

Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision
Schenectady International
10th Avenue Site
Operable Unit No. 1
City of Schenectady, Schenectady County
Site Number 4-47-007

March 1998

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

Don L.



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December 1, 1999

New York State Department of Environmental Conservation
1150 N. Westcott Road
Schenectady, New York 12306

Attn: Mr. Howard Brezner

Re: Supplemental Remedial Investigation for the Congress Street Facility of Schenectady International, Inc. DEC File No. R-0888-90-12

Dear Howard:

On behalf of Schenectady International, Inc. (SII), enclosed is a letter from Conestoga-Rovers & Associates (CRA) concerning the annual review of the soil remediation technologies that may be appropriate at the Congress Street facility of SII. As noted in CRA's letter, no new innovative technologies have been identified nor have conditions changed at the Congress Street facility that would modify the evaluation completed in the Supplemental Remedial Investigation Report.

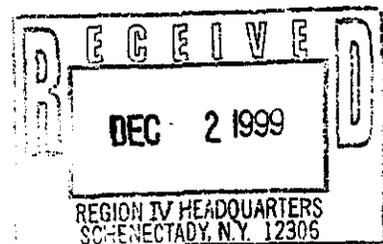
The annual review of soil remediation technologies is being submitted in compliance with the approved Supplemental Remedial Investigation Report for the Congress Street facility. If you have any questions, please call me at (518) 453-2897.

Very truly yours,

CLOUGH, HARBOUR & ASSOCIATES LLP
ENGINEERS, SURVEYORS, PLANNERS
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Laury K. Bibighaus, P.E.
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November 30, 1999

Reference No. 1312-31

Mr. Jim Witte
Schenectady International, Inc.
Route 5S
Rotterdam Junction, NY 12150

Dear Jim:

Re: SII Congress Street
Schenectady, New York

During the Supplemental Remedial Investigation for the SII Congress Street Site, it was determined that a significant portion of the soil contamination was inaccessible due to the presence of the existing buildings and the fact that contamination was present below the groundwater table. In accordance with the NYSDEC approved Supplemental Remedial Investigation Report for the Congress Street Site, Conestoga-Rovers & Associates (CRA) has conducted a review to identify any new or improved soil remediation technologies that may be appropriate for the Site.

Advances continue to be made in innovative technologies for treating contaminated soils and groundwater. The majority of these advances involve enhancing the more traditional technologies such as soil vapor extraction (SVE), bioventing, bioremediation, and air sparging by improving the site conditions or the delivery mechanism(s). These technologies were previously evaluated in the Feasibility Study Report dated July 1996 and were deemed to be potentially applicable to the Site, however, the presence of the existing buildings limit their implementation. This is still the case at the Site.

Based on the fact that a large portion of the contaminated soil at the Site continues to be inaccessible, it is recommended that SII proceed with the installation of the groundwater collection system that is scheduled for construction in 2000. Soil remediation technologies should continue to be reviewed on an annual basis in accordance with the approved Supplemental Remedial Investigation report.

November 30, 1999

Reference No. 1312-31

-2-

Should you have any questions regarding this information, please do not hesitate to contact us.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES



AP: Jamie Puskas, P. Eng.
JP/ck/6

Encl.

c.c. L. Bibighaus

DECLARATION STATEMENT - RECORD OF DECISION

Schenectady International - 10th Avenue Inactive Hazardous Waste Site Operable Unit No.1 Schenectady, Schenectady County, New York Site No. 447007

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for Operable Unit No. 1 of the Schenectady International - 10th Avenue inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Schenectady International - 10th Avenue Inactive Hazardous Waste Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

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

Description of Selected Remedy

Based upon the results of the Remedial Investigation/Feasibility Study (RI/FS) for the Schenectady International - 10th Avenue site and the criteria identified for evaluation of alternatives the NYSDEC has selected groundwater containment and treatment, plus collection and treatment of light non-aqueous phase liquid (LNAPL) for Operable Unit No 1. The components of the 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 and maintenance, and monitoring of the remedial system.
- The remedial system consisting of a "french drain" with a sufficient number of vertical wells to assure capture of contaminated groundwater leaving the site. The vertical wells will be located

in area(s) where the installation of the "french drain" is not constructable due to topography and/or access.

- Collection of the groundwater and seep water and treatment either on-site or off-site (dependent upon cost), plus collecting the LNAPL and treating the LNAPL off-site.
- Institutional controls will be implemented. These controls are maintaining the security fence and placing appropriate deed restrictions.
- Since the remedy results in untreated hazardous waste remaining at the site, a long term monitoring program will be part of the remedy. This program will allow the effectiveness of the selected remedy to be monitored and will be a component of the operation and maintenance for the site. A soil remedy, if enacted through Operable Unit 2, might lead to future reduction of the required monitoring.

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

3/11/98



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

TABLE OF CONTENTS

SECTION		PAGE
1:	Site Description	4
2:	Site History	4
	2.1 Operational/Disposal History	4
	2.2 Remedial History	5
3:	Current Status	6
	3.1 Summary of Remedial Investigation	6
	3.2 Interim Remedial Measures	7
	3.3 Summary of Human Exposure Pathways	8
	3.4 Summary of Environmental Exposure Pathways	8
4:	Enforcement Status	9
5:	Summary of Remediation Goals	9
6:	Summary of the Evaluation of Alternatives	9
	6.1 Description of Remedial Alternatives	10
	6.2 Evaluation of Remedial Alternatives	11
7:	Summary of the Selected Remedy	13
8:	Highlights of Community Participation	14
<u>Tables</u>	- Table 1: Nature and Extent of Contamination	15
	- Table 2: Remedial Alternative Costs	16
<u>Figures</u>	- Site Location Map	figure 1.1
	- Site Map	figure 1.2
	- Remedial System Components	figure 2.1
	- Typical Cross-Section Of The French Drain	figure 2.2
	- Primary Source Areas	figure 3.1
	- Total VOC and SVOC Isopleths	figure 3.2
<u>Appendix</u>	- Appendix A: Responsiveness Summary	A1
	- Appendix B: Administrative Record	B1

SECTION 1: SITE LOCATION AND DESCRIPTION

Schenectady International - 10th Street (SII) is a chemical manufacturing facility located since 1900 in the City of Schenectady, Schenectady County. It is Site No. 447007 on the NYS Registry of Inactive Hazardous Waste Sites. The site is approximately 7.0 acres in size and is located southwest of the intersection of 10th Street and Congress Street. Residences in a suburban neighborhood are 400 feet to the north and east of the site. Please refer to figures 1.1 and 1.2 for the location map and the site map, respectively.

The plant facility sits on a steep embankment. At the bottom of this embankment is Cowhorn Creek, a Class C stream (suitable for fish survival and propagation). Shallow groundwater moves in a southerly direction through the site, breaks out in seeps (along the embankment), flows to (then down) a swale along the southern fence line of the plant property, and ultimately to Cowhorn Creek. Individual seeps near a storm water outfall flow directly into the creek. A solvent smell is noticeable at these seeps.

Railroad tracks and a service road lie south of the site and outside of the security fence. A spur from the railroad and an area that previously contained tanks are uphill (partly up the embankment) from the swale and inside the security fence.

Based on the Remedial Investigation and Feasibility Study Reports, the NYSDEC has determined that it is beneficial to split this site into two operable units. Operable Unit No.1 will deal with the emerging contaminated groundwater, discharging to Cowhorn Creek, thus terminating this pathway to the environment.

Operable Unit No. 1, which is the subject of this ROD, will consist of installing a "french drain" style water collection system in the swale area between the facility and the railroad tracks. Groundwater that reaches the swale area will be collected and treated. Please refer to figures 2.1 and 2.2 for the remedial system location and typical cross-section of the "french drain", respectively.

