Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Diaz Chemical Corporation Site
Operable Unit No. 1
Village of Holley, Orleans County
Site Number 8-37-009

March 2002

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* ERIN M. CROTTY, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Diaz Chemical Corporation Inactive Hazardous Waste Site
Operable Unit No. 1
Village of Holley, Orleans County, New York
Site No. 8-37-009

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the Diaz Chemical Corporation Class 2 inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law. 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 on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Diaz Chemical Corporation inactive hazardous waste site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened release of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential significant threat to public health and the environment.

Description of Selected Remedy

Based on the results of the Remedial Investigation/Feasibility Study (RI/FS) for the Diaz Chemical Corporation Site and the criteria identified for evaluation of alternatives, the NYSDEC has selected Alternative No. 3, Continue Current IRMs with Source Area Hydraulic Control. The components of the remedy are as follows:

C Continue operating current Interim Remedial Measures (IRMs), including the blasted bedrock interceptor trench, the railroad spur bioventing, and maintaining engineering controls in the residences on South Main Street;

- Installation of additional recovery wells to provide hydraulic control of contaminated groundwater from the source areas;

- Implementation of a soil management plan, providing standard procedures for intrusive activity at the site;

- Maintenance and augmentation of the concrete pads and existing network of PVC-lined drains, as necessary, to minimize and prevent infiltration of precipitation;

- Replacement of sewer lines that run beneath source areas with lined trenches and/or aboveground piping;

- Maintenance of the Class 2 status on the Registry of Inactive Hazardous Waste Disposal Sites until all remediation is successfully completed;

- Establishment of a deed restriction on the property, restricting its use to industrial or commercial use only until remediation is completed, and also restricting the use of groundwater at the site to non-potable uses;

- Maintenance of the institutional controls in place at the two residential properties on South Main Street until it is deemed by the DEC and DOH that the controls are no longer necessary;

- Annual certification by a Professional Engineer licensed in New York State that the deed restrictions and institutional controls are both in-place and effective;

- The creation of a new Operable Unit at the site, Operable Unit No. 2, to address the contaminant source areas; and

- Since the remedy results in untreated hazardous waste remaining at the site, a long-term monitoring program would be instituted. Off-site wells and a small group of on-site wells will be monitored, along with periodic sampling of the indoor air of residences along South Main, Jackson, and Batavia Streets. This program would allow the effectiveness of the source control measures and the existing IRMs to be monitored and would be a component of the operation and maintenance program for the site.

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.

_____ _____

Date

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

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RECORD OF DECISION

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SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health has selected this remedy to address the significant threat to human health and/or the environment created by the presence of hazardous waste at the Diaz Chemical Corporation Site, a Class 2 inactive hazardous waste disposal site. As more fully described in Sections 3 and 4 of this document, past operations as a chemical manufacturing facility have resulted in the disposal of a number of hazardous wastes, including 1,2-dichloroethane (DCA, also known as ethylene dichloride, or EDC), at the site, some of which were released or have migrated from the site to surrounding areas, including the residential area east of the site. These disposal activities have resulted in the following significant threats to the public health and/or the environment:

- a significant threat to human health associated with migration of contaminated groundwater and vapors beneath the residential area east of the site;

- a significant environmental threat associated with the impacts of contaminants to soil and groundwater in exceedance of applicable standards.

In order to eliminate or mitigate the significant threats to the public health and/or the environment that the hazardous wastes disposed at the Diaz Chemical Corporation Site have caused, the following remedy was selected:

- Continue operating current Interim Remedial Measures (IRMs), including the blasted bedrock interceptor trench, the railroad spur bioventing, and maintaining engineering controls in the residences on South Main Street;

- Installation of additional recovery wells to provide hydraulic control of contaminated groundwater from the source areas;

- Implementation of a soil management plan, providing standard procedures for intrusive activity at the site;

- Maintenance and augmentation of the concrete pads and existing network of PVC-lined drains, as necessary, to minimize and prevent infiltration of precipitation;

- Replacement of sewer lines that run beneath source areas with lined trenches and/or aboveground piping;

- Maintenance of the Class 2 status on the Registry of Inactive Hazardous Waste Disposal Sites until all remediation is successfully completed;

- Establishment of a deed restriction on the property, restricting its use to industrial or commercial use only until remediation is completed, and also restricting the use of groundwater at the site to non-potable uses;

- Maintenance of the institutional controls in place at the two residential properties on South Main Street (discussed in more detail in Section 4.2, below) until it is deemed by the DEC and DOH that the controls are no longer necessary;

- Annual certification by a Professional Engineer licensed in New York State that the deed restrictions and institutional controls are both in-place and effective;

- The creation of a new Operable Unit at the site, Operable Unit No. 2, to address the contaminant source areas (an Operable Unit represents a portion of the site which for technical or administrative reasons can be addressed separately); and

- Since the remedy results in untreated hazardous waste remaining at the site, a long-term monitoring program would be instituted. Off-site wells and a small group of on-site wells will be monitored, along with periodic sampling of the indoor air of residences along South Main, Jackson, and Batavia Streets. This program would allow the effectiveness of the source control measures and the existing IRMs to be monitored and would be a component of the operation and maintenance program for the site.

The selected remedy, discussed in detail in Section 8 of this document, is intended to attain the remediation goals selected for this site in Section 6 of this Record of Decision (ROD), in conformity with applicable standards, criteria, and guidance (SCGs).

SECTION 2: SITE LOCATION AND DESCRIPTION

Diaz Chemical Corporation (Diaz) is located in the Village of Holley, Orleans County, New York as indicated on Figure 1, Project Location Map. The buildings, property boundaries, monitoring wells and other features are shown on Figure 2, Site Plan. The buildings range in construction from masonry and timber construction circa 1890 to a modern state of the art bulk handling facility constructed in the early 1990s.

The Diaz property is a wedge-shaped parcel of approximately 6 acres bounded on the north and east by residential parcels on Jackson Street and South Main Street. To the south and west, it is bordered by a set of Conrail railroad tracks, and beyond that by undeveloped land and a group of former Duffy-

Mott buildings that are now vacant. Across the tracks and adjacent to the southeast boundary is the Holley VFW Hall and a small, unnamed tributary to the East Branch Sandy Creek.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The site was initially developed as an industrial plant in the 1890s and was used primarily for tomato processing and cider vinegar production before being purchased by Diaz in 1974.

Diaz is a manufacturer of specialty organic intermediates for the agricultural and pharmaceutical industries. The Diaz product line has varied over the years of operation but has primarily consisted of halogenated aromatics and substituted benzotrifluorides. The site-related contamination is presumed to be the result of numerous small spills, leaks, and other operational practices over the history of the plant.

3.2: Remedial History

The Site was added to the New York State Registry of Inactive Hazardous Waste Disposal Sites in July 1992 as a Class 2 site. This classification indicates that the contaminants at the Site present a significant threat to the public health or the environment for which action is required.

Completing a large and complicated remedial program at an active chemical production facility has presented several challenges. To accommodate on-going operations and manage limited financial resources, Diaz carried out the investigation over many phases. From 1994 to 1999, Diaz conducted a Remedial Investigation (RI) of the Site. During the course of the RI, Diaz implemented two (IRM-1 and IRM-2) Interim Remedial Actions (IRMs) to mitigate soil and groundwater contamination identified during the RI. These IRMs were installed in 1995 and 1998 to promptly address the findings of the RI without waiting for the completion of the Feasibility Study (FS). An additional IRM was conducted at the residential properties impacted by off-site groundwater. The IRMs are discussed more fully in Section 4.2, below. In November 2000, Diaz submitted a draft FS to the NYSDEC. After NYSDEC review, the FS was modified and a revised report was submitted by Diaz in October 2001.

SECTION 4: SITE CONTAMINATION

To evaluate the contamination present at the site and to evaluate alternatives to address the significant threat to human health and the environment posed by the presence of hazardous waste, the PRP has recently conducted a Remedial Investigation/ Feasibility Study (RI/FS).

4.1: Summary of the Remedial Investigation

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

The RI was conducted in six phases. The first phase was conducted during 1994 with annual phases each year until the final phase was completed in 1999. A summary report entitled "Report on Remedial Investigation," dated February 2000, has been prepared which describes the field activities and findings of the RI in detail.

The RI included the following activities:

- Several rounds of soil gas surveys to identify areas of soil and groundwater contamination;
- Installation of soil borings and monitoring wells for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions;
- Sampling of water and sediments in the nearby East Branch Sandy Creek and a minor tributary; and
- Sampling of indoor air in several residences along the northern and eastern boundaries of the site.

To determine which media (soil, groundwater, etc.) are contaminated at levels of concern, the RI analytical data was compared to environmental standards, criteria, and guidance values (SCGs). Groundwater, drinking water and surface water SCGs identified for the Diaz site are based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part 5 of New York State Sanitary Code. For soils, NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 provides soil cleanup guidelines for the protection of groundwater, background conditions, and health-based exposure scenarios. In addition, for soils, site specific background concentration levels can be considered for certain classes of contaminants. Guidance values for evaluating contamination in sediments are provided by the NYSDEC "Technical Guidance for Screening Contaminated Sediments."

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

Chemical concentrations are reported in parts per billion (ppb) and parts per million (ppm). Chemical concentrations in air are reported in micrograms per cubic meter ($\mu g/m^3$). For comparison purposes, where applicable, SCGs are provided for each medium.

4.1.1: Site Geology and Hydrogeology

The ravine of the East Branch Sandy Creek dominates the local topography (Figure 1). The creek has cut into the massive shale and ledgey sandstone of the Queenston Formation, following the northwest-trending Clarendon-Linden Fault zone. The site sits on top of a rise west of the ravine. The rise is composed of silt and clay interpreted to have originated in a former glacial lakebed during the waning stages of the last ice age. There are approximately 30 to 35 feet of silt and clay lakebed soils under the Site. Occasional sand layers are present within the silt-clay at the east end of the site.

The shale beneath the site is weathered on its upper surface, in some places, becoming a dry, clayey mudstone. The weathered shale is much more permeable than the more competent bedrock beneath it. A few feet into the bedrock, the shale becomes dense and impermeable, yielding very little groundwater.

Groundwater at the site flows primarily from west to east. The flow is governed by the deep ravine of Sandy Creek east of the site. Groundwater is found on-site at a depth of 10 to 15 feet below ground surface around the main production areas. The depth to groundwater increases closer to the IRM-1 trench. At the trench, the depth to groundwater is approximately 30 feet. This is due to the fact that the trench is actively draining and lowering the water table. Off-site, the depth to groundwater decreases again, primarily due to the sloping topography of the site. Groundwater is close to the surface in some locations and has been found in the sump of one of the residences along South Main Street. However, since aggressive pumping of IRM-1 began, the water levels off-site have also dropped significantly.

4.1.2: Nature of Contamination

As described in the RI report, many soil, groundwater and sediment samples were collected at the site to characterize the nature and extent of contamination. The main categories of contaminants which exceed their SCGs are volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs).

The VOC contaminants of concern are primarily solvents as well as various brominated and fluorinated compounds, presumed to be manufacturing raw materials and by-products. Some contaminants representative of the VOC contamination are: 1,2-dichloroethane (DCA), parachlorobenzotrifluoride (PCBTF), xylene, ethylene dibromide (EDB), and bromochloroethane. The SVOC contaminants of concern are also various brominated and fluorinated compounds, presumed to be manufacturing by-products. Some contaminants representative of the SVOC contamination are: 1-bromo, 4-fluorobenzene; 3,4-dichlorobenzotrifluoride; 3-bromoacetophenone; and many other halogenated aromatic derivatives.

4.1.3: Extent of Contamination

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

Soil

The RI identified four contaminant source-areas. They are shown on Figure 3 and described in brief as follows: the Railroad Spur Area, Areas C and D , the Former Soda Ash Pit, and Area 5.

An area of light, non-aqueous-phase liquid (LNAPL) was found in the subsurface of the railroad spur. This area is used for the loading and unloading of chemicals onto railroad cars. The primary components of the LNAPL were Tenneco Blend solvent (a commercial petroleum-based solvent,

primarily comprised of xylenes, ethylbenzene, and other hydrocarbons) and PCBTF. In addition to the LNAPL, the soil contamination in this area contained ethylbenzene (61 ppm), xylenes (370 ppm total), and a group of tentatively identified compounds (TICs) related to the Tenneco Blend solvent (1,293 ppm total). The TAGM cleanup guidance value for soils is 10 ppm for the total amount of VOCs in the soil. The guidance values for the individual compounds are lower (ethylbenzene: 5.5 ppm and xylene: 1.2 ppm). This area is the focus of an Interim Remedial Measure (IRM), described below. No contaminated surface soils were discovered in this area, as it is covered with railroad ballast.

Areas C and D are active chemical production areas. The soils beneath these areas are contaminated with a variety of compounds. The volatile contamination consists of solvents and manufacturing raw materials, products and by-products. Bromobenzene was detected as high as 370 ppm. Also identified were: methylene chloride (5.4 ppm), acetone (32 ppm), DCA (52 ppm), benzene (3.3 ppm), ethylbenzene (13 ppm), xylenes (61 ppm total), 1,2-dibromoethane (68 ppm), 1-bromo, 2-chloroethane (61 ppm), PCBTF (200 ppm), and 1,3-dibromobenzene (360 ppm). The semivolatile contaminants are primarily manufacturing products and by-products. Identified SVOCs include: 1,4-dibromobenzene (360 ppm), 1-bromo, 2-ethylbenzene (190 ppm), and 1-bromo, 3-fluorobenzene (1,100 ppm). Many of the manufacturing by-products do not have specific cleanup values established in the NYSDEC TAGM guidance. Therefore the general cleanup goal of 10 ppm for the total amount of VOCs in the soil applies. The guidance values for the individual compounds are much lower (methylene chloride: 0.1 ppm, acetone: 0.2 ppm, DCA: 0.1 ppm, benzene: 0.06 ppm, ethylbenzene: 5.5 ppm, and xylenes: 1.2 ppm). In addition, the TAGM cleanup guidance value for the total amount of SVOCs in the soil is 500 ppm total and 50 ppm for any individual compound.

The former soda ash pit is a relatively small area adjacent to the railroad spur. The volatile contaminants found in this area include: PCBTF (17 ppm), xylenes (7 ppm total), DCA (4.9 ppm), and fluorobenzene (1.7 ppm). The primary SVOC contaminant is 2,4-dichlorobenzotrifluoride, detected at 17 ppm.

Area 5 is an area of the site used for the storage of chemicals, both in drums and in several above-ground tanks. No surface soils are present in this area, as it is also completely paved with concrete. The primary volatile compounds detected in this area are 1,2-dibromoethane (22 ppm), bromochloroethane (22 ppm), DCA (12 ppm), and 1,1-dichloroethane (1.8 ppm). Many of the manufacturing by-products do not have specific cleanup values established in the NYSDEC TAGM guidance. Therefore the general cleanup goal of 10 ppm for the total amount of VOCs in the soil applies to this area as well. The guidance values for the individual compounds are much lower (DCA: 0.1 ppm, and 1,1-dichloroethane: 0.1 ppm).

These manufacturing areas are completely paved with concrete and no surface soils are present. VOC detections in the soils beyond the source areas occurred in only three instances and at relatively low concentrations.

Few surface soils at the site are exposed. However, several surface soil samples were collected from various areas around the plant. None of these samples indicated any significant contamination of the surface soils. Off-site soils are also not found to be contaminated with site-related compounds.

Sediments

Sediments in the East Branch Sandy Creek were sampled on two occasions, once in 1995 and once in 1999. In one sample from 1995, PCBTF was detected at 0.005 ppm. That sampling location was re-sampled one month later and PCBTF was again detected, this time at 0.019 ppm. No other sediment analyses detected any site-related contaminants. The concentrations detected in the sediment are not considered to be significant.

Groundwater

Exceedances of NYSDEC groundwater cleanup criteria were found in all but a few of the on-site monitoring wells and hydropunch probes (a hydropunch is a steel tube inserted into the ground used to collect groundwater from a specific depth). The highest concentrations of site-related compounds in the groundwater were found in samples from overburden wells, including the hydropunch probes within, and immediately downgradient of, the identified source areas. Monitoring wells across the site revealed the following contaminants: DCA (82,000 ppb), PCBTF (49,000 ppb), xylenes (203,000 ppb total), 1,2-dibromoethane (55,000 ppb), and 1-bromo, 2-chloroethane (33,000 ppb). The groundwater quality standard for each of these compounds is 5 ppb, except for DCA, which has a groundwater standard of 0.6 ppb and 1,2-dibromoethane, which has a groundwater standard of 0.006 ppb.

