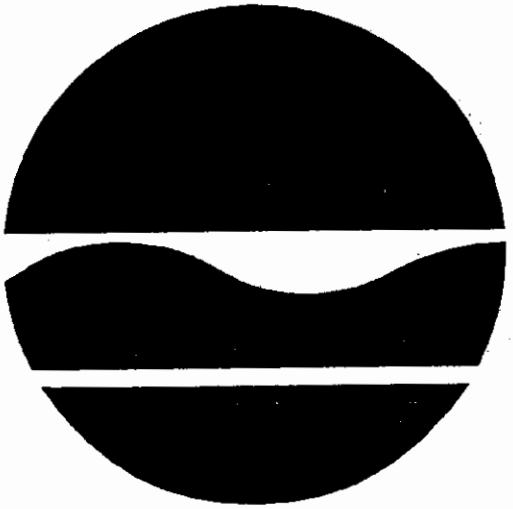
Clark Property

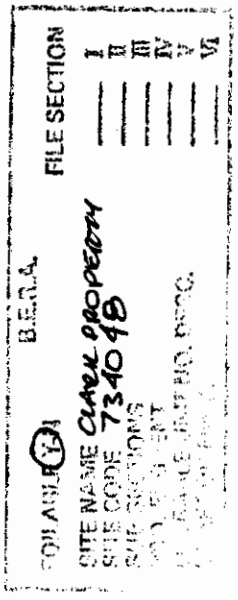
Inactive Hazardous Waste Site

Syracuse (C), Onondaga County, New York
Site No. 734048

RECORD OF DECISION

March 1994





Prepared by:

New York State Department of Environmental Conservation
Division of Hazardous Remediation

DECLARATION STATEMENT - RECORD OF DECISION

Clark Property Inactive Hazardous Waste Site
Syracuse, Onondaga County, New York
Site No. 734048

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Clark Property inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

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

Assessment of the Site

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

Description of Selected Remedy

Based upon the results of the Remedial Investigation/Feasibility Study (RI/FS) for the Clark Property and the criteria identified for evaluation of alternatives the NYSDEC has selected the no further action alternative. The components of the remedy are as follows:

1. The completed containment structure maintenance and monitoring.

2. Collection of leachate from the containment structure with off-site disposal.

3. Continuation of pumping and treating groundwater from the excavation site.

4. Financial assurance plan for operation and maintenance for 30 years.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

March 25, 1994
Date

Ann Hill DeBarbieri
Deputy Commissioner

TABLE OF CONTENTS

SECTION 1: SITE LOCATION AND DESCRIPTION

The Clark property is located adjacent to West Hiawatha Boulevard in Syracuse, NY. The property is bordered on the south by Amerada Hess Corporation property, on the east by the Buckeye property, and on the north and west by Carousel Center property. (See Figure 1)

The Clark property covers approximately 3.5 acres. Prior to construction and development of the Carousel Center, the topography was relatively flat with elevations ranging from approximately 6 to 15 feet above the City of Syracuse Datum (366 feet to 375 feet above mean sea level). The portion of the Clark property that is listed in the NYS Registry of Inactive Hazardous Waste Sites is a parcel approximately one acre in size at the southeast corner of the property (Figure 2).

SECTION 2: SITE HISTORY

The broad, low area immediately southeast of Onondaga Lake was originaly a salt marsh. Saline groundwater reportedly discharged to the marshes and formed salt springs. This natural feature was exploited for salt production as early as the mid 1600's. Maps dated 1892 and 1908 show that the Clark property was being used as evaporation plots for salt production.

A number of changes occurred during the period when the Clark property was used as salt plots. The original channel of Onondaga Creek which crossed the western and southeastern boundaries of the Clark property was straightened and relocated. The straightened channel was later used as part of the New York State Barge Canal System which opened in 1917.

The level of Onondaga Lake reportedly changed on two occasions during the 1800's. The lake level was intentionally lowered in 1822 by as much as 11 feet. This resulted in exposure of a wider portion of salt marsh for exploitation by the salt producers. The lake level was raised following the alteration of Onondaga Creek but reportedly did not return to its previous levels. The lake level rise enabled barges to navigate into the new channel via Onondaga Lake.

Use of this area for salt production apparently ended prior to 1910 when filling activities began. A 1928 map shows the southern half of this area as a farm lot, probably pasture, owned by Thomas Biggs. Around the turn of the century, the site began to be used for the disposal of inert hard fill. The Allied Corporation disposed of Solvay Process Company waste in this area from 1907 to 1910. Annotations on a map from 1910 indicate fill emplacement with Solvay Process Company wastes at some locations on the Clark

site. Solvay wastes are a mixture of calcium carbonate ($CaCO_3$), calcium chloride ($CaCl_2$), and calcium oxide (CaO). Records reportedly indicate the Solvay wastes were disposed on this area during the periods from 1907 to 1910 and 1924 to 1930.

Mixed fill was subsequently deposited in this area to raise grade to near current conditions. The area was gradually reclaimed by hard fill operations; in some areas over 20 feet of fill were placed. The Clark property was formerly operated as a concrete batching facility and served as a construction staging area for contractors working on Interstate Route 81 improvements.

