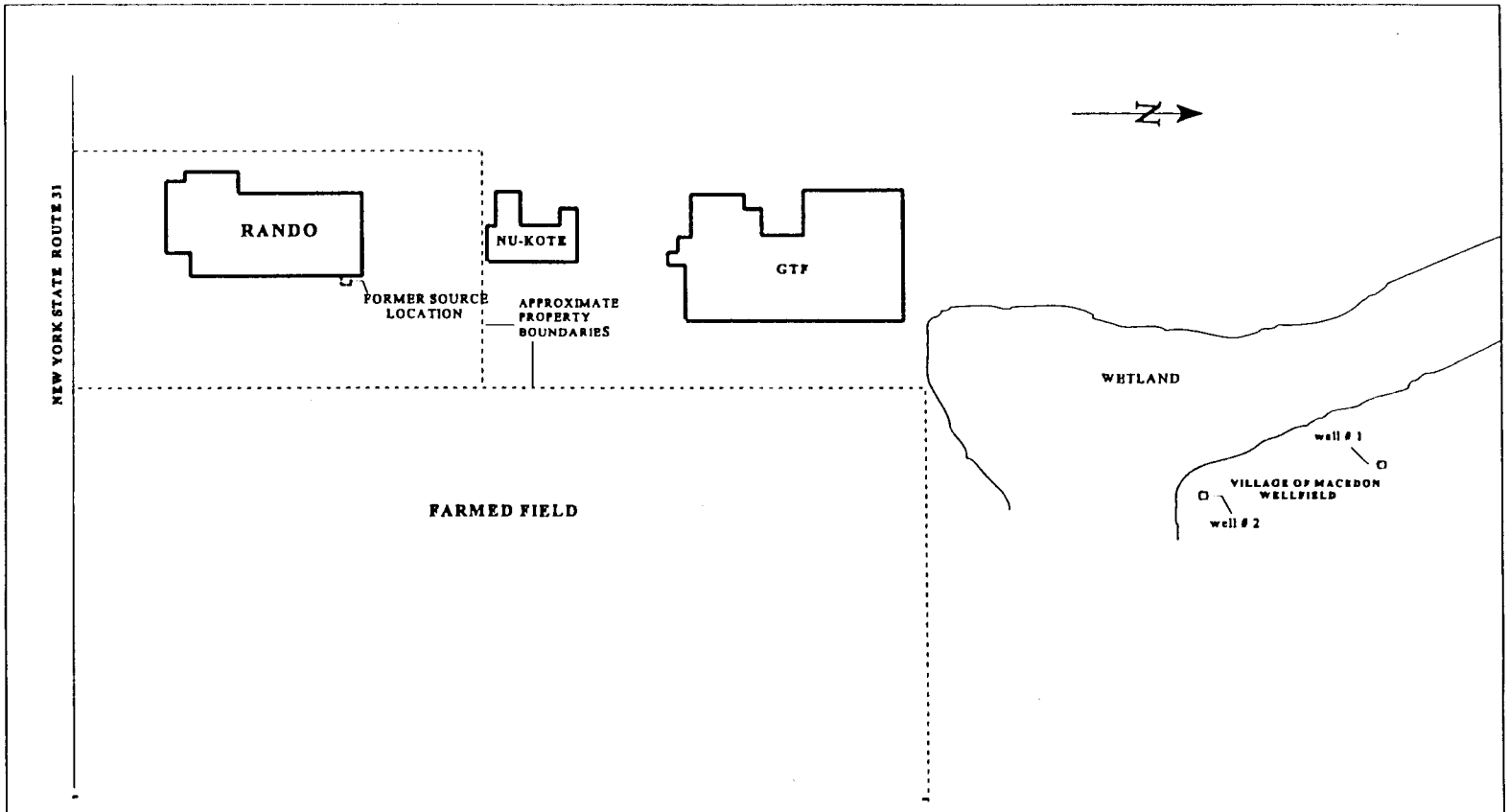

FIGURE 2
RANDO MACHINE CORPORATI
Town of Macedon, Wayne County, New Y
SITE PLAN
SCALE: 1IN = 200 FT JULY

RANDO MACHINE CORPORATION, SITE NO. 859014
PROPOSED REMEDIAL ACTION PLAN (REVISED)

1997: In January 1997, NYSDEC sampled groundwater to obtain current data. Results indicate a continued decreasing trend in contaminant concentrations on the Rando property. A generally decreasing trend in contaminant concentrations was also observed off-site.

Based upon comments received during and subsequent to this public meeting and the results of additional groundwater sampling, NYSDEC reevaluated its recommendation and has selected a different remedial alternative, no further action, as described in this ROD.

SECTION 3: CURRENT STATUS

In response to a determination that the presence of hazardous waste at the Rando site presented a significant threat to public health and/or the environment, Rando completed a remedial investigation which was approved in January 1994, and a feasibility study which was approved in January 1995.

3.1: Summary of the Remedial Investigation

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

The RI was conducted between November 1990 and September 1993. A report entitled, "Remedial Investigation," dated December 1993 has been prepared describing the field activities and findings of the RI in detail. The RI included the follows activities:

- A soil vapor survey to determine the general extent of VOC contamination and help determine monitoring well locations;
- Drilling of soil borings for source area investigation;
- Installation of monitoring wells for groundwater analyses and assessment of physical properties of soil and hydrogeologic conditions;
- A pump test to evaluate the hydraulic connection between the source and the contaminated Village of Macedon well # 2 and confirm the hydrogeologic properties derived earlier;
- Drilling of temporary borings and sampling groundwater to establish an off-site plume boundary;
- A habitat-based assessment to determine the impact of site contamination on a nearby designated wetland;
- Residential water use survey to identify private well users within a one-half mile radius of the site; and
- Sampling of the Village of Macedon wells.

To determine which media (soil, groundwater, etc.) contain contamination at levels of concern, the RI analytical data were compared to environmental Standards, Criteria, and Guidelines (SCGs). Groundwater, drinking water, and surface water SCGs identified for the Rando site were based on NYSDEC Ambient

Water Quality Standards and Guidance Values and Part V of NYS Sanitary Code. NYSDEC TAGM 4046 soil cleanup guidelines for the protection of groundwater, background conditions, and risk-based remediation criteria were used as SCGs for soil and Division of Fish and Wildlife Technical Guidance for Screening Contaminated Sediments was used for surface water sediments.

Results of the RI are summarized below; more complete information can be found in the RI report.

3.1.1: Nature of Contamination

As described in the RI report, many soil, groundwater, surface water, and sediment samples were collected both on-site and off-site to characterize the nature and extent of contamination. Results of the RI indicate groundwater is the only impacted media. The on-site groundwater contaminants of concern mainly included chlorinated volatile organic compounds (VOCs) such as TCA, TCE, and associated breakdown compounds. However, TCA was the only contaminant of concern off-site, including the Village of Macedon wellfield.

3.1.2: Extent of Contamination

Table 1 summarizes the extent of contamination for the contaminants of concern in groundwater and compares the data with the proposed remedial action levels (SCGs) for the site. The following are the media which were investigated and a summary of the findings of the investigation.

