New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Hazardous Site Control

ADDITIONS/CHANGES TO REGISTRY: SUMMARY OF APPROVALS

SITE NAME: OLD PLANT SITE DEC I.D. NUMBER 932051B

Current Classification 2 Volunteer Yes ____ No X
Sign (7) below

Activity: ☐ Add as Class ____ ☒ Reclassify to 4 ☐ Delist Categor ____ ☐ Modify ____

Approvals:

1. Regional Hazardous Waste Engineer	Yes	☒	No	☐	2/9/00
2. BEEI of NYSDOH	Yes	☐	No	☐	BYPASSED 12/20/00
3. DEE	Yes	☒	No	☐	2/24/00
4. ____ Remediation Action Bureau Director [Class 2]	Yes	☐	No	☐	JIA
5. BHSC - Investigation Section	Yes	☒	No	☐	2/15/00
6. BHSC - O&M Section [Class 4]	Yes	☐	No	☐	
7. BPM - Brownfield & Voluntary Cleanup Section					Date
8. Site Control Section					Date 1/11/01
9. Director					Date 3/12/01

Completion Checklist for Registry Sites

		Completed By: Initials	Date
OWNER NOTIFICATION LETTER?	☑		3-15-01
ADJACENT PROPERTY OWNER NOTIFICATION LETTER?	☑		3-30-01
ENB/LEGAL NOTICE SENT? (For Deletion Only)	☐		
COMMENTS SUMMARIZED/PLACE IN REPOSITORY?	☐		
FINAL NOTIFICATION SENT TO OWNER? (For Deletion Only)	☐		

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION

4/1/00

SITE INVESTIGATION INFORMATION

1. SITE NAME	2. SITE NUMBER	3. TOWN/CITY/VILLAGE	4. COUNTY
Olin Plant Site	932051B	Niagara Falls	Niagara

5. REGION	6. CLASSIFICATION
9	CURRENT [2] PROPOSED [4] MODIFICATION

7. LOCATION OF SITE (Attach U.S.G.S. Topographic Map showing site location)

a. Quadrangle Niagara Falls NY - Niagara Falls Ont b. Site Latitude 43° 4' 56" Site Longitude 79° 1' 56"

c. Tax Map Number(s) 159.15-1-6 d. Site Street Address P.O. Box 748, 2405 Buffalo Avenue, Niagara Falls, NY 14302

8. BRIEFLY DESCRIBE THE SITE (Attach site map showing disposal/sampling locations)

The Olin Plant Site is an active chemical manufacturing facility. The site contains areas where mercury brine sludge was previously spread on the ground surface as fill. In addition a temporary pond was used for retaining waste water from the mercury cell room. The pond was reportedly used for a 3 month period in 1970. Off-site contaminant migration via groundwater movement was also likely. Olin and DuPont performed a joint cleanup of contaminated sediment in the lower reaches of nearby Gill Creek in 1981 and 1982. Under the authority of RCRA section #3013, Olin conducted a Remedial Facility Investigation (RFI) of the Plant site and nearby Parking Lot site (#932051A) beginning in 1991. The RFI was accepted by the NYSDEC in November 1994. A Corrective Measures Study (CMS) outlining remedial actions to be taken at the site was approved in 1995. Construction to implement the Remedial Program began in 1997 and was completed and accepted by the NYSDEC on February 1998. As part of the site remediation, a series of monitoring wells and pumping wells were installed on the eastern portion of the plant site where organic chemical manufacturing occurred. Contaminated groundwater produced by the well system is treated on site and discharged to the municipal sewer system. In addition, improved storm water collection/management and surface paving were provided in other areas of the plant site. An Operation and Maintenance Plan has been approved and the site is now in long term O&M.

a. Area 50 acres b. Completed: ( ) Env. Property Assessment ( ) PSA ( ) SI ( ) ESI ( ) IRM ( )RI/FS ( ) Construction ( ) O&M (X) Other RCRA RFI, CMS and Remedial Plan

9. HAZARDOUS WASTE DISPOSED (Include EPA Hazardous Waste Numbers)

Unknown amounts of coal fines, organics (TCP, BHC) and waste water containing mercury along with an estimated quantity of 246 cubic yards of mercury cell brine sludges.