Aerial photographs show that the concrete batch plant was in operation prior to October 1951 and appears to be inoperative by March 1981.

SECTION 3: CURRENT STATUS

The NYSDEC, under the State Superfund Program, initiated a Remedial Investigation/ Feasibility Study (RI/FS) in February 1990 to address the contamination at the site.

3.1: Summary of the Remedial Investigation

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

In the initial stages of the Carousel Mall project numerous consultants performed investigations on the Clark property. Soil borings were conducted by Parrott-Wolff, Inc. under the direction of John P. Stopen Engineering Partnership in late 1987.

JEB Consultants began an environmental investigation of the Clark property in late 1987. Five soil borings were performed with the subsequent installation of five monitoring wells. JEB also collected groundwater samples and surface water samples from the Barge Canal.

Target Environmental Services, Inc., conducted a soil gas survey of the Clark and Buckeye properties in early November 1987 for JEB Consultants. Soil gas samples were obtained at 71 locations, 40 pertaining to the Clark property.

Dunn Geoscience Corporation conducted a subsurface investigation of the Clark property in 1988 prior to the listing of the Clark site on the Registry of Inactive Hazardous Waste Sites. Following the approval of the Remedial Investigation work plan in February 1990, Dunn Geoscience conducted a formal Remedial Investigation (RI).

For more detailed information regarding the Remedial Investigation refer to the Report on Hydrogeologic Conditions at the Clark property dated September 1988 and the Supplemental Remedial Investigation Report Site #734048 dated November 1990.

As a result of the analytical results from the Report on Hydrogeologic Conditions at the Clark property, a work plan was prepared for a Supplemental Remedial Investigation.

This investigation was conducted to define the areal and vertical extent of impacted soil and groundwater, identify upward groundwater hydraulic gradient, evaluate ambient air quality, provide supporting documentation regarding existing slurry wall, collect additional groundwater and soil samples, identify potential routes of contaminant transport, and analyze subsurface soil samples for the inorganic portion of the Target Compound List.

The bedrock underlying the Clark property is the Vernon formation, however, borings in excess of 200 feet did not encounter bedrock, but did confirm the presence of a thick sequence of glacial sediments overlying bedrock.

The general soil stratigraphy at the site consists of man-emplaced fill material overlying a naturally occurring sequence of glacial lake (glaciolacustrine) and post-glacial lake and marsh deposits.

The Clark property is located in a large groundwater discharge area. Local and Regional groundwater flow is toward Onondaga Lake, the Barge Canal and its major tributaries.

Locally, the flow of groundwater at the Clark property has been altered by the installation of a permanent slurry wall (Figure 3).

The sand and gravels which occur deep beneath the Clark property (i.e., in excess of 150 feet below grade) form a buried aquifer of unknown areal extent. Wells tapping this horizon reportedly flow, indicating upward flow gradients and artesian conditions. Groundwater from this permeable zone is reportedly saline and is not usable for water supply.

The results of the Remedial Investigation Program identified a contaminated plume consisting of the following products: trichloroethene and associated degradation products (e.g., 1,1-dichloroethene, trans-1,2-dichloroethene and vinyl chloride), toluene, 1,1,1-trichloroethane and associated degradation product (e.g., 1,1-dichloroethane) and acetone. Trichloroethene ranged from 0.24 ppm (parts per million) to non-detectable, toluene from 0.17 ppm to non-detectable, 1,1,1-trichloroethane from 0.03 ppm to non-detectable, and acetone from 11 ppm to non-detectable. These compounds are referred to as the contaminants of concern.

During the Supplemental RI, the lateral and vertical extent of contamination was defined by a series of shallow and deep soil borings from which soil samples were collected and analyzed. Monitoring wells with screens set within the low permeability glaciolacustrine silt and clay provided groundwater samples from beneath the contamination plume to determine vertical extent of groundwater contamination. Analytical results showed that only very low concentrations of a few volatile organic compounds (VOCs) were present indicating that the glaciolacustrine materials effectively mitigated vertical migration of contaminants and the groundwater quality within these materials has not been significantly impacted. Concentrations in soil samples from shallow (0-14 feet) soil borings ranged from 630 ppm (parts per million) to 120 ppm for trichloroethene, 430 ppm to 10 ppm for toluene, 160 ppm to 30 ppm for 1,1,1-trichloroethane, and 11 ppm to 2 ppm for acetone. Deep (18-36 feet) soil borings ranged from 0.7 ppm to non-detectable for trichloroethene, 0.6 ppm to non-detectable for toluene, 0.07 ppm to non-detectable for 1,1,1-trichloroethane, and 0.08 ppm to non-detectable for acetone. (Groundwater beneath the foundation at the Clark property is contained, and managed, as necessary, by an underdrain system approved by the NYSDEC).

Both soil borings and monitoring wells were installed on adjacent portions of the Buckeye and Hess properties during the Supplemental RI. Results indicated that only small adjacent portions of these properties were impacted by the Clark site VOCs. Air monitoring conducted during the Supplemental RI indicated that the site was not adversely impacting air quality.

3.2: Interim Remedial Measures:

Interim Remedial Measures (IRMs) were conducted at the site based on findings as the RI progressed. An IRM is implemented when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS.