3.1.2.1: Soil

Subsequent to the source removal in 1989, soil samples collected adjacent to the former dry crock location in February 1991 contained up to 29 ppb TCA and 12 ppb trichloroethene(TCE). To further verify the source area cleanup and to further delineate the extent of off-site contamination, an addendum to the RI work plan was developed and implemented. In May 1993, three additional soil borings at different depths at and near the former dry crock location were drilled. These borings detected 4 ppb of TCA and 3 ppb of TCE in soil, which are below NYSDEC recommended soil cleanup objectives. Off-site, approximately 170 soil samples were tested with field instruments during well drilling operations; the results did not indicate soil contamination.

3.1.2.2: Groundwater

Groundwater monitoring wells were sampled and analyzed in February 1991, January 1992, April 1992, July 1992, December 1992, and May 1993. Groundwater generally flows from the south-southwest to the north-northeast in the direction of the Village of Macedon water supply wells. The contaminants detected at elevated concentrations on-site were TCA in the 24 - 1100 ppb range; 1,1-dichloroethane (DCA) in the 8 - 150 ppb range; TCE in the 3 - 19 ppb range; and 1,1-dichloroethene (DCE) in the 22 - 54 ppb range. Off-site, only TCA was detected at elevated concentrations, in the 0.4 - 230 ppb range. The NYS Groundwater Standard for each of these contaminants is 5 ppb. The results also indicated contaminant concentrations are generally decreasing with time. The highest contaminant concentrations detected near the former dry crock at the end of RI field work in May 1993 were 520 ppb of TCA, 51 ppb of DCA, and 42 ppb of DCE. The highest off-site contaminant concentration was 81 ppb of TCA. The RI results also indicate the TCA plume extends onto the adjacent farmed field approximately 250 feet east of the easterly Rando property line. No TCA was detected in groundwater samples from the six temporary borings

TABLE 1
RANDO MACHINE CORPORATION
Town of Macedon, Wayne County, New York

NATURE AND EXTENT OF CONTAMINATION

MEDIA	CLASS	CONTAMINANTS OF CONCERN	CONCENTRATION RANGE (ppb)	FREQUENCY OF EXCEEDING SCGs	SCGs (ppb)
ON-SITE*					
Groundwater	Volatile Organic Compounds (VOCs)	trichloroethene	ND - 19	7 of 37	5
		1,1,1-trichloroethane	ND - 1100	20 of 37	5
		1,1-dichloroethene	ND - 54	12 of 37	5
		1,1-dichloroethane	ND - 150	12 of 37	5
		1,2-dichloroethane	ND - 14	7 of 37	5
OFF-SITE**					
Groundwater	VOCs	1,1,1-trichloroethane	ND - 230	14 of 30	5

ND = none detected

* On-site = Sample results from monitoring wells OW-B101B&C; OW-B206A,B&C; OW-B103A,B&C; and OW-B301A,B&C.

** Off-site = Sample results from monitoring wells OW-B105A&B; OW-B205A,B&C; and, temporary borings TB-305 through TB-311

located outside the approximate plume boundary. Please refer to Figure 3 for locations of the monitoring wells and temporary borings sampled during the RI, and for the approximate TCA plume boundary.

In January 1997, the NYSDEC sampled monitoring wells at the site. The results indicate contaminant concentrations have continued to decrease. The highest contaminant concentrations detected near the former dry crock (source) were 190 ppb of TCA, 24 ppb of DCA, and 24 ppb of DCE. The highest off-site contaminant concentration detected was 92 ppb. A comparison of the May 1993 and the January 1997 sampling results are presented in Table 2. The post-removal contaminant concentration trend for a source area well is depicted in Figure 4.

The analytical data obtained from the RI were compared to applicable standards, criteria, and guidelines (SCGs) in determining remedial alternatives. Groundwater, drinking water and surface water SCGs identified for the Rando site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part 5 of the Sanitary Code. For the evaluation and interpretation of soil and sediment analytical results, NYSDEC soil cleanup guidelines for the protection of groundwater, background conditions, and risk-based remediation criteria were used to develop remediation goals for soil.

A 72-hour pump test on the Village of Macedon well # 2 conducted in 1991 during the RI indicated TCA contamination (when pumping) remained in the range of 40 - 60 ppb, exceeding the NYS groundwater standard of 5 ppb. When not pumping, 4 ppb of TCA was detected. The Village of Macedon has stated that it will continue to use water supplied by the MCWA and has no present intention of putting its wells back on line. Therefore, it was determined there is no current need to address the Village well field area. In the future, if the Village decides to return these wells to service, the well field contamination issue will be revisited.

The remedial alternatives for the rest of the affected groundwater are evaluated in Section 7. The remedy for the groundwater is discussed in Section 8.

3.1.3: Site Geology and Soils

Below the Rando facility, the subsurface stratigraphy consists of upper till, ablation till, and basal till in descending order. The hydraulic conductivity for this stratigraphy varies from 10^{-4} to 10^{-8} centimeters per second (cm/sec). To the east and northeast of Rando, the subsurface stratigraphy consists of glaciofluvial sand and gravel, glaciolacustrine silt, and glaciolacustrine clay in descending order. The sand and gravel has a hydraulic conductivity between 10^{-2} and 10^{-4} cm/sec.

3.2: Summary of Human Exposure Pathways

This section discusses the types of human exposures that may present added health risks to individuals at or around the site. A more detailed discussion of the health risks can be found in Section VI of the RI report and the RFS Addendum.

An exposure pathway is how an individual may come into contact with a contaminant. The five elements which must be present for such an exposure to occur are 1) a source of contamination; 2) environmental media and transport mechanisms; 3) a point of exposure; 4) a route of exposure; and 5) an impacted population. These elements of an exposure pathway may be based on past, present or future events. Pathways where one or more of these elements are missing are referred to as "incomplete" to denote that no one is likely to become exposed.

Currently, there are no completed pathways associated with site-related contaminants. Consumption of groundwater for drinking was the only exposure pathway at the site. This pathway was eliminated when the Village of Macedon stopped using its wells. The Village of Macedon continues to obtain its drinking water from the MCWA.

3.3: Summary of Environmental Exposure Pathways

This section summarizes the types of environmental exposure which may be presented by the site. The ecological investigation, also referred to as Habitat Based Assessment conducted at the site, which is detailed in Section II of the RI report, did not reveal any adverse impact to the regulated wetland north of the site. No adverse impact was observed in surface water, sediment, or soil during the RI. Currently, no known environmental exposure pathway exists. The farthest off-site downgradient monitoring well TCA concentration was 5 ppb. Also, the contaminant concentrations appear to be decreasing with time. Therefore, considering the decreasing concentrations it is not likely that the contaminant plume will impact the wetland. Also, the proposed continued groundwater monitoring would reveal changes, should any occur.

SECTION 4: ENFORCEMENT STATUS

The NYSDEC and the Rando Machine Corporation entered into a Consent Order on November 9, 1990. The order obligates Rando to conduct a RI/FS. Upon issuance of Record of Decision (ROD) the NYSDEC will approach Rando to implement the selected remedy under a separate Consent Order. The Record of Decision is the final decision document for the site cleanup.