An Operable Unit represents a portion of the site remedy which for technical or administrative reasons can be addressed separately to eliminate or mitigate a release, threat of release, or exposure pathway resulting from the site contamination. The remaining operable unit (No. 2) for this site is described in Section 3.2 below.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

From the early 1900's to present, Schenectady International, Inc. has operated a manufacturing facility at the 10th Street site for insulating coatings and other chemical products. Spills, ranging from a few gallons to a few hundred gallons, over the period of operation have accumulated into a significant volume of contaminated soils. Contaminated soils are beneath the buildings, in transportation areas, southwest of the buildings and up to the "swale area" between the facility and the railroad tracks (see figure 3.1).

2.2: Remedial History

July 1984: groundwater monitoring wells were installed and groundwater samples were taken. Results showed a contravention of groundwater standards for xylene, phenols, cresols, and naphthalene-based hydrocarbons. These volatile and semivolatile compounds derive from the manufacturing processes at the 10th Street plant.

August 1987: a Consent Order was signed to conduct a Hydrogeologic Investigation & additional groundwater monitoring wells were installed.

March 1988: a Hydrogeologic Investigation was submitted and contamination confirmed. A Remedial Investigation/Feasibility Study (RI/FS) was recommended to locate and access the source(s) of the contamination and propose an appropriate remedy for the remediation of the site.

August 1993: the NYSDEC signed a multi-media pollution prevention (M2P2) Consent Order (C. O.) with SII that included an RI/FS.

July 1994: the M2P2 C.O. was modified to incorporate additional remedial activities necessary for the 10th Street plant.

December 1994: the M2P2 C.O. was again modified.

January 1996: the RI was submitted to the NYSDEC. Significant concentrations of site contaminants were found in the soils, groundwater, off-site surface water, and sediments of the swale and Cowhorn Creek.

July 1996: the FS was submitted to the NYSDEC. Based on review of the alternatives, the NYSDEC has made the decision to split the site into two operable units. The first operable unit, (OU1), will address terminating the pathways by which the contaminants are being released off-site. As further discussed in this ROD, the proposed means to address these pathways is groundwater collection and treatment. The collection system will be large enough to collect all groundwater, during a 24 hour-25 year rain event.

While the OU1 remedy will prevent further contamination of *off-site* surface water and groundwater, it does not address the long-term source of contamination: soils at the 10th Street facility. The soils will be addressed in the second operable unit (OU2) as described in the following paragraph.

Operable Unit No. 2

Additional study is needed to determine a remedy for the site's contaminated soils. NYSDEC's preference is for a remedy that will remove and/or destroy the contaminants, and thereby permanently eliminate the source of further contamination. There is some difficulty in accomplishing this as current SII plant operations prevent access to as much as 50% of the soils which need to be cleaned-up. Most of the site is covered by buildings, numerous utilities (e.g. pipe conduits) and an active railroad spur. Some remedial alternatives addressing soils were examined in July 1996 as part of the Feasibility Study; however, none were capable of addressing the inaccessible soils while allowing the plant operations to

continue. Additional investigations will be performed by the responsible party to define the extent of soil contamination. Once this is done, a supplemental feasibility study will be performed and a remedy will be selected as appropriate.

SECTION 3: CURRENT STATUS

In response to a determination that the presence of hazardous waste at the Site presents a significant threat to human health and the environment, Schenectady International Inc. has recently completed an RI/FS.

3.1: 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 one phase, between October of 1994 and December of 1994. A report entitled "Remedial Investigation Report - Congress Street Plant" (dated January 1996) has been prepared and it describes the field activities and findings of the RI in detail.

The RI included the following activities:

- *Soil gas survey and magnetometer survey to determine proper location of soil borings. The magnetometer survey was not successful due to metallic interference at the West loading dock (where drums are suspected to be buried).*
- *Installation of soil borings and collection of surface soils as well as subsurface soils. Installation of groundwater monitoring wells and the collection of groundwater samples to determine the hydro-geologic conditions.*
- *Collection of surface water and sediment samples from Cowhorn Creek to determine the current impact.*

To determine which media (soil, groundwater, etc.) contain contamination at levels of concern, the RI analytical data was compared to environmental Standards, Criteria, and Guidance (SCGs). Groundwater, drinking water and surface water SCGs identified for the Schenectady International - 10th Street site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of NYS Sanitary Code. NYSDEC TAGM 4046 soil cleanup guidelines (based on the protection of groundwater, background conditions, and risk-based remediation criteria) were used as SCGs for soil, and the Division of Fish and Wildlife Technical Guidance for Screening Contaminated Sediments was used for sediments.

Based upon the results of the remedial investigation in comparison to the SCGs and potential public health and environmental exposure routes, certain areas and media 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). For comparison purposes, SCGs are given for each medium.

3.1.1 Nature of Contamination:

The main contaminants of concern at the site are cresols, xylenes, phenols, and naphthalene-based compounds. All of these compounds are used in the chemical manufacturing process.

As described in the RI Report, many soil, groundwater, surface water and sediment samples were collected at the Site to characterize the nature and extent of contamination by the aforementioned compounds.

3.1.2 Extent of Contamination

Table 1 summarizes the extent of contamination for the contaminants of concern in soils, groundwater, and sediments. Table 1 also compares the data with the proposed remedial action levels (SCGs) for the Site. The following are the media which were investigated and a summary of the findings of the investigation. Please refer to Figures 3.1 and 3.2 .

Soil

Significant amounts of contamination were detected in subsurface as well as surface soils over a majority of the site. All of the contaminants of concern were found as high as 100 - 300 parts per million (ppm) in soils.

Sediments

All of the contaminants of concern were detected on-site in the swale "sediments". Napthalene was detected up to 11 ppm and Total phenols were detected up to 30 ppm. Sediments in Cowhorn Creek had phenols detected at 220 ppb (refer to Table 1 for comparison to standards).

Groundwater

All of the contaminants of concern were found in the 1 - 25 ppm range in one (or more) of the following monitoring wells: OW-3, OW-7A, and OW-11. Site-related contaminants were found only in the upper fifteen feet of the aquifer; the deeper aquifer does not appear to be affected. A light non-aqueous phase liquid (LNAPL) with 4 - 5 percent Napthalene was discovered in OW-10.

Surface Water

Phenols and Napthalenes were detected up to 20 ppm (each) in the surface seep southwest of Building No. 7 (in the swale). Total phenols were detected up to 380 ppb at the seep West of the loading dock (SW-8). These seeps flow into Cowhorn Creek, the nearest surface water.

3.2 Interim Remedial Measures:

Interim Remedial Measures (IRMs) are conducted at sites when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS.

An IRM is in the process of being designed for the collection of Light Non-Aqueous Phase Liquid (LNAPL) that was found in groundwater monitoring well OW-10. This LNAPL originated from a tank spill circa 1974 and is believed to be confined to the vicinity of OW-10.

The LNAPL will be collected in a smaller "french drain" system that is being proposed in the vicinity of OW-10 and OW-11. It is intended to remove as much of the LNAPL as possible before operation of the larger groundwater collection drain proposed as part of the OU1 remedy (Alternative 3 in section 6.1 of this ROD). The closer the LNAPL is collected to the source, the less smearing of the LNAPL onto the soils will occur.

The contaminated soils that are the source of the LNAPL are not accessible at this time. The source will be properly addressed in OU2.

Other IRMs are possible, as part of the M2P2 Consent Order. The order is currently going through another modification to address unrelated issues at the Rotterdam Junction facility.

3.3 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 7.0 of the RI Report.

An exposure pathway is how an individual may come into 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.

The installation of a security fence around the site has greatly reduced the potential for human exposure to the on-site sediments and surface water. Possible pathways which may exist at the site include:

- ingestion of surface water by drinking.
- ingestion of sediments.
- dermal contact with affected surface water or affected sediments.

3.4 Summary of Environmental Exposure Pathways:

This section summarizes the types of environmental exposures 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 have been identified:

- direct contact with affected surface water or affected sediments.
- ingestion of surface water for drinking.

- ingestion of sediments along with food.
- ingestion of affected terrestrial and/or aquatic animals and plants.

SECTION 4: 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 PRP for the site, documented to date, is Schenectady International, Incorporated.

The NYSDEC and Schenectady International entered into a Consent Order in August of 1993. The Order obligates the responsible parties to implement a full remedial program. See also the discussion under Section 3.2: Remedial History of this PRAP concerning modification of this Order.