Results from the RI indicated that the extent of contamination was limited to the southeast corner of the Clark site and the immediately adjacent portions of Buckeye and Hess. Based on these results, a remedial program was developed and an Interim Remedial Measure (IRM) was implemented at the Clark site to excavate and remove the contaminant source (i.e., impacted soil). Excavated soil (60,000 cubic yards) has been removed to a nearby double-lined containment structure with a composite (High Density Polyethylene/Asphalt) cover. Groundwater continues to be pumped from the excavated area and treated at the existing water treatment system to NYSDEC-established limits in the SPDES permit prior to discharge. Groundwater in the soil below the maximum depth of

excavation is hydraulically isolated from surrounding areas by a slurry wall which intersects the underside of the mall foundation at its waterproofing HDPE membrane. All IRM activities were conducted with the approval and oversight of the NYSDEC.

3.3: Summary of Human Exposure Pathways:

The measures implemented during the IRM have removed the source of contamination from the Clark site to a containment structure 800 feet to the west. The measures have eliminated previous contaminant migration pathways and potential exposure routes.

3.4: Summary of Environmental Exposure Pathways:

No fish and wildlife resources are currently at risk. Problems with contaminated groundwater and any other environmental exposure have been eliminated for the following reasons:

1. Contaminated soils have been removed from the uncontrolled site and placed in a lined, capped, and monitored area.

2. Potentially contaminated groundwater has been contained and is being and will continue to be treated as necessary.

SECTION 4: ENFORCEMENT STATUS

The NYSDEC and Conklin Ltd. entered into a Consent Order on 9/6/89. The Order obligates Conklin Ltd. to implement an RI/FS remedial program. Upon issuance of the Record of Decision Conklin Ltd. will put in place an Operation and Maintenance program approved by the NYSDEC for 30 years.

The following is the chronological enforcement history of this site.

Date	Index No.

9/6/89 #A7-0163-88-12
Implementation of a remedial program and authorization to commence a pilot study utilizing a vacuum extraction system to remediate the site.

5/25/90 #A7-0224-90-02
Implementation of an Interim Remedial Measure as defined in the "IRM Approved Work Plan".

Date	Index No.

6/26/90 #A7-2228-90-04
Irregularities with the operation of the modified water treatment system at the Clark site. Set up a monitoring fund.

The entire project is being financed by the developer, Conklin Ltd. The Order on Consent dated June 26, 1990, required that Conklin Ltd. pay a civil penalty of $55,000, reimburse the Department $20,000 for expenses associated with implementation of the Order and to establish a fund to pay for an Environmental monitor.

SECTION 5: SUMMARY OF REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6NYCRR 375-1.10. These goals are established under the guideline of meeting all standards, criteria, and guidance (SCGs) and protecting human health and the environment.

At a minimum, the remedy that has been selected will eliminate or mitigate all identified significant threats to the public health and to the environment presented by the contamination at the site through the proper application of scientific and engineering principles.

The goals selected for this site are:

- Eliminate the threat to surface waters by eliminating any future contaminated surface run-off from the contaminated soils on site.

- Eliminate the potential for direct human or animal contact with the contaminated soils on site.

- Mitigate the impacts of contaminated groundwater to the environment.

- Prevent, to the extent practicable, migration of contaminants in the containment structure to groundwater.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Potential remedial alternatives for the Clark Property site were identified, screened and evaluated in a Feasibility Study. This evaluation is presented in the report entitled Feasibility Study Site No. 734048, February, 1994. A summary of the detailed analysis follows.

6.1: Description of Alternatives

The potential remedies are intended to address the contaminated soil and potential contamination in groundwater at the remedial excavation area.

Alternative No. 1: No Further Action

Present Worth: $ 290,380.00
Capital Cost: $ 0
Avg. Annual O&M: $ 12,065.00

This alternative consists of the activities completed during the IRM. Groundwater management would continue and the existing water treatment system would continue to operate under the existing DEC permit. Groundwater monitoring surrounding the structure would be performed in accordance with the proposed Operation and Maintenance Manual. Leachate from the containment structure would be collected and disposed of at an approved offsite facility. This alternative is evaluated as a procedural requirement and as a basis for comparison.

Alternative No. 2: Groundwater Management/Leachate Management, VES Soil Tretment with Completed Interim Remedial Measures

Present Worth: $19,504,550.00
Capital Cost: $19,156,280.00
Avg. Annual O&M: $ 14,715.00
This alternative calls for soils in the containment structure to be treated by an in-situ vacuum extraction system (VES) in order to remove VOCs from the soil. The VES air stream would be treated on-site by vapor phase carbon adsorption. Groundwater and leachate management would be the same as presented in Alternative No. 1.

Alternative No. 3: Excavation, Structure, Removal, Off-Site Disposal of Soils

Present Worth: $ 39,316,790.00
Capital Cost: $ 39,197,300.00
Avg. Annual O&M: $ 4,900.00

Contaminated soils and liner materials would be excavated and shipped offsite for stabilization and disposal at a permitted commercial landfill. In addition to liner materials, twelve inches of clean underlying soil would be excavated and also shipped offsite for disposal to assure that no Clark contaminants remain. The purposes of stabilization treatment would be to assure that soils comply with applicable restrictions on land disposal of liquids (Paint Filter Test criteria) and the Toxicity Characteristic Leaching Procedure (TCLP). The existing leachate management system would continue to operate during excavation and removal activities but would eventually be eliminated.