Order on Consent

Date: November 9, 1990

Index #: BE-0181-87-04

Subject: Implementation of a Remedial Investigation/Feasibility Study for an Inactive Hazardous Waste Disposal Site Under Article 27, Title 13 of the Environmental Conservation Law.

SECTION 5: SUMMARY OF REMEDIATION GOALS

Goals of the remedial program have been established through the remedy selection process stated in 6 NYCRR 375-1.10. The overall remedial goal is to meet all Standards, Criteria, and Guidelines (SCGs) and be protective of 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 disposal at the site through proper application of scientific and engineering principles.

The goals for this site are:

- to mitigate all significant threats to the public health and to the environment posed by contaminated groundwater at the site; and

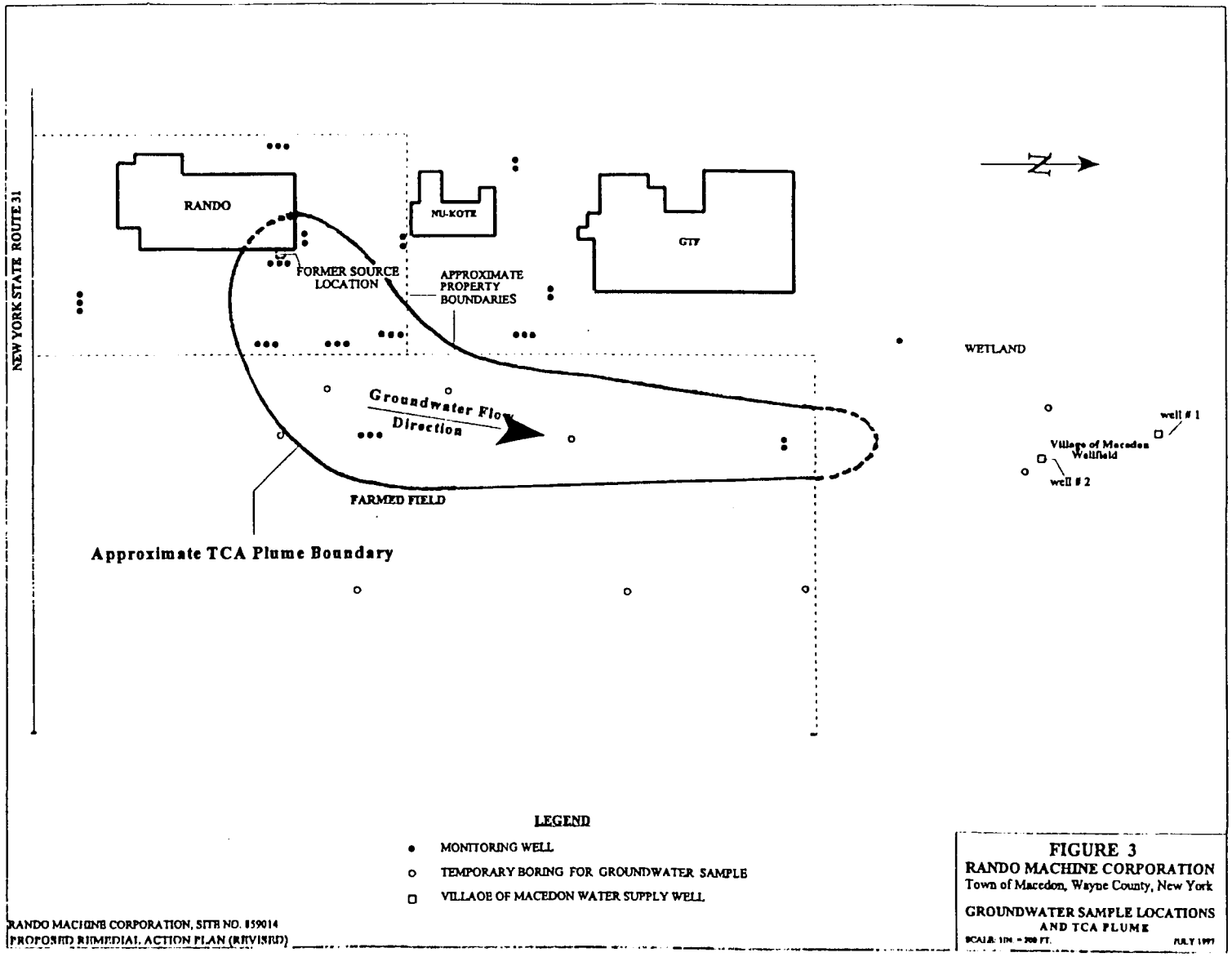

FIGURE 3
RANDO MACHINE CORPORATION
Town of Macedon, Wayne County, New York
GROUNDWATER SAMPLE LOCATIONS AND TCA PLUME
SCALE: 1IN. = 200 FT. JULY 1997

TABLE 2
RANDO MACHINE CORPORATION
Town of Macedon, Wayne County

COMPARISION OF MAY 1993 AND JANUARY 1997 SAMPLE RESULTS

CONTAMINANTS OF CONCERN	MONITORING WELL LOCATION	CONCENTRATION (ppb)		SCGs (ppb)
		5/93	1/97	
ON-SITE				
1,1,1-trichloroethane	B101-C	520	190	5
	B206-C	280	110	5
	B206-B	280	NS	5
	B103-A	130	53	5
	B301-B	26	NS	5
	B301-C	150	53	5
trichloroethene	B101-C	9	5	5
	B206-B	8	NS	5
1,1-dichloroethane	B101-C	21	19	5
	B206-C	51	24	5
	B206-B	8	NS	5
1,1-dichloroethene	B101-C	42	24	5
	B206-C	25	18	5
	B206-B	22	NS	5
methylene chloride	B301-C	407	ND	5
toluene	B301-C	13	ND	5
OFF-SITE				
1,1,1-trichloroethane	B205-C	81	92	5
	B105-B	23	5	5