In addition, the groundwater plume has been observed leaving the site and flowing beneath the residential area east of the site, toward Sandy Creek. Contaminated groundwater was also found in the basement sump of one of the residential properties along South Main Street. The sump water contained 1,2-DCA (2,200 ppb), 1,2-dibromoethane (1,400 ppb), and PCBTF (3,600 ppb). A groundwater contamination map is shown in Figure 4.

Surface Water

Waters in the East Branch Sandy Creek were sampled on two occasions, once in 1995 and once in 1999. Site-related contamination was not detected in any surface water sample.

Indoor Air

Indoor air was sampled in several residences adjacent to and nearby the site. Site-related contamination was detected in two residences along South Main Street, east of the site. The primary compound detected was PCBTF. The concentrations in the residential basements ranged from 10 $\mu g/m^3$ to 52 $\mu g/m^3$ (micrograms per cubic meter). After detecting the contaminants in both residences, Diaz installed air-purifying filters in the basements of both buildings. Subsequent air monitoring has confirmed that the filters are properly working and the indoor air contamination has been mitigated.

4.2: Interim Remedial Measures

An Interim Remedial Measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS.

Diaz has implemented three IRMs at the site since the RI/FS began in 1994. IRM-1 is a 265-foot long blasted-bedrock trench with seven groundwater pumping wells, five overburden drainage wells, a permanent building housing the electronic pump controllers, and an activated carbon groundwater treatment system. IRM-2 is a "bioventing" system that injects compressed air into four overburden sparge points at controlled rates to stimulate bioremediation of site-related compounds within the railroad spur area of the Plant. The third IRM involves air treatment in the two residences along South Main Street where indoor impacts from contaminated groundwater were identified.

IRM-1

IRM-1 has been demonstrated to be effective in capturing the groundwater at the downgradient end of the site and in controlling the VOC plume in both overburden and bedrock. IRM-1 was built in October 1995 and later improved in three stages:

- Pumping well RW-300 was added in 1996. This well improved the groundwater capture at the north end of IRM-1 by approximately doubling the IRM-1 pumping rate.

- Overburden pumping well RW-400, located east of the IRM-1 trench, was added in October 1997. This well improved groundwater capture in the overburden by intercepting an area of more permeable sand layers within the silt-clay.

- Further improvements and upgrades were made in July 1998. Diaz installed five more pumping wells and five passive drainage wells across the central part of the IRM-1 trench, and changed the pumping configuration of the system. These improvements greatly increased the groundwater capture in the overburden and the bedrock. Pumping wells RW-500, -600, –700 and –800 were added, and drainage wells DW-2 through DW-6 were added to drain the overburden groundwater from above the trench. The IRM-1 pumping rate increased to approximately 6 gpm after these improvements.

Groundwater levels in the overburden and bedrock around IRM-1 demonstrate the capture zone of IRM-1. Maps and cross sections demonstrating progressive changes are presented in the RI Summary Report.

IRM-1 has achieved hydraulic containment of the site by engineering control, and is removing contaminants on a daily basis. The VOC concentration levels in the monitoring wells downgradient of IRM-1 have been steadily declining with time, as discussed below, and these declines are related to the ongoing operation of IRM-1.

The RI groundwater sampling data demonstrate that IRM-1 and its improvements have abated the off-site flow of the groundwater from the Site and stopped the recharge of the VOC plume. Monitoring wells adjacent to and downgradient of IRM-1 show a significant decrease in total VOC concentrations since the expanded pumping began (see Table 2).

IRM-2

IRM-2 has been in operation since December 1997 to facilitate bioremediation of petroleum-hydrocarbons (Tenneco blend) and other site-related organic compounds present in the Railroad Spur Area. IRM-2 consists of four air-injection wells (VW-1 through VW-4), a groundwater recirculation pumping well (ALW-1) located at the downgradient portion of the IRM-2 area, and an underground perforated drainage pipe that recirculates water from well ALW-1 to a wood-chip lined trench (see Figure 5). This system was designed to create a treatment loop of oxygenated groundwater across the IRM-2 target area, providing a mechanism for mixing the oxygenated groundwater through the subsurface and deriving methane monooxygenase (MMO) enzyme from the wood chips. The oxygen addition facilitates aerobic biodegradation of the Tenneco Blend petroleum constituents by the action of native bacteria present in the Site soils. MMO has been shown to degrade chlorinated hydrocarbons at other sites.

Monitoring data for IRM-2 obtained to date indicate that IRM-2 is promoting the oxygenated/aerobic conditions necessary for the aerobic degradation of the Tenneco Blend compounds present in this area. The monitoring data from IRM-2 show the following trends: an increase in dissolved oxygen, sulfate, and carbon dioxide, increasing oxidation-reduction potential (Eh), and decreasing chemical oxygen demand (COD). These data continue to indicate that the necessary aerobic conditions for biodegradation of the site-specific compounds present in the IRM-2 area are being promoted by the IRM system and the primary indicator of microbial activity, carbon dioxide, is present at increased levels compared to background.

The dissolved oxygen levels in IRM-2 are at near-saturation levels (saturation of groundwater with atmospheric oxygen is in the range of 8 to 10 milligrams per liter (mg/L)) and are higher than the dissolved oxygen levels measured at other wells across the Site. The sulfate concentrations increased over the monitoring period, also indicating a shift toward more aerobic conditions.

IRM-2 should continue operating to enhance the necessary oxygenated conditions for enhanced aerobic bioremediation to continue. Groundwater mounding will be minimized by injecting air at very low rates (approximately ¼ cubic feet per minute) and pulsing the system on and off over regular time intervals, for example, on for a week and off for a week.

IRM-3

After detecting site-related contaminants in two residences along South Main Street, Diaz installed air-purifying filters in the basements of both buildings. As an additional protective measure, Diaz permanently covered the basement sump in one of the residences with an aluminum Bilco® door equipped with a neoprene seal. Periodic air sampling has been conducted at these residences since February 1998. All the samples including the most recent analysis (April 2001) have demonstrated the effectiveness of these actions in mitigating the potential exposure in these residences. In addition to these engineering controls, Diaz has reached separate agreements with the owners of the two properties to ensure that when the current occupants move, Diaz will have the opportunity to prevent new residents from moving into the buildings, preventing future potential for human health impacts.

4.3: Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the health risks can be found in Section 6 of the RI Summary Report.

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

Pathways which are known to or may exist at the site include:

- direct contact: The possibility for site workers to come into contact with contaminated soils and groundwater is limited. Only subsurface soils around the site are significantly impacted, while surface soils are not. Workers may be exposed to chemicals in the event that any excavation or subsurface work is performed. The potential does exist for off-site residents to come into contact with contaminated groundwater. One residence along South Main street has contaminated groundwater in its sump. Diaz has sealed the sump, minimizing the possibility that an actual exposure would occur.

- inhalation: The possibility exists for off-site residents to inhale chemical vapors from the contaminated groundwater. Indoor air was found to be contaminated in two residences along South Main Street. Since the contamination was first detected, the concentration of contaminants in the groundwater has been significantly reduced due to IRM-1. In addition, Diaz has installed air-purifying filters in the basements of both buildings, reducing the probability that an actual exposure will occur. However, the continuous operation and maintenance of the filters is necessary to ensure that this interim measure remains protective.

- ingestion: Groundwater is not used as a drinking water source in the area of the site. Potable water in the Village is supplied by municipal wells which are not impacted by the site.

4.4: Summary of Environmental Exposure Pathways

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

Groundwater at the site is contaminated with VOCs and SVOCs above NYS Ambient Water Quality Criteria. Because all freshwater groundwaters in New York are considered natural resources and potential supplies of potable water, the groundwater contamination must be mitigated.

Subsurface soils at the site are also contaminated at unacceptable levels. The amount of contamination in the soils presents an ongoing threat to the groundwater. As long as the soils remain contaminated, the groundwater will continue to pick up contaminants and mobilize them in the environment.

SECTION 5: ENFORCEMENT STATUS

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

The NYSDEC and the Diaz Chemical Corporation entered into an Order on Consent on July 1, 1994. The Order obligates the responsible parties to implement a RI/FS remedial program. Upon issuance of the Record of Decision the NYSDEC will approach the PRP to implement the selected remedy under an Order on Consent.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. The overall remedial goal is to meet all standards, criteria and guidance (SCGs) and be protective of human health and the environment. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The goals selected for this site are:

- Eliminate, to the extent practicable, off-site migration of groundwater that does not attain NYSDEC Class GA Ambient Water Quality Criteria.

- Eliminate, to the extent practicable, migration of LNAPL and DNAPL from the source areas.

- Eliminate, to the extent practicable, exposures to contaminated groundwater and vapors in the residential area east of the site.

- Eliminate, to the extent practicable, exposures to contaminants in the site soils.

- Eliminate, to the extent practicable, exceedances of applicable environmental quality standards related to releases of contaminants to the waters of the State.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy must 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 technologies to the maximum extent practicable. Potential remedial alternatives for the Diaz Chemical Corporation site were identified, screened and evaluated in the report entitled Feasibility Study Report, October 2001.

A summary of the detailed analysis follows. As presented below, 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.

The summary below only contains those alternatives from the FS which would be implementable at the site. Other technologies, such as surfactant flushing, thermal treatment, in-situ oxidation, or large-scale excavation were dismissed during the FS because they would not be feasible to implement under the current site conditions.

7.1: Description of Remedial Alternatives

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

Alternative #1: No Further Action

Present Worth: . . . . . *$ 297,756*
Capital Cost: . . . . . *$ 0*
Annual O&M: . . . . . *$ 21,600*
Time to Implement: . . . . . *N/A*

This alternative represents ceasing operation of the two IRMs and conducting a long-term groundwater-monitoring program. It is a baseline alternative against which the other alternatives are compared.

Alternative #2: Continue Current IRMs with Institutional Controls

Present Worth: . . . . . *$ 1,961,606*
Capital Cost: . . . . . *$ 0*
Annual O&M: . . . . . *$ 120,700*
Time to Implement: . . . . . *N/A*

This alternative recognizes the ongoing remediation of the site by previously completed IRMs. Only continued operation, maintenance, and monitoring of the IRMs are necessary to evaluate the effectiveness of the remediation completed under the IRMs. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment. This alternative would require deed restrictions on the future use of the site (i.e., only commercial and industrial uses of the site would be allowed) to reduce the potential for contact with the adversely impacted media, maintenance of the institutional controls in place at the two residential properties on South Main Street (discussed in more detail in Section 4.2), and a soil management plan for the Site. The existing fence already present around the Site would also need to be maintained.

Alternative #3: Continue Current IRMs with Source Area Hydraulic Control

Present Worth: . . . . . $ 2,137,194
Capital Cost: . . . . . $ 91,500
Annual O&M: . . . . . $ 148,400
Time to Implement: . . . . . 3 months

This alternative would consist of continuing to operate the existing IRMs, constructing additional groundwater recovery wells around the defined source areas, and implementing best management practices to enhance the hydraulic control measures in the source areas. A schematic plan is shown in Figure 6. This alternative includes implementing a long-term groundwater monitoring plan, a soil management plan for the Site, institutional controls in the form of a deed restriction on the property, and maintenance of the institutional controls in place at the two residential properties on South Main Street (discussed in more detail in Section 4.2). Diaz would maintain the existing concrete surface cap in the rest of the Plant including the main production areas. Sewer lines that run beneath these areas would be abandoned and replaced with lined sumps and/or aboveground piping. The existing network of PVC-lined drains, which collect the on-site storm water, would also be maintained.

Alternative #4: Continue Current IRMs with Two-Phase Extraction

Present Worth: . . . . . $ 4,412,866
Capital Cost: . . . . . $ 1,180,500
Annual O&M: . . . . . $ 444,000
Time to Implement: . . . . . 6 months - 1 year

This alternative would be identical to Alternative 2, but would include dual-phase extraction of groundwater and soil-vapor using a network of closely spaced extraction wells and dip tube "straws" installed in the extraction wells. Extracted groundwater and soil-vapor would be treated separately by filtering them through activated carbon, or alternatively, by condensing VOCs from the vapor stream. A schematic plan is shown in Figure 7.

Alternative #5: Continue Current IRMs with Soil Vapor Extraction

Present Worth: . . . . . $ 3,564,889
Capital Cost: . . . . . $ 1,019,500
Annual O&M: . . . . . $ 280,900
Time to Implement: . . . . . 6 months - 1 year

This alternative would include continuing to operate and maintain the existing IRMs, coupled with soil vapor extraction (SVE) within the source areas. A closely spaced network of SVE wells would be needed and typical wellhead vacuum levels during SVE would be on the order of 5 to 10 inches of mercury. A schematic plan is shown in Figure 8. The soil-vapor would be treated by filtering it through activated carbon prior to discharging the filtered air stream to the atmosphere.

7.2 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 included 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 governing cleanup of the Diaz Chemical Corporation site are NYSDEC TAGM 4046, "Determination of Soil Cleanup Objectives and Cleanup Levels;" NYSDEC Ambient Water Quality Standards and Guidance Values, and Part 5 of New York State Sanitary Code. Other relevant SCGs are listed in the Feasibility Study.

Of the five alternatives presented, Alternative 1 would not achieve cleanup goals for soil or groundwater. Alternatives 2 and 3 would partially meet groundwater SCGs by limiting the contamination to the site and preventing off-site migration. The two remaining alternatives would attempt to directly treat the contaminant sources in soil, but would only address those portions of the sources that are not beneath the production buildings.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

In comparison with the Remedial Goals established in Section 6, Alternative 1 is not protective of human health and the environment. Each of the four remaining alternatives is protective of human health and the environment. The existing IRMs provide sufficient hydraulic control of the site to mitigate short-term risks in Alternatives 2, 3, 4, and 5. Alternatives 4 and 5 would also attempt to remediate the contaminant sources, providing some additional protection 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, 2, and 3 present no additional short-term impacts on the community, environment, or workers. Alternatives 4 and 5 each impose limited short-term impacts on the community. They would require an atmospheric discharge of contaminants from the soil treatment systems. These releases could

be controlled with vapor treatment systems to prevent adverse impacts to the community. None of the alternatives presents an unacceptable short-term risk to the community.

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.

Alternative 1 would not be effective in the long-term. Alternatives 2 and 3 would provide long-term effectiveness in capturing and treating Site groundwater. However, they would not achieve a permanent solution for on-site soils, as source-area compounds would remain in place. Alternatives 4 and 5 include permanent and non-reversible mass removal from the source areas and therefore, provide some effectiveness against on-site contact with adversely impacted media. Alternatives 4 and 5 would both be anticipated to remove a large amount, but not all, of the contamination within the treatment areas. This is due to the nature of the site soils and the difficulty in remediating sites with silty, low-permeability soils, along with the fact a significant portion of the contaminant sources are present beneath the manufacturing buildings and largely inaccessible to remediation. Due to the fact that large sources would remain in-place beneath the buildings, these remedies would not dramatically improve groundwater quality at the site. Further, the vapor extraction technology in both Alternatives 4 and 5 would only be marginally effective at removing the semivolatile contaminants at the site. The residual contamination from sources beneath the buildings and from the semivolatile contamination would continue to act as sources of groundwater contamination, reducing the overall effectiveness of Alternatives 4 and 5. Because Alternatives 4 and 5 would leave significant contamination behind at the site, they are considered equally as effective as Alternative 3 in the long-term.