Alternative No. 4: Excavation, Structure Removal, Off-Site Thermal Treatment of Soils

Present Worth: $156,569,496.00
Capital Cost: $156,330,900.00
Avg. Annual O&M $ 4,900.00

This alternative consists of excavating all materials in the Containment Structure, transporting the contaminanted soils to a thermal treatment facility, and incinerating 100 percent of the contaminants. Groundwater management of the remedial excavation area would continue under DEC permit. The existing leachate management system would continue to operate during excavation and removal activities but would eventually be eliminated.

6.2 Evaluation of Remedial Alternatives

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

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

Alternatives No. 1-4 all can be implemented to comply with the associated SCGs.

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

Alternative Nos. 2-4 all involve some disturbance to the cap and all pose some risk to health and the environment.

Alternatives No. 1 may pose an environmental risk in the event of a failure to the containment cell. But as the reports show, the soils surrounding this site possess such a low permeability that any leakage would be detected by the monitoring system prior to any harm to the environment.

It has also been shown that the presence of an upward gradient within the water table would limit the ability of contaminants leaking (due to failure) from the cell to migrate from the site.

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

Alternative Nos. 1 and 2 have little short-term impact since the construction of the containment cell has already taken place. Alternative Nos. 2-4 would produce air emissions from the activities involving opening the cell and continuing impacts from traffic, dust, and noise due to treatment or removal activities.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of alternatives after implementation of the response actions. If wastes or treated residuals remain on site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risk, and 3) the reliability of these controls.

Alternative Nos. 1 and 2 would leave contaminated soils on site in the containment cell. While residuals pose a continuing environmental risk that risk is low considering the facts as presented in item #2 of this Section (7-2). Adequate and reliable controls are also proposed for Alternative Nos. 1 and 2 through monitoring and an operation and maintenance plan.

Alternative No. 2 has increased health and environmental risks due to emissions from treatment and handling requirements. Alternative No. 2 with the VES (Vapor Extraction System) has not been shown in previous treatability tests on this site to be effective in removing contaminants due to tight fine grained soils.

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

Alternative Nos. 1 and 2 reduce the mobility of the contaminants but do not reduce toxicity.

Alternative Nos. 3 and 4 would reduce volume and toxicity by removing contaminants from the site.

6. Implementability. The technical and administrative feasibility of implementing each alternative is evaluated. Technically, this includes the difficulties associated with the construction, the reliability of the technology, and the ability to monitor the effectiveness of the remedy. Administratively, the availability of

the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.

While all alternatives are implementable Alternative Nos. 2-4 have problems with the technical or administrative ability to deal with 60,000 cubic yards of contaminated soil. Alternative No. 2 does not respond well to the previously described VES system. It would also be difficult to work with the uncapped containment structure during offsite removal as required in Alternative Nos. 3 and 4.

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

Alternative No. 1 is the least expensive alternative that will be protective of human health and the environment.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 6, the NYSDEC is selecting Alternative No. 1, No Further Action, with a financial assurance plan to carry out the approved Operation and Maintenance Plan as the selected remedy for this site.

This selection is based upon the fact that Alternative Nos. 1-4 all can be implemented to comply with the associated SCGs. However, Alternative Nos. 2-4 all involve disturbance to the cap and all pose some risk to human health and the environment.

Alternative No. 1 has a present-worth value of $290,380.00.