NS = Not sampled ND = Not detected

Post-Removal
Source Area TCA Concentration Trend
At Monitoring Well OW-B101C

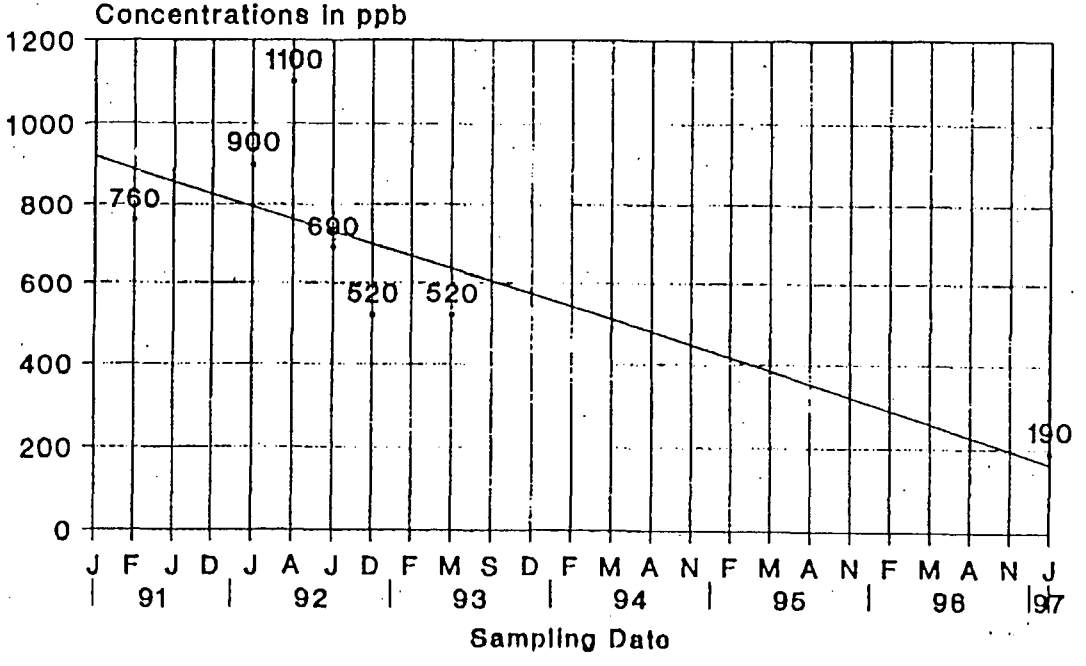

FIGURE 4

RANDO MACHINE CORPORATION
Town of Macedon, Wayne County, New York

POST-REMOVAL SOURCE AREA TCA TREND

- provide for attainment of SCGs for groundwater quality at the limits of the area of concern, to the extent practicable.

SECTION 6: SUMMARY OF EVALUATION OF ALTERNATIVES

The selected remedy should be protective of human health and the environment, be cost effective, comply with other statutory laws and utilize permanent solutions, alternative technologies or resource recovery techniques to the maximum extent practicable. Seven potential remedial alternatives for the Rando Machine Corporation site were identified, screened and evaluated in the feasibility study. This evaluation is presented in the documents entitled Revised Feasibility Study dated January 1995 and Revised Feasibility Study Addendums dated November 26, 1996 and February 20, 1997. Six potential remedial alternatives are evaluated in this ROD. A summary of the detailed analysis follows.

As used in the following text, the time to implement reflects only the time required to implement the remedy, and does not include the time required to design the remedy, procure contracts for design and construction or to negotiate with responsible parties for implementation of the remedy.

6.1: Description of Remedial Alternatives

The potential remedies are intended to address contaminated groundwater at the site.

Alternative 1: No Further Action

This alternative recognizes remediation of the site conducted under the previously completed source removal. Continued monitoring would be necessary to evaluate the effectiveness of the source removal completed and the continuing degradation of groundwater contaminants over time at the site. Nine wells would be sampled and analyzed periodically. The NYSDEC would review results to determine if further sampling or action is needed. Also, administrative controls such as a deed restriction would be placed on the Rando property to prevent exposure to contaminated groundwater.

Present Worth: . . . . . $ 194,699
Capital Cost: . . . . . $ 0
Annual O & M: . . . . . $ 9,480
Time to implement remedy: 0

Alternative 2: Hydraulic Containment

In this alternative, contaminated groundwater would be pumped for migration control, treated using granulated activated carbon (GAC), and reinjected to groundwater or discharged to the sanitary sewer through a State Pollution Discharge Elimination System (SPDES) permit.

An estimated eight extraction wells would be equipped with pumps, holding tanks, and piping. GAC filters would also be provided as needed. Appropriate on-site and off-site monitoring wells would be sampled and analyzed periodically. The NYSDEC would review results to determine if further sampling or action is needed.

Present Worth: . . . . . $ 547, 700
Capital Cost: . . . . . $ 137,400
Annual O & M: . . . . . $ 19, 980
Time to implement remedy: . . . . . 1 - 1.5 years

Alternative 3: Passive Containment

This alternative would include installation of a low permeability asphalt cap over the source area to minimize recharge and to slow down subsurface transport and allow a longer opportunity for in-situ natural degradation. A vertical and horizontal barrier of a soil-bentonite wall would also be installed to block groundwater flow. This alternative would depend only on continuing degradation of groundwater contaminants over time for treatment of groundwater.

Appropriate on-site and off-site monitoring wells would be sampled and analyzed periodically. The NYSDEC would review results and determine if further sampling or action is needed.

Present Worth: . . . . . $ 835,900
Capital Cost: . . . . . $ 641,200
Annual O & M: . . . . . $ 8,545
Time to implement remedy: . . . . . 1 - 1.5 years

Alternative 4: Bioremediation

In this alternative, bioremediation would consist of installing six additional wells to deliver microorganisms, oxygen and/or nutrients to the subsurface in the area of groundwater contamination.

Under controlled environmental conditions, microorganisms would continue to breakdown contaminants in groundwater, thereby decreasing the contaminant concentration. Appropriate on-site and off-site monitoring wells would be sampled and analyzed periodically. The NYSDEC would review results and determine if further sampling or action is needed.

Present Worth: . . . . . $ 2,862,000
Capital Cost: . . . . . $ 880,500
Annual O & M: . . . . . $ 96,480
Time to implement remedy: . . . . . 2 to 3 years

Alternative 5: Delivery and Extraction

This in-situ groundwater treatment alternative is intended to deliver contaminants by controlled flow to a treatment or extraction medium. The Geolock/Biodrain system that would be used in this alternative would comprise of two stages. The first stage would modify hydrogeology and direct contaminants to in-situ areas by installation of 200 feet of Geolock, a high density polyethylene interlocking sheet, installed to approximately 40 feet deep across the plume at the Rando property line, and would control groundwater retention time, contact time, and mixing rates. The second stage, Biodrain, consisting of porous wicks, would be installed at the base to uniformly apply treatment chemicals, microbial cultures, oxygen, and/or nutrient gas into the subsurface in areas of highest contaminant concentrations.

Appropriate on-site and off-site monitoring wells would be sampled and analyzed periodically. The NYSDEC would review results and determine if further sampling or action is needed.

Present Worth: . . . . . $ 6,071,700
Capital Cost: . . . . . $ 1,410,000
Annual O & M: . . . . . $ 226,890
Time to implement remedy . . . . . 2 - 2.5 years

Alternative 6: Dual Phase Vacuum Extraction

In this alternative, a high vacuum withdrawal of VOCs from unsaturated and saturated soil and groundwater would be affected using strategically placed wells within source areas of the contaminant plume. The extracted subsurface liquid and vapor would then pass through a liquid/vapor separator. A pilot study would be needed for this system to size and estimate operating parameters for design and permitting purposes.

An estimated sixteen dual phase wells would be installed. Skid installation and piping control would be needed to connect some area wells to the extraction equipment. Also, the area to be placed under vacuum would require a surface seal to enhance system efficiency.