10. ANALYTICAL DATA AVAILABLE

a. ( )Air (X)Groundwater ( )Surface Water ( )Sediment (x)Soil (x)Waste ( )Leachate ( )EPTox ( )TCLP
b. Contravention of Standards or Guidance Values - groundwater, soil

11. CONCLUSION

Remedial construction at the Olin Plant site has been completed under the authority of the RCRA program. The site is now in long term O&M with review of annual reports. RCRA permit conditions allow review and assessment every 5 years to revise permit conditions as needed. Reclassification of the site to Class 4 is necessary to reflect the long term O&M now underway at the site.

a. Institutional Controls (IC) Required? (X)Y ( )N b. If yes, identify c. Are these ICs in place and verified? (X)Y ( )N

12. SITE IMPACT DATA

a. Nearest Surface Water: Niagara River Distance 1000 ft. Direction _____ Class _____

b. Groundwater: On-site Depth 5 - 10 ft. Flow Direction _____ ( )Sole Source ( )Primary ( )Other High-Yield Aquifer

c. Water Supply: Niagara Falls Distance 2 miles Direction _____ Active ( )Yes ( )No

d. Nearest Building: Distance On-site ft. Direction _____ Use _____

e. Documented fish or wildlife mortality?	( )Y	(x)N	h. Exposed hazardous waste?	( )Y	(x)N
f. Impact on special status fish or wildlife resource?	( )Y	(x)N	i. If proposed Classification is 2, Priority?	( ) 1	( ) 2 ( ) 3
g. Controlled Site Access?	(X)Y	( )N	j. EPA ID# _____	HRS Score	_____

13. SITE OWNER'S NAME	14. ADDRESS	15. TELEPHONE NUMBER
Olin Chemicals Group	P.O. Box 748, Niagara Falls, NY 14302	(716) 278-6411

16. PREPARER	17. APPROVED
Signature Date: 3/12/01	Signature Date: 5/11/01
Michael J. Hinton, P.E., Environmental Engineer II, NYSDEC	Robert L. Marino, Director, Bureau of Hazardous Site Control, DER
Name, Title, Organization	Name, Title, Organization

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue, Buffalo, New York, 14203-2999
Phone: (716) 851-7220 • **FAX:** (716) 851-7226
Website: www.dec.state.ny.us

John P. Cahill
Commissioner

To: Bob Marino
From: Dan King
Subject: Reclassification Package
Olin Plant Site (No. 932051B)
Date: February 9, 2000

Enclosed for processing is a reclassification package for the above-referenced site. Reclassification from class 2 to class 4 is recommended as remedial construction at the site has been successfully completed and long-term OM&M is now underway.

This is a RCRA-Corrective Action site. The regional project manager is Stan Radon (DSHW) and regional coordinator is Mike Hinton (DER).

DKK:lj

cc: Mike Hinton
Stan Radon

a:olinplant.reclass.mem

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Hazardous Site Control, Room 252
:0 Wolf Road, Albany, New York 12233-7010
Phone: (518) 457-8807 • **FAX:** (518) 457-8989
Website: www.dec.state.ny.us

John P. Cahill
Commissioner

NOV 16 2000

G. Anders Carlson, Ph.D.
Bureau of Environmental Exposure Investigation
NYS Department of Health
Flanigan Square
547 River Street
Troy, NY 12203-3313

Dear Dr. Carlson:

Our records show that your office has not yet forwarded recommendations to us for sites on the enclosed list.

To assure that further action is not delayed, we plan to make final Registry listing decisions on these sites by December 20, 2000. Please provide your recommendations to us by this date so that we may incorporate them into our final decisions. Those sites which may be candidates for the voluntary cleanup program are noted in the list.