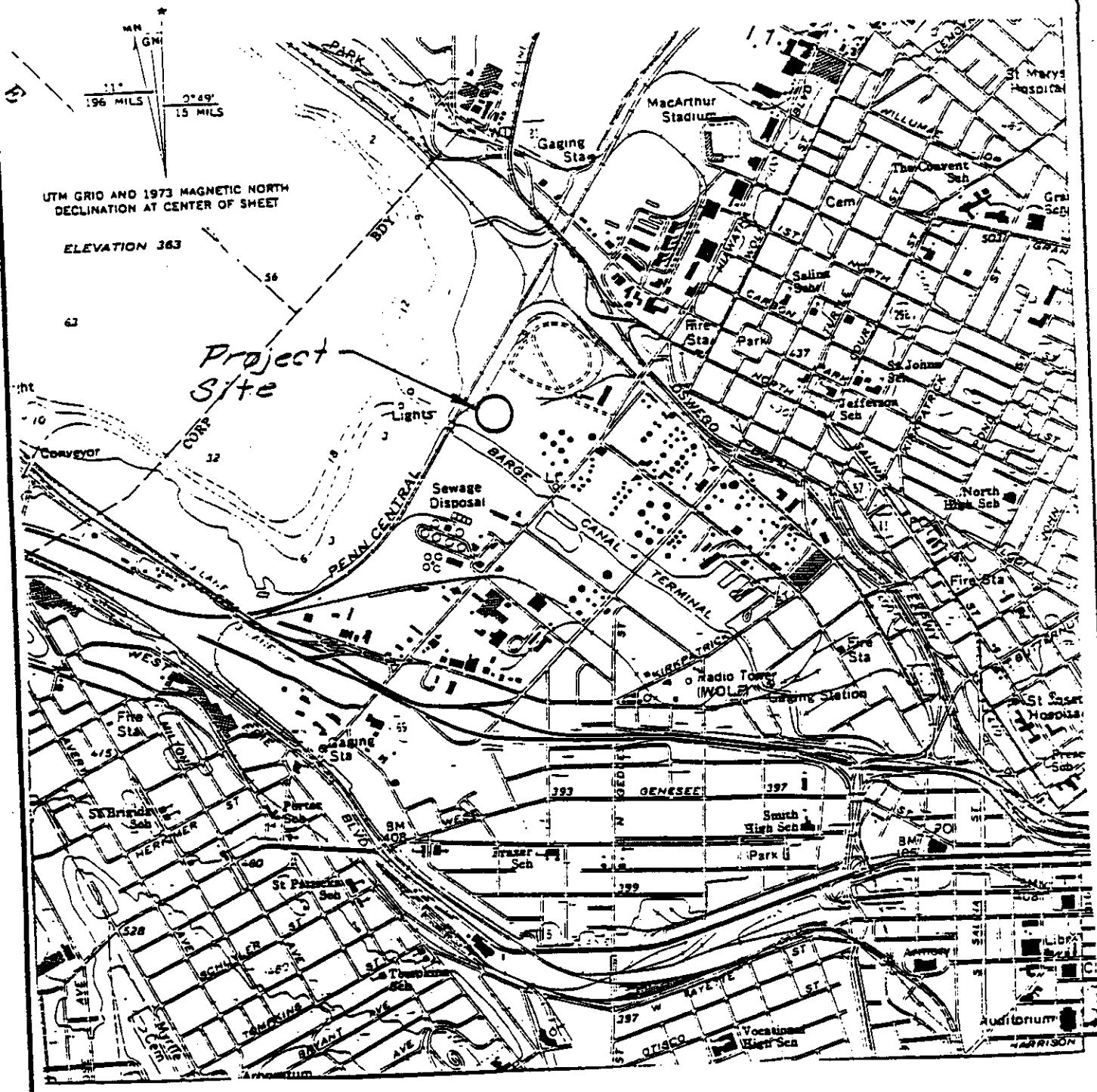
Alternative No. 1 is continued groundwater management from the excavated portion of the site pursuant to the existing DEC permit along with management of leachate from the containment structure. The groundwater from the excavated portion of the site is collected and transported to a NYSDEC approved treatment facility located adjacent to the Carousel Center site and operated pursuant to a DEC permit. Any leachate from the containment cell will be shipped to an approved disposal facility off-site.

This alternative calls for site monitoring, installation of monitoring wells and implementation of the Operation and Maintenance Plan for the containment structure.

The institutional controls will require the establishment of an Operation and Maintenance trust fund and the completion of closure and post-closure requirements. The exact cost estimate and details of the financial assurance agreement are currently being reviewed and should be finalized shortly.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

In the summer of 1989 public comment was requested on the Consent Agreement for the RI/FS. The Regional DEC office was also identified as the depository for all documents on the Clark Property project in 1989. Public comment was sought on the IRM proposal in March of 1990. An Action Plan for the adjacent Marley Property was provided to the public in a press release in August 1990. Group meetings were also held in 1990 with representatives of local labor unions working on the mall adjacent to the Clark Property site. The public meetings on the Proposed Remedial Action Plan (PRAP) were held on February 22, 1994. There was no public comment on the PRAP received at the meeting or during the comment period.



O'BRIEN & GERE ENGINEERS, INC
Syracuse, New York

Conklin Limited Operation & Maintenance Manual
Site Location Plan

FILE NO. 2593.014
DATE May 1993
DWG NO. 1

NOTES:

1. LOCATIONS OF THE CONTAINMENT STRUCTURE BOUNDARIES & MONITORING WELLS ARE APPROXIMATE
2. LOCATIONS OF THE CLARK PROPERTY & MWTS GROUNDWATER CHARGE LINES AS WELL AS OTHER UNDERGROUND UTILITIES ARE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.
3. THIS MAP SHOULD NOT BE USED FOR DESIGN PURPOSES.