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

Alternative 1 would not accomplish any reduction in toxicity, mobility, or volume. Alternatives 2 and 3 provide for partial reduction in toxicity, mobility, and volume. IRM-1 has reduced the toxicity of the off-site groundwater through an approximate 90% reduction in the concentration levels of site-related compounds. By capturing the Site groundwater, IRM-1 reduces the mobility of dissolved site-related compounds. With continued operation and maintenance of IRM-1, the site-specific cleanup levels for off-site groundwater are believed to be attainable under this alternative. However, the on-site groundwater and source areas are not affected by IRM-1. Alternative 3 would provide an additional measure to control the source areas and prevent additional contamination from spreading across the site, but provides little benefit in the volume of waste remaining at the site. Neither Alternative 2 nor Alternative 3 would provide for significant reduction in toxicity or volume of the source areas. Alternatives 4 and 5 would each provide for permanent reductions in toxicity, mobility, and volume by treating and/or removing the contaminants from the source areas. The treatment of contaminants either through dual-phase extraction or soil vapor extraction, provides for an irreversible reduction in contaminants. However, due to the fact that large sources would remain in-place beneath the manufacturing buildings and that significant amounts of semivolatile contamination would also remain in place, these remedies would only remove a portion of the contaminant mass present at the site. A significant amount of contamination would be left in-place.

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.

Alternatives 1, 2, and 3 would be readily implemented at the site. No technical or administrative difficulties are anticipated to interfere with implementing them. Alternatives 4 and 5, however, would present significant technical difficulties with implementation. Interference with plant production operations would be quite likely due to the need for many extraction wells. Because many wells would be necessary, the technology could not be implemented across the source areas without installing wells in high-traffic areas of the site. It would not be possible for Plant personnel to "work around" the numerous wells and associated piping within the production setting. There would not be enough physical clearance around some of these areas to bring in drilling equipment. Extraction piping cannot be run across the ground surface because it would unacceptably interfere with manufacturing operations, nor is it practical to bury extraction piping in and around the production areas without significantly disrupting the Plant operations for an extended time frame.

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision. The costs for each alternative are presented in Table 3.

Alternatives 4 and 5 are significantly more expensive than Alternative 3. Given the fact that Alternatives 4 and 5 would still leave the site with significant contamination in-place, the additional costs necessary to implement them are difficult to justify.

This final criterion is considered a modifying criterion and is taken into account after evaluating those above. It is evaluated 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 have been evaluated. The "Responsiveness Summary," included as Appendix A, describes public comments received and the Department's response to the concerns raised.

In general the public comments received were supportive of the selected remedy. Several comments were received, however, pertaining to the scope of the RI/FS, the January 5th air release, the public health impacts of the site, and the details of the selected remedy.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 7, the NYSDEC is selecting Alternative 3, Continue Current IRMs with Source Area Hydraulic Control as the remedy for this site.

This selection is based on the evaluation of the five alternatives presented in Section 7.2. Of the five alternatives, Alternative 1 would not meet SCGs for the site, nor would it be protective of human health and the environment. The remaining alternatives would each be protective of human health and the environment and meet the primary SCGs for the site. Alternatives 4 and 5 would both present limited short-term risks to the community which can be easily mitigated with conventional treatment equipment. Alternatives 3, 4 and 5 are also equivalent in their long-term effectiveness. Alternatives 4 and 5 would produce a greater reduction in toxicity, mobility, and volume of contamination than Alternative 3, but would leave significant amounts of contamination untreated. Alternatives 4 and 5 also present significant problems with implementability and are difficult to construct, operate, and maintain as long as the site remains an active manufacturing facility. The present worth cost of Alternative 3 is significantly less than the cost of implementing either Alternative 4 or 5.

The Department believes that if the site conditions were different (i.e., no longer in active use, or with a significant amount of down-time), a larger set of technologies could be evaluated at the site than those which were evaluated in the FS. Technologies that are more suitable to the semivolatile contamination at the site could also be pursued. Delaying remediation of the source areas until site conditions change will allow for the use of a broader range of remedial technologies and will enable the remediation to address all of the source areas and not just portions of them. Because of this, the Department is creating a second Operable Unit for the site to specifically address the contaminant source areas in the future.

The estimated present worth cost to implement the remedy is $2,137,194. The cost to construct the remedy is estimated to be $91,500 and the estimated average annual operation and maintenance cost for 30 years is $148,400.

The elements of the selected remedy are as follows:

- A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. Any uncertainties identified during the RI/FS would be resolved;

- Continue operating current IRMs, including the blasted bedrock interceptor trench, the railroad spur bioventing, and maintaining engineering controls in the residences on South Main Street;

- Installation of additional recovery wells to provide hydraulic control of contaminated water from the source areas;

- Implementation of a soil management plan, providing standard procedures for intrusive activity at the site;

- Maintenance and augmentation of the concrete pads and existing network of PVC-lined drains, as necessary, to minimize and prevent infiltration of precipitation;

- Replacement of sewer lines that run beneath source areas with lined trenches and/or aboveground piping;

- Maintenance of a Class 2 status on the Registry of Inactive Hazardous Waste Disposal Sites until all remediation is successfully completed;

- Establishment of a deed restriction on the property, restricting its use to industrial or commercial use only until remediation is completed, and also restricting the use of groundwater at the site to non-potable uses;

- Maintenance of the institutional controls in place at the two residential properties on South Main Street (discussed in more detail in Section 4.2) until it is deemed by the DEC and DOH that the controls are no longer necessary;

- Annual certification by a Professional Engineer licensed in New York State that the deed restrictions, institutional controls, and engineering controls are both in-place and effective;

- The creation of a new Operable Unit at the site, Operable Unit #2, to address the contaminant source areas; and

- Since the remedy results in untreated hazardous waste remaining at the site, a long term monitoring program will be instituted. Off-site wells and a small group of on-site wells will be monitored, along with periodic sampling of the indoor air of the residences along South Main, Jackson, and Batavia Streets. This program will allow the effectiveness of the source control measures and the existing IRMs to be monitored and will be a component of the operation and maintenance for the site.

SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

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

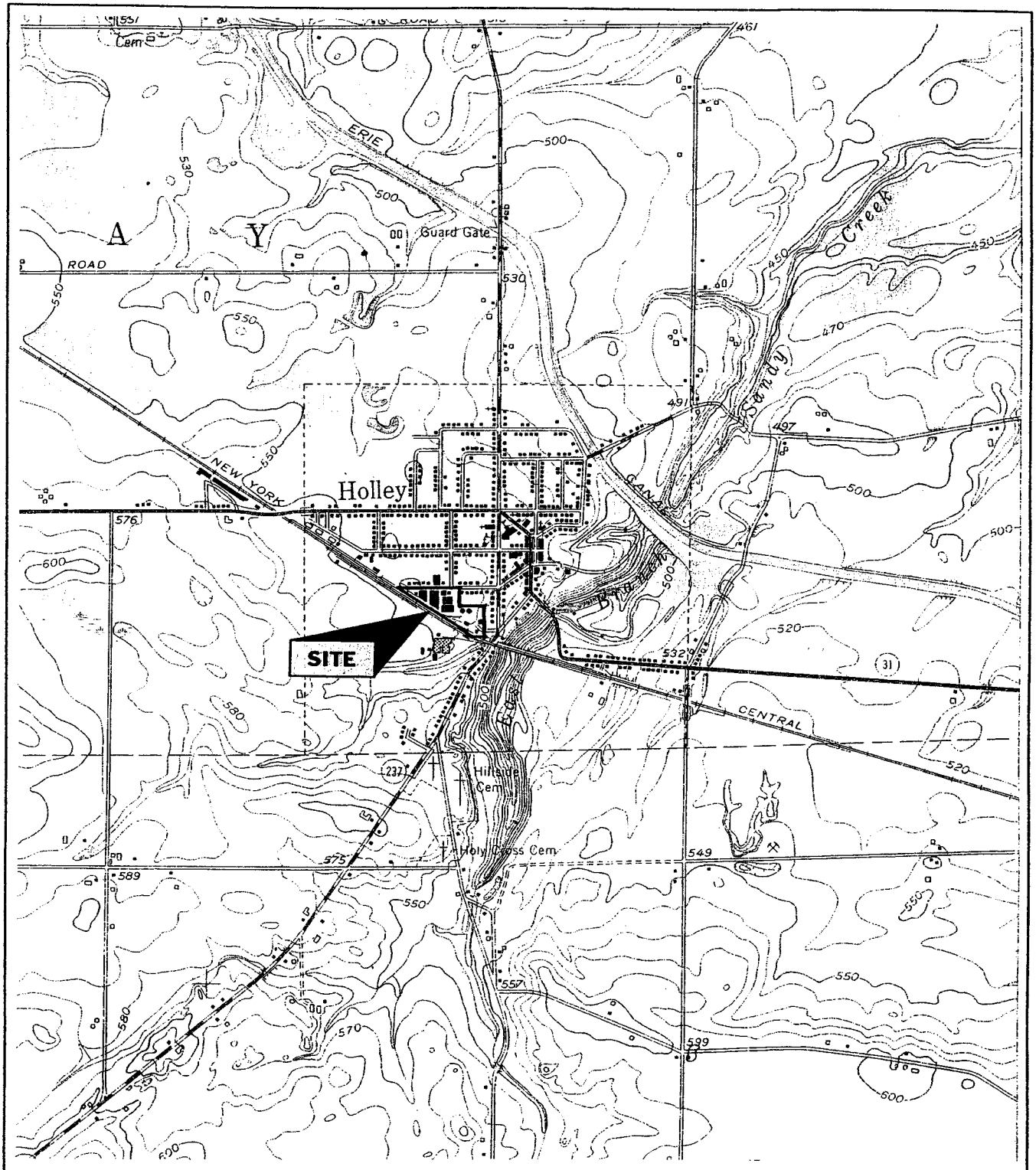
- A repository for documents pertaining to the site was established.

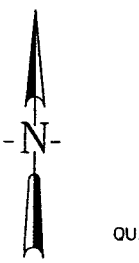
- A site mailing list was established which included nearby property owners, local political officials, local media and other interested parties.

- Fact Sheets were sent to the mailing list in: July 1994, January 1995, July 1995, December 1996, June 1997, May 1998, August 1999, and February 2002.

- Public Meeting were held in: January 1995, August 1995, July 1997, and March 2002.

- In March 2002 a Responsiveness Summary was prepared and made available to the public, to address the comments received during the public comment period for the PRAP.





QUADRANGLE LOCATION: HOLLEY, N.Y.

HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

DIAZ CORPORATION
HOLLEY, NEW YORK
RI REPORT

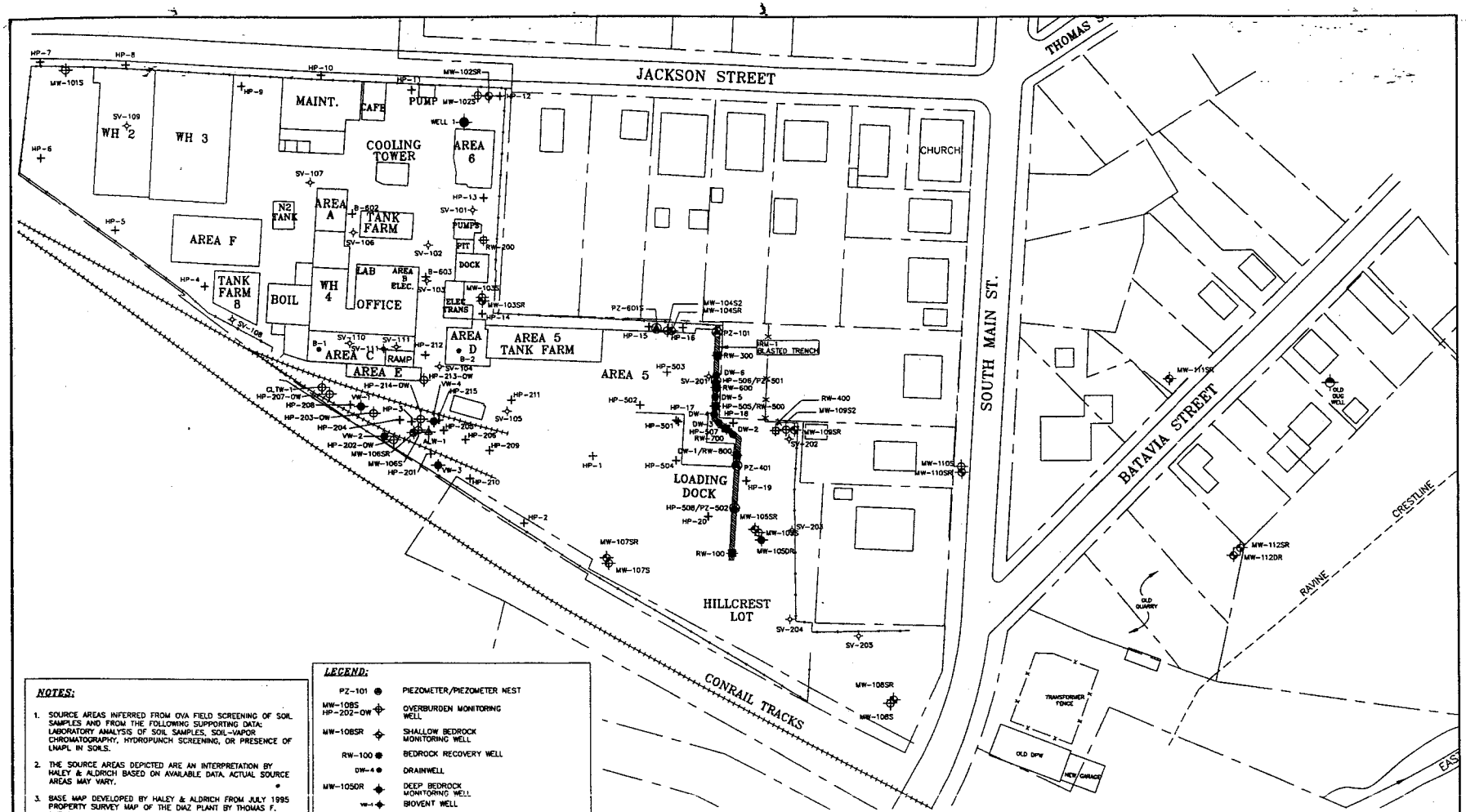
PROJECT LOCUS

SCALE: 1" = 2000'

JANUARY 2000

70385-067

FIGURE 1



NOTES:

1. SOURCE AREAS INFERRED FROM OVA FIELD SCREENING OF SOIL SAMPLES AND FROM THE FOLLOWING SUPPORTING DATA: LABORATORY ANALYSIS OF SOIL SAMPLES, SOIL-VAPOR CHROMATOGRAPHY, HYDROPUNCH SCREENING, OR PRESENCE OF LNAPL IN SOILS.
2. THE SOURCE AREAS DEPICTED ARE AN INTERPRETATION BY HALEY & ALDRICH BASED ON AVAILABLE DATA. ACTUAL SOURCE AREAS MAY VARY.
3. BASE MAP DEVELOPED BY HALEY & ALDRICH FROM JULY 1995 PROPERTY SURVEY MAP OF THE DIAZ PLANT BY THOMAS F. DUTTON LAND SURVEYOR, LAKEVILLE, NEW YORK AND FROM VILLAGE OF HOLLEY TAX MAPS 088.29 AND 088.05.
4. LOCATIONS OF DPW, K&K AND PRIVATE RESIDENCES ARE APPROXIMATE AS MEASURED OFF ROADWAYS BY HALEY & ALDRICH.
5. EXPLORATION LOCATIONS ARE APPROXIMATE AS MEASURED BY HALEY & ALDRICH FROM EXISTING STREETS, FENCES, AND BUILDINGS IN THE FIELD.
6. * IRM-1 WELLS OMITTED FOR CLARITY.
7. PLEASE REFER TO REPORT TEXT FOR FURTHER EXPLANATION AND DISCUSSION.