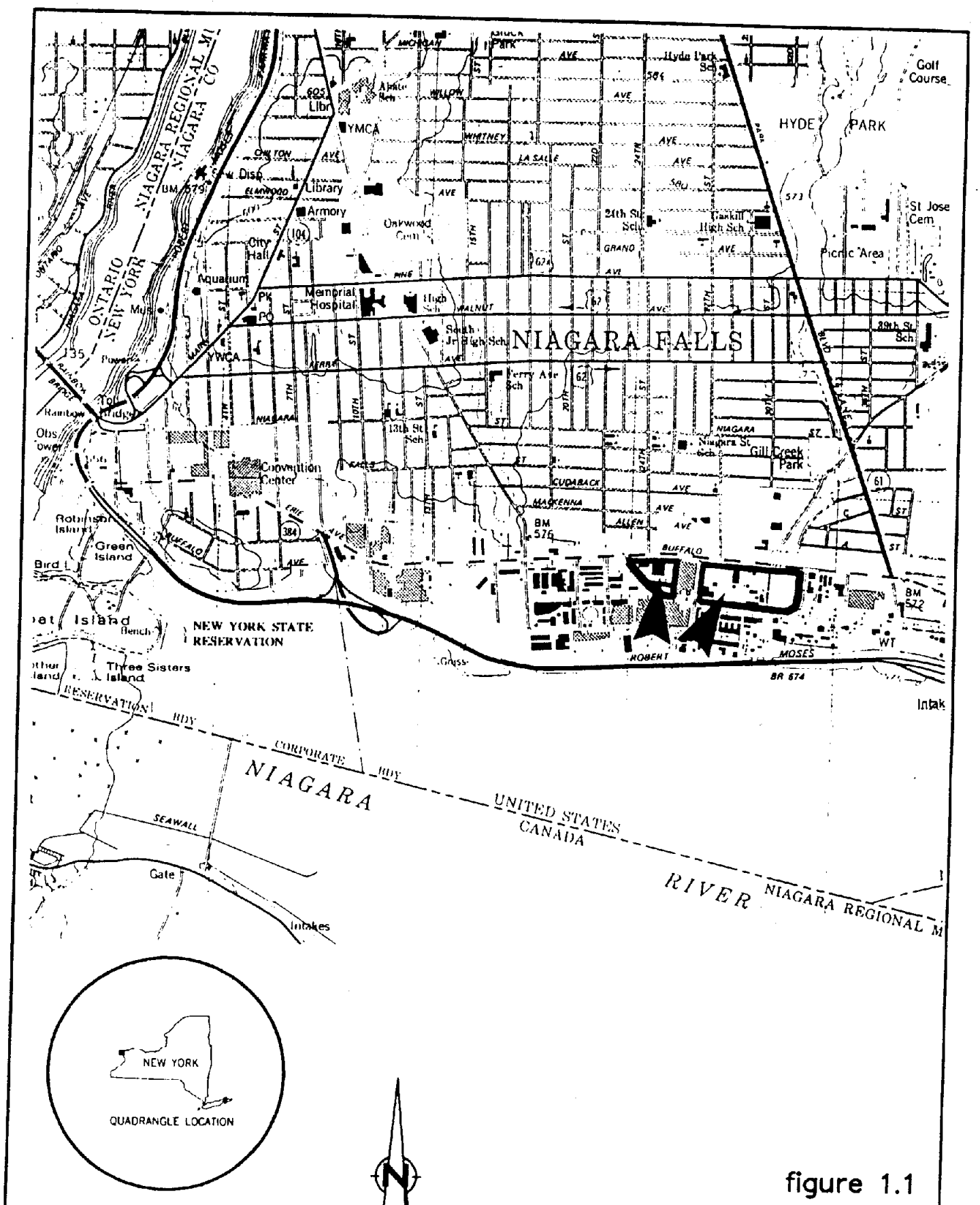
Sincerely,

Robert L. Marino
Acting Director
Bureau of Hazardous Site Control
Division of Environmental Remediation

Enclosure

bcc: R. Marino
D. Farrar

DF/srh



SOURCE: USGS NIAGARA FALLS, NY–NIAGARA FALLS, ONT. QUADRANGLE

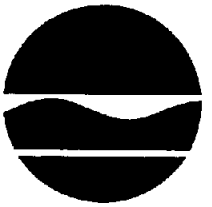
CRA

6548 (1) MAR 14/95(NF) REV.0

figure 1.1

SITE LOCATION MAP
OLIN CORPORATION
Niagara Falls, New York

New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials
50 Wolf Road, Albany, New York, 12233-7252
(518) 457-9253 Fax (518) 457-9240



John P. Cahill
Commissioner

September 30, 1997

Mr. Michael J. Bellotti, P.G.
Senior Associate Hydrogeologist
Olin Chemicals
P.O. Box 248
Lower River Road
Charleston, TN. 37310

Dear Mr. Bellotti:

Re: Remedial Program Required Submittals

The New York State Department of Environmental Conservation (NYSDEC) has reviewed the "Ground Water and Soil Remedition Program Project Management Plan", the "Ground Water Collection and Treatment System Data Collection Plan" and the "Health and Safety Plan" which were submitted by Olin Chemicals (Olin) on September 8, 1997.

The "Ground Water and Soil Remedition Program Project Management Plan" and the "Ground Water Collection and Treatment System Data Collection Plan" are herein approved. The NYSDEC does not formally approve a health and safety plan such as the one which Olin developed, but NYSDEC personnel will abide by Olin's "Health and Safety Plan" when conducting oversite of the remedial project unless there is a direct conflict with existing NYSDEC health and safety protocols.