SECTION 5: 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 should eliminate or mitigate all significant threats to the public health and to the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The goals selected for OU1 at this site are:

- *Mitigate the impacts of the contaminated groundwater to the environment (on-site and off-site).*
- *Prevent, to the extent possible, migration of contaminated groundwater (seep water) to Cowhorn Creek and the Mohawk River.*
- *Provide for attainment of SCGs for groundwater quality at the limits of the area of concern (AOC), to the extent feasible.*

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy should be protective of human health and the environment, be cost effective, comply with other statutory laws and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. As previously discussed, the RI/FS was originally intended to address the entire site. Results of the RI/FS have led to a division of the site into two operable units, the first addressing groundwater and surface water, and the second all on-site soils. Potential remedial alternatives for the Schenectady International - 10th Street site OU1 were identified, screened and evaluated in a Feasibility Study. This evaluation is presented in the report entitled "Feasibility Study Report - Congress Street Plant" (dated July 1996). While the FS report does include

some alternatives to address the on-site soils (Alternatives 4, 5, 6, 7), they are not presented in this PRAP which is intended to address OU1.

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

6.1: Description of Alternatives

The potential remedies are intended to address the contaminated groundwater. Of the seven alternatives screened in the RI/FS, only those alternatives relevant to the groundwater and surface water are being considered.

On site soils will be addressed in OU2 at a later date.

Alternative 1:

No Action

The no action alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, for 30 years, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

Present Worth:	\$ 1,090,000
Capital Cost:	\$ 0
Annual O&M:	\$ 36,300
Time to Implement:	0 months

Alternative 2:

Institutional Measures

This alternative would be the implementation of institutional measures only. This alternative would strive to minimize human contact with the contaminated material associated with the entire property by establishing deed restrictions and maintaining the fence around the property.

Present Worth:	\$ 1,160,000
Capital Cost:	\$ 30,000
Annual O&M:	\$
38,700	
Time to Implement:	6-12 months

Alternative 3:

Groundwater Hydraulic Containment Plus LNAPL Collection

Alternative 3 includes the institutional controls described in Alternative 2, groundwater collection and treatment on-site, LNAPL collection and treatment off-site, plus surface water and groundwater monitoring. Treatment cost is based upon construction and operation of a small, on-site facility. Other options include discharge to a publicly-owned treatment works (POTW) or to SII's wastewater treatment plant at the Rotterdam Junction facility. These options may be more cost effective and will be evaluated in the design phase.

Present Worth:	\$ 3,680,000
Capital Cost:	\$ 1,386,000
Annual O&M:	\$ 76,500
Time to Implement:	6-12 months

6.2 Evaluation of Remedial Alternatives

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6NYCRR Part 375). For each of the criteria, a brief description is provided followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is contained in the Feasibility Study.

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. Groundwater and surface water standards are applicable because contamination is migrating via groundwater and surface water to Cowhorn Creek and the Mohawk River.

Alternatives 1 and 2 would allow groundwater and surface water that exceed the standards for these media to migrate to Cowhorn Creek and ultimately the Mohawk River. Alternative 3, on the other hand, will intercept contaminated water and promote restoration of off-site waters to ambient quality standards.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of the health and environmental impacts to assess whether each alternative is protective.

Alternatives 1 and 2 are not protective of human health or the environment for the fact that SCG's would continue to be exceeded by a significant amount. These two alternatives will not be considered any further. Alternative 3, however, will significantly protect human health and the environment by intercepting contamination and preventing further exposure for off-site receptors.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of the remaining alternative (alternative 3).

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.

Alternative 3 does include the construction of a drain and treatment plant. However, the short term adverse effects will be minimal and the immediate benefits of collecting the groundwater for treatment far outweighs any construction difficulties.

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 3 will be effective in the long term with respect to containment and risk reduction, but will not permanently eliminate contamination from the site. The OU2 supplemental RI/FS will seek to augment the long-term effectiveness and permanence of the site remediation through identification of a feasible permanent treatment for on-site soils.

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 3 will collect and treat LNAPL, providing for a reduction in off-site impacts and compliance with SCGs.

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

Alternative 3 will be readily implementable because no extraordinary construction methods, access or approvals will be required. In addition, the remedy is monitorable.

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

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

8. Community Acceptance. Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan have been evaluated. The "Responsiveness Summary" included as Appendix A describes public comments received and the Department's response to concerns raised.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 6, the NYSDEC is selecting Alternative 3 as the remedy for OU1 on the site. Alternatives 1 and 2, as discussed in the previous section, are not sufficiently protective of human health and the environment.

This selection is based upon the need to eliminate the migration of contaminated groundwater (that does not comply with the SCGs) as quickly as possible. The protection of human health and the environment can be secured through Alternative 3 until the true extent of contamination under the buildings and other structures can be determined as part of OU2.

The concern has been raised that treating a portion of the soils and leaving an unknown amount of contaminated soils in place could cause the re-contamination of the treated area as groundwater passes through the site. It is believed that the collection and treatment of the groundwater will be needed for any alternative selected to address the contaminated soils, and can be designed to properly treat these waters for all the alternatives evaluated during OU2.

For these two reasons, we have recommended selection of Alternative 3 as a remedy for OU1, followed by a new investigation of on-site soils to provide for a soil remedy, which will complete remedial action for the whole site.

The estimated present worth cost to implement alternative 3 is \$3,680,000. The cost to construct the remedy is estimated to be \$1,386,000 and the estimated average annual operation and maintenance cost for 30 years is \$76,500 annually.

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 and maintenance, and monitoring of the remedial system.
- The remedial system consisting of a "french drain" with a sufficient number of vertical wells to assure capture of contaminated groundwater leaving the site. The vertical wells will be located in area(s) where the installation of the "french drain" is not constructable due to topography and/or access.

- Collection of the groundwater and seep water and treatment either on-site or off-site (dependent upon cost), plus collecting the LNAPL and treating the LNAPL off-site.
- Institutional controls will be implemented. These controls will consist of maintaining the security fence and placing appropriate deed restrictions.
- Since the remedy results in untreated hazardous waste remaining at the site, a long term monitoring program will be part of alternative 3. This program will allow the effectiveness of this remedy to be monitored and will be a component of the operation and maintenance for the site. A soil remedy, if enacted through Operable Unit 2, might lead to future reduction of the required monitoring.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

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

- A repository for documents pertaining to the site was established.
- A site mailing list was established which included nearby property owners, local political officials, local media, and other interested parties.
- In December 1997 a public meeting was held to inform the public of the availability of the repository and to discuss the Proposed Remedial Action Plan. Nineteen local residents attended the meeting and their questions were answered.
- In January 1998 the DEC, DOH, and representatives of the Responsible Party attended a meeting of the Mount Pleasant Neighborhood Association to further allow the local residents an opportunity to ask questions. The public comment period was extended to January 20, 1998.
- In February 1998 a Responsiveness Summary was prepared and made available to the public, to address the comments received during the public comment period for the PRAP.