Appropriate on-site and off-site monitoring wells would be sampled and analyzed periodically. The NYSDEC would review results and determine if further sampling or action is needed.

Present Worth: . . . . . $ 1,873,600
Capital Cost: . . . . . $ 693,600
Annual O & M: . . . . . $ 133,500
Time to implement remedy: . . . . . 1.5 - 2 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 (6 NYCRR Part 375). For each of the criteria, a brief description is provided followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is contained in the Feasibility Study.

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

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

The primary SCGs applicable to the site are compliance with 6 NYCRR Part 703 NYSDEC groundwater quality standards and 10NYCRR Part 5 NYSDOH drinking water standards.

Alternatives 1 and 3 depend on continuing degradation of groundwater contaminants over time and may take several decades or more to meet SCGs. Alternatives 2, 4, 5, and 6 include expedited flushing and/or

groundwater treatment, but would be expected to make a relatively small difference, compared to alternatives 1 and 3, in the amount of time required in meeting the SCGs. Groundwater contaminant concentrations are expected to persist and continue to decline slowly over time. This is due to the nature of the interactions between the groundwater, the contaminants, and the geologic matrix. Modeling studies have shown that even aggressive technologies have a limited effect in achieving SCGs in a reasonable time-frame. At this site, however, the longer time required to meet the SCGs would be considered acceptable because of the application of administrative controls that would restrict public access to contaminated groundwater on the Rando property, the absence of an environmental risk, and the readily available public water supply. Therefore, all alternatives being evaluated would be considered to meet this criterion.

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.

Alternatives 1 and 3 depend on continuing degradation of groundwater contaminants over time and may take several decades or more to meet drinking water standards which are protective of human health and groundwater standards which are protective of the environment. Alternatives 2, 4, 5, and 6 include expedited flushing and/or groundwater treatment, but would be expected to make a relatively small difference, compared to alternatives 1 and 3, in the amount of time required in meeting the drinking water standards or groundwater standards. Groundwater contaminant concentrations are expected to persist and continue to decline slowly over time. This is due to the nature of the interactions between the groundwater, the contaminants, and the geologic matrix. At this site, however, the longer time required to meet drinking water or groundwater standards would be considered protective because of the application of administrative controls that would restrict public access to contaminated groundwater on the Rando property, the absence of an environmental risk, and the readily available public water supply. Therefore, all alternatives being evaluated would be considered protective of human health and the environment.

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

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

Alternatives 1, 3, 4, and 5 would partially meet this criterion because of continued contaminant migration during implementation. Also, alternative 5 is a relatively new technology; its effectiveness is not completely proven. Alternative 2 would meet this criterion. Alternative 6 would partially meet this criterion because of the relatively higher potential for VOC emissions.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. 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.

Alternatives 1 and 3 would partially meet this criterion with reliable administrative controls that restrict public access to contaminated groundwater, and availability of public water supply. Alternative 2 would partially meet this criterion because full degradation of groundwater contaminants is expected to take several decades or more to meet the SCGs. The long-term effectiveness of alternative 2 would provide

limited benefit or effectiveness because of the current (low) groundwater contaminant concentrations and its ability to significantly reduce contaminant concentrations further. The effectiveness of alternative 2 would be further limited in areas of low soil permeability (10^{-6} - 10^{-8} cm/sec). Alternatives 4, 5, and 6 are permanent remedies and would meet this criteria. Reliable controls to restrict public access to groundwater could be implemented.

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.

Alternatives 1 and 3 would not reduce mobility but would partially reduce toxicity and volume. Alternatives 2 and 6 would significantly reduce mobility; however, alternative 2 would not remove toxicity or volume to the same extent as 6. Alternatives 4 and 5 would not reduce mobility but would reduce toxicity and volume. Thus alternatives 1, and 3 would partially meet this criterion and alternatives 2, 4, 5, and 6 would meet this criterion.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, 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 would meet this criterion because it is the no further action alternative. Alternative 2 would meet this criterion because of its simplicity of implementation. Alternatives 3, 4, 5, and 6 are relatively difficult to implement. Alternative 3 would be difficult to construct due to the limited space on the Rando property for the deep slurry cut-off wall, alternative 4 would encounter difficulties in delivering organisms and nutrients to low permeability soils, alternative 5 is a new technology, and alternative 6 would require pilot studies and may require permit for VOC emission.

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 criteria 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 3.

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

8. Community Acceptance. Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan (revised) have been evaluated. A "Responsiveness Summary" included as Appendix A presents the public comments received and the Department's response to the concerns raised. In general, the public comments received were supportive of the selected remedy.

SECTION 7: SUMMARY OF THE SELECED ALTERNATIVE

Based upon the results of the RI/FS, subsequent sampling, and the evaluation presented in Section 6, the NYSDEC is selecting alternative 1 (no further action) as the remedy for this site. This selection is based upon the following:

Alternatives 1 and 3 are expected to meet both threshold criteria eventually, if groundwater is not used for public consumption. Alternative 3 would be much more difficult to implement because placement of a subsurface slurry cut-off wall would be very difficult in the limited space available on the Rando property, considering the depth of installation. Alternatives 2, 4, 5, and 6 are expected to meet both threshold criteria , if groundwater is not used for public consumption. Alternatives 4, 5, and 6 would be more effective in the long-term, being permanent remedies, and would result in a greater reduction in toxicity and/or volume than alternative 2, but would have greater short-term impacts because of continuing contaminant migration (alternative 4), lack of experience due to a relatively new technology (alternative 5), and VOC emissions (alternative 6). Alternative 2 would be less difficult to implement compared to alternatives 4, 5, and 6 because it uses conventional, easily procured services and equipment. Technically, alternatives 1 and 2 are both desirable for this site. Alternative 1 is lower in cost. Alternative 2 would provide limited benefit over alternative 1. Contaminant concentrations in the groundwater are expected to persist, and are expected to continue to decline slowly over time with either alternative 1 or alternative 2. This is due to the nature of the interactions between the groundwater, the contaminants, and the geologic matrix. The effectiveness of alternative 2 will be further limited in areas of low soil permeability (10^{-6} - 10^{-8} cm/sec). Given the current absence of completed exposure pathways at the site, decreasing contaminant concentrations, and the current intention not to use the Village of Macedon wellfield, alternative 1, no further action, which equally satisfies the other criteria, and is lower in cost, is selected as the remedy for this site.

The selected remedy will allow for continued degradation of groundwater contaminants over time. Also, public access to groundwater on the Rando property will be restricted by applying administrative controls. Additionally, on-and off-site groundwater monitoring wells will be monitored to measure the effectiveness of the source removal completed and the continuing degradation of groundwater contaminants over time. The selected long-term monitoring wells are presented in Figure 5.

The estimated present worth to implement the remedy is $ 194,699. There is no construction cost for this remedy. The annual operation and maintenance cost for 30 years is $ 9,480.

7.1: Elements of the Selected Remedy

The selected remedy of no further action includes the following elements:

- periodic monitoring (semi-annually) of selected on-site and off-site monitoring wells to measure the effectiveness of the source removal completed, and continuing degradation of groundwater contaminants over time at the site;

- review of monitoring results at five year intervals to determine if further monitoring or action is needed; and

- applying administrative controls on the Rando property to restrict public access to contaminated groundwater.

