Remedial Action Plan
OCC—DUREZ SITE 001 & 002

City of North Tonawanda, New York
Site Number 9-32-018

Record of Decision

February 1989

PREPARED BY:

New York State
Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233
THOMAS C. JORLING, *Commissioner*

DIVISION OF HAZARDOUS WASTE REMEDIATION
MICHAEL J. O'TOOLE JR., P.E., *Director*

DECLARATION STATEMENT - RECORD OF DECISION

Site Name and Location:

Occidental Chemical Corporation's Durez Manufacturing Facility

City of North Tonawanda, Niagara County, New York

Site Code: 9-32-018

Classification Code: 2

Statement of Purpose:

This Record of Decision sets forth the selected Remedial Action Plan for the OCC-Durez Site. This Remedial Action Plan was developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Re-authorization Act (SARA) of 1986, and the New York State Environmental Conservation Law (ECL). The selected remedial plan complies to the maximum extent practicable with the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300, of 1985.

Statement of Basis:

This decision is based upon the Administrative Record for the OCC-Durez site and upon public input to the Proposed Remedial Action Plan (PRAP). A copy of the Administrative Record is available at the North Tonawanda Public Library, 505 Meadow Drive, North Tonawanda, New York and at the New York State Department of Environmental Conservation, 50 Wolf Road, Albany, New York. A bibliography of

those documents included as part of the Administrative Record is contained in Appendix C, infra. A Responsiveness Summary that documents the public's expressed concerns, the State's responses to those concerns, and ensuing changes to the Remedial Action Plan has been included as Appendix B, infra.

Description of the Selected Remedies:

The selected remedial actions provide for protection of public health and safety, protection of our environment, technical feasibility and performance, and compliance with statutory requirements. Briefly, the selected remedial actions include:

- Construct a groundwater interceptor trench around the perimeter of the Durez plant to eliminate any further migration of contaminated groundwater from the plant property and to recover contaminated groundwater that has already left plant property. Collected groundwater will be treated by a water treatment system to be constructed on the plant grounds.

- Cover contaminated soils and unvegetated areas of the plant's panhandle with clean soil and revegetate.

- Remove sediments from plant storm and sanitary sewers, route several plant storm sewers through the proposed wastewater treatment system and plug all plant utility line beddings where they cross the Durez plant boundary.

- Remove sediments from contaminated sections of the City's storm sewers, including the entire Pettit Creek Flume.

- Remove contaminated sediments from several sections of City sanitary sewers.

- Interim storage of excavated contaminated soils and sediments in a secure containment facility until a proven, permitted destruction or detoxification technology is available.

- Periodic assessment of technology for destruction or detoxification of stored sediments and soils, with commitment to implement when a technology becomes available.

- Long term monitoring of the effectiveness of the remedial actions.

Selection of remedial actions for the Pettit Creek Outlet Cove is deferred until ongoing investigations and evaluations are completed.

Declaration:

The selected Remedial Action Plan is protective of human health and the environment. The remedies selected will meet the substantive requirements of the Federal and State laws, regulations and standards that are applicable or relevant and appropriate to the remedial action. The remedy will satisfy to the maximum extent practicable the statutory preference for remedies that employ treatment that reduces toxicity, mobility or volume as a principal element. This statutory

preference will be met by eliminating the mobility of contaminants with a direct pathway of migration to the Niagara River, by treatment of contaminated groundwater to reduce toxicity, and by ultimately requiring permanent destruction or detoxification of contaminated sediments and soils to be removed.

Certain areas of the Durez facility contained within the proposed groundwater interceptor trench will continue to contain buried wastes and spilled chemicals after implementation of the Remedial Plan. Because the selected remedies result in hazardous substances remaining within the Durez plant boundaries, detailed long term monitoring is required. Additionally, to ensure that the remedy continues to provide adequate protection of human health and the environment, a review of the effectiveness of the remedies will be conducted every five (5) years, or at any time that monitoring data indicates a flaw in the remedies.

2/25/89
Date

Edward O. Sullivan
Deputy Commissioner
Office of Environmental Remediation
New York State Department of
Environmental Conservation

RECORD OF DECISION
OCC - DUREZ REMEDIAL ACTION PLAN

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I. SITE LOCATION AND DESCRIPTION

The Occidental Chemical Corporation's (OCC) Durez Division facility is located on Walck Road in the City of North Tonawanda, Niagara County, New York. Figures 1 and 2, infra, show the location of the OCC Durez facility. The Durez facility is an active chemicals manufacturing facility located in a mixed residential, commercial and industrial area of North Tonawanda.

To the southwest, west and northwest of the plant lie moderately dense residential areas with commercial usage interspersed. Numerous residences and business abut the Durez plant in this area. North and northeast of the plant are vacant areas. To the east lies two railroad corridors, several industrial complexes, and public recreational ball fields. South of the Durez plant lies offices of Occidental Chemical Corporation as well as additional residences and business buildings.

A major portion of the Durez remedial site includes a large City storm sewer system called the Pettit Creek Flume. This storm sewer system consists of a large concrete box culvert with numerous laterals. This system flows for more than a mile through the center of North Tonawanda and discharges to a small cove off the Little Niagara known as the Pettit Creek Outlet Cove, a.k.a. Inlet. The location of the Pettit Creek Flume (PCF) and its outlet cove are shown on Figure 2.

II. SITE HISTORY

The Occidental Chemical Corporation's (OCC) Durez Manufacturing Facility has been in operation since 1926. The Durez facility has been predominately involved in the production of plastics formulations for industry. One of the processes used at Durez and implicated as the major producer of wastes associated with Durez, involved the production of phenol by the chlorination and subsequent hydrolysis of benzene. This process known as the Raschig process, produced numerous chlorinated benzenes, chlorinated phenols and isomers of dioxin as reaction by-products. These and other compounds have been found contaminating subsurface soils and groundwater at the plant, as well as sediments in the City's storm and sanitary sewers and in the Pettit Creek Outlet Cove. The Raschig process was discontinued and dismantled in 1971.

From 1979 through 1986 extensive Remedial Investigations were carried out by OCC under State oversight to determine the type and extent of contamination. These investigations and their results were the subject of extensive State and public scrutiny. The chronology of remedial investigation and reports are summarized in Table 1, infra. All of the reports listed in Table 1 are included as part of the Administrative Record for the Durez project.

III. PROBLEM IDENTIFICATION

A. Definition of Site and Operable Units

A general conclusion from the remedial investigations was that a large portion of the Durez facility contains groundwater and soils contaminated by past plant operations, disposal activities and spills. It was also determined that Durez chemistry has migrated from the plant to City storm sewers and, to a much lesser degree, to City sanitary sewers. Once within the City's storm sewer, Durez chemistry moved downstream to the eventual outlet at the Pettit Creek Outlet Cove. The result is extensive groundwater contamination at the plant and high levels of contamination in sediments contained within the City's storm sewers and the outlet cove. The identified pathways of migration from the Durez facility include plant storm and sanitary sewers, plant utility line beddings and, most importantly, the movement of contaminated groundwater from the plant and into City storm sewers that run along Walck Road and Wilson Avenue.

In order to address the nature of chemical migration and the extent of contamination, the Durez remedial site was identified as containing the Durez plant, the contaminated City sewers downstream from Durez, including the entire Pettit Creek Flume, and the Pettit Creek Outlet Cove. Also included within the definition of the Durez remedial site are those areas adjacent to the Durez plant where contaminated groundwater was found to have migrated outside of the Durez plant boundaries.

As the Durez remedial program developed, three (3) separate operable units were developed. These operable units, listed in an upstream to downstream order, are:

1. Plant Property - That area of the Durez facility located north of Walck Road. This operable unit also includes the areas adjacent to the plant that contains groundwater contaminated by Durez chemistry. Within the plant boundaries are fourteen (14) suspected inactive waste sites containing a variety of Durez process wastes, off-spec products and construction and demolition type debris.

2. City Sewers - The portions of North Tonawanda's storm and sanitary sewers that were found to be contaminated by Durez chemistry, including the entire Pettit Creek Flume.

3. Pettit Creek Outlet Cove - A small cove off the Little Niagara River where the Pettit Creek Flume discharges.

The Durez site was divided into these operable units because they constitute separate, but not completely independent, units requiring substantially different remedial efforts.

B. **Problem Identification - Plant Property**

1. Plant Property Groundwater Contamination - Geology of the Durez Plant Property is basically comprised of from 5 to 12 feet of unconsolidated, relatively permeable overburden soils underlaid by a tight layer of clay 16

to 23 feet thick. The clay layer separates the overlying soil from glacial till and bedrock layers below. All available subsurface information indicates that the clay is a continuous and effective barrier that separates groundwater in the overburden from the bedrock aquifer. Figure 3 depicts the general geologic stratigraphy at the Durez plant property.

Groundwater in the overburden soil was studied extensively by periodically measuring water levels and sampling over 100 wells located both on and off the Durez plant. As a result of these investigations it was determined that the overburden groundwater has been seriously contaminated in a large portion of the Durez plant. Two (2) locations immediately adjacent to and outside of the plant boundaries were also found to have low level contamination in the overburden groundwater. Tables 2 and 3 present typical groundwater contamination encountered both on and off of the Durez plant. The documents included as part of the Administrative Record provide full descriptions of all groundwater analyses performed.

Groundwater in the bedrock aquifer was also measured and sampled in a series of bedrock wells. These analyses showed that groundwater in the bedrock aquifer remains uncontaminated by Durez chemistry at any level of concern. However, the existing open bedrock wells are considered to be potential pathways for future contamination of the bedrock aquifer.

2. Plant Property Soil Contamination and Waste Disposal Areas - Because of the ubiquitous nature of past plant disposal activities and the widespread presence of groundwater containing contaminants of low solubility and high soil affinity, it is assumed that a large portion of the Durez plant would

contain contaminated subsurface soils. Because of this, remedial investigations did not include a comprehensive program to identify the extent of contaminated subsurface soils within the plant boundaries. Instead, investigations concentrated on identifying potential pathways for human exposure to contaminated soils and wastes previously disposed of on plant property.

Surface soils both on and off of the Durez plant were the subject of extensive sampling and analyses for chemical contamination. As a result of these analyses it was determined that there are several locations within the Plant Property operable unit where soil contamination may present potential pathways for human exposure. These locations include numerous patches of bare soil in the northeast section of the Durez plant, known as the panhandle, and in a ditch that runs parallel to the tracks within the panhandle area. Currently, the panhandle area, but not the railroad ditch, is surrounded by a 7 foot high security fence to limit access and potential human exposure. Typical soil chemistry values are presented in Table 4.

Contaminated soils were found at only one off plant location, on Lee Avenue adjacent to the panhandle area. This location has since been successfully remediated by removing the contaminated soil, replacing this soil with clean imported soil, and revegetating. Documentation of this remediation is included as part of the Administrative Record.

3. Plant Property Sewers - Remedial Investigations included analyses to determine the extent of contamination in the storm and sanitary sewers. The City's storm sewer system downstream from the Durez facility was found to

have high levels of Durez chemistry. By comparison, the City's sanitary system downstream from the plant was found to have a much lower level of contamination. It was determined that contaminated overburden groundwater from the plant site has been infiltrating the storm sewer system and, to a much lesser degree, the sanitary sewer systems. The conclusion from these investigations is that the plant's storm and sanitary sewers, and their bedding material, are pathways that convey contaminated groundwater to off plant locations. Additionally, the plant storm sewer system has apparently also acted to convey material from accidental spills to the City's storm sewer system.

C. **Problem Identification - City Sewers**

Storm and sanitary sewers located off of the Durez plant property were the subject of several rounds of remedial investigations. Details of these investigations, methods and results are described in the Durez Remedial Alternatives Assessment (RAA) and other project documents included as part of the Durez Administrative Record.

1. City's Storm Sewers - To simplify discussions, the City's storm sewers have been separated into two (2) categories; the Pettit Creek Flume (PCF) and all other affected storm sewers. The PCF is a large concrete boxed structure that collects flow from numerous laterals and discharges into the Little Niagara River at a small cove called the Pettit Creek Outlet Cove (See Figure 2). The PCF is the major storm sewer conveyance for the area of North Tonawanda in which Durez is located. The other storm sewers considered here

are those smaller laterals and feeder systems that discharge into the PCF in the area studied.

Investigations revealed that several portions of the City's storm sewer system contain high levels of numerous organic chemical contaminants in sewer sediments. Analysis of sediments contained within the PCF showed total concentrations of organic compounds as high as 7.6%. This is the highest level of contamination encountered during the Durez investigation. Also found in portions of the PCF sediments were levels of dioxin ranging from non-detectable to 6,800 parts per billion (ppb) of total Tetrachlorodibenzo-para-dioxin (TCDD) and 110 ppb of the 2,3,7,8 isomer of TCDD. Other portions of the City's storm sewer system were also found to be contaminated by Durez chemistry, most notably Walck Road, adjacent to the plant, and Wilson Avenue. Contaminant levels for portions of the City's storm sewer are presented in Table 5. The chemistry contained in the City storm sewer system is considered to have a direct path of migration to the Niagara River.

2. City's Sanitary Sewers - Sediments from portions of the City's sanitary system downstream from Durez were tested for Durez chemistry. The results of these investigations are illustrated in Table 6. The levels of chemistry encountered in the sanitary system were generally much lower than those found in the City's storm sewers. Because North Tonawanda's Wastewater Treatment Plant, with activated carbon tertiary treatment, is located downstream from these contaminants, the chemistry contained in the sanitary sewer sediments is not considered to have a direct pathway to the Niagara River.

D. Problem Identification - Pettit Creek Outlet Cove

Sediments in the Pettit Creek Outlet Cove were found to be contaminated with numerous organic chemicals, including dioxins. Total concentrations of the analyzed organic compounds in the cove sediments ranged from 0.003 to 2.3 percent. Dioxins were also found in cove sediments, with total TCDD levels as high as 680 ppb and with 2,3,7,8 TCDD as high as 15 ppb. These sediments are in direct contact with waters of the Little Niagara River.

In addition to these contaminant problems, the raw water intake for the City of Lockport's water system passes underneath the contaminated sediments in the cove (See Figures 2 and 5). Although no Durez chemistry has been detected in Lockport's water, the potential for water supply contamination is a cause for serious concern by the State and County Health Departments and the City of Lockport. Investigations of the PCF Outlet Cove geology and chemical contamination are on-going in an effort to fully describe potential impacts to the City waterline and to further refine the estimate of the volume of contaminated material contained in the cove.

IV. ENFORCEMENT STATUS

Remediation of the OCC Durez site is proceeding under lawsuit brought by the State against the Occidental Chemical Corporation. This lawsuit was filed in May of 1983 and seeks relief based on the New York State Environmental Conservation Law (ECL), the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and on the common law of public nuisance.

In January of 1987 the City of North Tonawanda became party to the lawsuit when the City was granted intervenor status by the Court. This status provides for City input into development of actions taken pursuant to the lawsuit.

Implementation of the Remedial Action Plan discussed herein will be made pursuant to a Partial Consent Judgement. This Partial Consent Judgement will make it possible to expedite remediation of the Plant Property and City Sewers operable units while additional investigations at the Pettit Creek Outlet Cove proceed. A final consent judgement will be prepared at a later date to address remediation of the Pettit Creek Outlet Cove and to address any other issues that are not discussed in the Partial Consent Judgement.

V. GOALS AND OBJECTIVES FOR REMEDIATION

A. Overall Goals

The overall goal of the Durez Remedial Action Plan is to protect human health and the environment in and around the Durez facility, the City of North Tonawanda's sewers and the Pettit Creek Flume and its outlet cove. The specific objectives of remedial efforts for each operable unit are described below.

B. Plant Property

A primary objective for remediating the Plant Property operable unit is to prevent any further migration of contaminants from the Durez facility and to reduce or eliminate all identified potential pathways for human exposures to contaminated groundwater or soils contained within the Plant Property. An additional objective is to remove contaminated overburden groundwater from the Durez plant and from areas adjacent to the plant that contain contaminated groundwater. Remedial objectives also include reducing the toxicity, mobility or volume of contaminants present in groundwater to be collected by implementation of the Remedial Action Plan.

C. City Sewers

The primary objective for remediating the City's Sewers operable unit is to reduce or eliminate potential public and environmental exposure to the contaminated sediments found within the sewers. This objective includes reducing or eliminating future transport of contaminants to the Niagara River. An

additional objective is to permanently destroy or detoxify the contaminated sediments contained within the sewers.

D. Pettit Creek Outlet Cove

The primary objective for remediating the Pettit Creek Outlet Cove is to reduce or eliminate potential or demonstrated public and environmental exposures to contaminants found in and around the cove. Remedial objectives for the outlet cove also includes reducing or eliminating any potential for further migration of contaminants into the Niagara River. An additional objective is to permanently destroy or detoxify contaminated sediments found within the cove.

The remediation of the Pettit Creek Outlet Cove is not addressed by this Record of Decision. The goals and objectives for remediation of this operable unit will be fully developed following completion of ongoing investigations and evaluations at the cove. Selection of remedial actions will be documented in a separate Record of Decision following further public review and comment.

VI. SUMMARY, EVALUATION AND SELECTION OF ALTERNATIVES

This section outlines the alternatives considered, the evaluation of these alternatives, and the final selection of actions to be included in the Remedial Action Plan.

A. Evaluation Process

A number of alternatives were evaluated for remediation of problems identified for each operable unit. The criteria used to evaluate these remedial alternatives are as follows:

a) Overall Protection of Human Health and the Environment

b) Reduction of Toxicity, Mobility and Volume of Contaminants

c) Long Term Effectiveness and Permanence

d) Short Term and Potential Impacts during Remediation

e) Implementation and Technical Reliability

f) Compliance with Statutory Requirements

g) Community Acceptance

The evaluation criteria were applied to each of the alternatives in a comparative fashion. Generally, an alternative was discarded when found to be technically inadequate to meet an initial screening against criteria a), c) and e), above. Therefore, not all alternatives were subject to full evaluation. The selected remedial actions are those alternatives that passed initial screening and that provide for the best overall balance among all of the evaluation criteria. Criteria g), Community Acceptance, was applied to the remedial alternatives only

after public review and comment on the identified preferred remedial actions. See Section VII and Appendix B, infra, for discussion of public participation in development of the Durez Remedial Action Plan.

B. Plant Property Remediation

1. Plant-Property Groundwater - A number of possible alternatives for remediation of identified plant property groundwater problems were developed and evaluated. The primary remedial objective for addressing contaminated overburden groundwater is to prevent any further migration of groundwater from the plant property and to reduce the toxicity of any contaminated groundwater that is collected. The alternatives developed to meet this objective and the initial evaluations of those alternatives are summarized in Table 7. A more detailed discussion of these alternatives is presented in the Remedial Alternatives Assessment (Feasibility Study) prepared for the Durez remedial program and included within the Durez Administrative Record.