Table 1
Nature and Extent of Contamination
Exceeding SCGs

MEDIA	CLASS	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppb)	FREQUENCY EXCEEDS SCGs	SCG (ppb)
Groundwater	Volatile Organic Compounds (VOCs)	Xylene	ND to 24,000	9 of 48	5
		Ethylbenzene	ND to 3,900	8 of 48	5
		Toluene	ND to 220	3 of 48	5
	Semivolatile Organic Compounds (SVOCs)	Cresol (2-Methylphenol)	ND to 97	3 of 48	5
		Phenols	ND to 97	4 of 48	1
		Napthalenes	ND to 5300	9 of 48	10
Soils	Organic Compounds	Xylenes	ND to 1,600,000	15 of 36	1200
		Cresol	ND to 190,000	14 of 36	100
		Phenols	ND to 170,000	17 of 36	30
		Napthalenes	ND to 1,100,000	10 of 36	13,000
Sediments	Organic Compounds	Xylenes	ND to 26,000	2 of 6	1200
		Cresol	ND to 52,000	2 of 6	100
		Phenols	ND to 38,000	3 of 6	30
		Napthalenes	ND to 11,000	0 of 6	13,000

Table 2
Remedial Alternative Costs

Remedial Alternative	Capital Cost	Annual O&M	Total Present Worth
#1 -No Action	\$0	\$36,330	\$1,090,000
#2 -Monitoring and Deed Restrictions	\$30,000	\$38,660	\$1,160,000
#3 -Alternative #2 Plus Groundwater Containment Plus LNAPL Collection	\$1,386,490	\$76,500	\$3,680,000

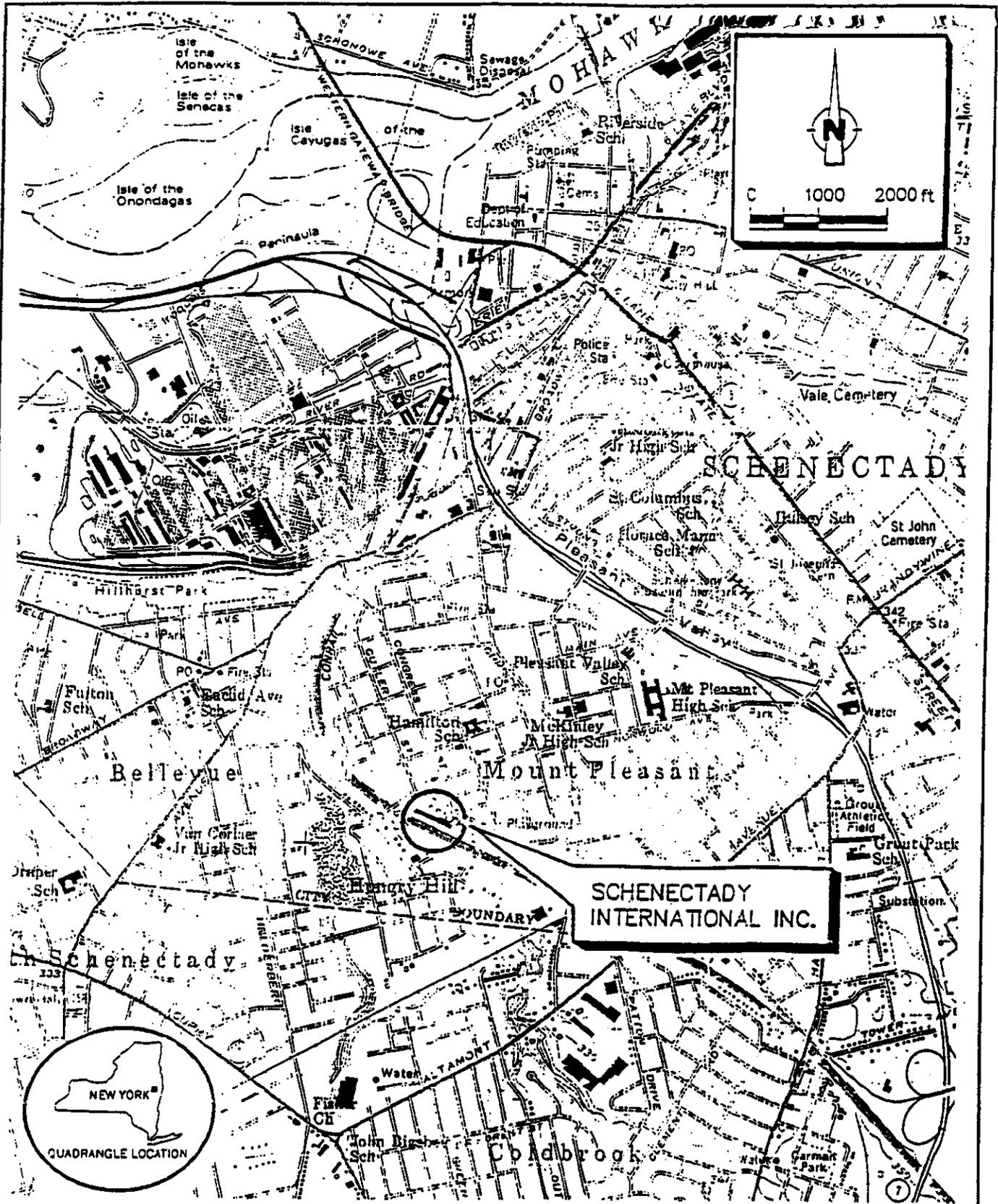


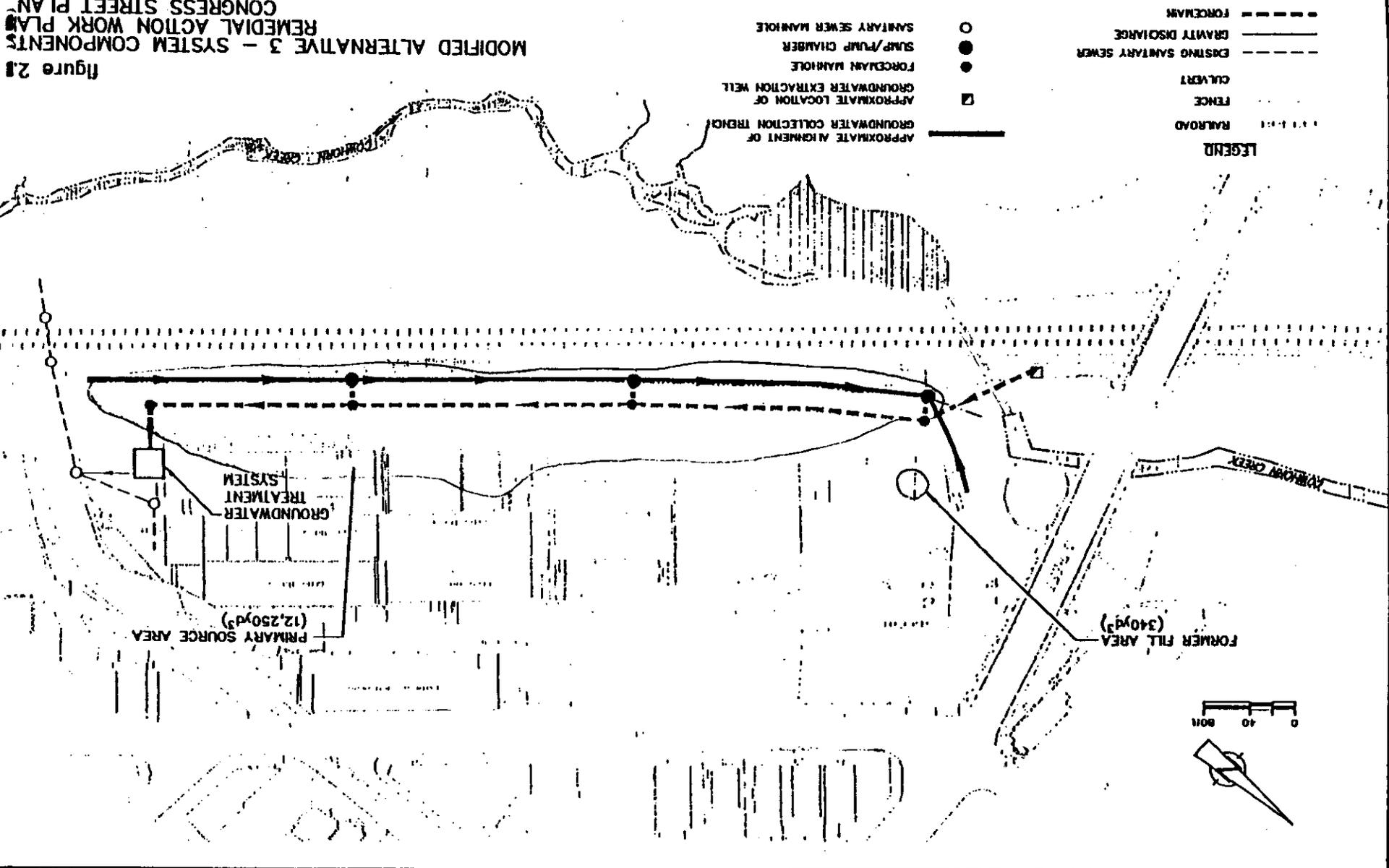
figure 1.1

**SITE LOCATION
REMEDIAL ACTION WORK PLAN
CONGRESS STREET PLANT
*Schenectady International Inc.***

SOURCE-
U.S.G.S. SCHENECTADY, N.Y.
SW/4 SCHENECTADY 15' QUADRANGLE

CRA

figure 2.11
MODIFIED ALTERNATIVE 3 - SYSTEM COMPONENTS
REMEDIAL ACTION WORK PLAN
Congress Street
Schenectady International Inc