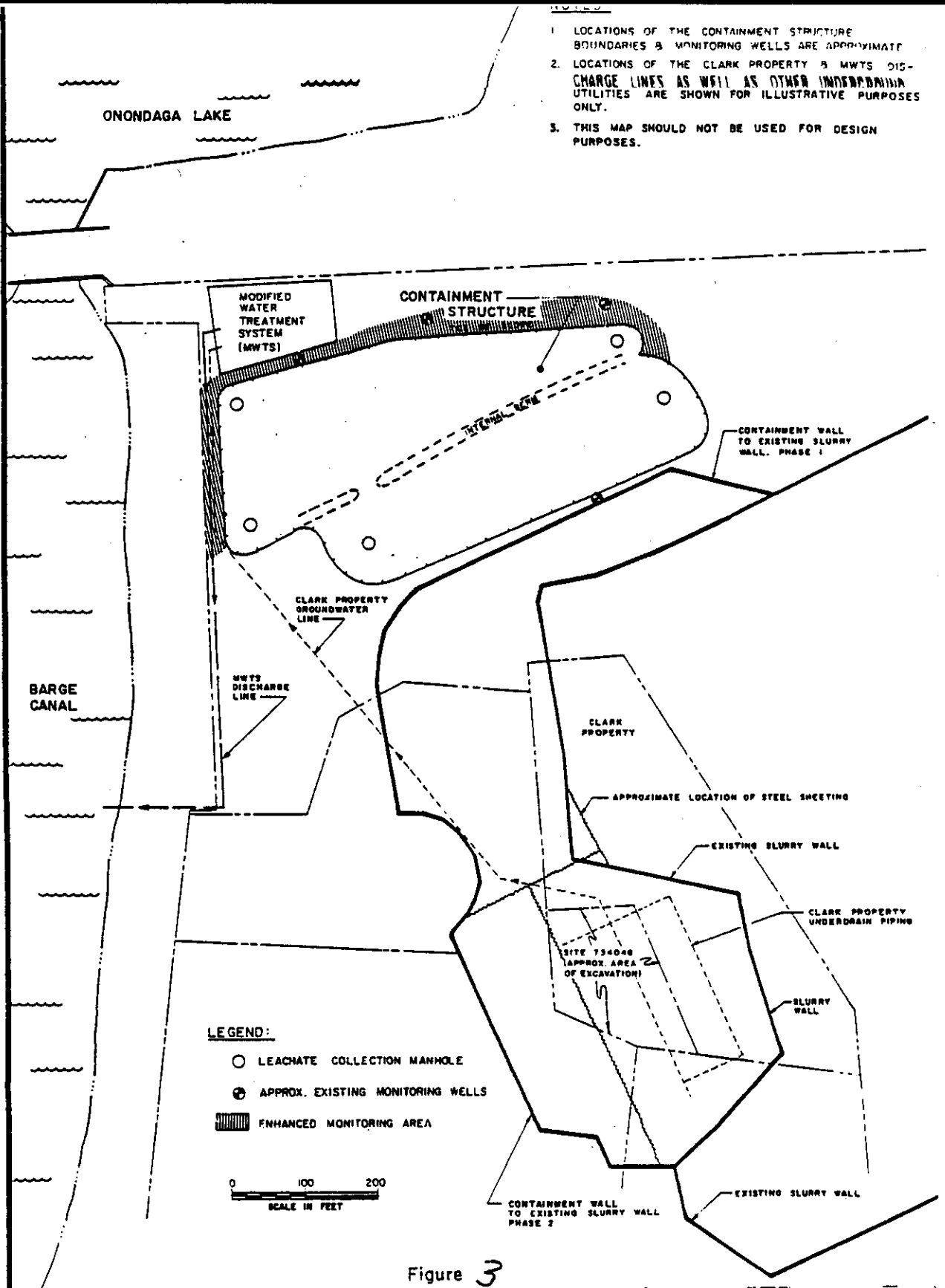
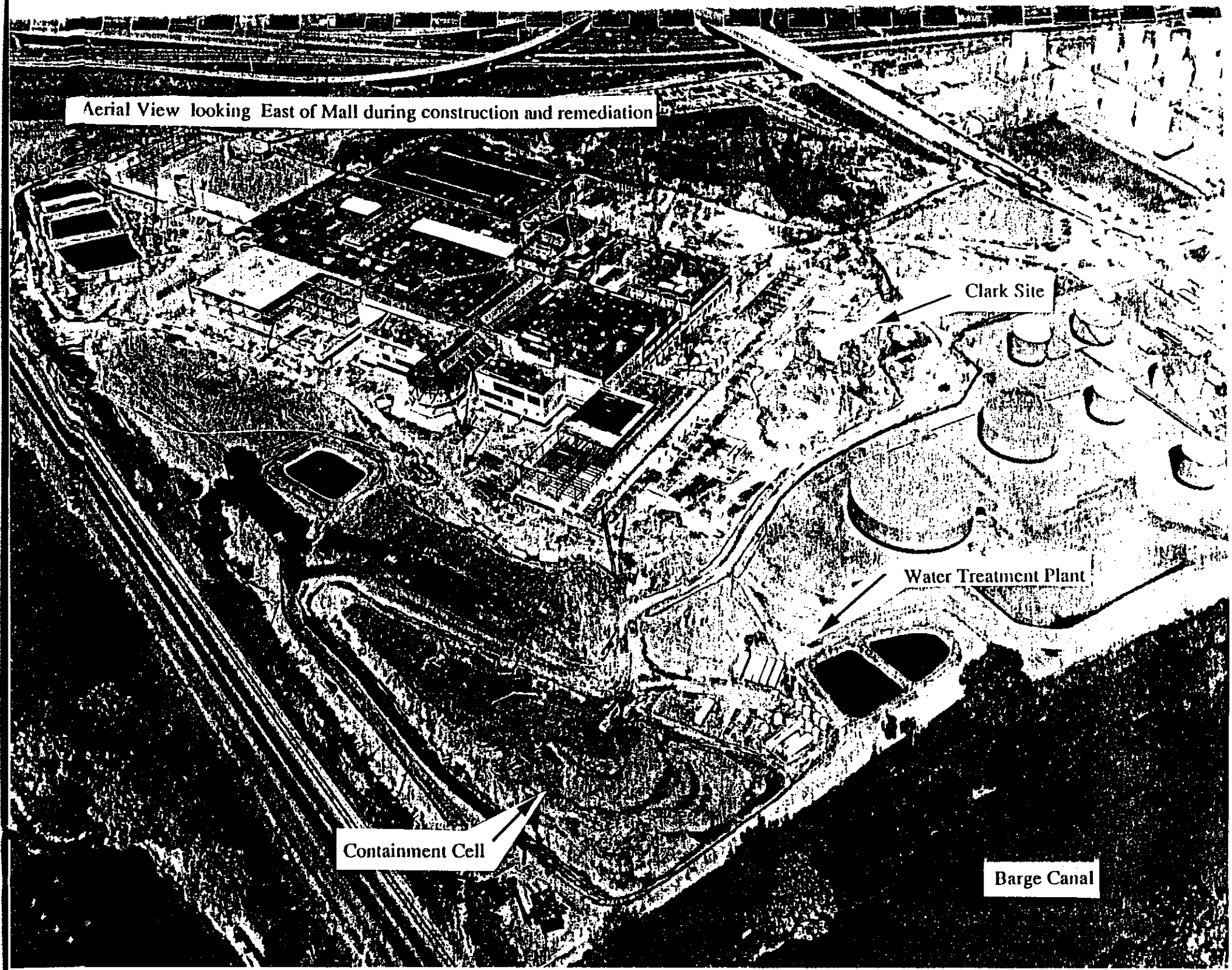