LEGEND:

PZ-101	PIEZOMETER/PIEZOMETER NEST
MW-108S HP-202-OW	OVERBURDEN MONITORING WELL
MW-108SR	SHALLOW BEDROCK MONITORING WELL
RW-100	BEDROCK RECOVERY WELL
DW-4	DRAINWELL
MW-1050R	DEEP BEDROCK MONITORING WELL
VW-1	BIOVENT WELL
ALW-1	RECIRCULATION WELL
B-2	SOIL BORING
HP-1	1994, 96, 98 & 99 HYDROPUNCH BORING
SV-107	1994 SOIL GAS SAMPLE LOCATION
B-1	1994 SOIL HAND SAMPLE LOCATION
	BLASTED TRENCH (IRM-1) *
	PROPERTY BOUNDARY
	FENCE

ISSUE	DATE	REVISIONS	BY
A	10/20/00	ISSUE FOR BID	NBA

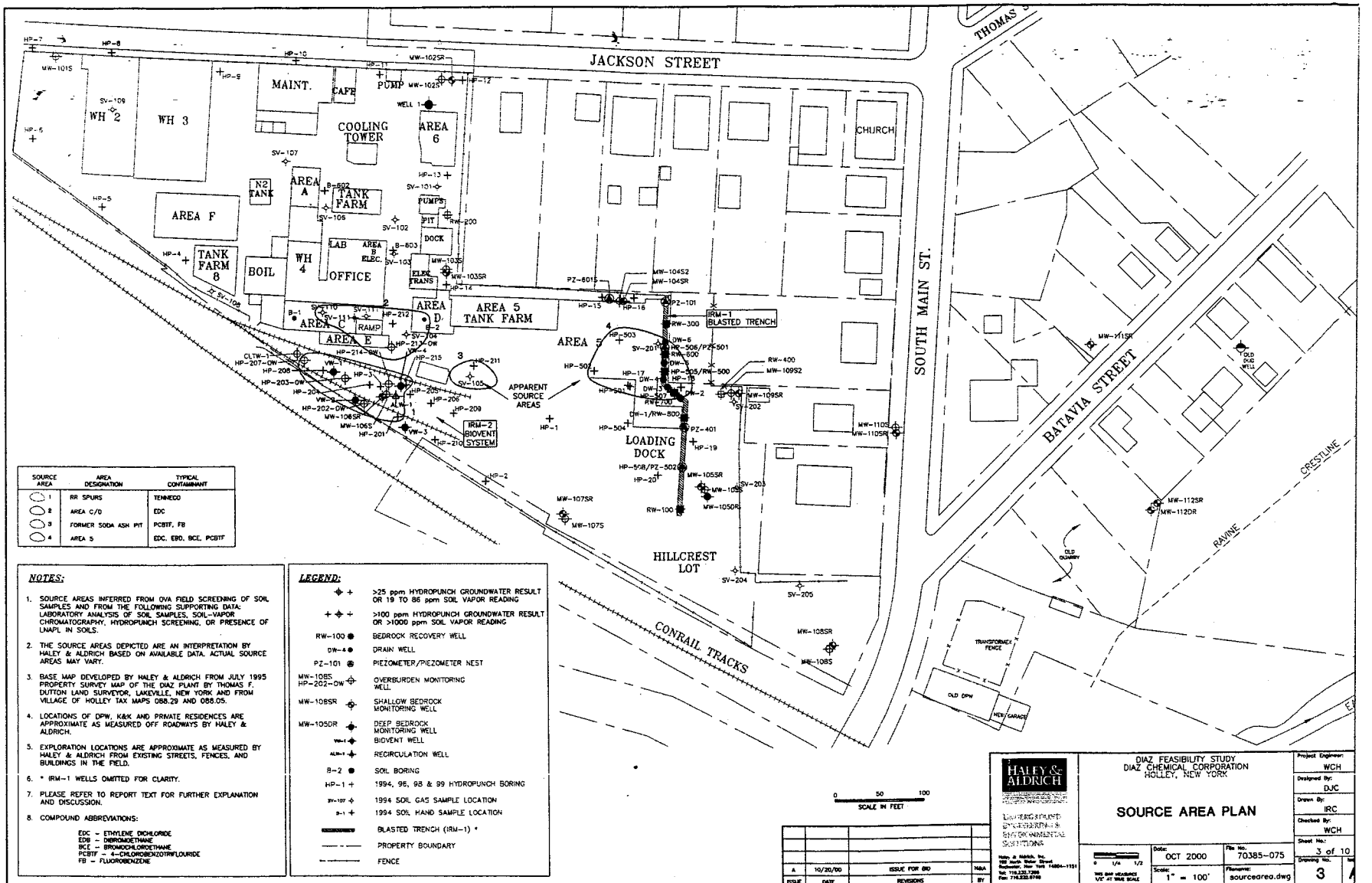
HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

DIAZ FEASIBILITY STUDY
DIAZ CHEMICAL CORPORATION
HOLLEY, NEW YORK

SITE PLAN

Project Engineer:	WCH
Designed By:	DJC
Drawn By:	IRC
Checked By:	WCH
Sheet No.:	2 of 10
Drawing No.	2
Issue	A
Date:	OCT 2000
File No.	70385-075
Scale:	1" = 100'
Filename:	siteplan.dwg



SOURCE AREA	AREA DESIGNATION	TYPICAL CONTAMINANT
1	RR SPURS	TENNECO
2	AREA C/D	EDC
3	FORMER SODA ASH PIT	PCBTF, FB
4	AREA 5	EDC, EBD, BCE, PCBTF

NOTES:

1. SOURCE AREAS INFERRED FROM OVA FIELD SCREENING OF SOIL SAMPLES AND FROM THE FOLLOWING SUPPORTING DATA: LABORATORY ANALYSIS OF SOIL SAMPLES, SOIL-VAPOR CHROMATOGRAPHY, HYDROPUNCH SCREENING, OR PRESENCE OF LNAPL IN SOILS.
2. THE SOURCE AREAS DEPICTED ARE AN INTERPRETATION BY HALEY & ALDRICH BASED ON AVAILABLE DATA. ACTUAL SOURCE AREAS MAY VARY.
3. BASE MAP DEVELOPED BY HALEY & ALDRICH FROM JULY 1995 PROPERTY SURVEY MAP OF THE DIAZ PLANT BY THOMAS F. DUTTON LAND SURVEYOR, LAKEVILLE, NEW YORK AND FROM VILLAGE OF HOLLEY TAX MAPS 088.29 AND 088.05.
4. LOCATIONS OF DPW, K&K AND PRIVATE RESIDENCES ARE APPROXIMATE AS MEASURED OFF ROADWAYS BY HALEY & ALDRICH.
5. EXPLORATION LOCATIONS ARE APPROXIMATE AS MEASURED BY HALEY & ALDRICH FROM EXISTING STREETS, FENCES, AND BUILDINGS IN THE FIELD.
6. * IRM-1 WELLS OMITTED FOR CLARITY.
7. PLEASE REFER TO REPORT TEXT FOR FURTHER EXPLANATION AND DISCUSSION.
8. COMPOUND ABBREVIATIONS:

   EDC – ETHYLENE DICHLORIDE
   EDB – DIBROMOETHANE
   BCE – BROMOCHLOROETHANE
   PCBTF – 4–CHLOROBENZOTRIFLOURIDE
   FB – FLUOROBENZENE

LEGEND:

- >25 ppm HYDROPUNCH GROUNDWATER RESULT OR 19 TO 86 ppm SOIL VAPOR READING
- >100 ppm HYDROPUNCH GROUNDWATER RESULT OR >1000 ppm SOIL VAPOR READING
- RW-100 BEDROCK RECOVERY WELL
- DW-4 DRAIN WELL
- PZ-101 PIEZOMETER/PIEZOMETER NEST
- MW-108S / HP-202-DW OVERBURDEN MONITORING WELL
- MW-108SR SHALLOW BEDROCK MONITORING WELL
- MW-105DR DEEP BEDROCK MONITORING WELL
- VW-1 BIOVENT WELL
- ALW-1 RECIRCULATION WELL
- B-2 SOIL BORING
- HP-1 1994, 96, 98 & 99 HYDROPUNCH BORING
- SV-107 1994 SOIL GAS SAMPLE LOCATION
- S-1 1994 SOIL HAND SAMPLE LOCATION
- BLASTED TRENCH (IRM-1) *
- PROPERTY BOUNDARY
- FENCE

ISSUE	DATE	REVISIONS	BY
A	10/20/00	ISSUE FOR BID	H&A

HALEY & ALDRICH
ENGINEERS AND SCIENTISTS
ENVIRONMENTAL SOLUTIONS
Haley & Aldrich, Inc. 100 North Water Street Rochester, New York 14604-1151 Tel: 716.232.7300 Fax: 716.232.9798

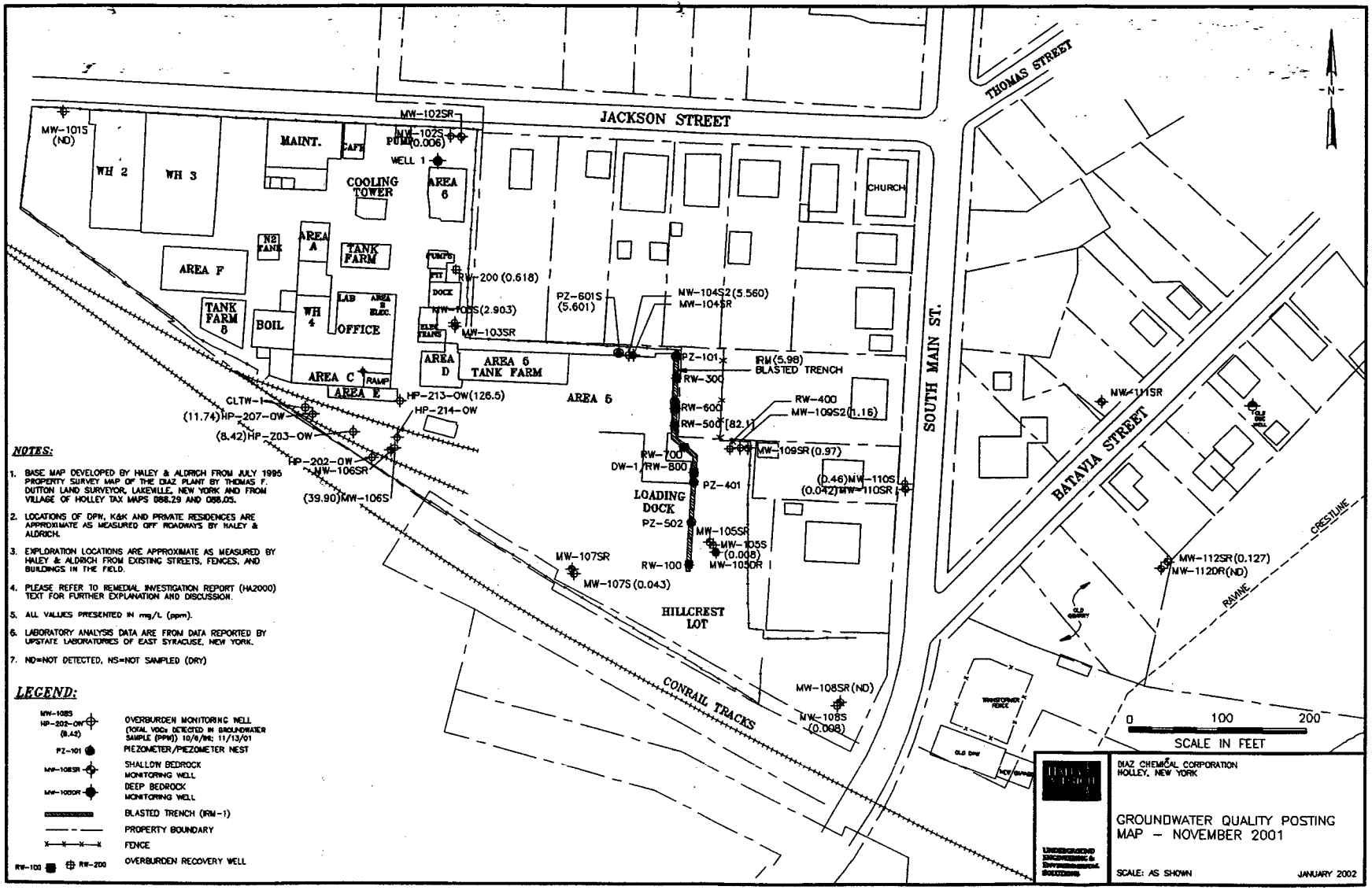
DIAZ FEASIBILITY STUDY
DIAZ CHEMICAL CORPORATION
HOLLEY, NEW YORK

SOURCE AREA PLAN

Project Engineer:	WCH
Designed By:	DJC
Drawn By:	IRC
Checked By:	WCH
Sheet No.:	3 of 10
Drawing No.:	3

Date: OCT 2000
File No.: 70385-075
Scale: 1" = 100'
Filename: sourcearea.dwg

0 1/4 1/2
THIS BAR MEASURES 1/2" AT TRUE SCALE



NOTES:

1. BASE MAP DEVELOPED BY HALEY & ALDRICH FROM JULY 1995 PROPERTY SURVEY MAP OF THE DIAZ PLANT BY THOMAS F. DUTTON LAND SURVEYOR, LAKEWILLE, NEW YORK AND FROM VILLAGE OF HOLLEY TAX MAPS 088.29 AND 088.05.
2. LOCATIONS OF DPW, K&K AND PRIVATE RESIDENCES ARE APPROXIMATE AS MEASURED OFF ROADWAYS BY HALEY & ALDRICH.
3. EXPLORATION LOCATIONS ARE APPROXIMATE AS MEASURED BY HALEY & ALDRICH FROM EXISTING STREETS, FENCES, AND BUILDINGS IN THE FIELD.
4. PLEASE REFER TO REMEDIAL INVESTIGATION REPORT (HA2000) TEXT FOR FURTHER EXPLANATION AND DISCUSSION.
5. ALL VALUES PRESENTED IN mg/L (ppm).
6. LABORATORY ANALYSIS DATA ARE FROM DATA REPORTED BY UPSTATE LABORATORIES OF EAST SYRACUSE, NEW YORK.
7. ND=NOT DETECTED, NS=NOT SAMPLED (DRY)

LEGEND:

- MW-108S — OVERBURDEN MONITORING WELL
- HP-202-OW (8.42) — (TOTAL VOCs DETECTED IN GROUNDWATER SAMPLE (PPM)) 10/8/96; 11/13/01
- PZ-101 — PIEZOMETER/PIEZOMETER NEST
- MW-108SR — SHALLOW BEDROCK MONITORING WELL
- MW-100DR — DEEP BEDROCK MONITORING WELL
- BLASTED TRENCH (IRM-1)
- PROPERTY BOUNDARY
- FENCE
- RW-100 — RW-200 — OVERBURDEN RECOVERY WELL

DIAZ CHEMICAL CORPORATION
HOLLEY, NEW YORK

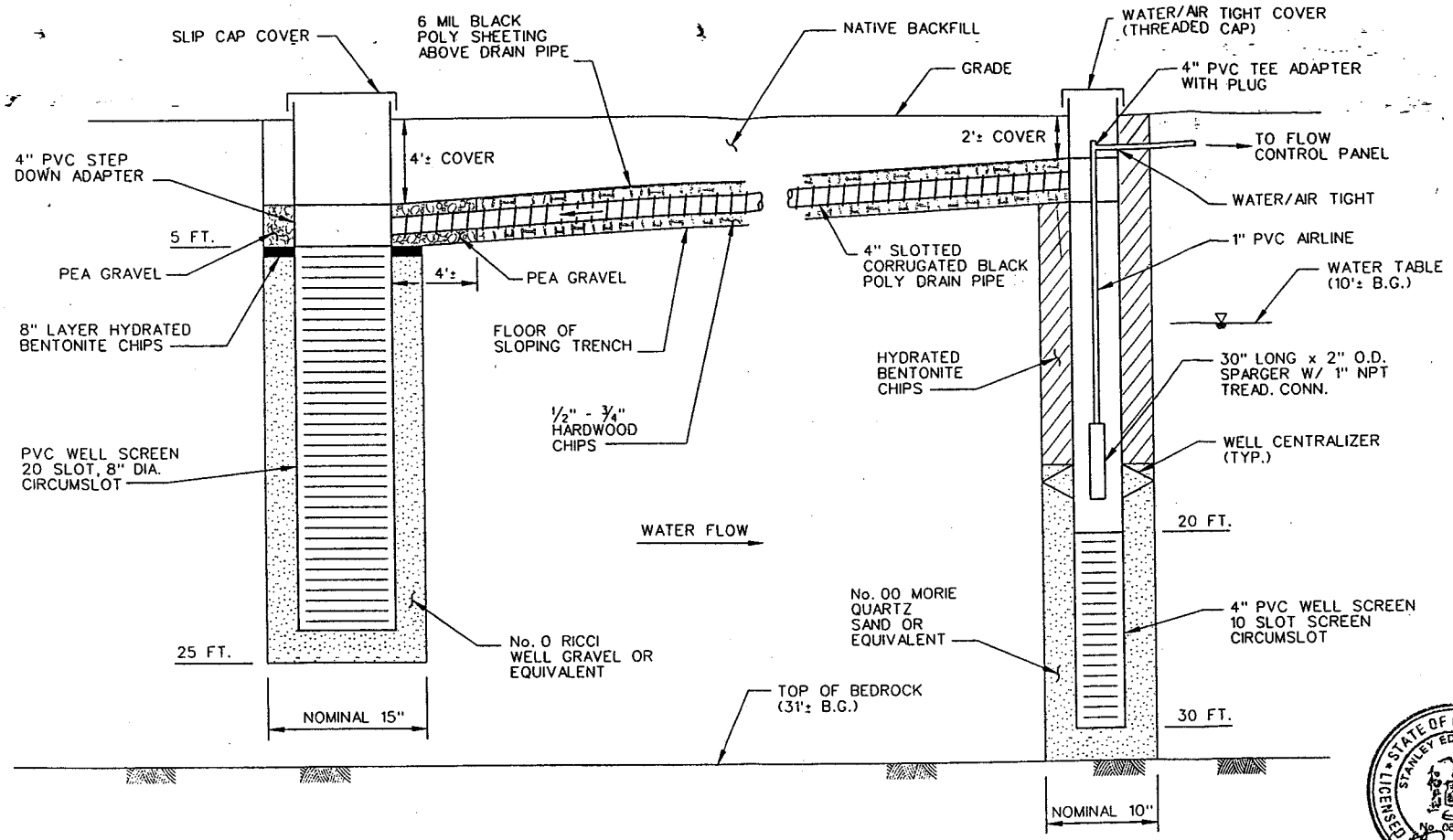
GROUNDWATER QUALITY POSTING MAP – NOVEMBER 2001

SCALE: AS SHOWN

JANUARY 2002

70385-078 POSTINGMAP.DWG

FIGURE 4



CULVERT WELL
SCALE: NONE.