The selected action for remediation of the contaminated overburden groundwater is to construct a subsurface interceptor drain around the perimeter of the Durez plant property (See Figures 6 and 7). Groundwater will be collected by the proposed interceptor trench and will be pumped to an on-site treatment facility to remove contaminants. A long term monitoring program will be a major part of this proposed remedial action. One section of the plant perimeter, an approximately 200 foot section along Walck Road, may be controlled by the construction of a low permeability barrier wall. A barrier wall for this section is considered because of severe space and structural limitations created by the proximity of a building foundation and

several large utilities. In addition to the trench and barrier wall, beddings of all underground plant utilities will be plugged where they cross the groundwater interceptor trench. Assessment of the evaluation criteria for this remedial action is as follows:

a) This alternative provides a high level of protection of public health and the environment by halting the migration of contaminants and by removing contaminated groundwater from both on and off of the Durez plant.

b) This alternative provides for permanent reduction in the toxicity, mobility and volume of contaminants found in overburden groundwater.

c) This alternative is considered to be an effective long term solution to the identified problems.

d) During construction of the preferred alternative, soils containing contaminated groundwater would be exposed during excavation. As such, fugitive air emissions, human exposures and runoff from contaminated soils are possible. Strict Health and Safety protocols, engineering controls, and project oversight will be used to control these problems.

e) This alternative is easily implemented using conventional construction methods and is technically the most reliable alternative considered.

f) This alternative can be readily designed to comply with all statutory requirements.

g) This alternative is considered to be well accepted by the community. No objections to this alternative or any preferences for other alternatives were received during public review and input.

The preferred remedial action for treatment of collected groundwater is treatment by activated carbon adsorption. The treatment design, construction, operation, monitoring and discharge limits will be pursuant to the requirements of a State Pollution Discharge Elimination System (SPDES) permit. This alternative is the only identified method responsive to the goals for remediation. Assessment of the evaluation criteria for this remedial approach is as follows:

a) Provides a high level of protection of public health and the environment by permanently removing contaminants that may have otherwise come in contact with the public and the environment.

b) Provides for permanent reductions in the toxicity, mobility and volume of contaminants found in overburden groundwater.

c) Provides an effective, long term solution for the treatment of collected contaminated groundwater.

d) Potential and short term impacts associated with construction of the proposed treatment plant are minimal in nature and will be properly addressed during construction.

e) This is a technically reliable and proven technology with "off the shelf" implementation.

f) Can be designed in compliance with all statutory requirements, including State Pollutant Discharge Elimination System (SPDES) permit requirements.

g) This alternative is considered to be well accepted by the community. No objections to this alternative or any preferences for other alternatives were received during public review and input.

Two (2) basic alternatives were considered for addressing identified problems with the bedrock aquifer. These alternatives and their evaluations are as follows:

- No Action - The no action alternative was rejected by initial screening against criterion a). This alternative is not considered to be adequately protective of human health and the environment, including the potential future use of bedrock waters, because it does not address identified potential pathways for migration of contaminants into the bedrock aquifer.

- Well Sealing - Passed initial screening against criteria a), c) and e). This alternative does address identified potential pathways for migration of contaminants into the bedrock aquifer and is technically feasible.

The selected remedial action for protection of the bedrock aquifer consists of sealing all bedrock wells. This alternative is the only identified alternative responsive to the goals for remediation. Assessment of the evaluation criteria for this remedial approach is as follows:

a) Provides for the maximum protection of public health and the environment by eliminating potential pathways for contamination of the bedrock aquifer.

b) Provides for permanent reduction in the potential for migration of contaminated overburden groundwater into the bedrock aquifer.

c) Will provide effective long term protection of the bedrock aquifer.

d) Potential and short term impacts associated with sealing of the bedrock wells are minimal in nature and will be addressed by provisions of the remedial Health and Safety Plan.

e) This technology is reliable and easily implemented.

f) This action can be implemented in compliance with all statutory requirements.

2. Plant Property Soil Contamination and Waste Disposal Areas

From early in the development of the Durez remedial program it was clear that the extent of subsurface soil contamination, past plant disposal activities, and the nature of the Durez physical facility precluded removal or in-situ

treatment of contaminated subsurface material. Any such treatment would be very extensive and would probably result in the physical removal of large portions of the Durez physical facility. Disposal or treatment of this volume of contaminated material is not available or feasible. Because of the viability of groundwater containment and treatment and because of the limited nature of potential exposure pathways, wholesale subsurface soil remediation and removal of identified waste disposal areas was deemed unnecessary to meet the stated goals and objectives of the remedial program. The Partial Consent Judgement will require OCC to perform continuing assessments of potential problems that may result from any contaminants that may remain on the Durez facility.

To address identified areas of surface soil contamination several alternatives were identified. These alternatives and their evaluation are as follows:

- No Action - Rejected by initial screening against criterion a). This alternative is not considered to be adequately protective of human health because it does not address identified potential pathways for human exposures.

- Cover with Clean Soil and Vegetate - Passed initial screening. This alternative does address identified potential pathways for human exposures and is technically feasible.

- o Remove Contaminated Surface Soils, Replace with Clean Imported Soil and Vegetate - Passed initial screening. This alternative does address identified pathways for human exposure and is technically feasible.

The selected action for remediation of contaminated surface soils on the Durez plant is to cover all contaminated areas with clean imported soil and revegetate. For the railroad ditch location the preferred remedial action is to install a culvert in the ditch line, cover with clean imported soil and revegetate. This remedial approach includes continued enclosure of the panhandle area by the existing security fencing in order to limit access. Assessment of the evaluation criteria for this remedial approach is as follow:

a) Provides for improved public health and environmental protection by removing a potential source of human exposure and contaminant migration.

b) This alternative provides for a reduction in the potential mobility of identified contaminants.

c) It can be implemented quickly and provides for an effective, long term solution to the identified problem.

d) Because the selected alternative is expected to involve very little disturbance of contaminated surface soils, the potential for fugitive air emissions and human exposures during construction is low. Adherence to the remedial Health and Safety plan will reduce any potential short term problems associated with this action.

e) It can be easily implemented and is technologically reliable.

f) Can be implemented in compliance with statutory requirements.

g) This alternative is considered to be acceptable to the public.

3. Plant Property Sewers

A number of possible alternatives for remediation of plant property storm and sanitary sewers were developed and evaluated. Alternatives considered for the remediation of problems associated with the plant's storm sewer system are as follows:

- No Action - Rejected by initial screening against criterion a). This alternative is not considered to be protective of human health and the environment because it does not address identified pathways for migration of contaminants and potential human exposures.

- Disconnect Sewers and Route Flows to Groundwater Treatment Facility Passed initial screening. This alternative would reduce or eliminate migration of contaminants from plant storm sewers and would reduce the toxicity and volume of contaminants in intercepted flows.

- Cleaning - Passed initial screening only for those sections of plant storm sewers that would not be disconnected and routed for treatment by the on-site treatment systems described in Section VI, B.1. infra.

- o Sealing Pipes and Manholes - Passed initial screening for those sections of plant storm sewers found to intercept and convey contaminated groundwater off-site. Sealing would eliminate infiltration of contaminated groundwater into the sewers. However, for sections of plant sewers found to intercept and convey groundwater, this alternative is incompatible with the alternative of disconnecting sewers and routing flows for treatment.

The selected approach for remediation of the plant storm sewers is to disconnect four (4) of the fourteen (14) storm sewer outfalls and route their flows through the proposed groundwater treatment facility discussed in Section VI, B.1., infra. These four (4) outfalls were identified as direct paths for migration of contaminants from the plant property. These outfalls are in areas of groundwater contamination and have elevations below the groundwater table, thus making them conduits for migration. It should be noted that the proposed peripheral groundwater interceptor trench will intercept flows from the bedding of all plant storm sewers where they cross cross the Durez plant boundary. The selected approach also includes cleaning the plant storm sewer lines to remove sediments. Assessment of evaluation criteria for this remedial approach is as follows:

a) Provides a high level of protection of public health and the environment by reducing or eliminating discharges of chemical contaminants into the City's storm sewer system and, ultimately, into the Niagara River.

b) Permanently reduces the, mobility and volume of contaminants found within storm sewer flows.

c) Will provide an effective, permanent solution.

d) The selected alternative will require some excavation during construction. As such, potential short term impacts include fugitive air emissions, human exposures and contaminant runoffs. Strict Health and Safety protocols, engineering controls, and strict project oversight will be used to control these problems.

e) The action is technologically reliable and easily implemented.

f) The action can be implemented in compliance with statutory requirements.

g) This is considered to be well accepted by the community.

Two (2) alternatives for addressing the plant property sanitary sewers were developed as part of the Durez Feasibility Study. A third alternative was added in response to public review of the Proposed Remedial Action Plan (PRAP). These alternatives are:

- No Action - Passed initial screening. This alternative relied upon the combined effect of the proposed groundwater interceptor drain and the proposal to seal all utility beddings where they cross the Durez plant boundary.

- Disconnect - Passed initial screening. This alternative addresses only those plant sanitary sewers no longer in use.

- o Cleaning - This alternative was added pursuant to public concern over possible recontamination of City sanitary sewers by sediments found within plant sanitary sewers. This alternative passes the initial screening criteria.

The selected remedial action for the plant's sanitary sewers is to disconnect and plug all existing plant sanitary lines that are no longer in use. For the remaining plant sanitary sewers, cleaning is the selected alternative to address concern with possible recontamination of City sanitary sewers by sediments contained within plant sewers. No other actions are deemed necessary to address plant sanitary sewers. It should be noted that the proposed peripheral groundwater interceptor drain will act to draw down the overburden groundwater table at the plant site as well as to intercept groundwater flow from bedding of the plant's sanitary sewers. Both of these actions will substantially reduce or eliminate the amount of contaminated groundwater migrating from the plant property. The overall effect of the project will be to reduce or eliminate the amount of chemical contaminants that reach the City's sanitary system. Assessment of the evaluation criteria for this remedial approach is as follows:

a) Provides a high level of public health and environmental protection.

b) The action is consistent with other identified preferred alternatives that permanently reduce the toxicity, mobility and volume of contaminants that may be present within the plant's sanitary sewer.

c) Works with other preferred alternatives to provide an effective, permanent, long term solution to the problem of chemical migration.

d) Potential and short term impacts associated with remedial construction for this alternative are minimal and will be addressed as necessary by the Remedial Health and Safety Plan.

e) It is easily implemented and technologically reliable.

f) It can be implemented in compliance with all statutory requirements.

g) This alternative addresses the public's expressed concerns and is considered to be acceptable to the community.

C. City Sewers Remediation

1. City Storm Sewers

For remediation of problems identified for the City's storm sewers three (3) basic alternatives were developed and evaluated:

- No Action - Rejected by initial screening. This alternative is not protective of human health or the environment.

- Sediment Storage In Place with Access Control and Monitoring - Rejected by initial screening. This alternative is not adequately protective of human health or the environment.

o Sediment Removal - Passed initial screening. With proper controls on removal operations, this alternative would be fully protective of human health and the environment.

The selected action for remediation of the City's storm sewers is to clean those portions which contain chemically contaminated sediments. Figure 8 shows the sections of City storm sewers to be cleaned. The sections to be cleaned include:

- The entire Pettit Creek Flume (PCF) from its upstream northern end on Nash Road between Meadow Drive and Lee Avenue, to its downstream end at the Pettit Creek Outlet Cove.

- Nash Road from Meadow Drive south to the PCF.

- Wilson Avenue from the Durez plant west to Nash Road.

- Walck Road from Eggert Drive east to Nash Road.

- Walck Road from the Penn Central RR west to Nash Road.

- Nash Road from Duane Drive north to the PCF.

- Numerous small connections to the PCF.

Assessment of the evaluation criteria for this preferred remedial action is as follows:

a) Provides a high level of protection of public health and safety by permanently reducing the potential for human exposure to chemicals contained in or migrating from the storm sewers. Provides for a greatly improved level of environmental protection by permanently removing chemical contaminants that have a direct and demonstrated path of migration to the Niagara River.

b) This alternative permanently reduces the mobility and volume of sediments contained in the City storm sewers.

c) In the long term this alternative would be an effective and permanent solution to the problem of contaminated sediments in the City storm sewers.

d) Remedial construction for this part of the proposed remedial plan involves a high potential for short term adverse impacts. Addressing these potential impacts is a major concern of the remedial program. Strict adherence to the Remedial Health and Safety Plan and it's community air monitoring program, stringent engineering controls, detailed requirements for sediment transport and thorough project oversight will control these problems.

e) This action can be implemented using technologically reliable construction methods.

f) Can be implemented in compliance with statutory requirements.

g) The need for sediment removal is considered acceptable to the community. However, the public has expressed serious concerns with possible spills, public exposures and other health effects that may occur during removal actions. These concerns will be addressed by final designs and remedial Health and Safety requirements.

2. City Sanitary Sewers

Two (2) alternatives for addressing contaminants in the City sanitary sewers were developed and evaluated:

- No Action with Cleaning by Routine City Maintenance - Rejected by initial screening. This alternative was not considered adequately protective of workers involved with routine maintenance of the City's sanitary sewer system.

- Sewer Sediment Removal - Passed initial screening.

The selected remedial action for addressing contamination in the City's sanitary sewer system is to remove sediments from contaminated sections of the sewers. The sections to be cleaned have contaminant levels that are low relative to the contamination present in the storm sewer systems, but that are consistently higher than the surrounding sanitary system tested during remedial investigations. These sections include:

- Wilson Avenue from the Durez plant west to Nash Road.

- Nash Road from Wilson Avenue south to Walck Road.

- Walck Road from the Penn Central Railroad west to Nash Road.

- Walck Road from Nash Road west to Jessela Drive.

The Proposed Remedial Action Plan indicated that this alternative would be implemented by OCC and the City working jointly to develop a cleaning program. However, because of expressed community concern, OCC has committed to include cleaning of City sanitary sewers as part of the remedial program. This will permit cleaning to be performed by qualified contractors under the requirements of the Remedial Health and Safety Plan.

D. Pettit Creek Outlet Cove Remediation

The selection of actions for remediation of the Pettit Creek Outlet Cove is deferred until completion of ongoing investigations and evaluations.

E. Disposition of Remedial Wastes

During implementation of the remedial actions outlined in this document a quantity of contaminated sediments and soil will be removed. Much of this material contains high concentrations of organic chemical contaminants as well as

some dioxin. As such, the safe and secure disposition of this material is of utmost importance. Disposition of this material is technically and administratively complex and has been the subject of much discussion.

OCC has made an extensive identification and evaluation of possible alternatives for the disposition of contaminated sediments and soils. These options fall under six (6) general approaches:

1. Off-Site Destruction Treatment
2. On-Site Destruction Treatment
3. Off-Site Land Disposal
4. Interim Storage Adjacent to the Pettit Creek Outlet
5. Interim Storage On-Site at the Durez facility
6. Interim Storage and Destruction at OCC's Main Plant on Buffalo Avenue in Niagara Falls

Numerous alternatives for options 1-5 were identified and evaluated in the Durez site Remedial Alternatives Assessment. The sixth option, off-site interim storage and destruction at OCC's Main Plant, was originally presented by OCC in February, 1988, as part of a proposal for treating contaminated material from a number of hazardous waste sites in Western New York for which OCC is an identified Potentially Responsible Party (PRP). This proposal involves interim storage in a secure containment facility to be built at OCC's Main Plant in Niagara Falls. Storage would continue while OCC pursues development and permitting of a solid hazardous waste incinerator, at the Main Plant, to be used for the ultimate destruction of contaminated soils and sediments.

Destruction treatment of hazardous wastes is currently being performed at a number of facilities around the country. However, to date there are no commercially available facilities with an EPA permit for treatment of the Durez type wastes. OCC's Main Plant proposal is a step toward developing the much needed destruction capability.

Land burial at a secure, permitted hazardous waste management facility is not a viable option. The EPA and the New York State Department of Environmental Conservation (NYSDEC) have prohibitions on land disposal of certain, specifically defined hazardous wastes. With these bans, there is no facility in New York State or within the United States that is permitted to accept the Durez wastes for land disposal.

An interim storage facility would contain contaminated sediments and soils to be removed from the Pettit Creek Outlet Cove, the Pettit Creek Flume and from other storm sewers. Interim storage is considered to be a much safer and secure option than leaving the contaminated material within the storm sewers or in the Outlet Cove where human exposures are possible and environmental exposure is ongoing. There are three (3) possible interim storage locations identified for the Durez materials:

- Interim Storage Adjacent to the Pettit Creek Outlet Cove - An interim storage cell could be constructed adjacent to the Outlet Cove. This cell would provide for better contaminant control than the "no action" alternative. However, there are several disadvantages to the outlet location. This location is near several businesses, developing land to both the north and south, the Little Niagara River and all of the human activities associated

with these places. Security at this location would be expected to be a problem. Additionally, the outlet location is geologically unsuited for a storage facility as it overlies layers of open graded soils in hydraulic connection with the river. For these reasons, the cove location was rejected.

- Interim Storage at Durez - Storage at the Durez plant offers several key advantages. This location overlies an impermeable clay layer that acts as an effective natural barrier to the downward movement of contaminated groundwater. The plant location is within the proposed groundwater interceptor trench, thus providing an additional backup to the liner and leachate collection systems that would be required components of the interim storage facility. This location would also have the advantages of proximity to the proposed activated carbon treatment system and enclosure within the security system of the Durez facility. With all of these protective systems in place, on-site interim storage at Durez will provide a high degree of protection for public health and the environment.

  Because the Durez interim facility would be constructed on-site during a remedial program developed under Federal statutes, a Resources Conservation and Recovery Act (RCRA) Part B hazardous waste management facility permit would not be required. However, all substantive technical requirements for such a permit would be met.

- Interim Storage at OCC's Main Plant - Storage at OCC's Main Plant on Buffalo Avenue in Niagara Falls has many of the same advantages as storage on-site at Durez. The Main Plant storage location overlies a clay layer and is within

the security system of the Main Plant. Additionally, the Main Plant location is in a heavy industrial area and is farther from residential and recreational areas than is the Durez location. With OCC's proposal for a Main Plant solids incinerator, the Main Plant location may also eliminate the extra risks associated with additional material handling at the time that destruction technology is implemented. With all of these factors, interim storage at the Main Plant would provide a high degree of protection of public health and safety and the environment.

A RCRA Part B permit for constructing a hazardous waste management facility would be required for the interim storage facility at the Main Plant. This permitting procedure is a complex technical and legal process and has the potential for causing a delay to implementation of the Durez remedial program.