The selected remedy is conditioned on the expectation that the groundwater contaminant concentrations will continue to decrease, and the fact that the Village of Macedon is not interested at this time in utilizing its affected wells for public water supply. If groundwater contaminant concentrations do not continue to decrease as expected, or if the Village of Macedon decides to return these wells to service, the remedial

alternative selected in this ROD will need to be reevaluated. Additional remedial alternatives would need to be evaluated, including wellhead treatment on the Village of Macedon wells.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

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

- A repository for documents pertaining to the site was established.
- A site mailing list was established which included nearby property owners, local political officials, local media, and other interested parties.
- A fact sheet containing site-related information was distributed on January 30, 1989 using the mailing list.
- A News Release announcing signing of a consent order with Rando and the begining of field work for the RI was issued on November 28, 1990.
- A fact sheet describing the results of RI was distributed on January 13, 1994 using the mailing list.
- An announcement for a public meeting announcement to discuss the proposed remedial action plan (PRAP) for the site and to solicit public comments was distributed on February 7, 1995 using the mailing list. The public meeting was held on February 16, 1995. The public comment period was February 10, 1995 - March 13, 1995.
- A letter announcing the reopening of the public comment period (January 29, 1996 - February 21, 1996) for the PRAP was distributed using the mailing list.
- A public meeting announcement to discuss the revised PRAP and to solicit public comments was distributed on January 28, 1998. The public meeting was held on February 12, 1998. The public comment period was January 28, 1998 - February 28, 2998.
- In March 1998, a Responsiveness Summary was prepared and made available to public, to address the comments received during the public comment period for the revised PRAP.

APPENDIX A

RESPONSIVENESS SUMMARY

Rando Machine Corporation Site
Town of Macedon, Wayne County, New York
Site ID # 859014

The following are the responses from the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) to the questions and comments received during the public comment period and/or made at the February 12, 1998 public meeting which presented the revised proposed remedial action plan (PRAP) for the Rando Machine Corporation (Rando) Site. Some of the questions or comments are grouped together to help formulate an appropriate response and avoid repetition.

This responsiveness summary forms a part of the Record of Decision issued by the NYSDEC for this site.

Q. 1 How sure are you that this groundwater contamination problem was caused by Rando?

A. 1 After the detection of elevated concentrations of 1,1,1-trichloroethane (TCA) in the Village of Macedon well # 2, NYSDEC conducted a door-to-door inquiry of the nearby industrial facilities searching for TCA users. Rando Machine Corporation (Rando), located approximately ¼ mile south-southwest of well # 2, was identified as a potentially responsible party. Also, the general direction of groundwater flow is from Rando toward the Village of Macedon wellfield. The floor drains from Rando's TCA storage area drained into a buried container, also called a dry crock, located immediately outside the northeast corner of the building. A preliminary investigation of the dry crock area by Rando indicated soil and groundwater contamination with TCA, TCE, and the breakdown products of TCA and TCE. In 1989, Rando removed the dry crock and associated contaminated soil as a part of the source removal action; contaminant concentrations have decreased since this removal. In 1990 Rando signed a consent order with the NYSDEC and conducted site investigation to determine the extent of soil and groundwater contamination. The site investigation indicated that TCA emanating from the dry crock area had migrated toward Rando's east property line and beyond in the adjacent farmed field. In the farmed field, TCA had migrated northward towards the Village of Macedon wells # 1 and # 2. Therefore, the NYSDEC believes that the TCA groundwater contamination at and near this site was caused by the former source (dry crock) at Rando.

Q. 2 If a gas station takes out a gas tank, they have to take out contaminated soil associated with it; why doesn't Rando have to?

A. 2 As indicated in the PRAP and the ROD, in March of 1989 Rando had completed the following source removal activities: drained the contents of the dry crock into a 55-gallon drum; excavated and removed the dry crock and placed it into an overpack drum; excavated additional soil from around the dry crock location; sampled excavated soil and the dry crock contents to characterize the compounds present; and transported the dry crock, its contents, and approximately 6 cubic yards of contaminated soil off-site for appropriate disposal. Post-removal soil sampling in the source area did not indicate soil contamination.

Thus, Rando removed the source of contamination and associated contaminated soil in much the same manner as would occur at gas station.

Q. 3 You say that groundwater at Rando is approximately 20 feet deep. If the contamination is only 20 feet down, why is no action being taken to get rid of the contamination on the Rando property which keeps contaminating our property? In time the Rando property will be the first property to be free of contamination. They are bringing the value of our property down. When the Village of Macedon wells were operating, the wells were drawing contamination and pumping it out of the ground. Since the Village of Macedon wells are no longer operative, contaminated groundwater should be pumped out and treated at the Rando property. You don't know that treating contaminated soil or groundwater won't work.

A. 3 The NYSDEC remedy selection process is based on detailed evaluation of various remedial alternatives against seven evaluation criteria. These criteria include 1) compliance with New York State Standards, Criteria, and Guidelines; 2) protection of human health and the environment; 3) short-term adverse impacts of the remedial action upon the community, the workers, and the environment during implementation; 4) long-term effects of the remedial alternatives after implementation and its permanence; 5) reduction of toxicity, mobility or volume of the wastes at the site; 6) technical and administrative feasibility of implementing each alternative; and 7) capital and operation and maintenance cost estimate for each alternative. The preferred remedy is finally evaluated against an eighth criteria of community acceptance. Groundwater monitoring data indicate contaminant concentrations are dropping with time at the site. Currently, no one in the area is using groundwater as a drinking water supply, and the groundwater is located in the 15 to 25 feet range below ground surface, making direct contact with groundwater unlikely. Additionally, currently available technologies for restoring aquifers contaminated with chlorinated solvents back to groundwater standards is limited; and, even if these technologies were used at this site, achieving groundwater standards could take several decades or more. Therefore, because NYSDEC believes that treating groundwater or taking no further action will require several decades or more before groundwater contaminant concentrations decrease below NYS groundwater standards, no further action is being required at this site.

Also, please note that the ROD qualifies the no further action by stating that "if groundwater contaminant concentrations do not continue to decrease as expected, or if the Village of Macedon decides to return these wells to service (the exposure route is reestablished), the remedial alternative selected in this ROD would need to be reevaluated. Additional remedial alternatives would need to be evaluated, including wellhead treatment on the Village of Macedon wells."

Q. 4 Why is New York State's standard for TCA so low when the federal standard is so high?

A. 4 There is little information on the toxicity of 1,1,1-trichloroethane (TCA), especially with respect to ingestion. The United States Environmental Protection Agency (USEPA) drinking water standard of 200 ppb for TCA is mainly based on the results of a laboratory study of mice exposed to TCA by inhalation for 14 weeks (which is only about 10% of their life span). In general, two year ingestion exposure studies are required to adequately characterize chronic (long-term) toxicity and carcinogenic potential. Since there are inadequacies in the toxicological data and uncertainties regarding the possible effects of chronic exposure, the degree of confidence in derivation of the USEPA's drinking water standards is low. In New York, TCA is considered a "principal organic contaminant" for which the drinking water standard is 5 ppb. Under New York State regulations, the 5 ppb standard applies to all principal organic contaminants until

it has been demonstrated that a contaminant does not pose an unreasonable risk to human health. Since TCA does not meet this criterion, application of the 5 ppb standard is appropriate.