AIR LIFT WELL
SCALE: NONE

STATE OF NEW YORK · LICENSED · STANLEY EDSON WALKER · No. 060351 · PROFESSIONAL ENGINEER
5-13-97

ISSUE	DATE	REVISIONS	BY
A	4/29/97	FOR REVIEW	JGT

HALEY & ALDRICH
UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

DIAZ PLANT
HOLLEY, NEW YORK
RM 2

CULVERT AND AIR LIFT WELL SECTION

Project Engineer:	SEW
Designed By:	MNR
Drawn By:	SPW
Checked By:	JGT
Sheet No.:	of
Drawing No.:	M-1
Rev.:	A
Date:	4-29-1997
File No.:	70385-000
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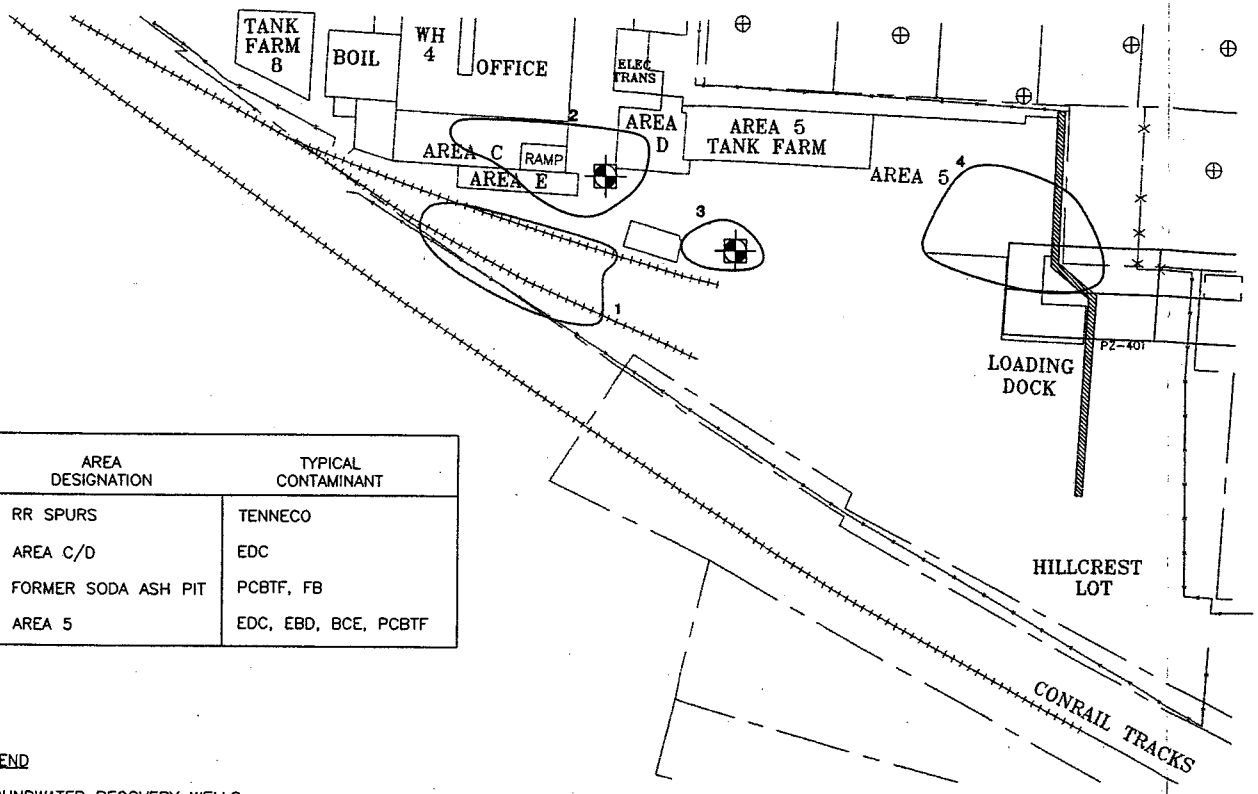
Figure 5



SOURCE AREA	AREA DESIGNATION	TYPICAL CONTAMINANT
1	RR SPURS	TENNECO
2	AREA C/D	EDC
3	FORMER SODA ASH PIT	PCBTF, FB
4	AREA 5	EDC, EBD, BCE, PCBTF

LEGEND

GROUNDWATER RECOVERY WELLS

HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

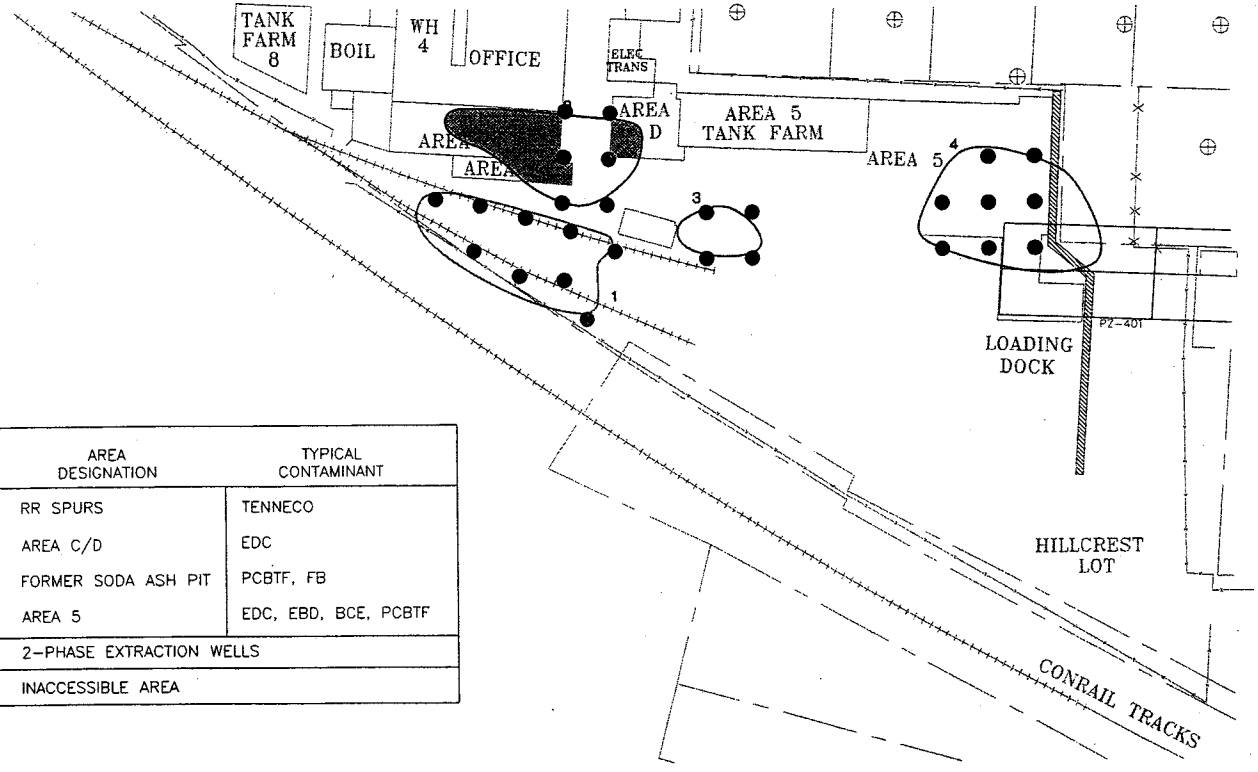
ISSUE	DATE	REVISIONS	BY
A		ISSUE FOR BID	HBA

DIAZ FEASIBILITY STUDY
DIAZ CHEMICAL CORPORATION
HOLLEY, NEW YORK

REMEDIAL OPTION GROUNDWATER RECOVERY WELL

Project Engineer:	WCH
Designed By:	DJC
Drawn By:	DJC
Checked By:	WCH
Sheet No.:	7 of 10
Date:	OCT 2001
File No.:	70385-075
Scale:	1" = 75'
Filename:	drawing7a.dwg
Drawing No.:	7
Issue:	A

Figure 6



SOURCE AREA	AREA DESIGNATION	TYPICAL CONTAMINANT
1	RR SPURS	TENNECO
2	AREA C/D	EDC
3	FORMER SODA ASH PIT	PCBTF, FB
4	AREA 5	EDC, EBD, BCE, PCBTF
●	2-PHASE EXTRACTION WELLS	
■	INACCESSIBLE AREA	

HALEY & ALDRICH
UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

DIAZ FEASIBILITY STUDY
DIAZ CHEMICAL CORPORATION
HOLLEY, NEW YORK

REMEDIAL LAYOUT
DUAL-PHASE EXTRACTION

ISSUE	DATE	REVISIONS	BY
A	10/20/00	ISSUE FOR BID	HBA

Date: OCT 2000 | File No. 70385-075
Scale: 1" = 75' | Filename: fslayouts.dwg
Project Engineer: WCH
Designed By: DJC
Drawn By: DJC
Checked By: WCH
Sheet No.: 9 of 10
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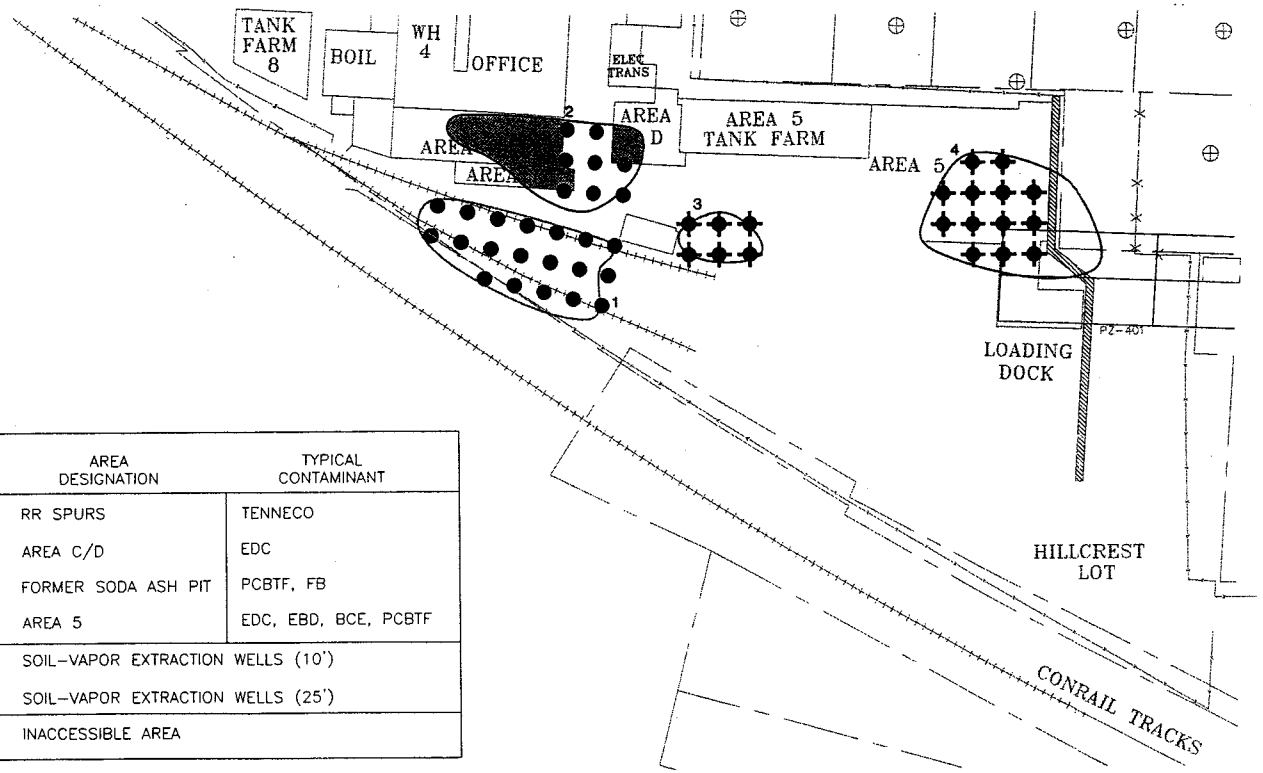
Figure 7



SOURCE AREA	AREA DESIGNATION	TYPICAL CONTAMINANT
1	RR SPURS	TENNECO
2	AREA C/D	EDC
3	FORMER SODA ASH PIT	PCBTF, FB
4	AREA 5	EDC, EBD, BCE, PCBTF
●	SOIL–VAPOR EXTRACTION WELLS (10')	
✚	SOIL–VAPOR EXTRACTION WELLS (25')	
▬	INACCESSIBLE AREA	

HALEY & ALDRICH
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ISSUE	DATE	REVISIONS	BY
A	10/20/00	ISSUE FOR BID	HBA

DIAZ FEASIBILITY STUDY
DIAZ CHEMICAL CORPORATION
HOLLEY, NEW YORK

REMEDIAL LAYOUT
SOIL VAPOR EXTRACTION

Date: OCT 2000
File No.: 70385-075
Scale: 1" = 75'
Filename: fslayouts.dwg

Project Engineer:	WCH
Designed By:	DJC
Drawn By:	DJC
Checked By:	WCH
Sheet No.:	8 of 10
Drawing No.	8
Issue	A

Figure 8

Table 1
Nature and Extent of Contamination

MEDIUM	CATEGORY	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppm)	FREQUENCY of EXCEEDING SCGs/Background	SCG/ Bkgd. (ppm)
Soils	Volatile Organic Compounds (VOCs)	4-Chlorobenzotrifluoride (PCBTF)	ND to 200	15 of 31	ND*
		1,2-Dichloroethane (DCA)	ND to 52	15 of 31	0.1
		Xylenes (total)	ND to 370	8 of 31	1.2
		1-Bromo, 2-chloroethane	ND to 29	5 of 31	ND*
	Semivolatile Organic Compounds (SVOCs)	3,4-Dichlorobenzo-trifluoride	ND	0 of 31	ND*
		1-bromo, 4-fluoro-benzene	ND to 2.5	2 of 31	ND*
		3-bromoacetophenone	ND to 3	3 of 31	ND*
Sediments	Volatile Organic Compounds (VOCs)	4-Chlorobenzotrifluoride (PCBTF)	ND to 0.019	2 of 7	ND*
		1,2-Dichloroethane (DCA)	ND	0 of 7	0.7**
		Xylenes (Total)	ND	0 of 7	92**
	Semivolatile Organic Compounds (SVOCs)	3,4-Dichlorobenzo-trifluoride	ND	0 of 7	ND*
		1-bromo, 4-fluoro-benzene	ND	0 of 7	ND*

Table 1
Nature and Extent of Contamination
(Continued)

MEDIUM	CATEGORY	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppb)	FREQUENCY of EXCEEDING SCGs/Background	SCG/ Bkgd. (ppb)
Groundwater	Volatile Organic Compounds (VOCs)	Methylene Chloride	ND to 12,000	13 of 37	5
		1,2-Dichloroethane (DCA)	ND to 82,000	25 of 37	0.6
		Xylenes (total)	ND to 203,000	19 of 37	5
		1,2-Dibromoethane	ND to 55,000	17 of 37	0.006
		1-Bromo, 2-chloroethane	ND to 33,000	14 of 37	5
		4-Chlorobenzotrifluoride (PCBTF)	ND to 49,000	27 of 37	5
	Semivolatile Organic Compounds (SVOCs)	3,4-Dichlorobenzo-trifluoride	ND to 6,700	11 of 34	ND*
		1-bromo, 4-fluoro-benzene	ND to 6,700	12 of 34	ND*
		3-bromoacetophenone	ND to 1,500	9 of 34	ND*

ND - Indicates the specified compound was “Not Detected”

* - Indicates no SCG for this specific compound exists, the background concentration is used instead.