The selected remedial alternative for disposition of the Durez remedial wastes is to subject these materials to destruction or other treatment to render the contaminants harmless. However, until a destruction or detoxification treatment is available, the only responsive remedial alternative is to provide secure interim storage. This two (2) phase approach, storage followed by destruction or other treatment, is the only viable approach for disposition of the Durez wastes at this time.

A final location for the proposed interim storage facility has not been elected. Both the Durez location and the Main Plant location are considered to e viable locations. OCC has committed to pursuing a RCRA Part B permit for the roposed Main Plant storage facility. However, there is no guarantee that the

Main Plant location will be permitted and available when the Durez clean-up begins. For this reason, the remedial program keeps both options open until a decision point is reached prior to remedial construction.

Regardless of interim storage location, OCC will be required to make evaluations of existing destruction or detoxification technologies every four (4) years. If OCC's proposed Main Plant solid hazardous waste incinerator becomes permitted and operational, the Durez wastes would be destroyed at that facility. If another facility becomes available elsewhere, OCC will be required to take the Durez wastes there for treatment.

VII. SUMMARY OF THE STATES DECISION

A. Public Participation

Throughout development of the OCC Durez remedial program the State has kept the public and local elected officials informed and has encouraged public review and comment. All investigation results and feasibility studies have been made available to the public in a public document depository at the North Tonawanda Public Library. These and other documents are part of the Durez Administrative Record, also available at the North Tonawanda Library.

Throughout development of the Durez remedial program numerous meetings have been held with City of North Tonawanda officials to discuss results of investigations and various elements of the remedial program. Additionally, the City is an intervenor party to the Durez lawsuit and as such, has access to represent the interests of the local community at all Durez negotiation meetings. Several meetings have also been held with City of Lockport officials in order to keep them informed and to meet the City's needs regarding the Lockport Waterline that passes underneath the Pettit Creek Outlet Cove.

In October of 1986 a public meeting and public availability session were held to present Occidental Chemical Corporation's draft Feasibility Study, entitled "OCC-Durez Remedial Alternatives Assessment" and to receive public input on this document. As a result of public input from this meeting and State reviews, OCC submitted a revised draft that was again the subject of public review. In January of 1987 another public meeting and availability sessions were held to discuss this revised Remedial Alternatives Assessment document.

During public review and comment on the Durez Remedial Alternatives Assessment, the public's major concerns centered on two (2) aspects of the Durez program: the proposal for storing contaminated sediments on the Durez plant property; and concern with public exposures during cleaning of the City's storm sewers. These concerns were addressed to the maximum extent practicable in subsequent revisions to the remedial program.

During August and September of 1988, a formal public comment period was held to provide for public input on the State's identification of preferred remedial actions. These preferred actions were described in the Proposed Remedial Action Plan that was made available to local officials and to the public. On September 8, 1988 a public meeting and an availability session were held to present the Proposed Remedial Action Plan and to receive public input. A transcript and Responsiveness Summary were subsequently prepared to document this public meeting and the State's response to the public's expressed concerns.

The transcript made of the public meeting has been made part of the Administrative Record and is available to the public. The responsiveness Summary prepared from the September, 1988 meeting is included as part of the Administrative Record and as Appendix B, infra. The Responsiveness Summary describes several changes to the Proposed Remedial Action Plan that were made pursuant to public input. These changes are incorporated into this Record of Decision and will be implemented as part of the remedial program.

Summary of Selected Remedial Actions

Remediation of the Durez site involves a program to halt the migration of ntaminants from the Durez facility followed by clean-up of contaminants that ve already migrated from the Durez facility. The remedial plan includes ovisions for the collection storage and treatment of contaminants and for the imination of identified pathways for potential human exposures. Long term nitoring, post remedial effectiveness assessment and periodic treatment chnology evaluation are also important components of the remedial plan.

More specifically, the remedial actions selected for each of the Durez site erable units are as follows:

1. Plant Property

- Construct a groundwater interceptor trench around the entire perimeter of the Durez plant property to stop off plant migration of overburden groundwater. Intercept bedding flows of all underground utility lines where they cross the interceptor trench by plugging bedding and routing flows to the interceptor trench drain.

- Collect groundwater from the interceptor trench and remove contaminants by treatment with an on-site carbon adsorption system to be constructed in conformance with the State Pollution Discharge Elimination System.

- Disconnect four (4) storm sewer outfalls and route them to the proposed on-site carbon adsorption system for treatment. Clean plant storm sewer lines to remove all sediments.

- o Disconnect unused portions of the plant's sanitary sewer system and remove all sediments from remaining plant sanitary sewer lines.

- o Seal all identified bedrock wells to eliminate them as potential pathways for contamination of the bedrock aquifer.

- o Cover areas of contaminated surface soils and unvegetated areas with clean imported soil and vegetate. One location, within a ditch that runs parallel to the railroad tracks, will have a culvert installed prior to covering and vegetating.

2. City Sewers

- o Remove all sediments contained within the Pettit Creek Flume (PCF) for it's entire length.

- o Remove all sediments contained within other portions of the City's storm sewer system which were found to contain contaminated sediments.

- o Remove all sediments contained within portions of the City's sanitary sewer system which were found to contain Durez chemistry.

3. Pettit Creek Outlet Cove

- o Selection of remedial actions for the Pettit Creek Outlet Cove operable unit is deferred until additional investigations and evaluations are completed. Investigations to further define the extent of contamination

in the vicinity of the cove and to further evaluate potential problems with the City of Lockport's Waterline are ongoing.

4. Disposition of Remedial Wastes

- Store, on an interim basis, all sediments, excess soils and any other material intended ultimately for destruction or detoxification. The storage location will be either OCC's proposed Main Plant Storage Facility, if it becomes permitted, or the Durez plant property. If the Main Plant Storage Facility becomes permitted, the contaminated material would go there, even if the material is already stored at Durez.

- Ultimately, all stored material will be destroyed, detoxified, or otherwise treated to permanently reduce the mobility, toxicity or volume of contaminants.

- While storage continues, OCC will be required to fully evaluate the availability of treatment technologies every four (4) years and will be required to destroy, detoxify or otherwise treat the stored material when a technology is determined to be available.

DUREZ RECORD OF DECISION

APPENDIX A
FIGURES AND TABLES

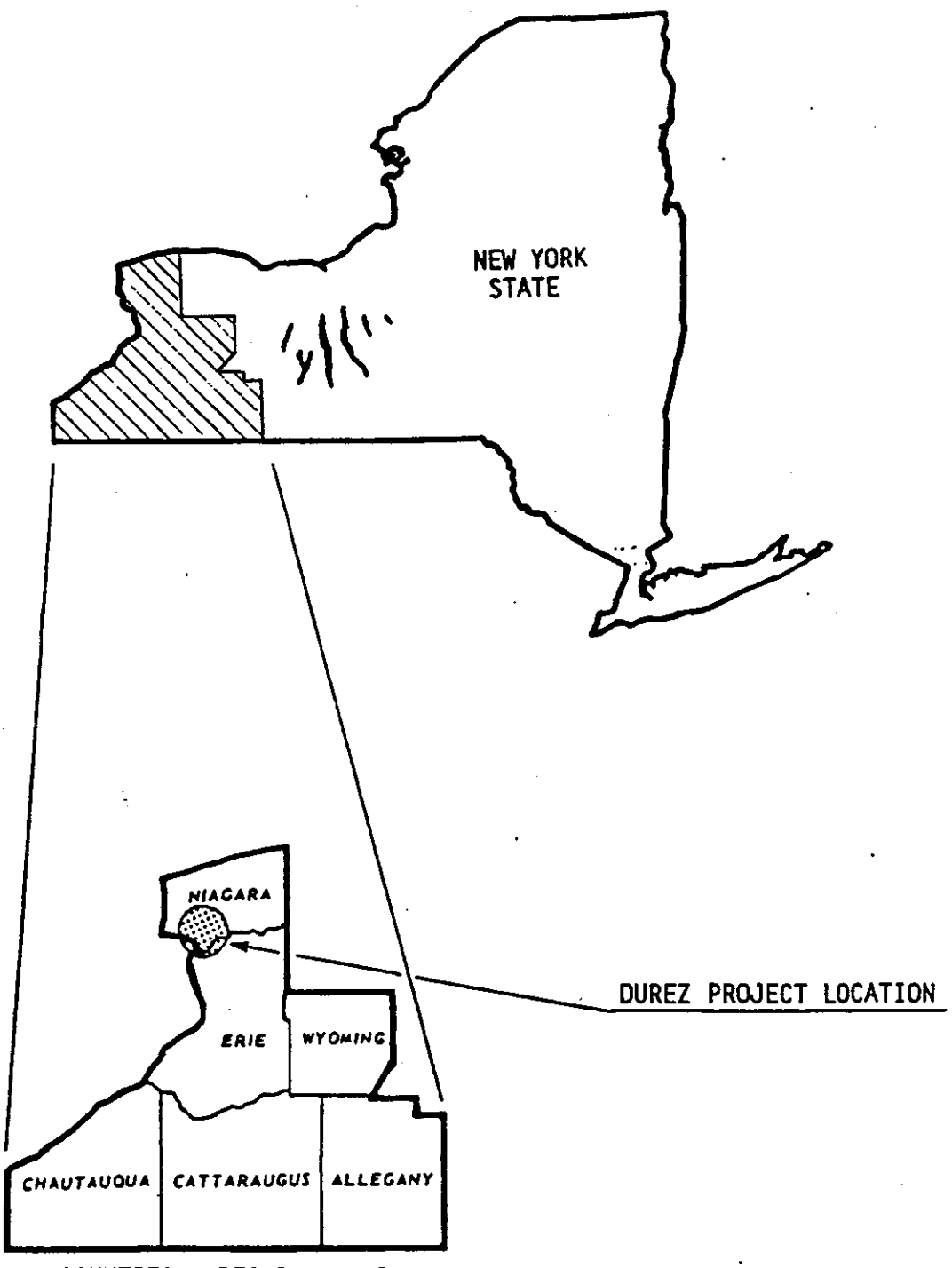
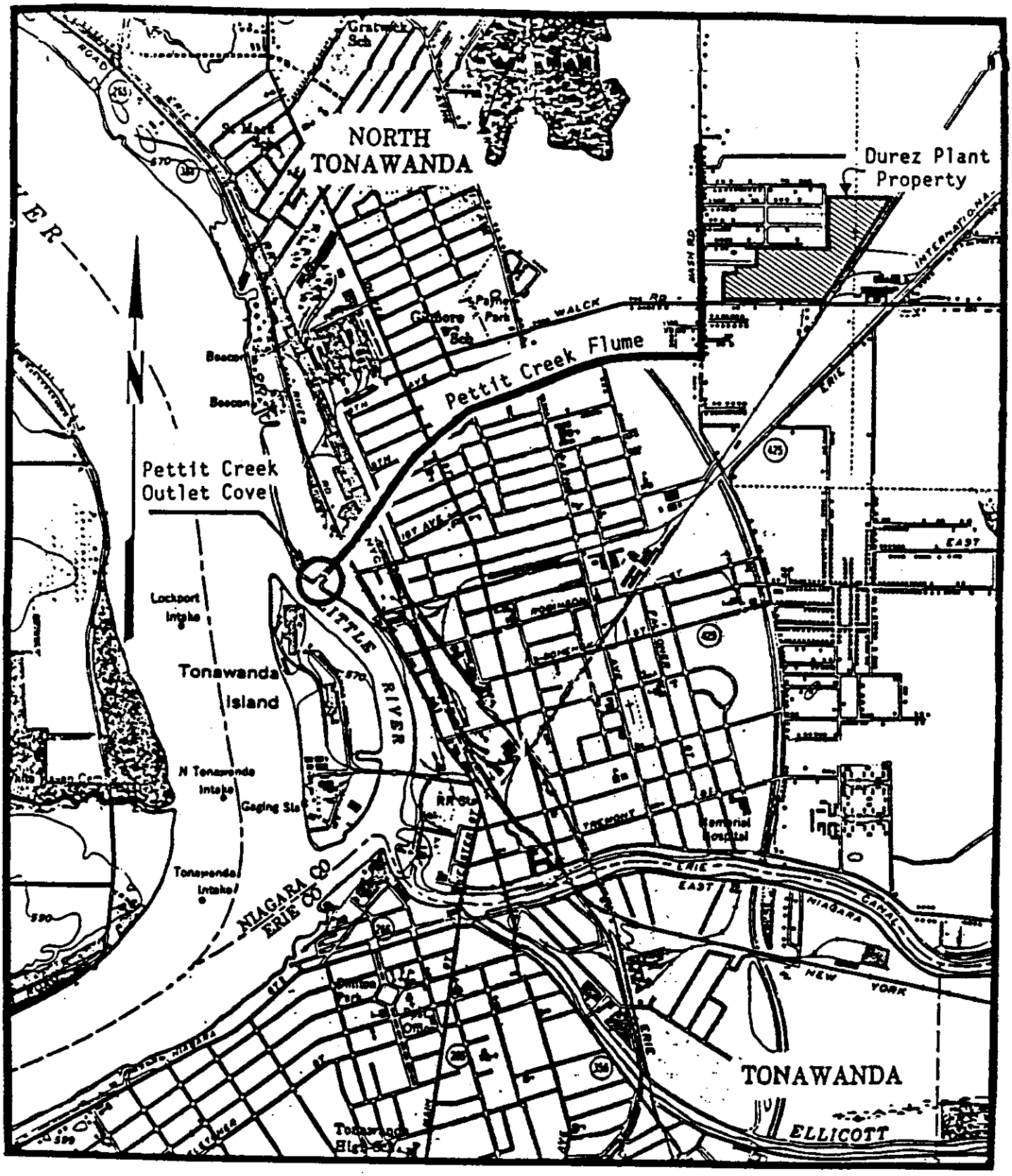


FIGURE 1
PROJECT LOCATION MAP



Operable Units: Durez Plant Property
City Sewers and Pettit Creek Flume (PCF)
Pettit Creek Outlet Cove

FIGURE 2
DUREZ SITE MAP
Scale 1" = 2000'

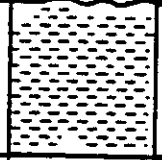
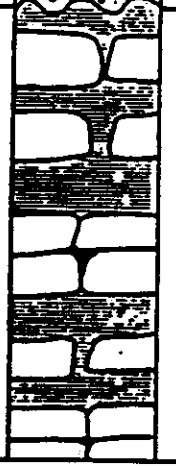
PERIOD	EPOCH	FORMATION	COLUMNAR SECTION	THICKNESS IN FEET	CHARACTER
QUATERNARY	RECENT	FILL		0-5	Gravel, flyash, coal dust, industrial waste, clean soil fill
	PLEISTOCENE (WISCONSIN AGE)	GLACIOLACUSTRINE SILT		2-7	Brown clayey silts to fine sand and silt
		FLUVIAL SANDS AND GRAVEL		0-5	Medium to coarse sands occasionally grading to gravel
		GLACIOLACUSTRINE CLAY		16-23	Purple brown clay; very stiff at top becoming very soft at bottom; red, silty laminations increase with depth
		TILL		0-7	Brown silty gravelly sand with cobbles
SILURIAN	UPPER SILURIAN	CAMILLUS SHALE FORMATION OF SALINA GROUP		500-700	Grey-green shale to carbonate mudstone, highly fractured, numerous veins and bodies of gypsum