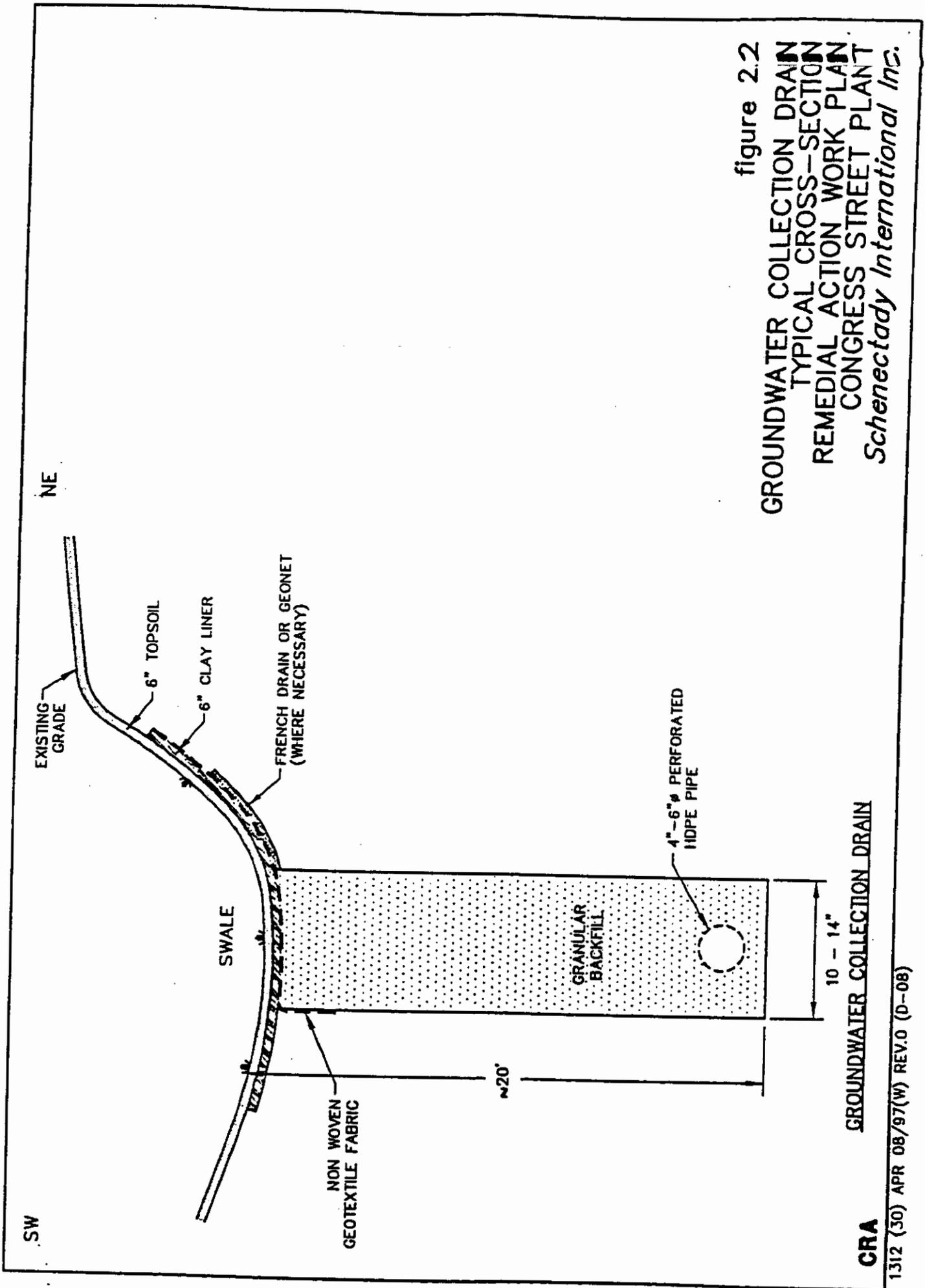


figure 2.2
 GROUNDWATER COLLECTION DRAIN
 TYPICAL CROSS-SECTION
 REMEDIAL ACTION WORK PLAN
 CONGRESS STREET PLANT
 Schenectady International Inc.

GROUNDWATER COLLECTION DRAIN

CRA

1312 (30) APR 08/97(W) REV.0 (D-08)

figure 3.1
 SURFACE AND SUBSURFACE SOIL PRIMARY SOURCE AREAS
 FEASIBILITY STUDY
 CONGRESS STREET PLANT
 Schenectady International Inc.

1312 (28) JULY 19/98(W) REV.0 (P-78)