** - Indicates that the units are in µg/g organic carbon.

Table 2
Change In Off-Site Groundwater Quality

Well	Total VOCs Detected in Groundwater (mg/L)					
	10/1996	10/1997	10/1998	10/1999	11/2001	% Decline
MW-104S2	11.89	8.52	6.92	5.56	NS	53%
MW-109S2	58.37	27.91	38.59	3.06	1.16	98%
MW-110S	NS	1.276	1.850	0.120	0.46	64%
MW-105SR	11.20	9.59	7.82	0.76	NS	93%
MW-110SR	NS	19.22	13.36	0.938	0.042	99%
MW-112SR	NS	NS	1.61	0.380	0.13	92%

[
(expanded pumping began)

NS - Indicates “Not Sampled”

Table 3
Remedial Alternative Costs

Remedial Alternative	Capital Cost	Annual O&M	Total Present Worth
Alternative #1: No Further Action	$0	$21,600	$297,756
Alternative #2: Continue Current IRMs with Institutional Controls	$0	$142,300	$1,961,606
Alternative #3: Continue Current IRMs with Source Area Hydraulic Control	$91,500	$148,400	$2,137,194
Alternative #4: Continue Current IRMs with Two-Phase Extraction	$1,180,500	$444,000	$4,412,866
Alternative #5: Continue Current IRMs with Soil Vapor Extraction	$1,019,500	$280,900	$3,564,889

APPENDIX A

Responsiveness Summary

APPENDIX A
RESPONSIVENESS SUMMARY

Diaz Chemical Corporation
Proposed Remedial Action Plan
Village of Holley, Orleans County
Site No. 8-37-009

The Proposed Remedial Action Plan (PRAP) for the Diaz Chemical Corporation Site (Diaz Site), was prepared by the New York State Department of Environmental Conservation (the Department) and issued to the local document repository on February 22, 2002. This Plan outlined the preferred remedial measure proposed for the remediation of the contaminated soil and sediment at the Diaz Site. As described fully in Section 8 above, the selected remedy is to Continue Current IRMs with Source Area Hydraulic Control.

The release of the PRAP was announced via a notice to the mailing list, informing the public of the PRAP's availability.

A public meeting was held on March 20, 2002 which included a presentation of the Remedial Investigation (RI) and the Feasibility Study (FS) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. Written comments were received from several commenters, summarized below. The public comment period for the PRAP ended on March 25, 2002.

This Responsiveness Summary responds to all questions and comments raised at the March 20, 2002 public meeting and to the written comments received.

The following are the comments received at the public meeting, with the Department's responses:

Part A: Comments Received Regarding the Environmental Investigations

Comment 1: What is PCBTF? Is it part of the PCB family?

Response 1: PCBTF is parachlorobenzotrifluoride. It is not a member of the polychlorinated biphenyls (PCB) family.

Comment 2: I've seen and read that S. Main Street is the area being tested. What about Jackson Street? How about testing on the other side of the railroad tracks, and in back of people's homes on Jackson Street? Are you planning on doing further testing down by the new quilting shop, down the ravine, and down by Frank's Hots? Where are the wells located?

Response 2: Soil vapor testing of the backyards on Jackson Street was conducted during the RI. The results indicated that contamination is present along the Diaz fence line, but the contamination does not extend north toward the homes. Wells on the southern boundary of the site also indicate that contamination is confined to the immediate area of the plant. The groundwater moves easterly across the site and not in a southerly direction. Additional testing beyond the Sandy Creek Ravine is not planned. The Creek has shown minimal impacts from the site and groundwater on the other side of the ravine flows in the opposite direction, westerly, toward the ravine. All monitoring wells are identified on the Figures in the ROD.

Comment 3: What about testing Sandy Creek again? Past testing in 1999 has shown that chemicals increased in the creek since 1995. Will the creek be tested again? This is a concern for people. People would like to know how far down the creek and how deep down you've tested Sandy Creek.

Response 3: Since testing of Sandy Creek water and sediment during the RI showed minimal impacts, additional testing has not been completed to date. The details of the sampling information for Sandy Creek is available in the RI report. Department staff can also provide detailed information upon request. Additional testing of the creek will be discussed during development of the long-term monitoring plan.

Comment 4: Are you aware of the spring that flows below the VFW? Has it been tested? This creek comes out of the rocks beneath the VFW. Can you test it? It's flowing higher since you've been doing the groundwater pumping. That creek starts from an abandoned well which is 30 feet in diameter and runs behind my house. That well would be a good sampling point for the DEC. Also, this spring may join up with another spring that flows from the Diaz site. That's why the water level is high. I would like to see more test wells dug around the facility with more monitoring.

Response 4: Your comment is acknowledged. Additional testing of springs and groundwater will be discussed during development of the long-term monitoring plan.

Comment 5: Who is responsible for testing the wells and how often are they tested? I have two wells on my property and never heard anything good or bad about the testing since I gave them permission to put wells on my property.

Response 5: Diaz is responsible for testing all of the wells. Wells are sampled once or twice a year, depending on the circumstances. Some less important wells are tested only every several years. You will be notified from now on about the results of any samples collected on your property.

Comment 6: Can split testing be done at the wells? Can someone else besides Diaz do the testing?

Response 6: The Department periodically collects "split" samples at the site. The purpose of a split sample is to verify the integrity of the data that is being reported. The Department is

willing to collect split samples at a greater frequency in the future.

Comment 7: You indicated there's a narrow band of groundwater contamination. Why is that? Do you think the trench is catching everything?

Response 7: There could be many reasons for the narrow groundwater plume. The bedrock at the site has a shallow channel carved into it, possibly from a former stream channel. In addition, the silty soils have thin sandy stringers running through them. These sandy layers are where much of the contamination is flowing. Off-site, the overburden is very thin and the groundwater is likely to be following bedrock fractures. The Department believes the trench is capturing the vast majority of the contamination. There is no way to confirm that it is 100% effective. However, the reduction in contamination observed to date reinforces the Department's belief that the trench, regardless of the exact percentage of capture, is effective at mitigating the off-site contamination.

Comment 8: Are there any ground monitoring wells along Jackson Street? Have you found any significant contamination in these wells? Are these wells at the plant entrance or by the homes? How can the wells monitor all the contamination?

Response 8: Monitoring wells are located near the plant entrance on Jackson Street. No wells are located farther east on Jackson Street on residential property. Please see Response 2 for more information.

Comment 9: I propose that monitoring wells be placed around Jackson Street and testing done around Jackson Street, to include the soils on Jackson Street and to test all kids who play in the dirt and all people who garden in the dirt. You need to test the soils as well as the groundwater.

Response 9: The need for additional monitoring wells on Jackson Street will be evaluated during development of the long-term monitoring plan. Data from the remedial investigation indicate that soil contamination from past releases of contamination are limited to the site. However, concerns about soil contamination related to deposition from recent air releases is being evaluated separately by State officials.

Comment 10: I looked over the papers from the 1999 drinking water sampling of the [village] wells and I saw that these chemicals are listed in the drinking water. Whether you feel these chemicals are at acceptable limits or not, how did they get there if not from this contamination? DCA and EDB was found. Are tests being done for EDB? Is some of the contamination due to chlorination of the wells? Has anyone taken water samples before the well is chlorinated?

Response 10: According to the Orleans County Department of Health, DCA and EDB were not found in the village supply wells. Trihalomethanes (THMs) have been discovered, but they are a direct result of the chlorination of the drinking water supply.

Comment 11: How old are the buildings on site with the source contamination under them?

Response 11: Those buildings are from the former Duffy-Mott cider vinegar plant and are over 100 years old.

Part B: Comments Received Regarding the Proposed Remedial Action Plan

Comment 12: You spoke about the agreement you signed with Diaz to clean up the site. Where would the money come from if Diaz moves away or goes bankrupt? Isn't the Superfund out of money now?

Response 12: The Department has not yet executed an Order on Consent with Diaz to remediate the site. The existing Order only covers the RI/FS. A new Order will be executed after the final remedy is selected. If Diaz were to declare bankruptcy, the State Superfund would likely finance the remediation and the State would seek to recover as much of its costs as possible. You are correct, the Superfund is currently out of money, but the Department is hopeful that the Governor's proposed legislation to refinance the Superfund will be passed soon.

Comment 13: You spoke about covering up areas of the plant with asphalt. Asphalt is porous. How can asphalt protect the soils from further contamination?

Response 13: Specialty asphalts with low permeability are available to reduce infiltration of rainwater. Concrete pads will also be considered. Asphalt would provide an adequate barrier to prevent people from coming in contact with the site soils and reduce infiltration of storm water. However, concrete would provide better protection against spills.

Comment 14: When you speak about cost effectiveness in the clean up, is cost effectiveness a concern for the taxpayers or Diaz?

Response 14: The analysis of cost effectiveness is completely independent of who is financing the remediation. It is an objective comparison, detailing whether similar protection can be offered at a lower cost.

Comment 15: Regarding Alternatives 3 and 4, you stated there would still be contamination in the ground, but won't there be less contamination if you dig up some of the soils?

Response 15: Yes, there would be less contamination left at the site. However, the net benefit of removing some soil at this time is marginal. The largest sources of contamination are present beneath the buildings. Even if some of the sources were removed at this time, there would be little noticeable improvement in the groundwater quality.

Comment 16: I understand you can't do anything under the buildings on site. But can the storage site be addressed? There's no buildings at the storage site. I'm concerned, and the storage site is directly behind my father's house. Are trenches or monitoring wells located by

that storage site?

Response 16: As stated above, partially removing some of the source areas would have little benefit at this time. The bulk storage area is monitored with wells and is immediately adjacent to the IRM-1 groundwater collection trench. This source area is being hydraulically controlled by the trench. Soil vapor testing in the backyards adjacent to the storage area indicated that contamination is present along the Diaz fence line, but the contamination does not extend north toward the homes.

Comment 17: Regarding the annual certification, I suggest that Diaz be monitored more stringently–perhaps monthly instead of annually, then if Diaz behaves, moving to quarterly certifications. Diaz needs to be monitored more closely, especially in light of the air release.

Response 17: The annual certification is only one part of the Department's oversight of Diaz. The annual certification will be signed by a Professional Engineer licensed in New York and will certify that the components of the remedy are still in place, and operating as intended. In addition to the annual certification, monthly or quarterly reports are also required to report the volume of water collected in the trench and treated, to confirm the IRM effluent is not contaminated, and to report on any other activities that occur.

Comment 18: Alternative 3 in the PRAP states that alternative would cost $2.2 million dollars with $91,500 in capital costs, and $148,400 in O&M. I'd like to see Diaz establish a special account for Holley, with a minimum amount of $2,137,194. We hear a lot about bankruptcies in the news lately and are concerned that Diaz could just up and leave the community. Diaz is to Holley like Enron is to Houston. The least Diaz could do is establish this special account for Holley. There needs to be money in this special account to continue this clean up process for generations, even after we are all gone.

Response 18: Requiring some form of financial assurance for completion of the remedy will be considered in the upcoming Order on Consent.

Comment 19: I have a proposal–if Diaz laid off 40% of its workforce, due to the cleanup, why can't these workers be rehired to perform the cleanup?

Response 19: A variety of workers with the necessary training and experience will be involved with the cleanup. It is conceivable that some of these workers could be former Diaz employees who have been laid off.

Comment 20: All the remediation is entrusted to Diaz and the DEC. I don't trust the DEC–you have not earned our trust. Diaz is in charge of all the remediation. If you give Diaz a cleanup plan and say you'll supervise it, I don't think it will work.

Response 20: The Department acknowledges your comment. The Department will supervise the remediation plan closely to ensure compliance from Diaz.

Comment 21: How long is the remedy supposed to take? Will it be 30 years?

Response 21: The remedy does not have a specified duration. The IRMs will continue to operate until all source areas are remediated.

Comment 22: If the facility operates forever, will all the contamination leach out and end up in the groundwater trench? Do you revisit new technologies to handle contamination cleanups?

Response 22: It will take many years for the site to clean itself up without direct intervention. New technologies will be evaluated if they feasibly provide for treatment of the sources in-place beneath the buildings.

Comment 23: If the buildings with the contamination under them are not being addressed now, will the contamination remain under them? If Diaz leaves, will this contamination be addressed then?

Response 23: Yes, the contamination will remain under the buildings. In addition, the selected remedy will include additional wells to contain the groundwater beneath the buildings. If the plant closes, the contamination will be addressed at that time.

Comment 24: Can horizontal wells be used under the buildings? Is it not feasible to clean up the contamination under buildings? Did you evaluate the technology to clean up underneath buildings?

Response 24: The ability to remediate beneath buildings is site-specific. At this site, the layout is such that horizontal wells and other technologies that could potentially remediate under the buildings are not feasible. These technologies were "screened out" during the FS.

Comment 25: Regarding the 4th & 5thalternatives, would these plans remove the source contamination? What is the net present value to do this?

Response 25: Alternatives 4 and 5 would not remove enough of the source areas to make them worth pursuing. The costs associated with these alternatives are $4.4 million and $3.6 million, respectively.

Comment 26: Did you evaluate the cost of removing the buildings as an alternative? Building a new building versus digging up the contaminants should be cost effective and you should evaluate that. How many square feet are we talking about?

Response 26: The alternative of removing the buildings was not evaluated in detail. It was screened out of the FS early due to feasibility restraints. Demolishing the buildings would require Diaz to construct a new process building before the old ones are removed. There is insufficient space at the site to perform this work and it would be much more costly than any of the other alternatives.

Comment 27: Does Superfund criteria state the clean up will put the site back to pre-release conditions or ground water standards? Why doesn't your proposal cover this?

Response 27: The Part 375 regulations state that the goal of any remedial program is to restore the site to pre-release conditions, *to the extent practicable*. Restoring the site to pre-release conditions remains the ultimate goal of the selected remedy. However, it is not feasible to attain that goal at this time.

Comment 28: Will you get a security account if Diaz goes bankrupt? How can you get this money? Won't Diaz need that money?

Response 28: Please see Response No. 18. The Department has considered requiring some form of financial assurance in the upcoming Order on Consent.

Comment 29: Does Diaz have insurance to cover any of this? Is cost a big factor in the clean up?

Response 29: The Department is not familiar with the extent of Diaz's insurance coverage. As discussed in the ROD and Response 14, cost effectiveness is a balancing criterion, to be evaluated along with all the other selection criteria. Cost alone does not drive the decision-making process.

Comment 30: I think another alternative would be to put up another building and dig out the contamination under the buildings. Most preferred remedies are to get the source removals, then do the clean up versus catching the contamination as you go.

Response 30: Please see Response 26.