I am pleased with the progress which Olin has made on the construction of the remedial system. Thank you for your effort.

Should you have any questions regarding the document, please call me at (518) 457-9253.

Sincerely,

William E. Wertz, Ph.D.
Senior Engineering Geologist

cc: F. Shattuck, Region 9
D. Carpenter, EPA Region II
J. Reidy, EPA Region II

To: Stan Radon

New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials
50 Wolf Road, Albany, New York, 12233-7252
(518) 457-9253 Fax (518) 457-9240

John P. Cahill
Commissioner

February 13, 1998

Mr. Michael J. Bellotti, P.G.
Senior Associate Hydrogeologist
Olin Chemicals
P.O. Box 248
Lower River Road
Charleston, TN. 37310

Dear Mr. Bellotti:

Re: Construction Certification Document - Olin Corporation
Groundwater Collection and Treatment

The New York State Department of Environmental Conservation has completed the review of the report titled *"Certification of Construction Quality Assurance for Olin Corporation's Ground-Water Collection and Treatment System And Stormwater Management, Grading, and Paving,"* prepared by Law Engineering and Environmental Services, Inc., dated January 1998.

Based on that review, the report is acceptable.

Should you have any questions regarding this issue, do not hesitate to contact Mr. Timothy DiGiulio, P.E. or me at (518) 457-9253.

Sincerely,

William E. Wertz

William E. Wertz, Ph.D.
Senior Engineering Geologist
Bureau of Hazardous Waste Facilities
Division of Solid & Hazardous Materials

cc: A. Sansone, Region 9
M. Fries, Husch & Eppenberger
J. Reidy, EPA Region II
D. Carpenter, EPA Region II
T. DiGiulio

CONSTRUCTION CERTIFICATION REPORT

FOR

GROUND-WATER COLLECTION AND TREATMENT SYSTEM
AND
STORMWATER MANAGEMENT, GRADING, AND PAVING

NIAGARA FALLS PLANT
2400 Buffalo Avenue
Niagara Falls, New York

Submitted To:

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Submitted By:

OLIN CORPORATION
Charleston, Tennessee

JANUARY 1998

Prepared By:

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, P.C.
in association with
Law Engineering and Environmental Services, Inc.
112 Townpark Drive
Kennesaw, Georgia 30144

CERTIFICATION OF

CONSTRUCTION QUALITY ASSURANCE

FOR

OLIN CORPORATION'S

GROUND-WATER COLLECTION AND TREATMENT SYSTEM
AND
STORMWATER MANAGEMENT, GRADING, AND PAVING

NIAGARA FALLS PLANT
2400 Buffalo Avenue
Niagara Falls, New York

I hereby certify that the construction of the Ground-water Collection and Treatment System and Stormwater Management, Grading, and Paving at Olin's Niagara Falls Plant located at 2400 Buffalo Avenue, Niagara Falls, New York was acccomplished as specified in the Contract Documents and documented in this report; and that I witnessed the performance of the Work.

Stephen K. Spitzer, E.I.T.
Resident Engineer

Jan 27, 1998
Date

CERTIFICATION OF

CONSTRUCTION QUALITY ASSURANCE

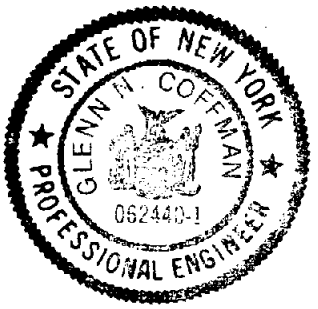
FOR

OLIN CORPORATION'S

GROUND-WATER COLLECTION AND TREATMENT SYSTEM
AND
STORMWATER MANAGEMENT, GRADING, AND PAVING

NIAGARA FALLS PLANT
2400 Buffalo Avenue
Niagara Falls, New York

I hereby certify that the construction of the Ground-water Collection and Treatment System and Stormwater Management, Grading, and Paving at Olin's Niagara Falls Plant located at 2400 Buffalo Avenue, Niagara Falls, New York was acccomplished as specified in the Contract Documents and documented in this report; and that I or a person under my direct supervision witnessed the performance of the Work. I am a Registered Engineer as established under the laws and regulations of the State of New York.