FIGURE 3
GEOLOGIC STRATIGRAPHY AT THE DUREZ PLANT

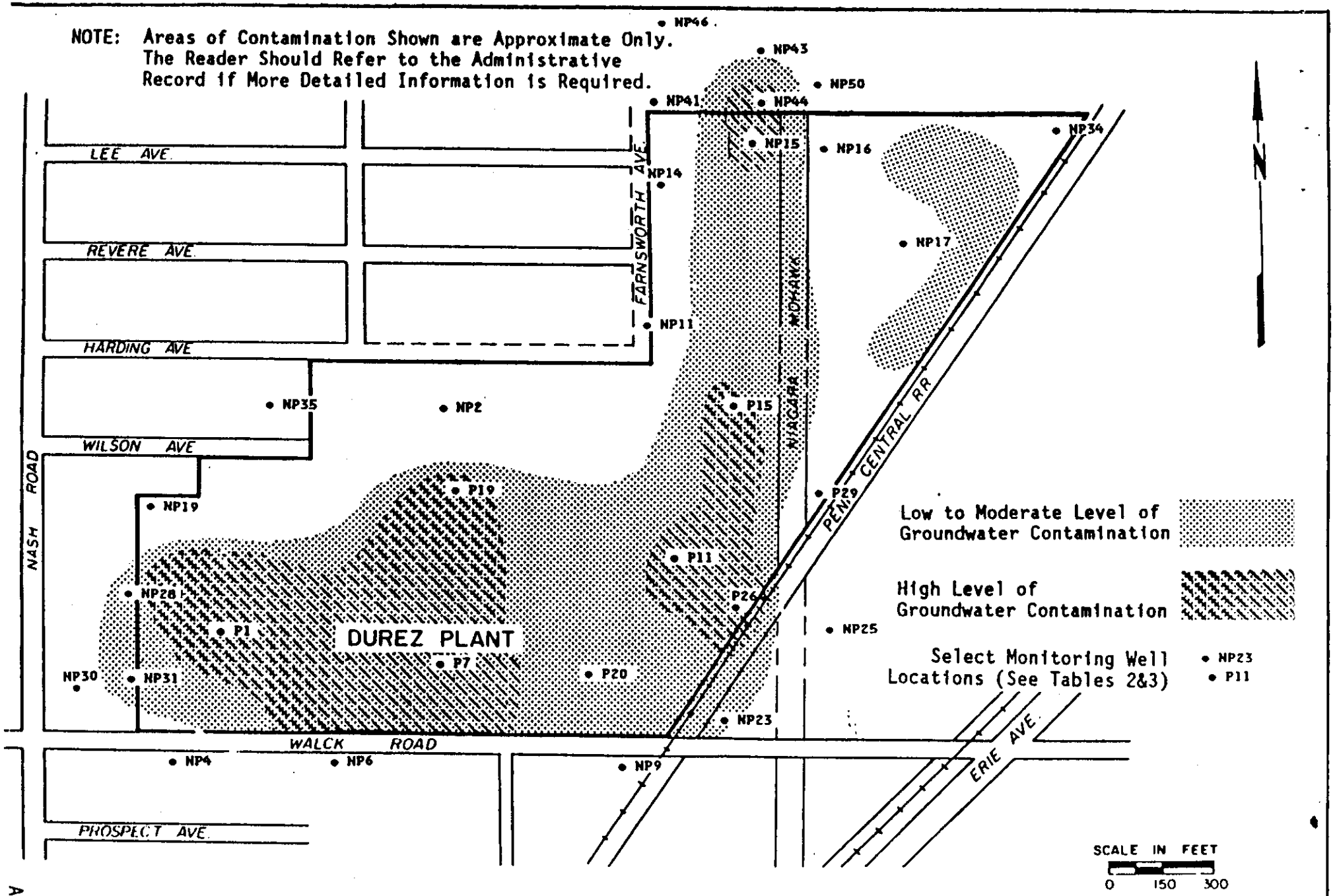


FIGURE 4
AREAS OF CONTAMINATED OVERBURDEN GROUNDWATER
AND SELECT MONITORING WELL LOCATIONS

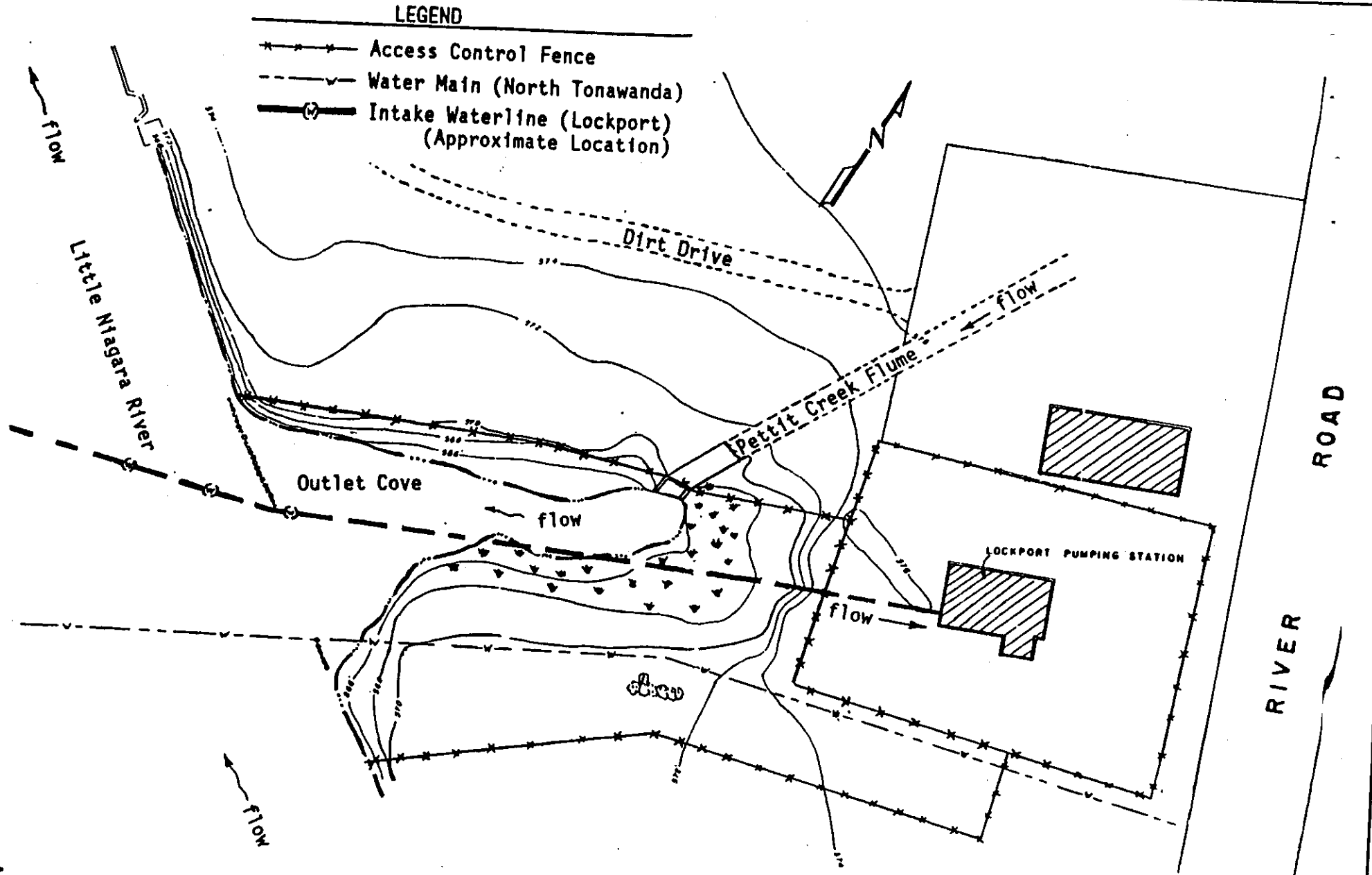


FIGURE 5
PETTIT CREEK OUTLET COVE

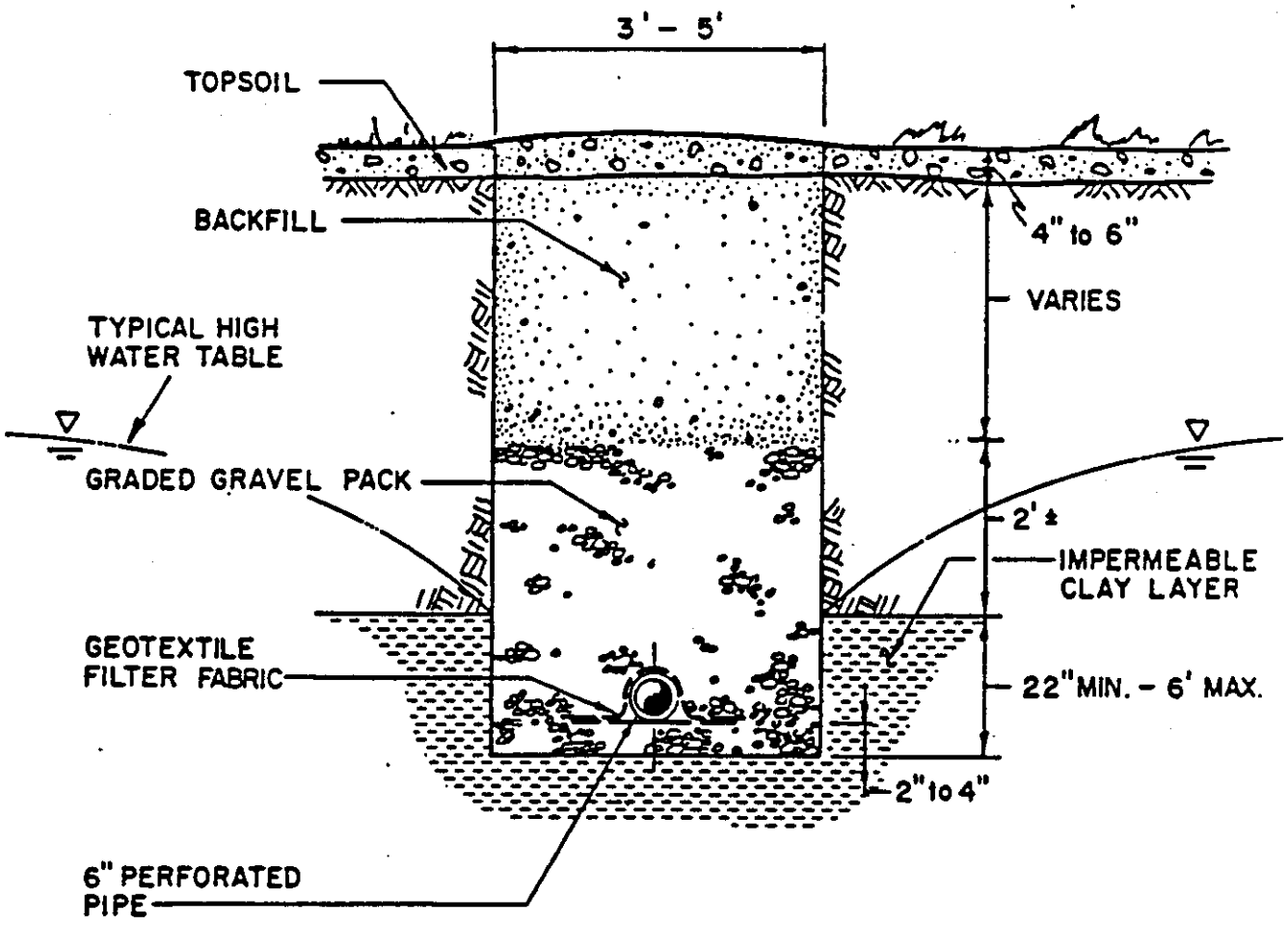


FIGURE 6
TYPICAL SECTION
GROUNDWATER INTERCEPTOR TRENCH

Not to Scale

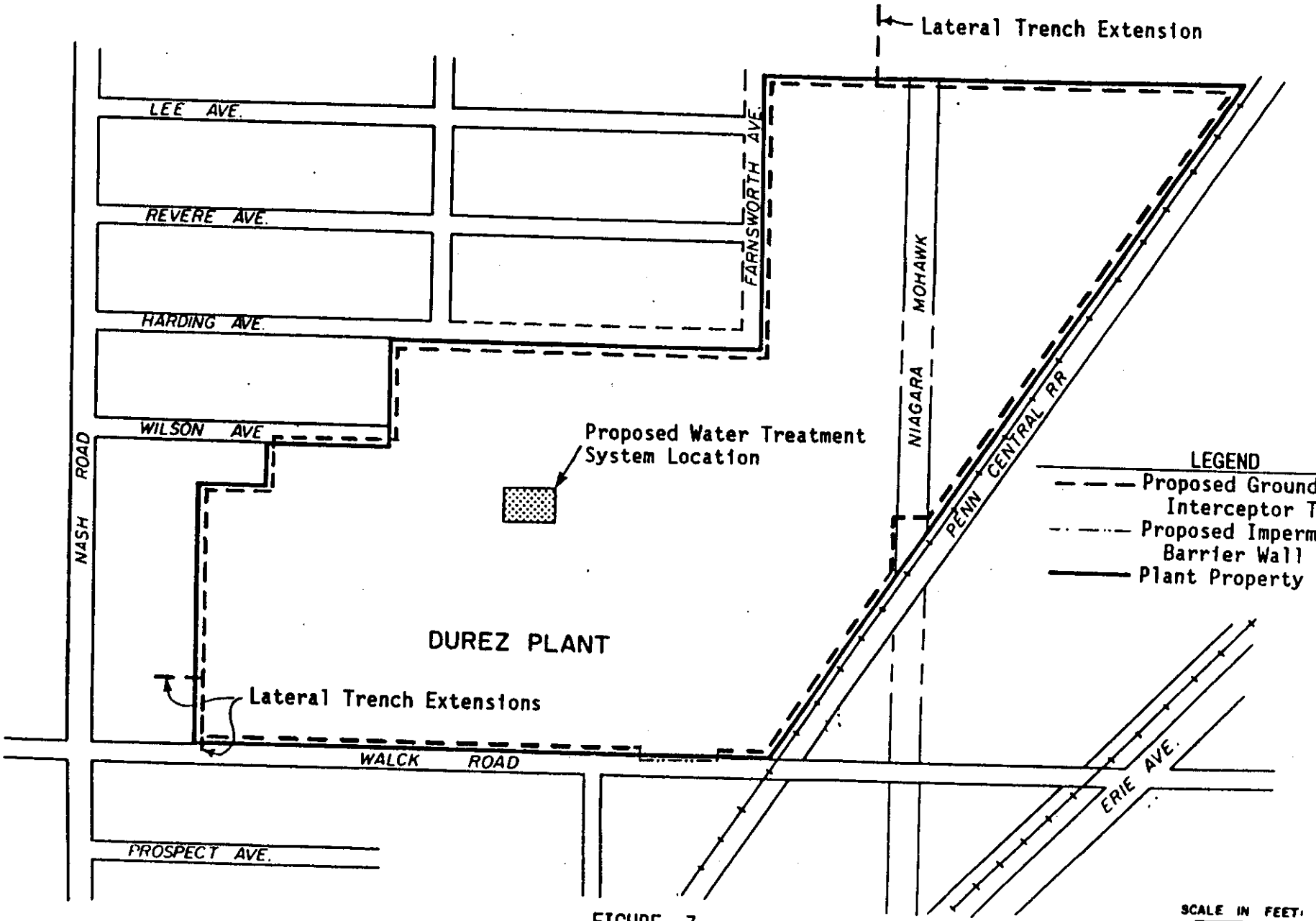
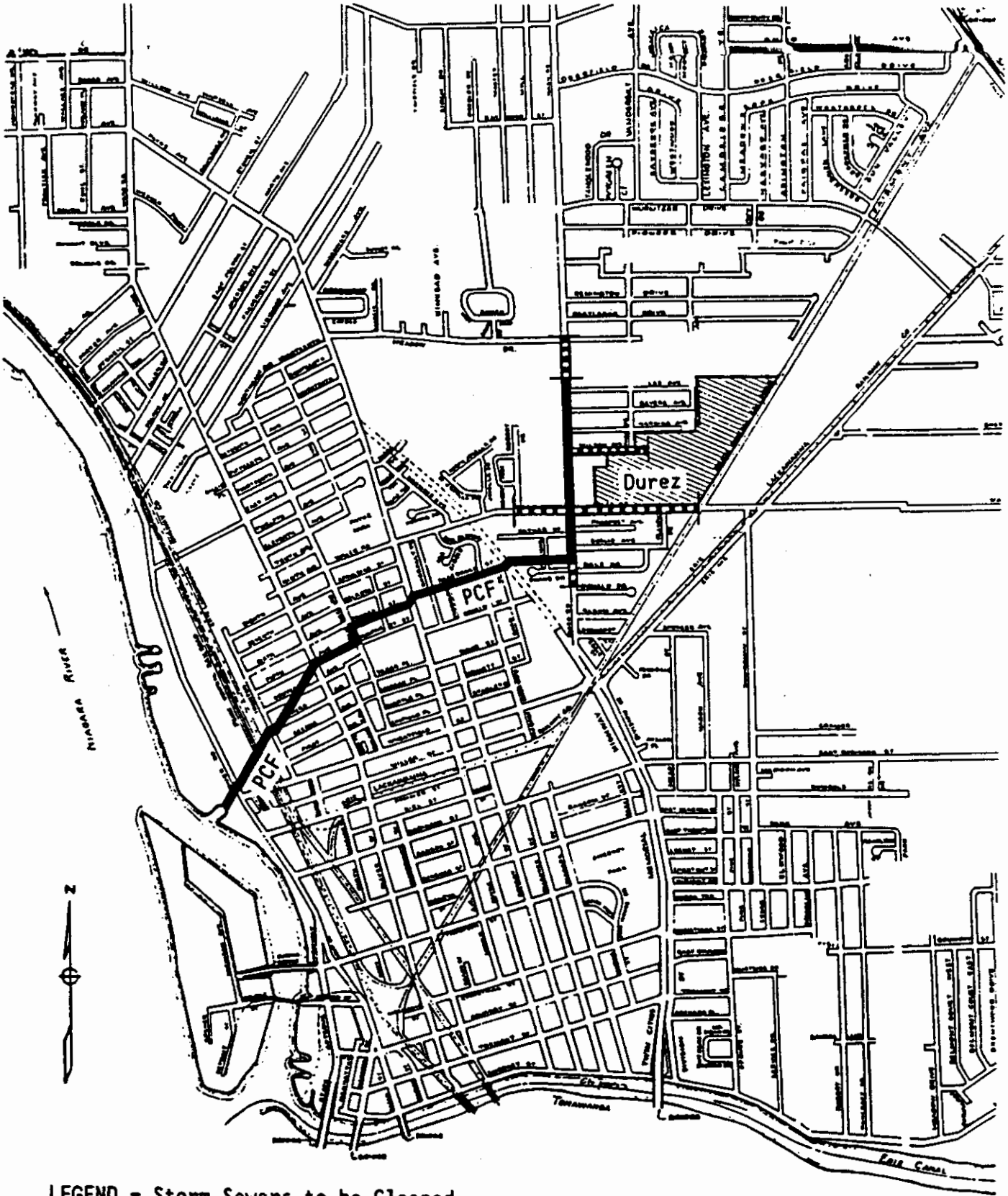


FIGURE 7
PROPOSED LAYOUT
GROUNDWATER INTERCEPTOR TRENCH
AND WATER TREATMENT SYSTEM



LEGEND - Storm Sewers to be Cleaned

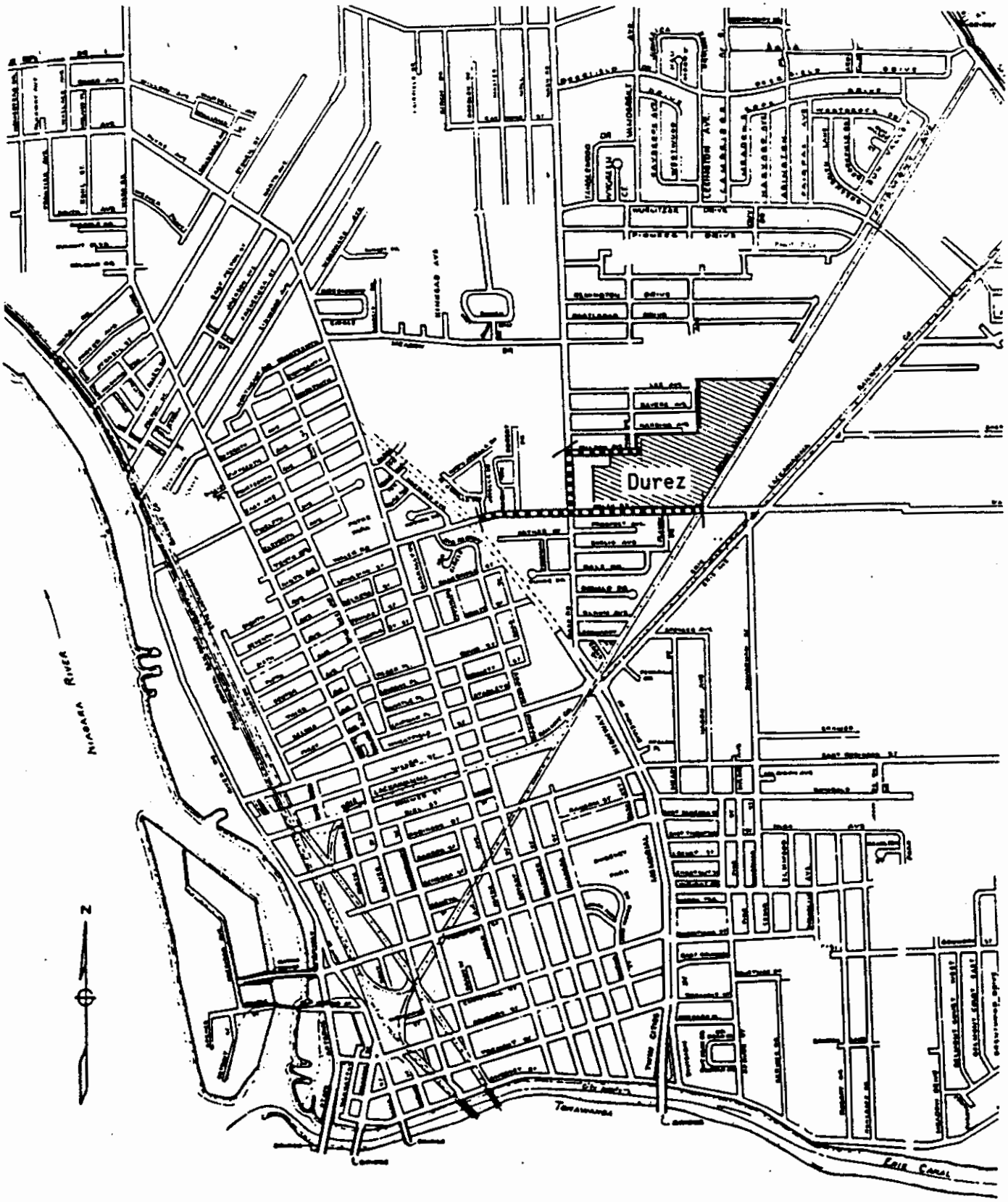
Pettit Creek Flume (PCF)

Other City Storm Sewers

NOTE: Numerous small connections to the Pettit Creek Flume that will be cleaned are not shown on this map.