Q. 5 You are talking about chlorinated solvents which build up with prolonged exposure and then cause health effects. Your data show you tested for the initial solvent (TCA) but I don't see data tracking the levels of degradation (breakdown) products or contaminants that could possibly be in these solvents. These solvents were used as degreasers and could have contaminants such as heavy metals in them.

A. 5 The groundwater samples were analyzed for the following analytical parameters: volatile organic compounds, semi-volatile organic compounds, metals (including heavy metals), and pesticides/PCBs. These are the chemical compounds and analytes (metals) listed in the target compound list (TCL) which are normally used for the State Superfund projects. The only compounds which were consistently detected above the NYS groundwater standards were TCA, TCE, and the degradation products of TCA and TCE. No heavy metals were detected above the NYS groundwater standards. TCA, TCE and the breakdown products of TCA and TCE were tested during each of the seven sampling events. The breakdown products of TCA and TCE that were consistently detected include 1,1-dichloroethane (1,1-DCA) and 1,1-dichloroethene (1,1-DCE). Please refer to Tables 1 and 2 of the ROD for information regarding concentrations of the compounds exceeding the NYS groundwater standards and the frequency of exceedences.

Q. 6 The Village of Macedon well # 3 shows increasing concentrations of toluene, which indicates to me the possibility of some other source of contamination (not Rando). This would be a concern if the Village of Macedon decides to reactivate its wells.

A. 6 At this time, the source of the toluene contamination at well # 3 is unknown. Before reactivating this well, it would be appropriate to locate and remove the source of this contamination.

Q. 7 Doesn't groundwater flow from Route 31, through the Rando property and over to the Village of Macedon well # 3 (southwest to northeast)? I have seen a map showing that. If you look at that map, you will see that the well # 3 is in the path of groundwater from Rando. When the Village stopped using wells #1 and #2, but kept using well # 3, I believe the contamination was drawn into well # 3.

A. 7 When the Village of Macedon wells # 1 and #2 are not pumping, the groundwater in the area would generally flow from southwest to northeast towards the Village of Macedon well # 3. Since elevated levels of toluene were detected in well # 3, but not at Rando, the NYSDEC believes the contamination at well # 3 is from an unknown and different source.

Q. 8 What about the two monitoring wells north of GTF? Do you not sample them any more? If well OW-B105 is contaminated, you should see contamination in those two wells.

A. 8 The two monitoring wells located north-northeast of GTF are OW-B106A and OW-B106B. These monitoring wells were repeatedly sampled, but did not indicate the presence of contaminants above NYS groundwater standards. Additionally, groundwater flowing from the Rando property does not tend to flow toward those two wells. Therefore, like some other monitoring wells installed during remedial investigation at the site, sampling of these two monitoring wells was discontinued. This scenario may change if the Village of Macedon decides to reactivate its wells.

Q. 9 At the rate the contaminant concentrations are decreasing, how many years will it be until the levels of contamination are low enough to remove the site from the list of inactive hazardous waste disposal sites? To remove the site from the list, how much contamination can be left at the site?

A. 9 The on-site and off-site groundwater will be monitored as indicated in the ROD. It is expected that contaminant concentrations will continue to persist, and decrease slowly, and may take several decades or more to meet the NYS groundwater standards. However, that does not mean the site will remain on the list of inactive hazardous waste disposal sites until NYS groundwater standards are met. Once the Record of Decision (ROD) indicating no further action is issued, the site will be reclassified from a class 2 to a class 4, indicating that the site is properly closed but requires continued management. Groundwater monitoring will continue until monitoring results indicate further monitoring is unnecessary. The site will be removed from the list of inactive hazardous waste disposal sites when the monitoring is discontinued.

Q. 10 When I was elected, I talked to the people who handle water in the Village. They said as the water level in the Erie Canal changes, the water level in the Village of Macedon wells goes up and down. Did you test at different times of the year to look for that effect?

A. 10 The water level in most wells goes up and down at different times of the year and it may affect groundwater quality. To account for these seasonal variations in groundwater levels and quality, a remedial investigation normally includes quarterly sampling for a minimum of one year. In this case, seven rounds of samples were collected from the monitoring wells at different times of the year. The results did not indicate a significant difference in groundwater quality which can be attributable to seasonal variations in water levels.

Q. 11 You referred earlier to the "source removal" being complete. What is the source removal?

The off-site contaminant concentrations remains about the same, but no more source removal is planned, right?

A. 11 Source removal is removal of an identified source of contamination. In this case, the source removal refers to the removal of the buried 55-gallon drum (dry crock) which was located on the northeast corner of the Rando building (refer to figures 2 and 3). Post-removal soil sampling at the source location did not detect additional soil contamination. Therefore, it was concluded that the source removal has been completed. As explained above in A. 3, pumping and treating contaminated groundwater to remove existing low contaminant concentrations at Rando would offer little additional benefit. Furthermore, the currently low off-site contaminant concentrations are also expected to decrease slowly over time due to natural degradation.

Q. 12 What about the farm next door to the site? Is it true that the farm property can't be sold until contaminant levels decrease on that property?

A. 12 The NYSDEC and NYSDOH do not prohibit the sale of any hazardous waste site or a property impacted by it from being sold; and, they have not done so for this property. As indicated in the ROD, the groundwater TCA concentrations at the farm property next door to the site exceeds NYS groundwater standards. However, the maximum TCA concentration found (92 ppb) is considered low. Natural

degradation will reduce TCA concentrations slowly; however, currently, there are no completed exposure pathways at the farm property, and a public water supply is readily available.

Q. 13 You mentioned deed restrictions will be placed on the Rando property. What does that mean? Doesn't that prevent the property from being sold? Could it affect the property value?

A. 13 The no further action alternative selected for this site includes an administrative control on the Rando property, such as a deed restriction, to restrict access to groundwater. That means Rando or any future buyer of the property could not use the groundwater until contaminant concentrations are reduced below NYS groundwater standards. As stated earlier, NYSDEC and NYSDOH do not nor have they prohibited the sale of the Rando property. The deed restriction could affect its property value.

Q. 14 The article in the news paper said the monitoring plan will cost about $ 195,000. What is that cost for?

A. 14 As indicated in the PRAP and the ROD, the selected no further action alternative includes periodic monitoring (semi-annually for the first five years and annually thereafter) of on-and off-site wells. The annual cost of this groundwater sampling and analysis is estimated to be $ 9,480. Assuming the monitoring will have to continue for 30 years, the 30-year net present worth works out to be $ 194,700.

Q. 15 How long will the monitoring continue - 30 years from now or 30 years from when the contamination was first discovered?