Comment 31: I reviewed the five proposed remedial plans and numbers 1-2-3-4 and 5 all leave significant amounts untreated. The DEC states it believes that if the site conditions were different, a larger set of technologies could be evaluated at the site than those evaluated in the FS. For eleven years the DEC knew Diaz was a hazardous waste site brewing contamination which spread from the plant site to a residential community. The most swift and thorough means should be implemented to stop the pollution from entering our homes, drinking wells, and creeks which feed into Lake Ontario. We would like Diaz to have downtime and allow a broader range of remedial technologies to be implemented. Then, any and all sources of contamination would be removed from the plant, the plant area, and around the village of Holley. We would like to see this action take effect immediately to protect the health, welfare, property and quality of life in our village.

Response 31: The Department believes, for the reasons outlined in the Record of Decision, that the selected remedy is the best alternative. The Department does not have the authority to force a shut down of the plant in order to clean up the contamination.

Comment 32: Are there dirt floors in the old buildings with the source contamination underneath?

How would pouring concrete in the buildings help? What is the danger to the employees working in these old buildings. Aren't there cracks in the beams and in the floors, which could expose the workers to soil contamination and vapors?

Response 32: The buildings do not have dirt floors; they have concrete floors. The exposure of workers to chemical vapors at the facility is subject to OSHA regulation. This matter is outside the Department's regulatory authority. The discussion regarding covering soil applies to open areas around the buildings.

Comment 33: Why is there a problem to remove an old building and remove the contamination underneath it? If the buildings are over 100 years old they can't be worth that much money. Wouldn't it be a good investment for Diaz to knock down the buildings and clean up the contamination?

Response 33: The buildings in question contain some of Diaz's most critical production equipment. Demolishing the buildings would require shutting down the bulk of the company's production. In addition, the buildings have concrete floors, which are at least 12 inches thick, along with thick brick and concrete walls. Demolishing them is not a trivial task. Further, because the buildings are over 100 years old, they may have historic value and may be subject to historic preservation requirements.

Comment 34: As part of your remediation, you state pouring concrete or asphalt will stop the contaminants. In area C, how did the older buildings, with concrete floors get contaminated? Why would concrete work if the buildings with concrete floors have contamination underneath them? That's a contradiction. How much concrete has been poured at Diaz since the contamination problems came up?

Response 34: The contamination beneath the buildings may have migrated through floor drains and dry wells in those buildings. A new concrete pad that is maintained will provide significant improvement over the current uncovered soils at the site.

Comment 35: I think by law that a Class 2 hazardous waste site has certain rules and regulations. If these rules were followed, people in the village would be happy. No where in your proposed remedies do you show that Diaz should be accountable and follow the laws and rules regarding a Class 2 waste site. I don't think the spirit of the law is being followed. The DEC is working for both Diaz and the public. If you were on your toes and followed the laws 15 years ago, this contamination would of never happened. Now you have no choice. You need to follow the letter of the law in this case and in the remedy.

Response 35: The Department believes that the remedial program completed for this site is in compliance with rules and regulations for Class 2 sites. Further, the Department intends to ensure that the completion of the selected remedy will also be done in accordance with all of the requirements of the regulations. The Part 375 regulations state that the goal of any remedial program is to restore the site to pre-release conditions, *to the*

extent practicable. Restoring the site to pre-release conditions remains the ultimate goal of the selected remedy. However, it is not feasible to attain that goal at this time. Regarding past operations, many of the regulations that exist today that control the storage and handling of chemicals and hazardous waste from production activities did not exist when Diaz began operations in 1974, over 27 years ago.

Part C: Comments Received Regarding the IRMs

Comment 36: My question is regarding the trench you blasted in the rock and are using to collect contaminated groundwater. How much water is collected on a daily basis and what is being done with this water? Is the water being processed? Does the processing take chemicals out of the water? How do you know that Diaz is complying with regulations and is keeping the carbon filters up to date and monitoring the trench properly?

Response 36: The trench collects on average, between 4 and 5 gallons per minute. This is about 7,000 gallons per day. This water is passed through an activated carbon filter, similar to the household filters available for tap water. The carbon removes the contaminants and the water is then discharged to Diaz's permitted discharge to the storm sewer. Analysis of the treated water is performed monthly and reported to the Department.

Comment 37: The homes with the contaminated sumps that are sealed up–where is that contaminated water going?

Response 37: Only one residence has a contaminated sump. The water from that pump is discharged to the sanitary sewer.

Comment 38: Regarding the sump that is capped off. I understand that water contains 1,2-dichloroethane 2,200 ppb and 1,2-dibromoethane at 1,400 ppb. Aren't these numbers high – too high to be letting this water flow off the site? Aren't these numbers higher than the allowable water standards that can be released into the ground? Have you been monitoring the groundwater levels?

Response 38: The analytical results you refer to are from the initial sampling of that location. Subsequent sampling has indicated a marked decline in the concentrations coinciding with increased pumping of the trench IRM. The current concentrations are still above groundwater standards, but have declined approximately 90%. The DEC and DOH anticipate the concentrations to continue to decline in the future.

Comment 39: The residents with polluted basements, are these residents being medically monitored? Is there a need for them to be monitored or tested?

Response 39: As stated in the ROD, the indoor air contamination in these residences has been abated. In addition, the concentrations of contaminants were relatively low when first discovered. The DOH does not believe that medical monitoring of the residents is necessary.

Comment 40: Regarding the trench and the wastewater treated on site–is the water tested before it is discharged to the sanitary sewer? Who tests this water before it is discharged?

Response 40: Please see Response No. 36. The water is passed through an activated carbon filter, similar to the household filters available for tap water. The carbon removes the contaminants and the water is then discharged to Diaz's permitted discharge in the storm sewer. Analysis of the treated water is performed monthly and reported to the Department.

Comment 41: Regarding the bedrock, is there a chance the groundwater collection trench is leaking water into the bedrock and causing more contamination very deep down?

Response 41: Several deep monitoring wells are present at the site. They do not indicate that deep groundwater is a problem at the site. The trench is constantly being pumped, which reduces the ability of the contamination to flow into deeper bedrock. In addition, the bedrock becomes increasingly dense with depth. The deep wells yield very small quantities of water when they are pumped.

Comment 42: How much topsoil and overburden is above the trench? Is the bedrock there a limestone or shale? How deep did the blasting go into the bedrock? How wide is the trench? Was there one or two lines drilled? Is there control over the fractures in the bedrock? Can that water be seeping anywhere? Doesn't the characteristics of shale change groundwater flows?

Response 42: There is approximately 30 feet of overburden above the bedrock trench. The trench is ten feet across, ten feet deep, and 265 feet long. It was installed with one line of explosives. As stated in Responses 7 and 41, the Department believes that the trench is effective in controlling groundwater at the site and preventing it from migrating into the residential area.

Comment 43: I'd also like to know about the two homes on South Main that Diaz reached an agreement with, that's discussed in IRM 3. When those two residents move out, no one else can move in. Why doesn't this apply to current residents? Is it safe for the current residents? If you feel these homes are not safe for future residents, why are the current residents allowed to live there?

Response 43: The DOH believes that the controls in-place at the two residences are protective of human health. The current residents have both chosen to remain in their homes. The decision on how to address new residents will be made when the time comes. One possibility in lieu of preventing new residents is for Diaz to perform extensive renovations of the properties to prevent vapors from entering the basements in the first place. These renovations cannot be performed while the houses are occupied. The ultimate goal at both of these properties is to eliminate the potential exposure pathways.

Part D: Comments Received Regarding Plant Operations

Comment 44: The storage area is by my backyard. Is there a requirement on how high you can stack the storage drums? Should the drums be stacked above the fence line? That doesn't look good.

Response 44: Regulations do govern how high drums can be stacked. Generally, it is limited to three high.

Comment 45: These discussions are about the ground water and soils, but what about the odors and the air at Diaz? These problems shouldn't come across the fence line and the company should be made to monitor this!

Response 45: Your concerns are acknowledged. Those concerns are outside the scope of this clean-up plan. However, your comment has been referred to the appropriate staff within the Department.

Comment 46: I remember when Diaz was polluting/killing fish and wildlife and I know quite a bit about Diaz. Mostly I am a longtime citizen of this community. I'd like to address the storage barrels. If you were to build a gas facility to supply gas to municipalities, you would need a tank underneath the gas tanks to collect any spills or leaks. This collection tank underneath the tanks can then be pumped off and treated and no gas leaks would get in the soils. I think Diaz needs to move the storage barrels and build a concrete pad to store them on and collect any spills. Then the soils below the barrels would be protected and never have contamination 24 feet below the surface again.

Response 46: The drum storage area you refer to is for product storage, not for the storage of hazardous waste. These drums are currently stored on a concrete pad. Your comments are outside the scope of this clean-up plan. However, your comments have been referred to the appropriate staff within the Department.

Comment 47: I'm aware under Diaz Chemical's industrial code 2865 that the company is legally allowed to make batches of various chemicals that have unknown health effects to people. I've looked at the report and there's lots of SVOCs and VOCs, these amounts of contamination are bad and quite high. The site is listed as Class 2, which, according to DEC criteria, is a threat to health. Is it common that a facility which produces so much contamination is allowed to continue operations, even while being remediated?

Response 47: Many active chemical plants have residual contamination present that remains in-place. The facilities are allowed to remain active while completing remediation.

Comment 48: Since Diaz makes speciality chemicals, they have a responsibility to keep the people who live close to the plant safe. It's unfortunate that this plant was allowed to operate so close to neighborhoods. But because of this close proximity, Diaz should have a higher level of accountability to the community. This community is divided, half need the company which provides jobs, but the other half have to live here. The company needs to be accountable to everyone in a proper manner.

Response 48: Your comment is acknowledged.

Comment 49: Diaz needs a risk management plan and citizens advisory group. Diaz has been operating 27 years and hasn't come up with either. The DEC needs to address that.

Response 49: Your comment is outside the scope of this clean-up plan. However, your comment have been referred to the appropriate staff within the Department.

Comment 50: Several speakers already mentioned more oversight at Diaz. I think it would be a good idea for the DEC to formally establish a citizens oversight and inspection committee. This committee should enable citizens the authority and power to visit and see if Diaz is doing their cleanup. If we're supposed to trust the DEC, why can't we entrust our local citizens? Confidence is low in Diaz' self-monitoring and this distrust is best summed up in the DEC/AG's suit. The suit states that Diaz's acts and omissions at its plant resulted in recurring spills and releases and contributed to becoming a public nuisance. Diaz has failed to abate the nuisance it created and that has put the health and safety of people and property in serious harm. Since we live here, drink the water and breath the air, why can't we have citizens help you inspect what Diaz does? This would show good faith all around.

Response 50: The Department does not have the authority to create a citizen's committee with the powers described in this comment. However, the Department would welcome any voluntary arrangement made between the public and the company. Currently, if a citizen notices something that is not right, they should contact the DEC at (585) 226-2466.

Comment 51: I'd like to support the earlier comment on containment tanks. Any kind of tank, whether for fuel or oil, needs a containment tank under it. I guess that Diaz has about 1000 barrels of acid in 55 gallon drums. It would be common sense to put a containment tank of some sort under these barrels. Currently these barrels sit in the sun and can expand or build up pressure and split. Also kids can get in there and play on them.

Response 51: Please see Response 46.

Part E: Comments Received Regarding the January 5, 2002 Air Release

An informal availability session was held after the public meeting to discuss the January 5, 2002 air release. DEC and DOH staff responsible for addressing the release were available for questions. Comments made during that period are not addressed in this document.

Part F: Written Comments

A letter dated March 1, 2002 was received from Mrs. Anita Trupo of Holley which included the following comments:

Comment 52: "Many residences of Holley have not received notification of this meeting, which is a gross neglect on the part of the DEC. Every citizen must be well informed of this urgent matter."

Response 52: The Department sent notification of this meeting to over 200 people on the site mailing list. Included on the mailing list were citizens who live around the site and local television, radio, and newspaper outlets. The newspapers in the area have covered this story extensively and the Department believes that sufficient public awareness of the meeting was achieved.

Comment 53: "Diaz Chemical Company has a history of at least 40 or more spills ... and has never cleaned up their act! They, in my opinion, are not responsible to clean up anything."

Response 53: The Department acknowledges your concern over the clean-up of the site. The Department will oversee Diaz's implementation of the remedy and ensure that it is conducted properly.

Comment 54: "Would you want to put off a 'total' decontamination of your village if [the soil and groundwater were heavily contaminated with the Diaz-related chemicals?] As a life long citizen of Holley and a property owner - I do not want these harmful contaminants in the groundwater or the soil of my village. Our drinking water is from village wells. How long will it take for this contamination to seep into them, if the contamination isn't completely cleared away all at one time?"

"According to [the PRAP], ... the DEC believes if the site were no longer in active use, or with a significant amount of down-time, a larger set of technologies could be evaluated at the site than those which were evaluated in the FS. We would like a plant downtime ... so that any and All sources of contamination can be removed from the plant, plant area, and any and all parts of the Village of Holley's soil and groundwater. We would like this action taken immediately to protect the health and welfare of our village."

Response 54: The Department believes, for the reasons outlined in the Record of Decision, that the selected remedy is the best alternative. Implementation of the selected remedy will prevent the soil and groundwater contamination from contributing to any new off-site releases, will prevent exposures, and will result in a more complete cleanup of the source areas by waiting until they can be remediated directly rather than indirectly. The Department does not have the authority to force a shut down of the plant in order to clean up the contamination.

Regarding the vulnerability of the village wells, the DEC and DOH do not believe the village wells are threatened by the site. The wells are located upgradient and far away from the plant. Groundwater at the site is moving away from the wells and not toward them. The village wells have been sampled by the DOH for Diaz-related chemicals and none have been detected.

A letter dated March 4, 2002 was received from Ms. Angeline Lusk of Holley which included the following comments:

Comment 55: This letter discusses many of the issues surrounding the air release of January 5, 2002.

Response 55: Your comments regarding the air release have been forwarded to the staff responsible for managing the release.

Comment 56: "Diaz bought a home that is down the street from me. When I talked with various people, they said there was something in the cellar of this house. I know nothing about this, and if this is true, I am upset that my house, which also sits down from the road and is three doors from that house, wasn't inspected nor was I given any information about chemicals leaking into the ground. I explained this to DEC and never heard another thing."

"The [Orleans County] Health Dept. was in my basement on Jan. 11th, smelled the chemicals [from the air release] and was anxious to test the water in the sump pump. However, it is now March 4th and I have not heard from the Health Dept."

Response 56: Diaz conducted soil vapor screening along South Main Street. Based on the results of that screening, the DEC and DOH identified nearby residences that were most likely to be impacted by the groundwater contamination. Your residence was not considered to be at risk based on the results of the soil vapor screening. A water sample was collected from your sump on March 8, 2002. You can expect to receive results from the DOH shortly.

A letter dated March 13, 2002 was received from Ms. Mary Scarborough of Holley which included the following comments:

Comment 57: "Diaz Chemical should never have been allowed to locate in a populated area - but since it is there and has proved time and again to be a reckless corporate citizen in regard to environmental considerations the NYS Department of Environmental Conservation must keep above average attention on the corporation. This proposal for clean up can only be one of many things that will need to be done to make Diaz a responsible and careful corporation. The citizens of this area expect and demand constant pressure on Diaz now and in the future."

Response 57: Your concern with oversight of the company is acknowledged. The Department will oversee Diaz's implementation of the remedy and ensure that it is conducted properly.

A letter dated March 21, 2002 was received from Mr. Edward Jones which included the following comments:

Comment 58: "That was a very unfortunate accident that happened on Jan. 5th. But the point is, it

was an accident. As long as we've lived in the village, Diaz has always been a good neighbor. Concerns are addressed, and as far as I know, there has never been any attempts to 'cover up' anything. I'm sure that there may be a couple of houses that may still have a chemical problem, but I'm also pretty sure that there are residents here who are seeing green and are going along for the ride. It seems strange to me that one house that has been deserted is totally surrounded by houses where the residents have moved back in. I don't think these chemicals were 'house selective' and just decided to dump on one house or another. And for whoever is in these questionable houses, if they're smokers, I'm sure they've put more carcinogens and other toxic chemicals into the atmosphere of their houses from their cigarettes than Diaz did with their release. Anyway, I believe Diaz has been a positive influence on the village of Holley, from helping with the tax base to the scholarships they give out each year at graduation. Hopefully we aren't seeing the end of the road for them."