FIGURE 8
CITY STORM SEWERS TO BE CLEANED

0 800 1600



LEGEND

City Sanitary Sewers to be Cleaned

0 800 1600

FIGURE 9
CITY SANITARY SEWERS TO BE CLEANED

TABLE 1
DOCUMENTATION AND CHRONOLOGY OF REMEDIAL INVESTIGATIONS

1. "Hydrogeologic Investigation, Durez Division, Hooker Chemicals and Plastics Corporation", RECRA Research, Incorporated, October 1980. 1 Volume.

   Major Items Included:
   - o Evaluate Basic Plant Property Hydrogeology
   - o Construct Overburden Piezometers on Plant Property
   - o Soil Borings and Soil Chemistry on Plant Property
   - o Evaluate and Renovate Existing Bedrock Production Wells
   - o Groundwater Chemistry on Plant Property - Overburden and Bedrock

2. "Report of Continuing Field Investigations, Summer 1982", Occidental Chemical Corporation, November 1982. 3 Volumes.

   Major Items Included:
   - o Site Review and Evaluation of Durez Process Chemistry
   - o Investigate Hydrogeology of Plant Property and Adjacent Area
   - o Construct Overburden Piezometers on and near Plant Property
   - o Soil Borings and Soil Chemistry on and near Plant Property
   - o Groundwater Chemistry on and near Plant Property - Overburden
   - o Groundwater Chemistry of Bedrock Aquifer
   - o Dioxin Analyses of Raschig Tars and Plant Soils

3. "Report of Continuing Field Investigations and Exposure Assessment, 1983", Occidental Chemical Corporation, January 1984. 3 Volumes.

   Major Items Included:
   - o Evaluation of Plant Groundwater Flow and Chemical Migration
   - o Evaluation of Surface Water Movement at Plant Boundaries
   - o Evaluation of Potential Exposure Pathways and Health Risk Assessment
   - o Construct Additional Overburden Piezometers
   - o Construct Piezometers in City Storm Sewer Beddings
   - o Soil Borings and Soil Chemistry on and near Plant Property and in Sewer Bedding
   - o Groundwater Chemistry
   - o Dioxin Analyses of Soils on and near Plant Property

4. "Report of Continuing Field Investigations and Exposure Assessment", Occidental Chemical Corporation, July 1984. 3 Volumes.

   Major Items Included:
   - o Continued Monitoring and Evaluation of Groundwater Flow
   - o Risk Assessment for Exposure to Dioxin in Soils
   - o Supplementary Water and Soil Analyses for Plant Panhandle Area, including Dioxin

5. "Report of Continuing Field Investigations and Exposure Assessment. Site Operation Plan, Clay Integrity Final Report", Dunn Geoscience Corporation, November 1984. 1 Volume.

   Major Items Included:
   - o Determine the Characteristics and Integrity of the Clay Layer under the Plant Property

6. "Site Remediation Program and Alternatives Considered for 889 Lee Avenue", Dunn Geoscience Corporation, March 1985. 1 Volume.

   Major Items Included:
   - o Presents Results of Investigation for Durez Chemistry Found Off of Plant Property at 889 Lee Avenue
   - o Exposure and Risk Assessment for 889 Lee Avenue
   - o Proposals for Remediation of 889 Lee Avenue

7. "Report of Continuing Field Investigations. Report on Site Operations Plan, Summer 1984. Bedrock Aquifer, Off-site Soil Survey, Panhandle Surface Investigation, 889 Lee Avenue", Occidental Chemical Corporation, February 1986. 1 Volume.

   Major Investigation Tasks:
   - o Further Evaluate Clay Integrity by Bedrock Well Pumping Test
   - o Soil Chemistry of Numerous Off Plant Property Locations
   - o Surface Water Chemistry in Plant Panhandle Area
   - o Soil Chemistry of Surface Soils and Unvegetated Areas of the Plant Panhandle Area
   - o Remediation of 889 Lee Avenue Documented

8. "Site Operations Plan, Investigation of the Durez Area Storm and Sanitary Sewers, North Tonawanda, New York", Dunn Geoscience Corporation, October 1985. 1 Volume.

   Major Items Included:
   - o Proposal for Investigating City Storm and Sanitary Sewers

9. "Report of Continuing Field Investigations. North Panhandle Hydrogeologic/Analytical Report", Occidental Chemical Corporation, June 1986. 1 Volume.

   Major Items Included:
   - o Construct Monitoring Wells in Plant Panhandle Area and in Adjacent Area North of Plant Boundary
   - o Soil Borings and Soil Chemistry in Plant Panhandle Area and in Adjacent Area North of Plant Boundary
   - o Detailed Hydrogeologic Evaluation of Plant Panhandle Area and in Adjacent Area North of Plant Boundary
   - o Chemistry of Overburden Groundwater in Plant Panhandle Area and Adjacent Area North of Plant Boundary

10. "Report of Continuing Field Investigations. Phase I Report, Durez Area Sewer Investigation", Occidental Chemical Corporation, July 1986. 1 Volume.

    Major Items Included:
    - o Determine Extent of Contamination and Quantity of Sediments in Portions of City Storm Sewers and Pettit Creek Flume
    - o Determine Extent of Contamination and Quantity of Contaminated Sediments in City Sanitary Sewers
    - o Inspection of General Sewer Conditions

11. "Report of Continuing Field Investigations. Phase 2 Report, Durez Area Sewer Investigation", Occidental Chemical Corporation, September 1986. 1 Volume.

    Major Items Included:
    - o Additional Sampling and Analyses to Further Define Extent of Contamination in City Storm Sewers
    - o Determine Stratigraphy and Extent of Contamination in the Pettit Creek Outlet Cove
    - o Dioxin Analyses for City Storm Sewers and Pettit Creek Outlet Cove

12. "Remedial Alternatives Assessment for the Durez Site", Dunn Geoscience Corporation, December 1986. 1 Volume.

    Major Items Included:
    - o Summary of Remedial Investigations

13. "Video Inspection of the Pettit Creek Flume, North Tonawanda, New York", Occidental Chemical Corporation, March 1987. 1 Volume.

    Major Items Included:
    - o Determine Physical Condition of Pettit Creek Flume
    - o Verify Sediment Quantity Estimates
    - o Determine Size, Location and Condition of Lateral Connections to the Pettit Creek Flume

TABLE 2
PLANT OVERBURDEN GROUNDWATER CHEMISTRY

COMPOUND	MONITORING WELL P1	P7	P11	P15	P19
Total Phenol (mg/L)	2.3	44	49.5	0.48	0.207
o-Chlorophenol	a	a	59	a	a
p-Chlorophenol	a	a	81	a	a
2,4,5 Trichlorophenol	a	a	ND10	a	a
2,4,6 Trichlorophenol	a	a	10	a	a
Benzene	a	a	18	a	a
Monochlorobenzene	85	12000	740	160	740
o-Dichlorobenzene	160	3200	160	ND10	46
p-Dichlorobenzene	280	5500	200	ND10	14
1,2,3 Trichlorobenzene	ND10	ND10	28(c)	ND10	ND10
1,2,4 Trichlorobenzene	ND10	910	c	ND10	ND10
Toluene	290	680	290	110	ND10
o-Chlorotoluene	a	a	ND1	a	a

COMPOUND	MONITORING WELL P20	P26	P29	NP2	NP14
Total Phenol (mg/L)	0.037	ND0.014	*	*	*
o-Chlorophenol	a	380	*	*	ND10
p-Chlorophenol	a	3000	*	*	ND10
2,4,5 Trichlorophenol	a	ND10	*	*	ND10
2,4,6 Trichlorophenol	a	1200	*	*	ND10
Benzene	a	93	ND1	ND1	ND1
Monochlorobenzene	ND20	900	ND1	ND1	ND1
o-Dichlorobenzene	37	10	ND1	2	ND1
p-Dichlorobenzene	25	87	ND1	2	ND1
1,2,3 Trichlorobenzene	ND10	ND1	ND1	ND1	ND1
1,2,4 Trichlorobenzene	ND10	ND1	ND1	ND1	ND1
Toluene	ND10	4200	ND1	ND1	ND1
o-Chlorotoluene	a	11	ND1	ND1	ND1

COMPOUND	MONITORING WELL NP15	NP16	NP17	NP19	NP34
Total Phenol (mg/L)	*	*	*	*	*
o-Chlorophenol	56	ND10	ND10	*	*
p-Chlorophenol	150	ND10	ND10	*	*
2,4,5 Trichlorophenol	ND10	ND10	ND10	*	*
2,4,6 Trichlorophenol	ND10	ND10	ND10	*	*
Benzene	92	ND1	ND1	ND1	ND1
Monochlorobenzene	980	ND1	ND1	ND1	ND1
o-Dichlorobenzene	940	ND1	ND1	ND1	ND1
p-Dichlorobenzene	680	ND1	ND1	ND1	ND1
1,2,3 Trichlorobenzene	ND10	ND1	ND1	ND1	ND1
1,2,4 Trichlorobenzene	28	ND1	ND1	ND1	ND1
Toluene	39	ND1	ND1	ND1	ND1
o-Chlorotoluene	2	ND1	ND1	ND1	ND1

The information listed in this Table is representative. A complete summary of groundwater data is included as part of the Administrative Record. The location of the listed monitoring wells are shown on Figure 4, infra.

Concentrations reported are in ug/L (ppb) except for Total Phenol in mg/L (ppm)
* = Insufficient Sample for complete analyses
a = Analysis not performed for this compound
b = Sample lost due to lab accident
c = 1,2,3 and 1,2,4 Trichlorophenol are reported together

TABLE 3
OFF PLANT OVERBURDEN GROUNDWATER CHEMISTRY

COMPOUND	MONITORING WELL NP4	NP6	NP9	NP11	NP23
Total Phenol (mg/L)	ND0.014	*	*	*	*
o-Chlorophenol	ND10	*	*	ND10	ND10
p-Chlorophenol	ND10	*	*	ND10	ND10
2,4,5 Trichlorophenol	ND10	*	*	ND10	ND10
2,4,6 Trichlorophenol	ND10	*	*	ND10	ND10
Benzene	ND1	ND1	ND1	ND1	9
Monochlorobenzene	ND1	ND1	ND1	ND1	ND1
o-Dichlorobenzene	ND1	ND1	ND1	ND1	ND1
p-Dichlorobenzene	ND1	ND1	ND1	ND1	ND1
1,2,3 Trichlorobenzene	ND1	ND1	ND1	ND1	ND1
1,2,4 Trichlorobenzene	ND1	ND1	ND1	ND1	3
Toluene	ND1	ND1	ND1	ND1	ND1
o-Chlorotoluene	ND1	ND1	ND1	ND1	2

COMPOUND	MONITORING WELL NP25	NP28	NP30	NP31	NP35
Total Phenol (mg/L)	*	ND0.014	ND0.014	2.8	ND0.014
o-Chlorophenol	*	ND10	b	26	ND10
p-Chlorophenol	*	ND10	b	290	ND10
2,4,5 Trichlorophenol	*	ND10	b	ND10	ND10
2,4,6 Trichlorophenol	*	ND10	b	ND10	ND10
Benzene	5	ND1	ND1	120	ND1
Monochlorobenzene	ND1	ND1	ND1	600	ND1
o-Dichlorobenzene	ND1	ND1	ND1	21	ND1
p-Dichlorobenzene	ND1	ND1	ND1	26	ND1
1,2,3 Trichlorobenzene	ND1	ND1	ND1	ND1	ND1
1,2,4 Trichlorobenzene	ND1	ND1	ND1	ND1	ND1
Toluene	ND1	ND1	ND1	ND1	ND1
o-Chlorotoluene	ND1	ND1	ND1	46	ND1

COMPOUND	MONITORING WELL NP41	NP43	NP44	NP46	NP50
Total Phenol (mg/L)	ND0.5	ND0.5	4.65	ND0.5	ND0.5
o-Chlorophenol	ND10	ND10	25	ND10	ND10
p-Chlorophenol	ND10	ND10	5200	ND10	ND10
2,4,5 Trichlorophenol	ND10	ND10	ND10	ND10	ND10
2,4,6 Trichlorophenol	ND10	ND10	ND10	ND10	ND10
Benzene	ND1	ND1	70	ND1	ND1
Monochlorobenzene	ND1	ND1	2500	ND1	ND1
o-Dichlorobenzene	ND1	ND1	990	ND1	ND1
p-Dichlorobenzene	ND1	ND1	2900	ND1	ND1
1,2,3 Trichlorobenzene	ND1	ND1	14	ND1	ND1
1,2,4 Trichlorobenzene	ND1	ND1	48	ND1	ND1
Toluene	ND1	ND1	2	ND1	ND1
o-Chlorotoluene	ND1	ND1	1	ND1	ND1

The information listed in this Table is representative. A complete summary of groundwater data is included as part of the Administrative Record. The location of the listed monitoring wells are shown on Figure 4, infra.

Concentrations reported are in ug/L (ppb) except for Total Phenol in mg/L (ppm)
* = Insufficient Sample for complete analyses
a = Analysis not performed for this compound
b = Sample lost due to lab accident
c = 1,2,3 and 1,2,4 Trichlorophenol are reported together

TABLE 4
SOIL CHEMISTRY

SAMPLE	DESCRIPTION	LOCATION	RAA Reference
SS1	Near Surface Soil	Off-plant at end of Harding	Tables 13&14
SS2B	Near Surface Soil	On-plant in Panhandle R.R. ditch	" "
SS4	Near Surface Soil	Off-plant Walck & Penn R.R.	" "
SS14	Near Surface Soil	Off-plant at Lee and Farnsworth	" "
Site 4	Surface Soil	On-plant Typical Panhandle location	Table 15
Sample 8	Surface Soil	On-plant Typical unvegetated area	Table 16a
5R	Surface Soil	Off-plant South side of Wilson	Table 17
6R	Surface Soil	Off-plant between Prospect & Plastic	" "

COMPOUND	SAMPLE DESIGNATION SS1	SS2B	SS4	SS14
1,2,3 Trichlorobenzene	ND0.05	11	0.11	ND0.05
1,2,4 Trichlorobenzene	ND0.05	29	0.18	ND0.05
1,2,3,4 Tetrachlorobenzene	ND0.05	10	ND0.05	ND0.05
1,2,4,5 Tetrachlorobenzene	ND0.05	14	ND0.05	ND0.05
Pentachlorobenzene	ND0.05	12	ND0.05	ND0.05
Hexachlorobenzene	ND0.05	17	ND0.05	ND0.05
o-Chlorophenol	ND100	ND100	ND100	ND100
2,4,5 Trichlorophenol	ND10	ND10	ND10	ND10
3,4,5 Trichlorophenol	ND10	ND10	ND10	ND10
Pentachlorophenol	ND10	ND10	ND10	ND10
Total TCDD	0.89	4.3	0.29	0.51
2,3,7,8 TCDD	0.10	1.0	0.06	0.03

COMPOUND	SAMPLE DESIGNATION Site 4	Sample 8	5R	6R
1,2,3 Trichlorobenzene	0.08	2.7	ND0.05	ND0.05
1,2,4 Trichlorobenzene	0.17	1.9	ND0.05	ND0.05
1,2,3,4 Tetrachlorobenzene	ND0.05	0.88	ND0.05	ND0.05
1,2,4,5 Tetrachlorobenzene	0.05	1.4	ND0.05	ND0.05
Pentachlorobenzene	ND0.05	0.93	ND0.05	ND0.05
Hexachlorobenzene	0.09	5.0	ND0.05	ND0.05
o-Chlorophenol	ND2	ND2	ND2	ND2
2,4,5 Trichlorophenol	ND2	ND2	ND2	ND2
3,4,5 Trichlorophenol	ND2	ND2	ND2	ND2
Pentachlorophenol	ND2	ND2	ND2	ND2
Total TCDD	a	a	a	a
2,3,7,8 TCDD	a	a	a	a

The information listed in this Table is representative. A complete summary of data is included as part of the Administrative Record.