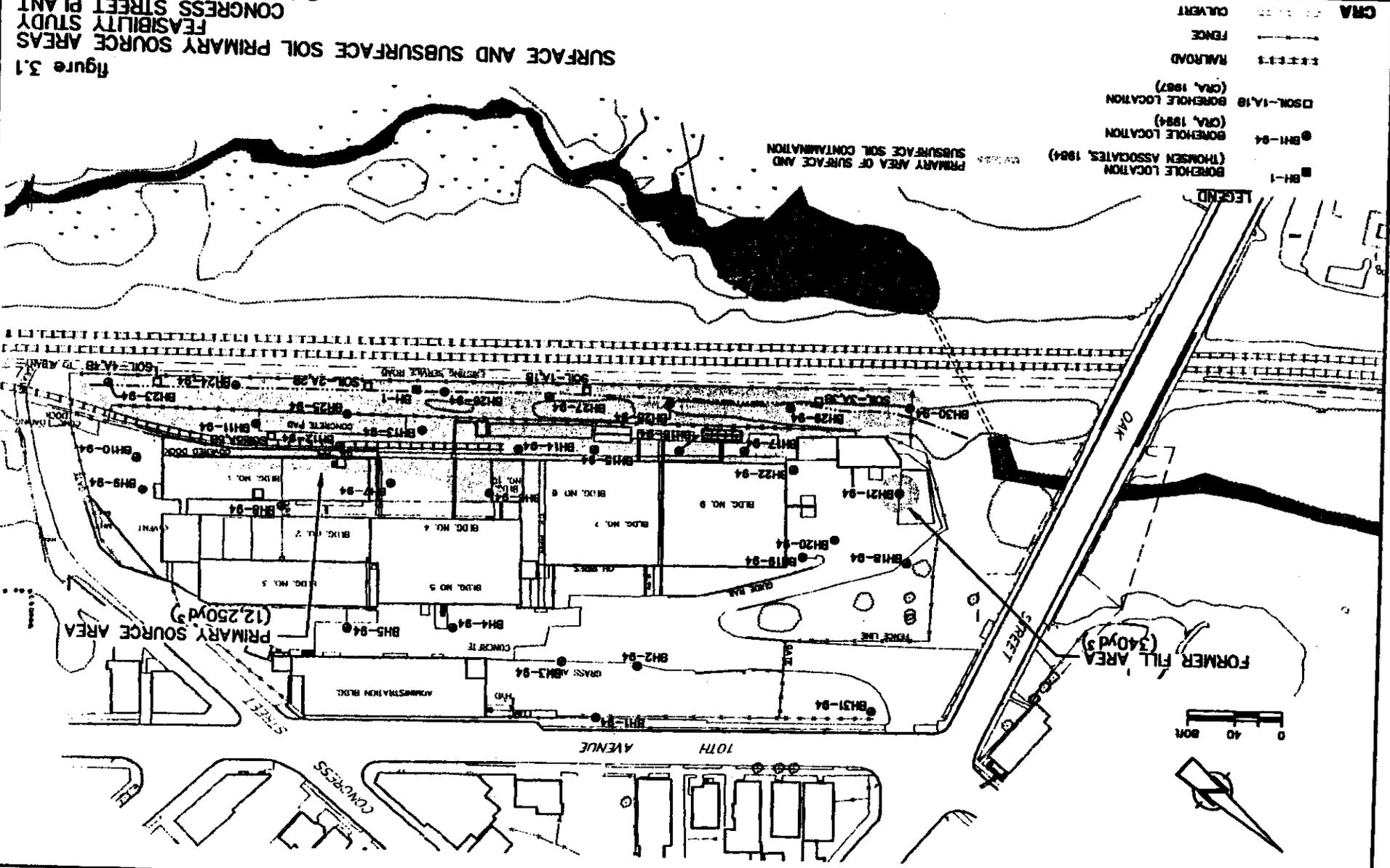
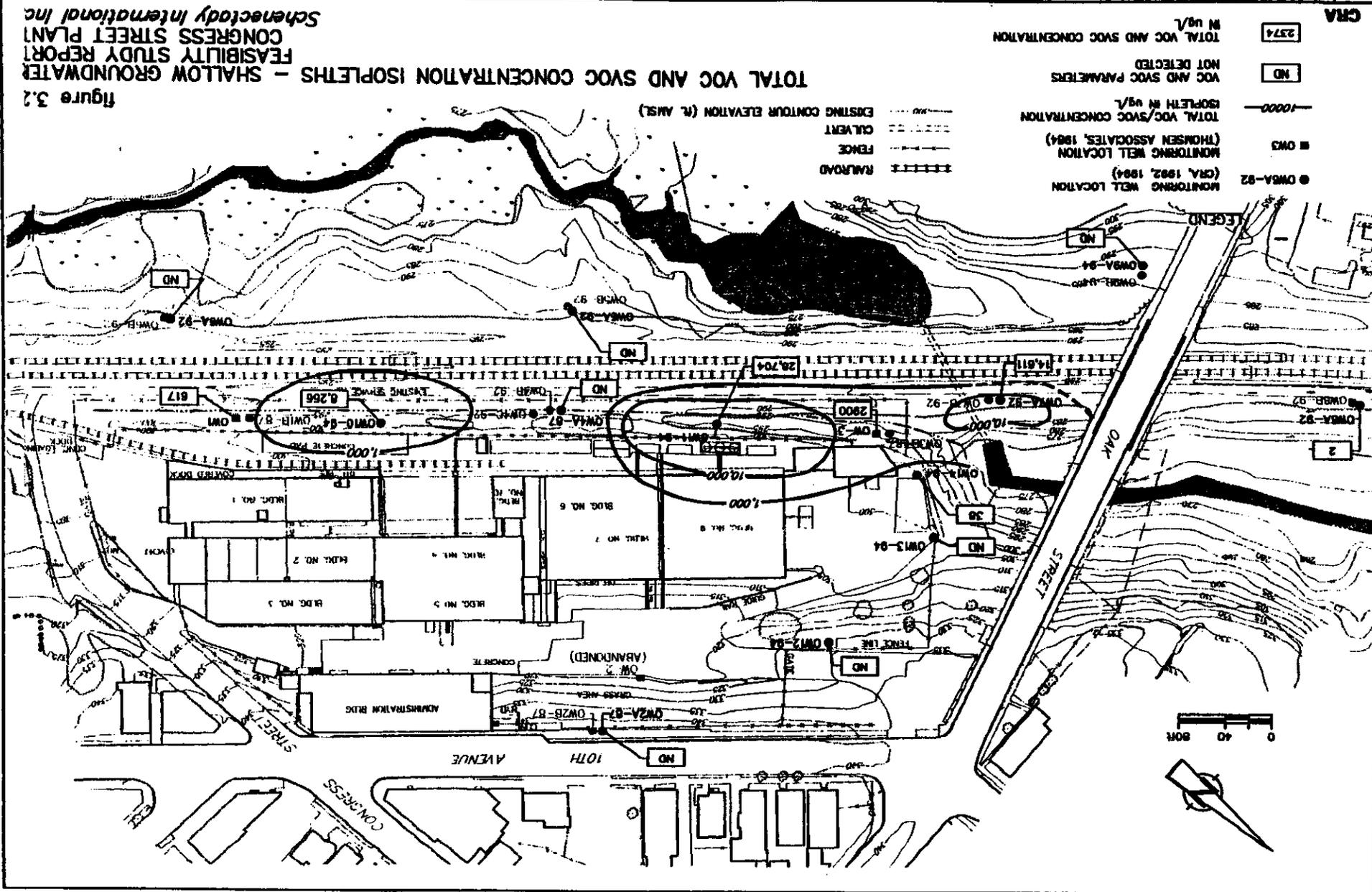


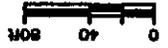
figure 3.2
TOTAL VOC AND SVOC CONCENTRATION ISOPLETHS - SHALLOW GROUNDWATER
FEASIBILITY STUDY REPORT
CONGRESS STREET PLANT
Schenectady International Inc

1312 (28) JULY 15/86(W) REV0 (P-78)



- LEGEND**
- OWA-92 MONITORING WELL LOCATION (CRA, 1992, 1994)
 - OWA MONITORING WELL LOCATION (THOMSEN ASSOCIATES, 1984)
 - 10000— TOTAL VOC/SVOC CONCENTRATION ISOPLETH IN ug/L
 - ND VOC AND SVOC PARAMETERS NOT DETECTED
 - 2374 TOTAL VOC AND SVOC CONCENTRATION IN ug/L

- RAILROAD
- FENCE
- GALVANT
- EXISTING CONTOUR ELEVATION (N. AMSL)



Appendix A

RESPONSIVENESS SUMMARY

**Schenectady International, Inc. - 10th Avenue Facility
Proposed Remedial Action Plan
City of Schenectady, Schenectady County
Site No. 447007**

The Proposed Remedial Action Plan (PRAP) for the Schenectady International, Inc. (SII) 10th Avenue Facility, Operable Unit No. 1, was prepared by the New York State Department of Environmental Conservation (NYSDEC) and issued to the local document repository on December 6, 1997. This Plan outlined the preferred remedial measure proposed for the remediation of the contaminated soil and sediment at the SII 10th Avenue Facility. The preferred remedy consists of groundwater and seep collection by means of a subsurface trench and extraction wells, with treatment of contaminated water and light non-aqueous phase liquid (LNAPL) on- or off-site.

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

A public meeting was held on December 16, 1997 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 The City of Schenectady Public Works, the County of Schenectady Department of Planning, and the law firm representing SII.

The public comment period for the PRAP was to have ended on January 6, 1998. In response to comments at the public meeting, NYSDEC extended the comment period. In addition, a second meeting for concerned citizens was held at the Mount Pleasant Neighborhood Association, on January 13. The comment period officially closed on January 20, 1998.

This Responsiveness Summary responds to all questions and comments raised at both the December 16, 1997 and the January 13, 1998 public meetings, and to the written comments received. All questions and comments pertaining to health issues have been addressed with assistance from the New York State Department of Health (NYSDOH).

The following are the comments received with the NYSDEC's responses:

COMMENTS AND QUESTIONS FROM PUBLIC MEETINGS

COMMENT 1: There are 12,000 residents in the area. In addition to residents who live near 10th Avenue, Cowhorn Creek is behind several houses where there may be more interested residents. There is concern that not enough residents have received the notice about the proposed project and the December 16 meeting. It is suggested that the deadline for comments be extended to February 6, 1998 so the Mount Pleasant Neighborhood Association can meet to discuss. Schenectady International, Inc. (SII) has been a good neighbor. Their representatives meet with the Association frequently. It is disappointing that DEC has not contacted the Association earlier about the project. DEC's priorities are distorted. DEC should meet with us at our next meeting to explain your proposal and answer our questions.