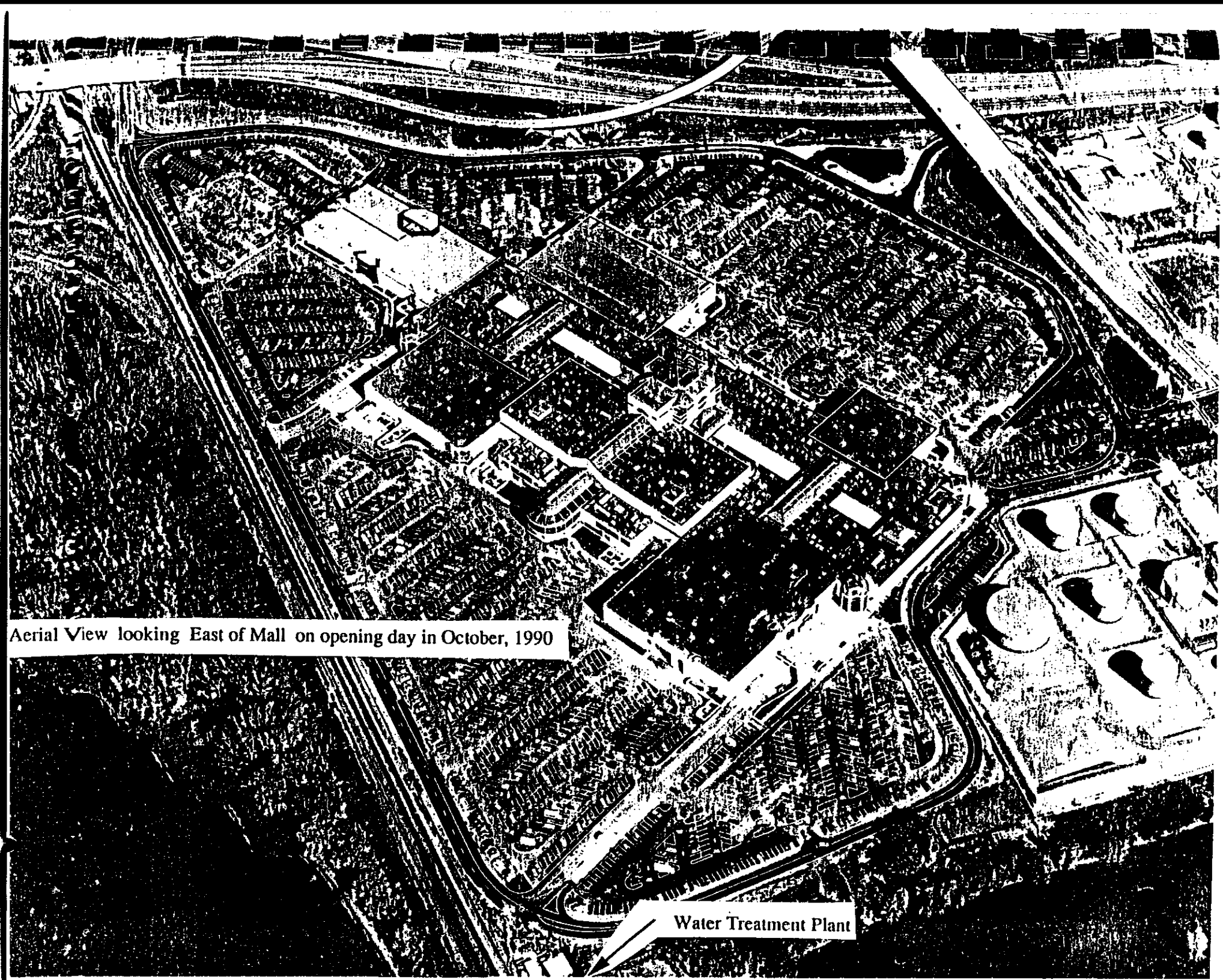
Figure 3

CONKLIN LIMITED, INC.