Concentrations reported are in ppm except TCDD and 2,3,7,8 TCDD are in ppb.
NDx = Compound was Not Detected at or above concentration "x".
a = Analysis not performed for this compound
b = 1,3 and 1,4 Dichlorobenzene are reported together

TABLE 5
CITY STORM SEWER CHEMISTRY

SAMPLE	DESCRIPTION	LOCATION	RAA Reference
C1	Composite Sediment	PCF- Nash Rd N of Wilson	Table 22
C2	Composite Sediment	Wilson Avenue storm sewer	" "
C3	Composite Sediment	PCF- Nash Rd between Wilson & Walck	" "
C4	Composite Sediment	PCF- Nash to Rosebrock	" "
C5	Composite Sediment	PCF- Nash Rd S of Walck	" "
C6	Composite Sediment	Walck Rd between Nash & Penn R.R.	" "
2	Sediment Grab	Walck Rd at Zimmerman	Table 25a
3	Sediment Grab	Walck Rd at Eggert	" "
9	Sediment Grab	PCF- Oliver St crossing	" "
12	Sediment Grab	Nash Rd sewer N of PCF	" "

COMPOUND	SAMPLE DESIGNATION C1	C2	C3	C4	C5
Benzene	ND20	ND20	ND20	ND20	51
Monochlorobenzene	89	390	1400	1200	6900
o-Dichlorobenzene	1400	4700	17000	3200	11000
p-Dichlorobenzene	1700	3600	18000	3600	15000
1,2,3 Trichlorobenzene	605	3500	5400	1900	1200
1,2,4 Trichlorobenzene	1750	8900	16100	3750	2600
1,2,4,5 Tetrachlorobenzene	90	620	935	1700	710
Pentachlorobenzene	2.2	27	155	955	430
Hexachlorobenzene	1.2	19	120	735	320
Toluene	40	70	220	18	72
o-Chlorotoluene	100	180	4700	970	4900
Total TCDD	6	40	160	6800	2500
2,3,7,8 TCDD	ND0.04	ND0.07	6	110	55

COMPOUND	SAMPLE DESIGNATION C6	2	3	9	12
Benzene	250	ND1.0	ND1.0	ND1.0	ND1.0
Monochlorobenzene	18000	ND1.0	ND1.0	13	ND1.0
o-Dichlorobenzene	16000	ND1.0	2.7	79	1.5
p-Dichlorobenzene	25000	ND1.0	1.2	94	ND1.0
1,2,3 Trichlorobenzene	3000	ND0.1	ND0.1	63	ND0.1
1,2,4 Trichlorobenzene	7700	ND0.1	0.15	215	ND0.1
1,2,4,5 Tetrachlorobenzene	720	ND0.1	ND0.1	69	ND0.1
Pentachlorobenzene	310	ND0.1	ND0.1	75	ND0.1
Hexachlorobenzene	240	ND0.1	ND0.1	79	ND0.1
Toluene	590	ND1.0	ND1.0	ND1.0	7.6
o-Chlorotoluene	3700	ND1.0	ND1.0	33	ND1.0
Total TCDD	520	a	a	a	a
2,3,7,8 TCDD	15	a	a	a	a

The information listed in this Table is representative. A complete summary of data is included as part of the Administrative Record.

Concentrations reported are in ppm except TCDD and 2,3,7,8 TCDD are in ppb.
NDx = Compound was Not Detected at or above concentration "x".
a = Analysis not performed for this compound
b = 1,3 and 1,4 Dichlorobenzene are reported together

TABLE 6
CITY SANITARY SEWER CHEMISTRY

SAMPLE	DESCRIPTION	LOCATION	RAA Reference
Z201	Sediment Sample	Walck Road at Jesella Drive	Table 24a
Z204	Sediment Sample	Walck Road at Eggert	" "
Z206	Sediment Sample	Nash Road at Walck Avenue	" "
Z215	Sediment Sample	Wilson Avenue near plant	" "
Z218	Sediment Sample	Nash Road at Wilson Avenue	" "

COMPOUND	SAMPLE DESIGNATION Z201	Z204	Z206	Z215	Z218
Benzene	ND2	ND2	ND2	ND2	ND2
Monochlorobenzene	80	3	170	ND2	ND2
o-Dichlorobenzene	190	10	280	12	5
p-Dichlorobenzene (b)	440	16	720	18	7
1,2,3 Trichlorobenzene	20	0.88	50	7.7	0.78
1,2,4 Trichlorobenzene	44	2.4	91	24	1.7
1,2,4,5 Tetrachlorobenzene	20	0.62	42	1.0	1.5
Pentachlorobenzene	20	0.81	33	0.04	ND0.01
Hexachlorobenzene	28	2.1	39	0.06	ND0.01
Toluene	ND2	ND2	2	ND2	ND2
o-Chlorotoluene	55	12	220	2	ND2
Phenol	ND2	ND2	6.0	11	ND2

The information listed in this Table is representative. A complete summary of data is included as part of the Administrative Record.

Concentrations reported are in ppm except TCDD and 2,3,7,8 TCDD are in ppb.
NDx = Compound was Not Detected at or above concentration "x".
a = Analysis not performed for this compound
b = 1,3 and 1,4 Dichlorobenzene are reported together

TABLE 7
ALTERNATIVES AND EVALUATION
OVERBURDEN GROUNDWATER REMEDIATION

Alternatives Considered	Initial Screening Criteria		
	a	c	e
Groundwater Migration Control			
1. No Action	F	F	P
2. Groundwater Monitoring Only	F	F	P
3. Groundwater Pumping & Treatment	P	P	F
4. Groundwater Pumping & Recharge	P	P	F
5. Impermeable Barrier & Groundwater Recovery	F	P	F
6. Subsurface Peripheral Interceptor Drain & Treatment	P	P	P
Treatment of Contaminated Groundwater			
1. Activated Carbon Adsorption	P	P	P
2. Distillation	F	F	P
3. Solvent Extraction	F	F	P
4. Thermal Incineration	P	P	F
5. Bio-Treatment	F	F	F

NOTES: Criterion a = Overall Protection of Human Health and the Environment
Criterion c = Long Term Effectiveness and Permanence
Criterion e = Implementation and Technical Reliability

P = Pass on initial screening

F = Fail on initial screening

DUREZ RECORD OF DECISION

APPENDIX B
RESPONSIVENESS SUMMARY

Proposed Remedial Action Plan
OCC—DUREZ SITE

City of North Tonawanda, New York
Site Number 9-32-018

Responsiveness Summary

November 1988

PREPARED BY:

New York State
Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233
THOMAS C. JORLING, *Commissioner*

DIVISION OF HAZARDOUS WASTE REMEDIATION
MICHAEL J. O'TOOLE JR., P.E., *Director*

TABLE OF CONTENTS

I. INTRODUCTION

This Responsiveness Summary addresses the public's concerns regarding the identification of preferred remedial actions for clean up of the Occidental Chemical Corporation's (OCC) Durez Division manufacturing facility in North Tonawanda, New York. Public comments on the preferred remedial actions for the Durez site were received during an open comment period from August 24, 1988 through September 30, 1988. On September 8, 1988 a public meeting was held to present to the public the identified preferred remedial actions and to receive public comments. The remedial investigation and draft feasibility study for the OCC-Durez site were the subject of previous public meetings in October 1986 and January 1987.

During remedial investigation information was obtained on site background and history, site features, hydrogeology, groundwater and surface water contamination, migration of contaminants from the Durez facility, contamination in city storm and sanitary sewers downstream from Durez and contamination in a small cove of the Little Niagara River called the Pettit Creek Outlet Cove, a.k.a. inlet. Based on the information obtained during these investigations, it was concluded that contaminated groundwater, past disposal activities, spills and accidental releases from the plant site have contaminated portions of the City's storm sewer system as well as the Pettit Creek Outlet Cove. To a much lesser extent, portions of the City's sanitary sewers located downstream from Durez were also found to be contaminated by Durez chemistry.

Remedial investigations of groundwater in the vicinity of the Durez facility indicate that chemistry has migrated from the plant site at three (3) general locations; 1.) the northwest portion of the plants panhandle area, 2.) the southwest portion of the plant site, and 3.) generally along Walck Road at the south side of the plant site where contaminated groundwater was found to have directly infiltrated into the City's storm sewer system. With the exception of the Walck Road location, the migration of contaminated groundwater from the plant site was found to be limited to well defined areas and was found not to extend great distances from the plant. Additional geologic investigations found that the plant site and surrounding area are underlaid by a tight impermeable layer of clay that has acted to effectively block the downward migration of Durez chemistry.

Based upon remedial investigation findings a number of alternatives for clean up of the City's sewers and for halting further migration of contamination from the plant site were developed. Each of the alternatives developed for the Durez site were evaluated on the basis of the following criteria:

a. Overall protection of human health and the environment
b. Reduction of toxicity, mobility and volume of contaminants
c. Long term effectiveness and permanence
d. Short term and potential impacts during remediation
e. Implementation and technical reliability

f. Compliance with statutory requirements

In addition to these six evaluation criteria, another criterion, community acceptance, was evaluated as part of the decision making process and was incorporated into the Record of Decision.

Based upon the six evaluation criteria listed above, the following remedial actions were identified as the preferred alternatives for the Durez site:

- Construction of a groundwater interceptor trench around the perimeter of the Durez plant in order to eliminate further chemical migration from the plant property. Collected groundwater would then be treated by a wastewater treatment system to be constructed on the plant grounds.

- Cover contaminated soil and unvegetated areas in the plant's panhandle area with clean soil and revegetate.

- Removal of sediments from plant storm sewers, routing several plant storm sewers through the proposed water treatment system and plugging all plant utility line beddings where they cross off of the Durez plant property.

- Removal of contaminated sediments from City storm sewers, the Pettit Creek Flume and the Pettit Creek Outlet Cove at the Little Niagara River.

- Interim storage of excavated contaminated soils and sediments in a secure containment facility until a proven, permitted destruction treatment technology is available.

The remedial alternative considered for the Durez site and the identified preferred remedial actions were presented to the public in a Proposed Remedial Action Plan (PRAP) and were the subject of the September 8, 1988 public meeting and a September 9, 1988 public availability session.

II. CHANGES TO THE PROPOSED REMEDIAL ACTION PLAN

As a result of public comment on the Proposed Remedial Action Plan the State is incorporating modifications into the remedial program. Specific actions to address these modifications will be incorporated into final design.

A. STORM SEWERS

A good deal of public concern has centered on the possibility that there are direct interconnections between the contaminated Pettit Creek Flume (PCF) and residences along its' route. The State agrees that an additional evaluation of possible interconnections should be performed to identify any such potential pathways for exposure and to alleviate public concern over this issue. The State has requested OCC to perform this evaluation as part of final design activities, however OCC does not recognize the need for this evaluation. In order to eliminate potential fugitive vapor problems OCC has proposed to plug all connections to the PCF during cleaning operations. Because of this safeguard, OCC does not believe that an evaluation of possible interconnections is needed for a safe and effective remedial program.

Regardless of OCC's position on this matter, the State will proceed with an evaluation of possible interconnections between the PCF and residences along the route. It is expected that the City of North Tonawanda and the State will work closely together on this evaluation and that implementation will be during 1989. This evaluation may include such tasks as:

- o Inventory and homeowner questionnaire
- o Elevation survey of basement drains
- o Smoke testing of PCF connections
- o Tracer dye test of floor and basement drains

B. SANITARY SEWERS

Subsequent to preparation and public presentation of the Proposed Remedial Action Plan, OCC has agreed to clean contaminated portions of the City's sanitary sewer system as part of remediation. The sections proposed for cleaning include:

- o Wilson Avenue - From the Durez plant west to Nash Road
- o Nash Road - From Wilson Avenue south to Walck Road
- o Walck Road - From the Penn Central Railroad to Nash Road
- o Walck Road - From Nash Road west to Jesella Drive

To minimize possible recontamination of these City sanitary sewers, OCC has also committed to clean sanitary sewers located on plant property.

The State considers this commitment by OCC to be a positive addition to the remedial program. Cleaning of these sanitary sewers will be performed in conformance with all requirements of the

Remedial Health and Safety Plan. Disposal of removed sediments will be addressed in the same manner proposed in the PRAP for disposal of sediments removed from storm sewers.

III. RESPONSES TO COMMENTS RECEIVED DURING THE SEPTEMBER 8, 1988 PUBLIC MEETING

During the September 8, 1988 Public Meeting a number of comments were received. These comments and the State's presentations made at the meeting are documented in a transcript prepared from the meeting. A copy of the meeting transcript is available for public review at the following locations:

Durez Administrative Record
North Tonawanda Public Library
505 Meadow Street
North Tonawanda, NY

NYSDEC - Region 9
600 Delaware Avenue
Buffalo, NY 14202
See: Mr. Jack Hyden
Tel: 716-847-4585

NYSDEC - Central Office
50 Wolf Road - Room 222
Albany, NY 12233
See: Mr. Craig Jackson
Tel: 518-457-5636

The comments received during the Public Meeting have been separated into several general categories:

A. Technical Issues
B. Health and Safety Concerns
C. Legal, Administrative and Public Participation Concerns
D. Miscellaneous Concerns

Please note that the questions and comments listed herein are not verbatim. Comments received have been paraphrased and edited in order to transform their conversational style into a clear, more concise written form. The page number(s) following each question refer to that questions location in the September 8, 1988 meeting transcript.

A. TECHNICAL ISSUES

Q. (A1) Is the contaminated material to be removed during future remediation of the Pettit Creek Outlet Cove, a.k.a. Inlet, going to be stored at the Durez Plant? (Page 39)

A. Any contaminated sediments removed from the Outlet Cove will be dealt with in the same manner as the sediments to be removed from the Pettit Creek Flume and other sewers. This material will be stored in a secure interim storage facility until a permitted destruction facility is available. The final location of the interim storage facility has not been determined and the State proposes to keep the location options open until remedial construction begins. The location options are storage at the Durez plant or storage at OCC's Main Plant on Buffalo Avenue in Niagara Falls.

Q. (A2) Could OCC's Main Plant storage facility be permitted and ready to receive Durez wastes by the anticipated 1989 start of remedial construction? (Page 44)

A. Yes. We believe that there is a chance that the proposed facility could be available during 1989. OCC has submitted an application for a Resource Conservation and Recovery Act (RCRA) permit for constructing a hazardous waste storage facility at the Main Plant in Niagara Falls. OCC has also submitted a Draft Environmental Impact Statement (DEIS) required for the proposed facility under the State Environmental Quality Review Act (SEQR). While the normal time frame for permitting such a facility would extend beyond the anticipated 1989 remedial start, the State and OCC are working cooperatively on this project. Once permitted, construction would be quick because the proposed facility is technically not difficult to construct.

Q. (A3) Why would OCC be willing to store the Durez wastes at an interim facility at Durez if the proposed Main Plant storage facility may be available a year later? (Page 46)

A. This issue has been the subject of much discussion between the State and OCC. The Consent Order is being structured to accomplish two goals regarding storage. These goals are: 1.) to develop the necessary storage capability as soon as possible so that the Durez wastes can be removed and isolated from possible human and environmental exposure, and 2.) to permit flexibility so that if and when the Main Plant storage becomes available, the Durez wastes would go there as quickly as possible. One thing that is being seriously considered is a temporary above ground facility at Durez that could house the Durez wastes in airtight containers while awaiting availability of the Main Plant storage facility. Such a facility at Durez would have a predefined life. If that predefined life is reached before the Main Plant storage facility is available, OCC would construct the proposed secure temporary land cell storage at

Durez. Under this proposed storage scheme OCC is willing to remove contaminated sediments prior to availability of the Main Plant storage facility.

Q. (A4) Who has the videotape made during the inspection of the Pettit Creek Flume and inventory of PCF laterals? (Page 50)

A. Both the City of North Tonawanda and the State have had access to the videotapes, however neither have a copy. Following the September 8, 1988 meeting OCC has supplied copies of the videotapes to both the City and the State.

Q. (A5) The Proposed Remedial Action Plan (PRAP) states that the exact method to be employed for removal of sediments from the sewers and the Pettit Creek Outlet Cove will be finalized during the detailed remedial design. How will the public be made aware of the details and selection of the methods? (Page 57)

A. From a technical perspective, the selection and details of removal methods will be based upon performance specifications. That is, OCC will request contractors to propose methods for work that will be performed in accordance with defined performance criteria such as adherence to Health and Safety requirements, extent of cleaning, material handling and transport requirements, etc. When OCC has selected methods for this remedial construction, the State and OCC will then present the detailed design for public review prior to the start of construction.

Q. (A6) Regarding the Pettit Creek Outlet Cove, what additional testing will be performed and what is being looked for? (Page 81)

A. The purpose of the additional investigations at the Outlet Cove is to collect geotechnical and chemical data to further define the extent of problems at the cove. The tasks that OCC is proposing or has completed include; inspection of the interior of the Lockport waterline, non-invasive geophysical analyses to map existing soil stratification and to accurately locate the Lockport waterline, make soil borings around the perimeter of the outlet cove for determining soil stratification and chemical contamination, sample and analyze the material underlying the coves soft sediments, and sample and analyze the backfill surrounding the Lockport Waterline. The information obtained will be used to further define extent of contamination and to serve as the basis for development and evaluation of additional remedial measures should they be necessary.

Q. (A7) Could there be contaminant migration from the Outlet Cove to the parcel of property, located approximately 1,000 feet north of the Cove, that was recently acquired by North Tonawanda for extension of Fisherman's Park? (Page 83)

A. Information obtained in March of 1988 from soil borings made around the perimeter of the outlet cove indicate that some migration of contaminants is occurring to the north of the cove at a depth of around 30 to 35 feet. Whether the migration is as far north as the Fisherman's Park extension is unknown, but it does appear unlikely that contamination from the cove is that far north. The proposed additional investigations of the Outlet Cove area will help to define the extent of contaminant migration.

Q. (A8) What is the completion date for the remedial program? (Page 97)

A. Subsequent to public review of the Proposed Remedial Action Plan OCC submitted an overall schedule for implementation of the Durez remedial program. The State and OCC are currently discussing the schedule. This schedule will be included as part of the Remedial Action Plan and will be appended to the upcoming Durez Consent Order. This issue will be directly addressed and will be presented as part of the public review of the Consent Order.

Q. (A9) The PRAP says that the bedrock aquifer remains uncontaminated, yet the remedial investigation does indicate some contamination of the bedrock aquifer. (Page 97-98)

A. During investigations of the bedrock aquifer low level "hits" of chemistry were found consistently in only one bedrock monitoring well. Review of well installation showed that this well was inadvertently installed through a pocket of pure chemistry located in a local bowl shaped depression in the clay confining layer. Assessment of the available data led OCC to conclude that the "hits" found in this well were the result of chemical drag down during installation of the well casing. The other wells came up non-detect for chemistry or were found to have sporadic "hits" at very low levels near the detection limits of the chemical analyses. Based upon this and all other bedrock aquifer data, the State was able to conclude that the bedrock aquifer, as a whole, is not contaminated at any consistently detectable level or at any level of concern.

Q. (A10) The remedial program includes a proposal for a short section of impermeable barrier wall. Can an effective impermeable barrier wall be constructed? (Page 98)

A. Yes. This technology has been proven at numerous sites around the State and country, including Love Canal.

Q. (A11) The remedial program makes no provision for long term monitoring of the bedrock aquifer, yet it would seem important to have some sort of monitoring system. (Page 98)

A. Long term monitoring of a contaminated site is a common component of many remedial programs. In the case of the bedrock aquifer below

Durez, the only identified pathway for contamination of the bedrock aquifer is the wells used for access to that aquifer. As such, the very wells that would be used for monitoring represent the greatest threat for future contamination of the bedrock aquifer. Because the bedrock aquifer is uncontaminated, the removal of the potential pathways for contamination is considered to be of greater need than the need for long term monitoring. Therefore, the remedial program proposes to seal all bedrock wells rather than keep them open for monitoring purposes.