RESPONSE 1: The deadline for comments was extended to January 20, 1998. DEC presented an overview of the proposed remedial action at the Mount Pleasant Neighborhood Association's meeting on January 13, 1998 and had a question and answer session which Schenectady International Inc. also participated in.

COMMENT 2: Is Cowhorn Creek contaminated? What is under the creek? Will anything be done to the creek during the project?

RESPONSE 2: The proposed plan is to cut off additional contaminant releases, preventing them from moving to the creek. The creek bed sediments do show low levels of contamination. At this point, no remedial action is required due to a health assessment and fish and wildlife assessment that do not indicate the need to take remedial action.

COMMENT 3: What differences are there between contamination found in groundwater and storm runoff?

RESPONSE 3: Both groundwater and storm water run-off reach Cowhorn Creek and both are being monitored. The groundwater contains higher levels of contaminants, while the levels detected in the storm runoff do not warrant remediation.

COMMENT 4: The project is a "slam dunk"! You're trying to ram the proposal through. Is the proposed plan a sealed and delivered document? Does public concern and information heard at public meetings on projects change anything?

RESPONSE 4: The DEC and SII have been monitoring the contamination and working on interim remedial measures (IRMs) for this site since 1983. We have solicited public comment as required by law, and according to current DEC policy. SII had also previously notified the Association of the work we were doing at this site. As required

by law, public comments will be considered and responded to as part of the ROD. The proposed plan is alterable if public comments bringing to light new information that leads to significant additional knowledge, and use of this knowledge justifies changes in the remedy.

COMMENT 5: Has the City of Schenectady been notified about the proposed project, tonight's meeting and the public comment period? They knew nothing about it when I called them. I gave the fact sheet to the City engineer last week.

RESPONSE 5: It is not known who in the City government received official notification. The City government was notified of the intent to speak at the Mt. Pleasant Neighborhood Assoc. meeting and extend the comment period to January 20, 1998. Mr. Gary McCarthy attended to represent the City at the Mt. Pleasant Neighborhood Assoc. meeting.

COMMENT 6: Is leaching from the old City dump on Cheltingham Avenue going into Cowhorn Creek? Are there other possible polluters (sources of pollution) along the creek? e.g. Niagara Mohawk or the railroad. The pond downstream is polluted and the swamp area upstream was filled in. The whole area is contaminated and should be investigated... and when you do investigate, bring in the neighborhood with your further work. We have information that can help. SII is a good corporate citizen and not the only possible source of contamination over the years. Other polluters have littered and polluted other parts of the creek.

RESPONSE 6: DEC is aware of some of the other sources from the Mount Pleasant neighborhood area and downstream of SII's site. We may not be aware of all contributors, and we encourage residents to contact us of other possible sources. We ask that SII only remediate their portion of the contamination. Investigation of the "pond" is not within the scope of this Proposed Remedial Action Plan (PRAP).

COMMENT 7: If contamination is shown to be present in the creek, will you do a cleanup of the other parts of the creek?

RESPONSE 7: The possibility of remediating the creek would result from a future investigation and the ROD created as part of a future investigation.

COMMENT 8: Why was concern about soil and groundwater contamination under the SII plant not brought up earlier to the community? This is the first we've heard about the contamination.

RESPONSE 8: From SII's account, it appears that they did briefly mention it in April and May of 1996. DEC's policy on this project was to get neighborhood input only after most of the investigation was complete and the findings had been thoroughly evaluated and documented.

COMMENT 9: Are you confident the proposed remedy will work?

RESPONSE 9: Yes. A Feasibility Study, as required, was completed examining the environmental, logistical, and economic constraints posed at this site.

COMMENT 10: How much of the total contamination will be collected and where will it go?

RESPONSE 10: The idea is a concept on paper. It must still go through the final design stage and be constructed. Additional sampling and analysis is scheduled to further characterize the amount of groundwater and contamination which will require containment and treatment. Contaminated groundwater collected will be treated on-site, or off-site, depending on actual volume measured during the final study. It is estimated that 95% of the contamination will be captured and prevented from going off the site.

COMMENT 11: Why not put a containment wall around the plant property?

RESPONSE 11: During the feasibility study portion of our analysis, it was determined to be physically impossible to build a concrete structure that close to the railroad, due to railroad restrictions and confined space.

COMMENT 12: How many vertical wells would be installed?

RESPONSE 12: We would only need to use wells where a trench is not possible. Depending on the volume of water needing to be pumped, wells may be installed to assure efficient containment of the groundwater. The actual number of vertical wells will not be known until the final design is completed.

COMMENT 13: How long would the design period take? When would the system be in the ground?

RESPONSE 13: Three months after approval from the railroad is secured. We expect to be able to install the french drain in late spring or early summer 1998, if railroad approvals are secured quickly.

COMMENT 14: What type and size (dimensions) of french drain would be installed?

RESPONSE 14: Pipe diameters and pump sizes will be calculated for the final design, depending on the volume of water determined during the pump test planned for this winter/spring.

COMMENT 15: Will the "upstream groundwater" affect the remedy? There is a lot of water flowing in that area.

RESPONSE 15: It is desirable to minimize the amount of water that must be treated by limiting the flow of clean water into the contaminated area. All surface water will be kept separate from the groundwater and discharged through existing outfalls in compliance with the NYSDEC's Division of Water discharge limits. The "french drain" will be covered with a layer of clay in attempts to accomplish this separation. All groundwater flowing under the facility will be collected and treated. The clean "upstream groundwater" is not expected to flow at a volume great enough to enter the contaminated area (and possibly overwhelm the collection system). If the measurements to be taken by SII show a possibility of overwhelming the designed collection system, SII will design and install a culvert along the south side of the plant to keep the clean "upstream groundwater" from under the buildings.

COMMENT 16: Will there be additional public participation during/after the design is complete?

RESPONSE 16: Public notices (fact sheets) will be issued to announce the availability of the plans and specifications in the document repositories and the start of construction activities. If interest warrants, or if there are major changes to the remedy in response to public comments or new information, another public meeting or an availability session may be held. Citizens are welcome to contact NYSDEC for information anytime during the design phase.

COMMENT 17: How much noise will the pumps make? SII usually curtails noise activity after 11 p.m. Will that be necessary with the pump system? Neighborhood residents would like to be involved in pump housing & design for concerns about noise.

RESPONSE 17: Noise from the submersible pumps will be similar to a private drinking water wells, i.e., minimal. The pumps will be located 25 feet below ground with little detectable sound.

COMMENT 18: Are there other similar projects nearby?

RESPONSE 18: Curry Road Shopping Center also has a collection and treatment system for groundwater. SII also is pumping and treating groundwater at the Rotterdam Junction site with a system of five vertical wells. Approximately 22,000 gallons a day is treated. A horizontal drain is proposed for this site also. Installation is planned for this spring and will provide us with useful design information for the SII system.

COMMENT 19: Will there be odors from the project?

RESPONSE 19: We do not expect odors from collecting groundwater and treating it.

COMMENT 20: (By the Mount Pleasant Neighborhood Association): The proposed project is basically a good thing but your communication about what you're investigating and what you are proposing needs improvement.

RESPONSE 20: Agreed. DEC responded to the need to better inform the Association of this project though the second public meeting on January 13, 1998. DEC will target the Association in any future public notifications.

COMMENT 21: If SII were working at full output capacity, would this be taking place (would they still be required to perform this remedy)?

RESPONSE 21: Yes, the company would be required to do it.

COMMENT 22: How much migration of contaminants has occurred? Has contamination migrated across the train track?

RESPONSE 22: Contamination across the tracks has not been detected in the wells. Very low levels of contamination have been found in wells downstream of the site. An estimation of the amount of contamination in "pounds per day" has not been done. It is presumed that early on, probably a lot of migration occurred. In more recent years, SII has improved its chemical handling practices, helping to stem off-site contamination by preventing new releases.

COMMENT 23: Where will wells (the pumping wells) be drilled to install pumps?

RESPONSE 23: Wells will be drilled in areas where the trench may not work effectively.

COMMENT 24: Who will pay for the project?