A. 15 The 30-year period at Rando starts from the date this ROD is issued. Periodic groundwater monitoring (semi-annually for the first five years and annually thereafter) of on- and off-site monitoring wells will be performed to measure the effectiveness of the source removal completed at Rando, and continuing degradation of groundwater contaminants over time at the site. The results of monitoring will be reviewed yearly; however, a comprehensive evaluation of the results will be conducted at every 5-year intervals to determine if further monitoring or action is needed. In the NYS inactive hazardous waste site remediation program, long term monitoring cost-estimates are normally based on 30-year period.

Q. 16 You mentioned that if the Village wants to reopen its water supply wells, it will cost a lot more than the amount ($ 194,700) for the monitoring plan. How much more would it cost? If the Village decided to do that, would it be the State's or the Village's responsibility to treat the wells?

A. 16 The approximate cost of reactivating the Village of Macedon water supply wells by installing air strippers would be $ 800,000 - $1000,000; monitoring at Rando and of the wellfield (wells #1 and #2) would also continue. If the Village of Macedon decides to reactivate its water supply wells, groundwater conditions at that time would be reevaluated. If treatment were necessary, the viability of the responsible parties to fund such treatment would be considered. If there are no viable responsible parties, the State would attempt to use its resources to fund the appropriate treatment and recover costs at a later date.

Q. 17 I have a hard time with the responsible party statement. Who pays for the water the Village receives now? I understand Rando settled with the Village for a large amount of money, correct? So Rando admitted responsibility and is the responsible party, correct? If the State were approached with a proposal to reactivate the wells, would the state have the final say in whether spending the money to treat

the wells would be worth it?

A. 17 The NYSDEC has identified Rando as a potentially responsible party at this site with the former dry crock (removed by Rando in 1989) as a source of groundwater contamination. The water presently received from Monroe County Water Authority is paid for by the users, the Village of Macedon residents. NYSDEC was not a part of the settlement between Rando and the Village of Macedon and is not sure of all its conditions. The NYSDEC is not aware that Rando admitted responsibility. If the State were approached by the Village of Macedon to reactivate the water supply wells (wells # 1 and # 2), the State would evaluate various treatment alternatives and their practicality.

Q. 18 Could the Village of Macedon wells be operated for a year, with all the water sent into the Canal, to see if the contaminant concentrations would decrease enough to start to use the wells for drinking again?

A. 18 If the Village of Macedon desires to reactivate its wells (#1 and #2), all feasible options to accomplish it in a technically sound and cost-effective manner would be evaluated. However, due to the nature of interactions between the groundwater, the contaminants, and the geologic material present at the site, it is unlikely that the aquifer would be restored to drinking water standards for several decades or more by just pumping and discharging it into the Canal, without subjecting groundwater to some sort of a proven external treatment, like air stripping. Additionally, discharging contaminated water to the Canal would not be a preferred approach since it transfers contamination.

Q. 19 Would you drink water out of those wells if there was an air stripper on the wells? If you spent all that money on an air stripper, shouldn't it work? Caledonia doesn't think it does.

A. 19 After treatment by the air stripper, contaminants are not detected in the Village of Caledonia drinking water. Since Caledonia's drinking water passes New York State Department of Health drinking water requirements, it is considered suitable for all purposes. Therefore, the use of an air stripper has been and continues to be an effective remedy to remove volatile organic contaminants from the Village of Caledonia's drinking water. Similarly, there is no reason why an air stripper should not work to remove TCA, also a volatile organic contaminant, for the Village of Macedon wells.

Q. 20 Has any surface water in the wetland been tested? Was any contamination found?

A. 20 Yes, the surface water in the regulated class III wetland located ¼ mile north of Rando was sampled. None of the compounds identified in the surface water sample exceeded NYS standards or guidance criteria.

APPENDIX B

ADMINISTRATIVE RECORD

Rando Machine corporation
Town of Macedon, Wayne County, New York
Site ID # 859014

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1) Record of Decision including Responsiveness Summary issued by NYSDEC dated March 1998

2) Proposed Remedial Action Plan (revised) prepared by NYSDEC dated January 1998

3) Public Meeting Announcement by NYSDEC dated January 28, 1998

4) Analytical results of NYSDEC groundwater sampling at Rando dated February 1997

5) Revised Feasibility Study Addendum by Haley & Aldrich of New York dated November 26, 1996

6) Letter from NYSDEC to Rando Machine Corporation dated October 10, 1996

7) Letter from NYSDEC to Haley & Aldrich of New York and Harris Beach & Wilcox dated June 21, 1996

8) Letter from NYSDEC to the concerned citizens dated January 16, 1996

9) Letter from Harris Beach & Wilcox to NYSDEC dated December 12, 1995

10) Proposed Remedial Action Plan prepared by NYSDEC dated March 1995

11) Public Meeting Announcement by NYSDEC dated February 7, 1995

12) Revised Feasibility Study (RFS) by Haley and Aldrich of New York dated January 1995

13) Letter from NYSDEC to Rando approving RFS report dated January 13, 1995

14) Fact Sheet distributed to concerned citizens dated January 13, 1994

15) Letter from NYSDEC to Rando approving Remedial Investigation (RI) report dated January 11, 1994

16) Letter from Haley & Aldrich of New York to NYSDEC dated January 7, 1994

17) Letter from NYSDEC to Haley & Aldrich of New York dated January 4, 1994

18) Letter by NYSDEC to Haley and Aldrich of New York dated December 16, 1994

19) RI Report Addendum by Haley and Aldrich of New York dated December 1993

20) Letter from NYSDEC to Haley and Aldrich of New York dated December 6, 1993

21) Letter from Haley and Aldrich of New York to NYSDEC dated February 23, 1993

22) RI/FS Work Plan Addendum by Haley and Aldrich of New York to NYSDEC dated December 1992

23) Responses on RI Report by Haley and Aldrich of New York to NYSDEC dated November 1992

24) Remedial Investigation Report by Haley and Aldrich of New York to NYSDEC dated April 1992

25) Letter by Haley and Aldrich of New York to NYSDEC dated March 6, 1992

26) Letter by Haley and Aldrich of New York to NYSDEC dated December 4, 1991

27) Letter by Haley and Aldrich of New York to NYSDEC dated November 1, 1991

28) Letter by Haley and Aldrich of New York to NYSDEC dated December 21, 1990

29) News Release by NYSDEC dated November 28,1990

30) Consent Order between the NYSDEC and Rando dated November 9, 1990

31) Letter by Haley and Aldrich of New York to NYSDEC dated September 24, 1990

32) RI/FS Work Plan Haley and Aldrich of New York dated August 1990

33) Data Report by Haley and Aldrich of New York dated November 1989

34) Fact Sheet by NYSDEC dated January 30, 1989

35) Letter from NYSDEC to Rando dated November 5,1987

Note: - The July 13, 1994 Village of Macedon Board Resolution is included in Appendix E of the RFS dated January 1995 (see # 12 above)

- Other significant correspondence related to the RI report are included in the appendix E of the RI Report Addendum dated December 1993 (see # 19 above)