Q. (A12) I don't understand from the PRAP the extent to which remediation will effect all contaminated sediments and/or all contaminated groundwater on and off the site. (Page 99)

A. The answer to this is contained in the Administrative Record. The PRAP is a summary document and could not possibly address every detail of the remedial program. For this reason the PRAP urged interested persons to read other project documents included in the Administrative Record.

Q. (A13) Multiple questions concerning the extent of contamination, details of remedial investigation, etc. (Page 100)

A. This information is fully documented in the Administrative Record found at the North Tonawanda Public Library. The interested public is encouraged to use the information and documents available in the Administrative Record.

Q. (A14) Why doesn't the plant remediation require excavation of all contaminated material? (Page 100)

A. Most of the material found at the Durez site is not grossly contaminated, however, the majority of the plant site, including soils and groundwater, is assumed to be contaminated to some degree. Excavation of all contaminated material, presumably for destruction, would eventually require excavating nearly the entire plant site and dismantling some of the Durez physical facility. This would result in well over a million cubic yards of material being picked up with nowhere to go. This proposal would also clearly force OCC-Durez out of business and would produce severe economic hardships to the people and government of North Tonawanda. It is the opinion of the State that the remedial program for Durez will be fully protective of public health and the environment without whole scale excavation of the plant site.

Q. (A15) Remediation of the plant panhandle proposes to remove soil as needed. What does "as needed" mean? (Page 100)

A. The intent of the panhandle remediation is to remove potential human exposures by covering and revegetating areas of known soil

contamination and unvegetated areas. The "as needed" language was included solely to permit flexibility in the event that covering existing soil with clean soil would cause problems with surface water drainage. However, given the nature of the panhandle area, it is expected that very little, if any, soils will have to be removed.

Q. (A16) **The PRAP proposes to remediate contaminated material found within a railroad ditch by installing a culvert and covering with clean soil. Why doesn't the program propose to remove and properly dispose of the contaminated material? (Page 100)**

A. The intent of installing the culvert is to isolate the contaminated material from human exposures. Because the material is not considered to be highly contaminated, removal was not considered necessary.

Q. (A17) **Are we accepting the notion that the plant site is to remain contaminated in perpetuity? Shouldn't the program address this concern? (Page 101)**

A. The program does address this concern. The proposed groundwater interceptor and treatment will continuously extract contaminants from the plant site. However, the nature of contamination at Durez does mean that it will take a long time before contamination is no longer a problem. For this reason, OCC will be required to operate the remedial facilities until OCC can prove that they are no longer needed.

Q. (A18) **Question concerning the discharge of chemicals into the City's sanitary sewer system, the levels of contaminants found there and what the remedial program proposes to do concerning sanitary sewer contamination. (Page 101-102)**

A. The levels of contaminants in the City's sanitary sewers are documented within the Administrative Record. Subsequent to preparation of the PRAP and the September 8, 1988 Public Meeting, OCC agreed to clean the contaminated sections of City sanitary sewer and plant property sanitary sewers as part of the Durez remedial program. This proposal will be made part of the Record of Decision. Concerning future discharges to the City sanitary sewers, this is mainly an issue between OCC and the City of North Tonawanda's Department of Public Works and is addressed by the City's sewage discharge authorizations. However, the remedial program will include long term monitoring of City sanitary sewers to assess the continued effectiveness of remediation.

Q. (A19) **Why doesn't the remedial program directly address contamination in the plant's sanitary sewers? (Page 102)**

A. Subsequent to preparation of the PRAP and the September 8, 1988 public meeting, OCC committed to clean plant property sanitary sewers. This proposal will be implemented along with those actions already identified within the PRAP for remediation of plant sanitary sewers.

Q. (A20) **Does the remedial program propose to clean all contaminated sediments from the Pettit Creek Flume (PCF) or is there some level of contaminated sediments or area of the PCF that will not be cleaned? (Page 103)**

A. All sediments contained within the PCF will be removed, regardless of contaminant level or location.

Q. (A21) **Is there a mechanism, such as cracks, that allows contaminants to escape the PCF and enter the ground, groundwater or elsewhere outside of the PCF? (Page 103)**

A. Video inspection of the PCF shows a number of cracks and open joints in the PCF that would allow passage of water. However, for its entire length the PCF is considered to be a sink for local groundwater and as such, hydraulic gradients will force outside groundwater into the PCF. With this flow pattern, contaminated water from within the PCF is not likely to escape the confines of the PCF. Only during high flow events might there be a gradient allowing PCF water to escape through the joints. However this is a short, transient condition and the return to normal, inward gradients would quickly bring any escaped PCF water back inside.

Q. (A22) **Question concerning the extent of cleaning for City storm sewers other than the PCF. (Page 103)**

A. The sections of City storm sewer identified for cleaning include all sections found to be contaminated.

Q. (A23) **Will the remedial program address contaminated bedding of storm and sanitary sewers? (Page 105)**

A. Yes, the program addresses beddings both on and off of the plant site. On the plant site, contaminants will be drawn off and treated by the proposed interceptor trench. Off of the plant site the contamination found in the Walck Road storm sewer bedding will be drawn back into the interceptor trench and treated. To facilitate this, OCC has proposed to construct a lateral from the interceptor trench to the Walck Road sewer bedding. Any contaminants found off the plant site in bedding of the city's sanitary sewers will not be recovered. It is assumed that the amount of chemistry involved is small. Recovery of this material would be very difficult, costly and disruptive. There is no identified route of exposure to this chemistry unless it reenters the sanitary sewer. Once inside the

piping, this minor amount of chemistry can be easily handled by North Tonawanda's advanced waste treatment facility and would not be expected to exceed the facilities operating requirements.

Q. (A24) **Why does the remedial program propose an interim storage facility in a populated area? OCC owns a large parcel of land in Niagara County near the SCA facility in a non-urban area. Why not use this location for storage? (Page 107)**

A. Under current statutes, the only legally available location for storing the Durez wastes is at the Durez plant. There is no other location in the country that can legally handle this material. OCC has proposed to develop a legally available, permitted facility at its Buffalo Avenue Plant in Niagara Falls and the State is encouraged by this proposal. OCC has not given any indication that they are considering or would be willing to consider constructing a storage and destruction facility for handling Durez wastes at any other location. However this issue would more appropriately be addressed by review of the proposed Main Plant project.

Q. (A25) **The remedial program is proposing interim storage for the Durez material. How long is interim? (Page 107)**

A. This issue will be addressed in detail within the Consent Order for remediation of the Durez site. The Consent Order will require OCC to move the material to the Main Plant should that facility become available. The Order will also require OCC to evaluate treatment technologies every four years and to implement a treatment as soon as one becomes available. As an additional measure, the Order will require OCC to remove the material after eight years. In the event that there are no options for removal after eight years, the matter will be referred to the Court.

Q. (A26) **To what extent would the selection of a treatment technology be based upon cost effectiveness requirements of State or Federal statutes? (Page 108)**

A. Protection of human health and the environment as well as technical effectiveness are the primary selection criteria for a remedial treatment technology. Cost effectiveness is also a selection criteria and is used to choose between technologies that are otherwise equivalent. However, for Durez, cost effectiveness has not been used as a selection criteria.

B. HEALTH AND SAFETY CONCERNS

Q. (B1) How will residents be protected from possible airborne or waterborne sediments during construction activities? (Page 48)

A. A detailed Remedial Health and Safety Plan is being developed to address this very important concern. Among other things, this Health and Safety Plan will include requirements for community air monitoring to follow the level, if any, of harmful airborne chemicals. The Health and Safety Plan will include requirements for OCC to modify or cease construction activities in the event that airborne contaminants become a problem. Additionally, the State on-site representative will have the authority to shut down work in the event that anything is amiss from a Health and Safety standpoint. The Health and Safety Plan will also address, among other things, requirements for dealing with any accidental spills of contaminated material, worker safety and personal protection equipment, security and site control, equipment decontamination, and numerous other safety issues. The Health and Safety Plan will be made available to the public for comment as part of review of the Durez Consent Order and its attached Remedial Plan.

Regarding possible waterborne contaminant exposures, the State and OCC recognize this as a serious issue and will be addressing this from several angles. First, removal methods will be tailored to minimize the generation of excess contaminated water. Second, for purposes of this program, any water that comes into contact with contaminated sediments will be considered contaminated and will be collected and treated. Third, OCC will be developing a number of requirements for sediment and erosion control. As an example, during cleaning of the City's storm sewers, OCC will construct a silt trap to act as a third line of defense to remove any waterborne sediments that may escape collection.

Q. (B2) **A number of City residents along the route of the Pettit Creek Flume (PCF) believe that their houses may be directly connected to the PCF via interconnections, floor drains, etc.. Has an evaluation of this possibility been made and who is going to notify residents if they are connected? (Page 51-52)**

A. A comprehensive, house by house evaluation has not been made. A number of residences were evaluated in response to individual complaints regarding possible interconnections. In each case evaluated, no direct connections to residences were identified. Additionally, floor drains checked were found to be trapped in conformance with standard plumbing practices and building code requirements. Trapped connections, even if connected to the PCF, would not allow any vapors from the PCF to be emitted.

As a result of the previous evaluations made, the State did not identify a need for a full, house by house, search for possible interconnections. However, because of strong public concern over

this issue, the State agrees to further address this issue by including a more comprehensive evaluation of possible interconnections. See Section II of this Responsiveness Summary for an outline of the State's proposal.

Q. (B3) Has there been any surveys done to assess the health of residents living near the Durez facility and could there be an ongoing survey to monitor the health of these residents? (Page 60-61)

A. The New York State Department of Health is in the process of performing a Cancer Cluster investigation for North Tonawanda and the area around Durez. This is an exacting and time consuming investigation. At this time, the necessary data has been gathered and summarized. The tasks remaining include the comparison of observed cancer incidents with expected values. This is the raw analysis. Should observed cancer rates exceed expected rates, then a follow-up will be performed to determine possible causes and to see if the cancers are truly occurring as a result of proximity to Durez.

Regarding an ongoing survey, the need for such a survey will necessarily be dependent upon the current cancer cluster investigation and any follow-up that may occur. At this time, there are no ongoing survey or monitoring programs being set-up, however this will be considered, depending upon results of the current investigation.

Q. (B4) Residents' basements in North Tonawanda have been severely flooded in the past, including last July. Were there any contaminants in the water that filled the basements? (Page 76)

A. The State does not know whether the flood waters came from back-ups from storm or sanitary sewers or from infiltration of surface waters or groundwater. However, some sampling and analysis of sediments found in basement sumps has been done and no indication of contamination was found. The State's proposal to make a comprehensive evaluation of possible storm sewer interconnections will help to answer some of these questions regarding possible contamination by backups and flooding.

Q. (B5) Could contaminants from the City's storm sewers have escaped the sewers and entered distribution pipes for North Tonawanda's drinking water? (Page 86)

A. Engineering evaluations of this possibility shows this to be highly unlikely. First, concerning the migration of Durez chemistry out of the storm sewers, see the response to question A21. Second, regarding the intrusion of contaminants into the water distribution system, the water distribution piping in the area around the contaminated sewers are all force lines. That is, all of this piping

is on the positive pressure side of distribution pumps. The positive pressure in these lines would cause drinking water to exit the pipe through any holes or cracks in the line, and would not allow groundwater to enter the pipe. As such, even if there were contaminants present in the soil or groundwater surrounding a pipe, these contaminants would not enter the water supply system.

The City of North Tonawanda Public Water Supply (PWS) system is regulated by the DOH under Part 5 of the State Sanitary Code. As such the operation, maintenance and monitoring of drinking water quality is carried out and assessed in a prescribed manner. Drinking water is monitored for bacteriological, radiological, organic and inorganic constituents on a routine basis. Additionally, the City's drinking water supply has been evaluated for an expanded list of analytes as part of a DOH Statewide survey. The City of North Tonawanda PWS is in compliance with Part 5 and drinking water quality meets or exceeds all standards and guidelines.

Q. (B6) **How do Durez facility employees normal tasks involve them with possible exposure to contaminants? What measures will be taken to ensure that Durez facility employees are protected from possible exposures as a result of remedial construction activities? (Page 101)**

A. The normal tasks of Durez facility employees could potentially cause exposures to contaminants at the Durez plant, both prior to and during remediation. It is the intent of the remedial program to minimize potential exposures to the Durez workers during remediation and for the long term following remediation. Potential exposures during remediation will be directly addressed by the Remedial Health and Safety Plan. The Health and Safety Plan will require the same type and level of protections for Durez workers as for all other members of the public community (See response to Question B1). Potential exposures over the long term are being addressed by the selected remedial alternatives and by the technical details to be developed for implementing remedial measures.

Q. (B7) **Has the State Health Department taken samples from Lockport's water system for analysis of Dioxin or its isomers? (Page 105)**

A. Previously completed analyses indicate that the City's drinking water quality meets or exceeds all standards and guidelines. Additionally, the City of Lockport public water supply system has recently been sampled by the DOH for analysis of an extensive list of analytes. Raw water, finished drinking water and selected samples throughout the plant were analyzed. A report of the Health Department's findings is being prepared.

Q. (B8) **Given the concerns with potential impacts on Lockport's**

waterline, has any consideration been given to relocating the waterline? (Page 106)

A. At this time, there have been no identified adverse impacts to the Lockport waterline that can be attributed to Durez chemistry. However, because the possibility of adverse impacts to the waterline exists, OCC and the State are continuing efforts to fully identify any problems associated with the waterline. Until the problems are defined and unless adverse impacts to the waterline are found to exist, discussions of waterline location would be premature. However, waterline relocation certainly would be discussed as a remedial option if and when the need arises.

C. LEGAL ADMINISTRATIVE AND PUBLIC PARTICIPATION CONCERNS

Q. (C1) Has OCC been determined to be liable for the problems associated with the OCC-Durez site? (Page 16)

A. Liability is a legal term determined after a matter goes to trial and a decision is reached. OCC has committed to a considerable amount of remedial work at their site and this case appears to be on the way to being settled without litigation. Thus, unless we do end up in litigation, the legal determination of liability will not be made.

Q. (C2) Do OCC and the State bear the cost for remediation of the Durez Site? (Page 17)

A. OCC will bear the cost for remedial activities required for clean up of the Durez site. The State will provide review of final design and oversight of remedial construction activities. The State will seek full reimbursement from OCC for past and future response and oversight costs.

Q. (C3) If, at a later date, it is determined that there is a route of exposure to the Durez contaminants and that a person has been injured by this, will settlement of the State's lawsuit preclude an individual from suing Durez? (Page 18)

A. No, absolutely not. This issue will be directly addressed in the interim Consent Order currently being negotiated.

Q. (C4) When will a Record of Decision for the Durez site be made, is there a legal time frame for this? (Page 20)

A. There is no legal time frame. For this case it is anticipated that a Record of Decision will be issued in January of 1989.

Q. (C5) If the contaminated material form the Durez clean up is stored in a secure facility at the Durez plant, will there be any legal requirements keeping Durez from becoming a secured dump site for other communities to use? (Page 47)

A. In the event that contaminated material removed during clean up of the Durez site becomes stored in a secure facility at the Durez plant, such storage would be authorized only under the terms of the clean up program as embodied in the interim Consent Order. No other wastes will be authorized for storage at Durez by the Consent Order. For OCC to receive authorization to dispose of any other hazardous wastes they would have to develop a separate storage facility and obtain a RCRA permit for that facility. It is extremely unlikely that OCC would apply to permit such a facility or that such a facility could meet all State and Federal requirements for a facility to receive commercial hazardous wastes for storage. It is equally

unlikely that OCC would have the necessary support of the public, local government or State for such a facility.

Q. (C6) Who is going to monitor the remedial construction activities? (Page 48)

A. The State Department of Environmental Conservation will be monitoring all construction activities performed for the Durez remediation. The State Department of Health will also provide additional oversight for ensuring adherence to the Health and Safety Plan. The interim Consent Order negotiated for implementing the Durez clean up will provide authority for the State to stop construction work in the event of any threats to the Health and Safety of the community or to workers involved in the clean up.

Q. (C7) Could a local residents committee be set up to go on-site with appropriate safety equipment to monitor the Durez remedial construction activities and health and safety concerns? (Page 54-55)

A. This question brings up a very useful, and difficult, suggestion for providing an additional oversight of remediation by those people closest to the problem. The difficult part is that for close in monitoring of work zones, the citizens that would be on the committee must first complete an OSHA certified 40 hour Health and Safety course, must meet minimum experience qualifications and must then be fitted into proper personal protection equipment. This is a requirement of the remedial Health and Safety Plan and will not be waived for anyone entering a work zone. An additional difficulty lies in the issue of liability for anyone entering the Durez plant site or the off plant work zones.

As an alternative to this proposal, the State is willing to assist a local residents committee to monitor the construction practices from outside the active work zones. The State is willing to provide informal training to familiarize the committee with the personal protection equipment and the type of monitoring equipment that will be used during the Durez remediation. The State's On Site Coordinator (OSC) will be available to meet with members of the citizens committee to discuss project progress and any problems that may be encountered. Concerning access for monitoring, the remedial activities for the Pettit Creek Flume and other City sewers will be easily observable from outside the work zones. For monitoring activities on the Durez plant site, the State will approach OCC with the issue of access by members of the proposed committee if the committee so requests.

Q. (C8) The people from North Tonawanda want representation in developing and implementing the Durez remedial program. (Page 90)

A. The State understands this concern and does represent the citizens of North Tonawanda. Additionally, the City of North Tonawanda has been

designated as an intervening party to the lawsuit brought against OCC by the State. This gives the City direct access to meetings and negotiations held to define the remedial program and provides input to allow the City government to watch out for the best interest of the citizens of North Tonawanda. Also, there has been a good deal of active public participation throughout the development of the Durez program. This speaks well for the citizens of North Tonawanda and has provided for several modifications to the Durez program. Also, see response to question C7 above and C12 below.

Q. (C9) **Does the Proposed Remedial Action Plan (PRAP) propose to use "Community Assessment" as a criterion for evaluating the proposed remedial alternatives, or should this be "Community Acceptance"? (Page 97)**

A. The proper evaluation criterion should be "Community Acceptance". The evaluation of selected remedial alternatives against this criterion will be documented within the Record of Decision.

Q. (C10) **Why is the proposed additional Outlet Cove remedial investigations not addressed by the PRAP or within the interim Consent Order? (Page 106)**

A. The additional investigations are being developed with good cooperation from OCC. This has generally been the history of Durez investigations. As such a legal order to perform the investigation is not considered necessary and would most probably result in delays to the investigation. In fact, three of the tasks required by the investigation are scheduled to be performed prior to the earliest possible completion of the Durez interim Consent Order.