RESPONSE 24: SII.

COMMENT 25: How much truck traffic will be associated with construction and removal of recovered contaminants transported from the site?

RESPONSE 25: Truck traffic associated with construction will occur during a 2-6 week period, approximately two trucks per day. To put this into perspective, there were 8-10 trucks per day during former peak production operation.

COMMENT 26: How much contamination is at the Congress Street site?

RESPONSE 26: The quantity of contamination within the on-site soils is not known exactly. The OU1 remedy will be able to prevent migration of contaminants off-site until OU2 is implemented to quantify and address the soil contamination.

COMMENT 27: If SII wanted to sell the property, could it be sold and used for another business purpose?

RESPONSE 27: Yes, as a "deed restricted" site, after remediating those areas which are feasible to remediate.

COMMENT 28: What is the time-line for the cleanup?

RESPONSE 28: The construction season is anticipated to be 2-6 weeks after all approvals are secured. Operation and maintenance of the system is budgeted for up to 30 years.

COMMENT 29: In a major rain storm, how will the french drain handle a large volume of water?

RESPONSE 29: The size of the drain should be larger than what is needed. Drain depth will vary from 8 to 20 feet in depth. We are designing the system to accommodate groundwater plus a 24 hour 25-yr rain event (which is statistically the worst case).

COMMENT 30: Has DEC checked further downstream to sample the location where the pond used to be?

RESPONSE 30: SII has sampled downstream (especially following the 1970 cresol release). A number of specific places of concern and information would be helpful to know for planning the next phase of this project and other possible future projects. DEC has other sites downstream, such as Niagara Mohawk, which are currently under investigation or remediation.

COMMENT 31: Wouldn't it be sensible to sample upstream?

RESPONSE 31: Sampling may be part of another project not associated with SII's site. DEC would need firm justification to spend public (taxpayer) money to sample areas outside SII property. It would be unfair to require SII to do sampling upstream.

COMMENT 32: Are you (SII) satisfied with the project (Is SII in agreement with the proposed remedy)?

RESPONSE 32: SII responded yes.

COMMENT 33: Why has this project come about now?

RESPONSE 33: In recent years, higher priorities at SII's Rotterdam Junction facilities have received more attention for DEC and company resources. Economic decisions have been made independent of the project. Production increases & efficiencies have helped increase employment in recent years.

COMMENT 34: Why was a french drain chosen instead of a concrete container system?

RESPONSE 34: The french drain system meets the seven selection criteria required of all DEC remediation projects. The objective of this operable unit is to capture and treat the groundwater. Also, the railroad tracks are an obstacle that would hinder the installation of a concrete container system.

COMMENT 35: Will treatment take place on-site or off-site?

RESPONSE 35: This will be determined in part by upcoming pump tests.

COMMENT 36: How many water trucks per day, if water will be treated off-site?

RESPONSE 36: Probably one per day. May depend on the water quality and where it can be treated. The City wastewater treatment plant (WWTP) would be the preferred solution.

COMMENT 37: Will the system collect storm runoff?

RESPONSE 37: The system is intended to collect all surface water contaminated by contact with site materials, especially seep water. Unaffected surface runoff will go to Cowhorn Creek.

COMMENT 38: Do the contaminants leave a particular fingerprint used to track or tie them to a source?

RESPONSE 38: Only if the contaminant is unique to one industry in the area, so it would be detected only if it migrated from that industrial site.

COMMENT 39: The City of Schenectady City Council looks forward to working with DEC and SII on the project. This is an input phase. [Gary McCarthy, President, City Council.]

COMMENTS RECEIVED BY MAIL:

COMMENT 40: The plan does not address remediation of the contamination of Cowhorn Creek caused by the discharges from SII. The remediation must address the surface water and sediment in the creek. In addition, the plan should address the continued treatment of the downstream contaminated storm water and sediment.

RESPONSE 40: The OU1 remedy has been determined to protect human health and the environment, including Cowhorn Creek, from hazardous wastes at SII. In view of the low levels of site-related contamination found in the creek, NYSDEC's Division of Fish and Wildlife and the NYS Department of Health have concurred that the creek itself does not need remedial action at this time. By eliminating discharges of hazardous substances from the site, the remedy will address future water quality in the creek, insofar as SII has been a factor.

COMMENT 41: The plan does not address the contamination under the buildings when SII ceases operation (at the 10th Avenue facility).

RESPONSE 41: Operable Unit #2 (OU2) will address the contamination under the buildings. A second ROD with its own public meeting and comment period will occur as part of OU2. The fact that SII ceased manufacturing operations does not immediately allow access to the contamination, which may involve demolition of the buildings.

COMMENT 42: The Schenectady County aquifer is a designated sole source aquifer. We are the most concerned about any contaminants that may be discharged in the Mohawk River or groundwater recharge area of the aquifer.

RESPONSE 42: Once implemented, the remedial system will contain and treat contaminated groundwater. The potential risk of contaminated groundwater reaching the sole source aquifer should be eliminated so long as groundwater is being contained.

COMMENT 43: SII does not believe that the data support a conclusion that groundwater leaving the Facility property, or conditions in Cowhorn Creek, pose any threat to human health or the environment. As DEC is aware, SII has submitted health risk assessment data demonstrating this and is willing to resubmit this information.

RESPONSE 43: Soils at the Facility property are conveying contamination to the groundwater that exceeds the applicable standards. The dispute regarding what conclusion can currently be drawn from the data does not affect the potential for continuing (or future) impacts for as long as the soils remain contaminated. Health risk assessment data were used as the basis for determining the aforementioned standards. Health risk assessment data generated by SII will only be useful after the soils and groundwater have been cleaned to the applicable standards, or to the maximum extent feasible.

COMMENT 44: It is critical in the implementation of the schedule that DEC keep in mind that the two components of the remedial system (the french drain itself plus the "pumping and treating" component) need to be closely related in time.

RESPONSE 44: The DEC is cooperating to the best of its ability to assure a smooth implementation of both the french drain component and the "pumping and treating" components of the remedial system without unnecessary delays.

COMMENT 45: Under the multi-media order on consent (DEC No. R-0888-90-12), the RI and FS were developed, and this order provides clear, binding and enforceable time frames for submissions, access, stipulated penalties for non-compliance, et cetera. SII is unsure whether this order would continue to govern remedial activities at the Facility, or if DEC intends to negotiate a new order on consent to cover such activities. Please clarify.

RESPONSE 45: Order No. R-0888-90-12 includes implementation as part of the clear, binding and enforceable time frames. Implementation involves the design of the remedial system, its construction, and continued "operation and maintenance" of the remedial system until the DEC approves of the system being shut down. The negotiation of a separate order on consent is not necessary at this time. The Division of Environmental Remediation does not foresee the need to have an order that involves more than "implementation" as that term is described above.

COMMENT 46: SII is concerned that remedial actions at the Facility take place in a coordinated and consistent fashion, and that the hazardous waste management program, at some future date, not seek to impose inconsistent or redundant actions.

RESPONSE 46: It is not the intent of the DEC to impose inconsistent or redundant actions upon SII. The Division of Solid and Hazardous Materials and the Division of Environmental Remediation have a good working relationship that generally avoids such conflicts.

Appendix B

ADMINISTRATIVE RECORD

Schenectady International, Inc. - 10th Avenue Facility
Record Of Decision
City of Schenectady, Schenectady County
Site No. 447007

- "Hydrogeologic Investigation - Congress Street Plant" dated March 1988 by Conestoga-Rovers & Associates.
- Multi-media Pollution Prevention Consent Order dated August 1993.
- "Remedial Investigation Report - Congress Street Plant" dated January 1996 by Conestoga-Rovers & Associates.
- "Feasibility Study Report - Congress Street Plant" dated July 1996 by Conestoga-Rovers & Associates.
- "Addendum 1 - Feasibility Study Report" dated November 1996 by Conestoga-Rovers & Associates.
- "Remedial Action Work Plan - Congress Street Plant" dated April 1997 by Conestoga-Rovers & Associates.
- Proposed Remedial Action Plan dated December 1997.