Response 58: Your comment is acknowledged.

A letter dated March 21, 2002 was received from Ms. Barbara McAllister of Waterport which included the following comments:

Comment 59: "To expect [Diaz] to comply with procedures (some of which they should have already been doing and weren't) is going to take a lot of vigilance."

Response 59: Your concern with oversight of the company is acknowledged. The Department will oversee Diaz's implementation of the remedy and ensure that it is conducted properly.

Comment 60: "Cleaning up their own property would be great if it works, but the areas of contamination are not restricted to their property. Maybe municipal wells are testing all right but what about the soil?"

Response 60: Data from the remedial investigation indicate that soil contamination from past releases of contamination are limited to the site. The municipal wells are remotely located from the site. A recent soil sample collected by the village detected toluene at low levels. The DEC and DOH do not believe that Diaz is the source of this contamination. Toluene is a common contaminant found in a variety of products, including gasoline, paints, and adhesives. No site-specific compounds such as EDC, EDB, or PCBTF were detected in the soil sample.

Comment 61: "Are you aware of the fact that Diaz has bought up some homes because they contaminated them? How many more are but we don't know?"

Response 61: Yes, the Department is aware that Diaz has purchased one residence east of the plant. This residence is one of the two where indoor air contamination was detected during the RI. No other residences are expected to be impacted by the off-site groundwater plume. During the RI, Diaz conducted soil gas sampling around Jackson Street, South Main Street, and Batavia Street. The results provided a generalized map of the

groundwater plume that was subsequently confirmed with groundwater samples from monitoring wells. Based on these results, indoor air was tested in eight residences.

Comment 62: "They need to clean up the town. There are chemicals found in a park, on homes in cars, on lawns."

Response 62: This comment is related to the recent air release. Concerns about soil contamination related to deposition from recent air releases is being evaluated separately by State officials.

An undated letter was received from Ms. Bonnie Fleisschauer of Holley which included the following comments:

Comment 63: "One of the goals of the plan is to 'control/remove sources of contamination,' however I don't see anything in the plan pertaining to identifying the sources of the contamination nor preventing future leaks. ... What has the DEC done to identify what is causing these leaks to prevent further contamination? Are lines or tanks failing? Is the internal handling of chemicals sloppy? Are there adequate safety programs in place to prevent this from happening again? If we only focus on the cleanup without examining the causes, we will just be allowing more contamination to happen."

Response 63: The goal of controlling and/or removing sources of contamination is meant to address source areas within the soil. A "source area" is loosely defined as an area of high concentration contamination that acts as a continuing source for the ongoing contamination of groundwater or that is a potential threat for direct exposure to the high concentrations of chemicals within it. The original "source" of contamination, as you refer to it (leaks, spills, tanks, etc.), was likely a combination of these items during the early years of the plant's operations. Many of the regulations that exist today that control the storage and handling of chemicals and hazardous waste from production activities did not exist when Diaz began operations in 1974, over 27 years ago. The items you mention are currently regulated to varying extents through State and Federal regulations.

Comment 64: "I also agree with my neighbors who spoke about concerns of Diaz's implementation of the remedial program. If their past performance is any sort of indicator, and it has to be, they will take shortcuts and do an inadequate job of it. I urge that DEC oversee all areas of this program and be prepared to use whatever measures are necessary to guarantee that Diaz handle the cleanup and **prevention** programs as proposed."

Response 64: Your concern with oversight of the company is acknowledged. The Department will oversee Diaz's implementation of the remedy and ensure that it is conducted properly. As stated in Response 63, the "prevention" measures you discuss are outside the scope of this cleanup. However, your comments have been referred to the appropriate staff within the Department.

A letter dated March 21, 2002 was received from Ms. Tanya Hundley of Holley which included the following comments:

Comment 65: "My husband and I believe the only proper way to clean our neighborhood is to clean the whole area. I can not believe that cost is even a factor when children live so close. ... I would like to know why some children can grow up in a healthy area but ours can not because of cost. We did not put those chemicals there, Diaz did and it's time they cleaned it up."

Response 65: The Department believes, for the reasons outlined in the Record of Decision, and in particular, the long-term effectiveness and implementability of the alternatives, that the selected remedy is protective of human health and is the best alternative. Implementation of the selected remedy will prevent the soil and groundwater contamination from contributing to any new off-site releases, will prevent exposures, and will result in a more complete cleanup of the source areas by waiting until they can be remediated directly rather than indirectly. Cost effectiveness is an evaluation criterion required by law. As discussed in the ROD and Responses 14 and 29, cost effectiveness is a balancing criterion, to be evaluated along with all the other selection criteria. Cost alone does not drive the decision-making process.

A letter dated March 22, 2002 was received from Mr. Richard Catlin of Holley which included the following comments:

Comment 66: "I feel the first priority should be more testing. Every home surrounding the facility should be tested for contamination. The homes on South Main Street should be the first priority. If the basement has a sump, the water should be tested. If the basement is dry - with dirt floor - the soil should be tested. The air in every basement should be tested. The extent of the problem should be a priority. Soil testing should include total perimeter including Jackson Street homes."

Response 66: As discussed in Responses 2, 9, 56, 60, and 61, the Department believes the extent of contamination is well-defined. The need to test indoor sump water and air at additional homes will be evaluated if new information indicates a problem may exist. Testing the soils in a dirt floor basement is unnecessary. Contamination would not be detected in those soils unless the chemicals were spilled in the basement itself.

Comment 67: "Also a study should be put together to track health problems in the area. Included should be all types of cancers, premature births, birth defects, attention deficit problems and general common respiratory problems of local children."

Response 67: As stated in Response 39, the DOH does not believe that medical monitoring of residents is necessary in relation to the soil and groundwater remediation. All exposure pathways have been eliminated or mitigated. This is a separate issue from the medical monitoring of people exposed to the January 5, 2002 air release.

Comment 68: "The trench also concerns me. It is suggested that it has been a major factor in reducing the contamination leaving the site; at five gallons per minute I rather doubt that. The blast into shale bedrock, being already porous by nature, I'm sure has created many undetected pathways for the groundwater to follow."

Response 68: There is ample monitoring data to demonstrate the effectiveness of the trench. Downgradient water levels have dropped in response to the aggressive pumping of the trench. In addition, the contaminant concentrations downgradient have dropped considerably, by over 90% in four of the five downgradient wells. The contaminated sump has been dry on several occasions and also shows a 90% decrease in contamination when samples can be collected. Please see Responses 7, 36, 40, 41, and 42 for more information. In addition, sampling and water level data for the trench can be found in the RI Summary Report.

Comment 69: "It was suggested at the meeting that capping with concrete or asphalt would prevent further contamination at the site. Also suggested was the fact that the worst contamination was believed to be concentrated under Area C, already capped with one foot of concrete. When asked how it got there through concrete, [the DEC] blamed voids around 'drains to dry wells.' If it came from these voids, how much went down the drains. I believe these dry wells would be highly suspect if they exist. If they do exist, they should be accessible for immediate cleanup as I'm sure they are not located under the 100 year old building of area C, and surely they would not have been allowed to build anything else over these dry wells."

Response 69: The Department believes some of the worst contamination at the site is beneath the Area C/D buildings. There is an old floor drain in Area C which is a likely former route for contamination to enter the subsurface. It has since been plugged by Diaz to prevent any additional contamination. The original foundations and floor slabs of these buildings are very old and are cracked. It would not have been difficult in the past for spilled chemicals to migrate through the floor cracks and into the underlying soils if the spill were not cleaned up immediately. New floor slabs have been poured over the old ones, preventing new contamination from entering the subsurface. The former condition of the floor slabs is a far different scenario from new concrete pads which will be placed around the site to minimize infiltration of both spilled chemicals and precipitation. Any chemical spilled on a concrete pad will be much easier to contain and clean up than if the chemical were spilled directly onto site soils. In addition to providing spill protection, concrete pads will divert precipitation run-off into the storm sewers instead of letting it infiltrate into the subsurface. By preventing this infiltration, there will be less groundwater at the site to carry contamination from the source areas.

Comment 70: "It is my opinion that someone takes charge immediately and cleans up the site. We should mandate and enforce the order of operations and not be falsely pacified by the mere maintenance of such an environmental hazard for the next 30 plus years."

Response 70: The Department believes, for the reasons outlined in the Record of Decision, that the

selected remedy is the best alternative.

A letter dated March 25, 2002 was received from Mr. Alan J. Knauf, an attorney representing local residents which included the following comments:

Comment 71: "The overall goal is to clean to pre-disposal conditions. However, in this case DEC is summarily rejecting complete source treatment or removal that will achieve this goal without even analyzing the costs or feasibility, stating that 'other technologies, such as surfactant flushing, thermal treatment, in-situ oxidation, or large scale excavation were dismissed during the FS because they would not be feasible to implement under current site conditions.' At the meeting, you explained that the Site conditions that allegedly made this not feasible were in fact that a few thousand square feet of the Diaz plant were located over the source area, and that only partial removal of the source would be ineffective, since the remaining source would continue to contribute towards groundwater contamination."

"While we do not disagree that partial source removal might be ineffective, there has been absolutely no showing that complete source removal or treatment is not feasible or implementable. Clearly it would be preferred, since it is the only way to clean the Site to prerelease conditions, meet DEC's standards, achieve long-term effectiveness, and permanently and fully reduce toxicity, mobility, or volume."

"Clearly, it is arbitrary and capricious to not even consider the feasibility of the only options - source treatment or removal - that would meet the overall goals of the State Superfund program. The remedies suggested cost in the millions of dollars. However, new warehouse space might be built for $50 per square foot. If the issue is over even 5,000 square feet, even at double that rate, the cost would be about $50,000 - a paltry sum compared to the options you are considering. Furthermore, it is our understanding that the plant is about 100 years old, and that the buildings are fully depreciated and hardly of any value."

"Thus, the option of putting up a new building, either on this site, or preferably at another site away from populated areas to avoid the ongoing threat from Diaz, needs to be evaluated. Another option would be temporarily relocating while the area was dug up and a few thousand square feet of the plant replaced. We understand there would be extra operational costs, but these should not be astronomical, and at the very least they need to be evaluated. Treatment of the source was not even considered. I asked if, for example, horizontal wells could be dug under the building, and [the Department] indicated this was not evaluated.

"Therefore, not only has DEC made feasibility, which is only one of seven factors to be considered when determining the overall goal of achieving pre-disposal conditions, the overriding goal, but the Plan fails to even justify your choice by a comprehensive engineering analysis of the options and costs.

Response 71: The Department believes that the remedial program completed for this site is in compliance with rules and regulations for Class 2 sites. Further, the Department intends to ensure that the completion of the selected remedy will also be done in accordance with all of the requirements of the regulations. The Part 375 regulations state that the goal of any remedial program is to restore the site to pre-release conditions, *to the extent practicable*. Restoring the site to pre-release conditions remains the ultimate goal of the selected remedy. However, it is not feasible to attain that goal at this time.

The Feasibility Study (FS) was stamped and signed by a Professional Engineer licensed to practice in New York State. It was completed in accordance with USEPA's "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA - Interim Final."[1] According to the EPA guidance, general response actions should be identified as potentially applicable at a site. Those general response actions are further refined and a preliminary evaluation of effectiveness and feasibility (implementability and cost effectiveness) is then performed. Those general responses which are either not effective or not feasible are discarded and are not carried on for detailed analysis. This is precisely what was performed in the Diaz FS.

The Department believes your assumptions for constructing new warehouse space are under-estimated. The buildings, especially area C, cannot be partially demolished. The structure is an extremely massive brick and concrete building. It would likely require complete demolition instead of a more costly partial demolition with extensive temporary structural supports added (which would likely interfere with remedial activities anyway). In order to remediate just " a few thousand square feet" the entire structure would have to be removed. In addition, there is insufficient space at the current facility to build a new process building. Further, the buildings in question contain some of Diaz's most critical production equipment. Demolishing the buildings would require shutting down the bulk of the company's production. The costs associated with this action, both direct and indirect, are not trivial. The possibility of relocating to another site at the same time would only magnify the costs substantially.

Comment 72: "The characterization of the site as 'Operable Unit No. 1' is an abuse of the 'operable unit' definition. ... Typically 'operable unit' is used to divide environmental media such as groundwater and soil, or portions of a site."

"However, you propose defining Operable Unit No. 2 as 'the contaminant source areas,' in an effort to segment away cleanup of the contamination source as the preferred remedy. This proposal is an end round to avoid the regulatory mandate. With this logic, source removal could always be avoided by creating a second operable unit that would never be addressed. Since Operable Unit No. 2 may never be addressed as long as Diaz remains in operation, the required cleanup may be postponed in perpetuity."

[1] USEPA 540/G-89-004, October 1988

Response 72: The Department believes that the remedial program completed for this site is in compliance with rules and regulations for Class 2 sites. Many sites have operable units created to separately manage source areas from groundwater plumes or off-site concerns. The decision to create a second operable unit at this site was only arrived at once the screening of technologies and comparison of alternatives were completed, indicating that source treatment at the site is not feasible at this time. Restoring the site to pre-release conditions remains the ultimate goal of the selected remedy.

Comment 73: "You claim that DEC will have to address "Operable Unit No. 2" when Diaz leaves the site. This is a very poor idea. A very likely reason for Diaz leaving would be bankruptcy. Then, no funding would be available from Diaz."

"An excellent suggestion from the meeting came form County Legislator George Bower, who suggested full financial security up front [Comment 18]. Not only should security be provided for the IRMs you suggest, but also for the permanent remedy for "Operable Unit No. 2," even if it is to be delayed as you propose."

Response 73: Please see Response 18. The Department has considered requiring some form of financial assurance in the upcoming Order on Consent.

APPENDIX B

Administrative Record

APPENDIX B

Administrative Record Files
Diaz Chemical Corporation, Operable Unit 01
Site No. 8-37-009
Village of Holley, Orleans County

1. File Index
2. RI/FS Phase I Technical Memorandum, November 1994
3. RI/FS Addendum to Phase I Technical Memorandum, June 1995
4. RI/FS Phase II Technical Memorandum, November 1995
5. RI/FS Phase III Technical Memorandum, December 1996
6. RI/FS Phase IV Technical Memorandum, December 1997
7. RI/FS Interim Phase V Technical Memorandum, July 1998
8. RI/FS Phase V Technical Memorandum, December 1998
9. RI/FS Phase VI and FS Work Plan, April 1999
10. RI/FS Summary Report, February 2000
11. Final FS Report, October 2001
12. Interim Remedial Measure Plan, August 1995
13. Interim Remedial Measure Decision Document, September 1995
14. Interim Remedial Measure Plan, IRM-2, May 1997
15. Interim Remedial Measure Decision Document, IRM-2, August 1997
16. Citizen Participation Plan, September 1994
17. Proposed Remedial Action Plan (PRAP), February 2002
18. Record of Decision, March 2002
19. Consent Order for RI/FS, Index No. B8-0413-92-09, dated July 1, 1994
20. Information Fact Sheet, M2P2 Project, July 28, 1994

21. Notice, Public Availability Session, January 18, 1995

22. Announcement, Public Availability Session, July 28, 1995

23. Fact Sheet, RI/FS, December 1996

24. Fact Sheet and Public Meeting Announcement, IRM-2, June 1997

25. Fact Sheet, Phase V Investigation, May 1998

26. Fact Sheet, Final Phase RI/FS, August 1999

27. Letter from Mrs. Anita Trupo, dated March 1, 2002

28. Letter from Ms. Angeline Lusk, dated March 4, 2002

29. Letter from Ms. Mary Scarborough, dated March 13, 2002

30. Email letter from Mr. Edward Jones, dated March 21, 2002

31. Letter from Gary Litwin, NYSDOH to Michael J. O'Toole, NYSDEC, dated February 15, 2002. Re: Proposed Remedial Action Plan, Diaz Chemical Corporation

32. Letter from Gary Litwin, NYSDOH to Michael J. O'Toole, NYSDEC, dated March 29, 2002. Re: Record of Decision, Diaz Chemical Corporation

Non-Foilable documents are located on a separate roll of microfilm.

Photographs are stored at the State Records Center.