Q. (C11) **The State should provide the City, citizens and organizations in the City of Niagara Falls with a full and fair opportunity to participate in the proposal to dispose of the Durez material at the OCC Main Plant. (Page 107-108)**

A. The proposal to dispose of Durez wastes at OCC's Main Plant will be fully discussed during the permitting procedures required under the Resources Conservation and Recovery Act (RCRA) for the proposed Main Plant facility. This proposal will be also subjected to the requirements of the State Environmental Quality Review Act (SEQR). Both of these environmental protection statutes have clear, strong requirements for public participation in the decision making process. It is through these requirements that the citizens, organizations and City of Niagara Falls will be fully informed and will receive a full and fair opportunity to participate.

Q. (C12) **The State should include within the final PRAP or Consent Decree**

a substantive mechanism for public review and comment on the Durez program as it develops. (Page 110)

A. The State agrees that substantive public review during development of designs for the Durez clean up is necessary, important and desirable. The Durez Consent Order and Remedial Plan will be the subject of a public review period and meeting. Additionally, as draft final design documents become available they will be made available to the public at the document depository in Niagara Falls.

Q. (C13) The Responsiveness Summary should be made available in a time frame that allows the public to respond to them prior to a final decision being made. (Page 110)

A. A Responsiveness Summary is not normally the subject of public review and comment. It is the responsibility of the Commissioner of the Department of Environmental Conservation to assure that the Responsiveness Summary and the Record of Decision are responsive to the public's concerns. Until the Commissioner is satisfied that the remedial program is responsive to the public, a final decision will not be made and the Record of Decision will not be authorized.

D. MISCELLANEOUS CONCERNS

Q. (D1) When the City of North Tonawanda designed and built its waste treatment plant, were the Durez operations factored in? (Page 94)

A. The design for any municipal treatment plant is based upon estimates of loadings into the system. As a major industrial entity, the Durez facility operations would have been included in the the estimates for waste treatment loadings. In fact, North Tonawanda's selection of advanced carbon adsorption technology for the waste treatment plant may be in part, based upon the Durez loadings.

IV RESPONSES TO WRITTEN COMMENTS

A. RESPONSE TO MR. JACK M. FOX, Esq. - Letter dated September 28, 1988

The Proposed Remedial Action Plan (PRAP) does recognize and address the contamination found in and around the Pettit Creek Outlet Cove. Section III of the PRAP identifies removal of contaminated sediments from the Pettit Creek Outlet Cove as the preferred remedial action for the Cove. The PRAP further states that "investigations of the PCF Outlet Cove geology and chemical contamination are ongoing" and that "other remedial measures would be developed at a future date if ongoing outlet cove investigations indicate such a need".

The intent of the ongoing outlet cove investigations is to identify any problems with the Lockport Waterline and to further define the extent of contamination of the cove and the surrounding area, including Mr. Williams' property. See responses to meeting comments A6 and A7 contained herein.

A number of soil borings for determining contamination have already been completed as part of continuing cove investigations. Within the past several months twenty-one soil borings, including eleven on Mr. Williams' property, have been completed. The results of chemical analyses of soils from various depths in these borings will be used to help determine the extent of contamination and the objectives and need for additional investigations or remedial actions.

The highest levels of contaminants encountered during the Durez investigation were found within the PCF storm sewer well upstream from the outlet cove. This material will be completely removed by the proposed remedial actions.

THE LAW OFFICE OF JACK M. FOX
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ORCHARD PARK, NEW YORK 14127

(716) 662-5563

DATE Sep 28, 1988 (Wed)

SUBJECT OCC-DUREZ SITE Comments

NY DEC -Mr. Craig D. Jackson, P.E.

50 Wolf Road - Room 222

Albany, New York 12233-7010

I represent Daniel H. Williams and Clarence C. Williams, owners of land surrounding the "Pettit Creek Flume." I have reviewed the proposed remedial action plan concerning the OCC-Durez pollution abatement dated August 1988.

The document entitled "OCC-DUREZ SITE PROPOSED REMEDIAL ACTION PLAN, Published By New York State Department of Environmental Conservation Division of Hazardous Waste Remediation" herein referred to as "the proposal," fails to recognize and address groundwater and soil contamination surrounding the Pettit Creek Outlet Cove. Therefore the plan is unacceptable and incomplete (see copy of letter from Murray E. Sharkey, P.E. dated May 12, 1988). If the proposal is accepted without addressing the groundwater and soil surrounding the cove, the Department of Environmental Conservation should be estopped from denying any permits or authority based upon contamination, to my clients plan to construct a marina at the pettit cove site.

As acknowledged by the proposal, the PCE was found to have "the highest level of contamination encountered during the Durez investigation." These contaminates pose an immediate threat to the Little Niagara River and the City of Lockport's fresh water supply. We therefore object to any plan which fails to thoroughly address and prioritize the most critical and pending threats to safety, health and welfare.

SIGNED

☐ *PLEASE REPLY* ☐ *NO REPLY NECESSARY*

B. RESPONSE TO MR. GARY J. FRANKLIN, Superintendent of Public Works,City of North Tonawanda - Letter dated September 29, 1988

The selection of a "no action" alternative for most of the plant sanitary sewers was identified as a preferred alternative only after development and identification of alternatives for other aspects of the remedial program that indirectly help mitigate problems with the plant site sanitary sewers. However, subsequent to public review of the Proposed Remedial Action Plan (PRAP), OCC has agreed to clean plant sanitary sewers as part of the Remedial Program. This commitment was made to avoid possible recontamination of the City's sanitary sewers.

Regarding continuing and future sanitary sewer inflows from the Durez plant, the remedial program and OCC have not identified any illegal contributions or contaminant inflows from plant operations. However, there are no assurances that such flows will not arise in the future. Although this is an operating issue beyond the scope of the remedial program, OCC will continue to monitor the sanitary sewers downstream from Durez. The required monitoring will be long term and will help to determine if the sanitary sewers remain clean of Durez chemistry following remediation.

A comparison of chemical contaminant level in the City's sanitary sewer sediments downstream from Durez with sanitary sewer sediments contained within the Durez plant sewers can not be made at this time. This points out an oversight of the remedial investigation. Although sanitary sediments immediately adjacent to Durez were tested, no sediments from within the Durez plant sanitary sewers were tested. Additionally, the quantity of sediments contained in Durez plant sanitary sewers is not known. However, because OCC has committed to clean the plant sewers as part of the remedial program and dispose of the removed sediments in the same manner to be used for other remedial sediments, there is no need for any additional analyses of plant sewer sediments.

The intent of the remedial program is to limit the migration of chemistry from Durez through all identified potential pathways, including sanitary sewers. The North Tonawanda wastewater treatment plant (POTW) is not considered to be a catch all for migrating Durez chemistry. The POTW is considered within the Proposed Remedial Action Plan (PRAP) only to illustrate that the potential for exposures and environmental releases caused by chemical migration through the sanitary system is further reduced by the presence of the POTW. Long term monitoring will help to identify any future problems that may arise from chemical loadings from Durez.

Subsequent to preparation and public presentation of the PRAP, OCC has committed to clean certain portions of the City's sanitary sewer system as part of remedial activities. See Section II of this Responsiveness Summary. Although the contaminant level within the sanitary sewer sediments are much lower than that found in the storm sewers, the proposed cleaning by OCC is considered to be a positive

action that will limit possible chemical exposures that City workers may inadvertently receive during routine cleaning of these sewers. The cleaning proposed by OCC will take advantage of OCC's contractor's experience and will be performed under the requirements of the Remedial Health and Safety Plan. During cleaning provisions will be made to reduce or eliminate any potential for human exposures, including possible back-up of fumes or sediments into connected structures.

The need for grouting of City sanitary sewers has not been demonstrated. However, should the need be demonstrated by post remediation monitoring or other information, sewer grouting could be implemented at a later date.

The DOH has agreed to meet with the City of North Tonawanda Superintendent of Public Works and his staff to review and evaluate past and present sewer maintenance practices. In this way the DOH will better understand the types of exposures to contaminated sewer sediments that may have occurred. Further evaluations, as determined by this review, will then be designed.

Department of Public Works

CITY OF NORTH TONAWANDA, N. Y.

758 ERIE AVENUE
NORTH TONAWANDA, N.Y. 14120

Phone: 695-8585

September 29, 1988

Mr. Craig D. Jackson, P.E.
New York State
Dept. of Environmental Conservation
50 Wolf Road - Room 222
Albany, New York 12233-7010

Re: North Tonawanda, N.Y.
OCC-Durez
PRAP
Public Comment

Dear Mr. Jackson:

I have a few comments to make on the proposed Remedial Action Plan as presented during the public meeting held September 8, 1988.

My first comments deal with Section I of the Plan, Plant Site, Part C, Plant Property Sewers on the subject of plant sanitary sewer remediation. The plan's preferred action is to deem no action required with the exception of disconnecting and plugging currently unused plant sanitary sewers. Supporting this preferred action are three reason which I would like to address individually.

The first reason stated is that there are no process discharges into the sanitary system. While this may be demonstrably supported by field investigation, it occurs to me that lesser volumes may enter the system thru floor drains in plant areas and sink and basin drains particularly in laboratory areas. This is not so much a question of remediation as it is of ensuring avoidance of future contamination in the sanitary system as no degree of safeguarding such inflow sources of contaminants will in any way remediate existing conditions in the plant site sanitary system.

The second reason cited was that investigative analysis of downstream City sanitary sewers indicate that high concentrations of organic chemicals have not been discharged into the City system. This conclusion, I believe was developed by a finding of very small volumes of sediments in the sanitary sewers as compared to the Petite Creek Flume and storm sewers bounding the plant site and low concentrations found in those limited volumes. This conclusion does have to be tempered with the fact that the flow velocities in the sanitary system are higher and periodic cleaning of sanitary system has taken place down thru the years. As plant site sanitary sewers may not have been as routinely cleaned of sediments thru the years, do plant site sanitary sewers show appreciably higher concentrations of Durez chemistry than the adjacent City's sanitary sewers?

The last reason given for the preferred action of no action is that the POTW has activated carbon adsorption treatment incorporated into it. If this is the catch-all solution to whatever Durez chemistry enters into the City sanitary sewer system, then I believe Durez should be obligated to provide whatever analysis is required to study the impacts of such chemistry on the POTW and its maintenance and operations. The City, of course, has a State and Federally mandated Sewer Use Ordinance which precludes the discharge of such toxic materials to the sanitary sewer collection system.

My opinion on the subject of the Plant's sanitary sewer system is that while the proposed peripheral plant site interceptor drain will limit or reduce future infiltration of the sanitary sewer by groundwater borne contaminants, it will not alter existing contaminated sediments presently within the plant site sanitary sewers. If it is the State's conclusion that such existing sediments do not exist in sufficient volumes or do not have high enough concentrations of Durez chemistry to be of a health or environmental concern, then they should state so. If this is not the State's conclusion, then a preferred action of no action is not an adequate response.

My other comments have to do with Section II, North Tonawanda Sewers, and in particular the terse item on City Sanitary Sewer Remediation. It is my opinion overall that the PRAP has glossed over the problem of the sanitary sewer remediation for the following reasons:

1. The volume of contaminated sediments in the City's storm sewer system has focused everyone's attention on them rather than separately evaluating both sytems independently.

2. The sanitary sewers are of considerably smaller sizes and limit cleaning options as being considered for the Petite Creek flume. The cleaning procedures should be addressed independently along with independent considerations given to grouting requirements.

3. The sanitary sewers are, unlike the storm sewers, connected to the homes and businesses along the streets and for this reason health concerns may become more significant during remediation work. In the State's own hierarchy of concerns in evaluation of proposed remediation actions this fact significantly alters the evaluation of sanitary sewer remediation plans from those of storm sewer remediation plans.

In my opinion, the State has shown some need for the remedial cleaning of the City's sanitary sewers while finding no need to clean the plant site sanitary sewers. I would conclude that the State is of the opinion that similar levels of contamination are calling for different levels of response due to the connections to the buildings and the non-site contained nature of the City's sanitary sewers. If, however, the levels of contaminates encountered are equal to or less than those found in plant site sewers and the State feels these levels do not represent significant health and/or environmental concerns, they should prefer no remedial action if indeed none is indicated. If, on the other hand, an independent analysis of the City's sanitary sewers demonstrates a need for remedial action, then a proposed remedial action plan evaluating the characteristics of sanitary sewers which are significantly different from storm sewers should be developed. Basically, if indeed it has to be done they let us prepare to do it correctly.

One other basic item of remediation of the City's sanitary and storm sewer system concerns the City's employees who have been in these sewers over the years performing maintenance and cleaning operations. I feel strongly that any remediation plan of these systems should include at least a medical evaluation of those employees and a study of any health hazards they may have been exposed to and a determination of their current conditions. I have left this concern for last as I want this to remain freshest in your mind amoungst all my comments.

Very truly yours,

Gary J. Franklin

Gary J. Franklin
Superintendent Public Works

GJF/rk

C. RESPONSE TO REVEREND ALBERT R. LEASE, President, Ecumenical Task ForceBoard of Directors - Letter dated September 30, 1988

The State agrees that the option for Interim Storage of Durez wastes at a storage facility proposed for OCC's Main Plant in Niagara Falls requires a good deal of thought and public participation. Before this option can become reality, OCC must first obtain a Resource Conservation and Recovery Act (RCRA) permit for the proposed storage facility. The proposed storage facility must also meet all of the requirements of the State Environmental Quality Review Act (SEQR) and the State Environmental Law Title 11 requirements for Siting Hazardous Waste Facilities. As part of the evaluation and permitting process there will be a full and comprehensive review of the proposed facility. Legal requirements as well as DEC policy will ensure that the public will be fully informed and will be provided with a fair opportunity for input.

Regarding EPA policy on disposal of Dioxin wastes, the EPA permits return of Dioxin wastes to the point of generation or removal to a facility fully permitted to receive such wastes. To date, there has been no permitted facility available to receive these wastes. As such, prior to OCC's Main Plant proposal, there was no alternative to storage of the Durez wastes back at Durez. If successful, OCC's proposal would create a facility that would be fully permitted to receive the Durez wastes.

Transportation of the Durez wastes to OCC's Main Plant would be substantially longer than the transport back to Durez. The issue of transportation to the proposed Main Plant facility is a major concern and will be evaluated by both governmental and public review. This issue will be weighed with many other factors in the development of decisions regarding the Main Plant proposal.

The issue of separability of the proposed Main Plant storage facility from the proposed Main Plant solid hazardous waste facility will be addressed as part of review of the Main Plant proposal. However, as part of the Interim Consent Order for the Durez remediation, OCC will be required to make a periodic assessment of alternatives for destruction or detoxification of the Durez wastes. This assessment will be required for as long as these wastes remain in storage, regardless of location. As such, should the Durez wastes become stored at the Main Plant and the proposed incinerator does not materialize, OCC will still be required to seek an alternative destruction or detoxification technology. OCC will be required to implement an alternative treatment technology when it becomes available.

Ecumenical Task Force of the Niagara Frontier, Inc.
259 Fourth Street • Niagara Falls, New York 14303 • 716-284-0026

September 30, 1988

Mr. Craig D. Jackson, P.E.
NYS Department of Environmental Conservation
50 Wolf Road, Room 222
Albany, New York 12233-7010

Re: Occidental Durez Site
Proposed Remedial Action Plan

Dear Sir:

The Ecumenical Task Force raises the following concerns regarding the above cited Remedial Action Plan:

Part IV Disposition of Contaminated Wastes, Alternative #3, requires much thought and public comment. First of all, Alternative #3 implies or assumes an Environmental Protection Agency change relative to dioxin contaminated waste. We are not aware of a change in the policy of requiring these wastes to be kept at/returned to their site of origin (in this case Durez). If this policy has been changed, we are not aware of it, nor have we had opportunity to comment on it! Secondly, this Alternative requires a considerably longer distance of transportation (4 to 5 times the distance).

In many ways this proposal represents a form of toxic musical chairs, since no community will volunteer to host a contaminated waste storage facility! Niagara Falls has no more desire for such a facility than North Tonawanda.

Certainly there are also merits to Alternative #3. As Occidental cites, it would be further from residential and recreational areas than the Durez location.

We trust that a comprehensive evaluation of the pro's and con's of interim storage at Occidental's main plant can be accomplished through your (DEC's) permitting process for such a facility. We commend the DEC for requiring adherence to the permit requirements for the facility.

It will be difficult to evaluate this intermin storage facility apart from its eventual companion destruction facility (rotary kiln), for without the destructive facility, the storage is anachronistic!

Sincerely,
Albert R. Laese/bh
Rev. Albert R. Laese
President, ETF Board of Directors

ARL:bh
cc. Mayor Elizabeth Hoffman
Mr. David Brooks

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DUREZ RECORD OF DECISION

APPENDIX C
ADMINISTRATIVE RECORD - BIBLIOGRAPHY

BIBLIOGRAPHY:

ADMINISTRATIVE RECORD

for the

REMEDIAL PROGRAM

OCC - DUREZ SITE
Site No. 932018

in

North Tonawanda, New York

Updated: December 1988

Prepared by: New York State Department of Environmental Conservation

1. "Hydrogeologic Investigation, Durez Division, Hooker Chemicals and Plastics Corporation", RECRA Research, Incorporated, October 1980. 1 Volume.

2. "Report of Continuing Field Investigations, Summer 1982", Occidental Chemical Corporation, November 1982. 3 Volumes.

   SECTION I, Introduction, Summary and Conclusions
   SECTION II, Hydrogeology
   SECTION III, Sampling and Analytical Chemistry

3. "Report of Continuing Field Investigations and Exposure Assessment, 1983", Occidental Chemical Corporation, January 1984. 3 Volumes.

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   SECTION II, Hydrogeology
   SECTION III, Sampling and Analytical Chemistry

4. "Report of Continuing Field Investigations and Exposure Assessment, 1983. New York State Comments and Requests for Clarification. OCC Response", Occidental Chemical Corporation, March 1984. 1 Volume.

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   SECTION I, Introduction, Conclusions, Exposure Assessment and Site Operations Plan
   SECTION II, Hydrogeology
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9. "Hydrogeologic Evaluation of the Durez Plant Site, North Tonawanda, NY", Geologic Testing Consultants, Ltd., June 1985. 1 Volume.

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16. "Video Inspection of the Pettit Creek Flume, North Tonawanda, New York", Occidental Chemical Corporation, March 1987. 1 Volume.

17. "Proposal for Solid Waste Storage and Destruction", Occidental Chemical Corporation, February, 1988.

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19. Transcript of September 8, 1988 Public Meeting. Prepared by Jack W. Hunt and Associates for NYSDEC. 1 Volume.

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