CLARK SITE – SYRACUSE, N.Y.
REMEDIAL ALTERNATIVE MAP THREE
TREATMENT, ADDITIONAL MONITORING & IRM

PROJECT NO. 00296-017.46 | DATE OCT. 3, 1990 | SCALE AS SHOWN


Aerial View looking East of Mall during construction and remediation
Clark Site
Water Treatment Plant
Containment Cell
Barge Canal



Aerial View looking East of Mall on opening day in October, 1990

Appendix A: Administrative Record

1. "RI Elements for NYSDEC Proposed Site #734048", Syracuse, NY
   By: Dunn Geoscience Corporation
   Dated: April 1989

2. "Supplemental Remedial Investigation Work Plan for Clark Property", Syracuse, NY
   By: Dunn Geoscience Corporation

3. "Revised Pilot Study Work Plan for Proposed Site #734048", Syracuse, NY
   By: Dunn Geoscience Corporation
   Dated: August 1989

4. "Supplemental Remedial Investigation Report Site #734048", Syracuse, NY, 2 Volumes
   By: Dunn Geoscience Corporation
   Dated: November 1990

5. "Interim Remedial Measure Report Site #734048", Syracuse, NY 5 Volumes
   By: Dunn Geoscience Corporation
   Dated: November 1990

6. "Final Feasibility Study Site #734048", Syracuse, NY
   By: Dunn Geoscience Corporation
   Dated: April 1991 - Revised: February 1994

7. "Operation and Maintenance Manual for the Containment Structure Site #734048", Syracuse, NY
   By: O'Brien and Gere Engineers, Inc.
   Dated: May 1993

8. "Supplemental Draft Environmental Impact Statement for Carousel Center", Syracuse, NY
   By: The Pyramid Company of Onondaga
   Dated: December 1987

9. "Hydrogeologic Conditions at the Clark Property"
   By: Dunn Geoscience Corporation
   Dated: September 1988

10. "Data Validation Summary in Support of the Report on Hydrogeologic Conditions at the Clark Property", Syracuse, NY
    By: Dunn Geoscience Corporation
    Dated: September 1988

11. "Engineering Report Water Treatment Facility, Clark Property", Syracuse, NY
    By: Dunn Geoscience Corporation
    Dated: November 1989

12. "Conceptual Contingency, Maintenance and Monitoring Plan Site #734048", Syracuse, NY
By: Dunn Geoscience Corporation
Dated: September 1991

13. Order on Consent, Index #A7-0163-88-12
(RI and VES pilot study), September 6, 1989

14. Order on Consent, Index #A7-0224-90-02
(IRM), May 25, 1990

15. Order on Consent, Index #A7-2228-90-04
(Operation for the water treatment system), June 26, 1990

16. Memo to J. P. McBurney from Mark E. Falerios; Subject: Clark Property Air Monitoring and Risk Assessment
Dated: May 26, 1989

17. Memo to Richard Brazell from Ajay Shroff; Subject: Clark Site Cleanup Goals
Dated: May 22, 1990

18. Letter to Michael Shanley, Esq., from Richard Brazell; Subject: Excavation and Removal of Contaminated Soil
Dated: June 17, 1991

19. Memo to Richard Brazell from Paul Carella; Subject: Clark Site - No Fish or Wildlife Impacts
Dated: January 11, 1991

20. Letter to Michael P. Shanley, Esq., et. al., from Richard Brazell; Subject: Approval of the Remedial Investigation for the Clark Site
Dated: January 14, 1991

21. Letter to Shanley, Sweeney and Reilly from Richard Brazell; Subject: Clark Site - Approval of Interim Remedial Measure
Dated: May 1, 1991

22. Letter to Charles Branagh from Richard Fedigan; Subject: NYSDOH Concurrence with Remedial Alternative Selected in the Feasibility Study
Dated: February 11, 1993

23. Letter to Michael O'Toole from G. Anders Carlson; Subject: PRAP Concurrence of NYSDOH
Dated: February 7, 1994

24. Letter to Gregory Faucher from Charles Branagh; Subject: Approval of Feasibility Study
Dated February 24, 1994

25. Letter to Gregory Faucher from Charles Branagh; Subject: Approval of Operation and Maintenance Plan
Dated: February 24, 1994

26. Chronology of Events from 1989 to 1994 on remediation of the Clark Site, issues on the Marley Property, Carousel Mall construction, and public involvement activities.

27. New York State Department of Environmental Conservation, Division of Hazardous Waste Remediation Technical and Administration Guidance Manual, 4000-4046

28. New York State Environmental Conservation Law
6 NYCRR Part 375, May 1992

29. National Oil and Hazardous Substance Pollution Contingency Plan
40 CFR Part 300, 1990