Glenn N. Coffman, P.E.
No. 062440

Jan 27, 1998
Date

CONTENTS

OBJECTIVES OF PROJECT

Olin Corporation in Niagara Falls, New York has implemented a Remedial Plan to address ground water contamination at the plant. In accordance to this plan, a ground-water recovery system was installed consisting of five recovery wells and five passive relief wells. The goals of this recovery system are to reduce the concentration of Olin-derived hazardous waste constituents in the site ground water and restrict off-site migration of these constituents. The treatment and discharge of the collected ground water will meet all applicable regulations.

This document summarizes the design of the system, its major components, and its general operation. For more detailed description, refer to the 90% Design Report dated May 30, 1997.

GROUND-WATER COLLECTION SYSTEM

The ground water collection system consists of five active recovery wells and five passive relief wells. The five active wells pump ground water from the surficial water bearing zone (A-Zone) and the next lower fractured bedrock water bearing zone (B-Zone). The passive relief wells are identical to the active wells except they do not contain pumps, level transmitters, or electrical power connections. These passive wells allow the A-Zone water to drain into the B-Zone for capture by the recovery wells by providing direct hydraulic connections between these zones. Together, these wells should contain A- and B-Zone ground water moving across the Alundum Road/Gill Creek (ARGC) area on the eastern portion of Olin's Plant 2. The passive relief wells were designed to allow easy conversion to active recovery wells if additional ground water capture is required. To reduce the cost of converting these wells, the ground-water collection piping was extended to the passive relief wells.

As part of the ground-water recovery system, eight new ground-water piezometers were installed into the A-and B-Zones separately. They are generally located between the recovery wells to measure local drawdown responses in the A-zone and B-zone. These piezometers will be used during startup to demonstrate the adequacy of the ground water capture provided by the recovery well/passive relief well system.

Both the recovery and passive relief wells were installed to a depth of approximately 25 feet below grade or about three to five feet below the bottom of the B-zone. A lockable protective cover was installed on each well. The recovery wells contain submersible pumps capable of pumping 2 gallons per minute (gpm), or less, to 18 gpm per well. Each well is equipped with a pitless adapter unit. The well discharge piping will exit the side of the well casing through the pitless adapter assembly at a depth below the frost line. These adapters allow the well pumps to be removed for service using a removable steel pull pipe which is threaded into the adapter unit.

Each recovery well is equipped with a submerged liquid level pressure transmitter to continuously monitor and turn off the submersible pump at a fixed water level above the pump intake. This will function as a safety while establishing the appropriate continuous pumping rate for the well. A flow throttling valve (globe valve) was installed inside Building 73 for each recovery well collection line to adjust the pumping rate to maintain the desired drawdown. Pumping rates at each well will be established during system start-up. A manual disconnect switch was installed for the pump at each well.

Dual-containment piping was constructed to conform to the secondary containment requirements specified in 6 NYCCR Part 373-2.10. A 4-inch outer diameter SDR-11 wall thickness HDPE carrier pipe from each well contains a 1.5-inch HDPE SDR-11 ground-water discharge pipe. The 1.5-inch pipe was threaded through the 4-inch carrier pipe to each well to allow for future replacement of the inner pipe, if needed, without the excavation of the 4-inch carrier pipe.

For leak detection, a fabricated HDPE leak detection fitting was attached to each pitless adapter flange with a 4-inch HDPE riser pipe extended to above ground surface approximately 2 feet from the recovery well casing. Each leak detection riser contains a float switch which will provide continuous monitoring for the presence of liquid in the sump. If liquid is detected, an alarm signal will be sent to the central control and monitoring system.

GROUND-WATER TREATMENT SYSTEM

The collected ground water requires treatment prior to disposal. Many of the constituents present in the ground water under Olin's property, which are subject to the sewer service charge,

are easily removed by air stripping. In addition to air stripping, clarification and pH neutralization are required to eliminate free phase solvents and traces of caustic, and to reduce the scaling potential of the ground water. The major components of the treatment system are as follows:

- A secondary containment system;
- A clarification tank to allow DNAPL droplet settling and withdrawal as needed;
- A first-stage pH adjustment tank to reduce aberrant, high influent pH;
- A second-stage pH adjustment tank to adjust (fine-tune) pH to acceptable discharge levels and reduce scaling potential in the stripper;
- A low-profile multi-tray air stripper with an air preheater to reduce volatile organic compound discharge concentrations with stripper vapor discharge stack 50-feet tall;
- Treated ground water discharge by gravity flow through a new storm sewer system to be constructed to the existing POTW outfall system.

Based on preliminary estimates, a design basis of 60 gallons per minute (gpm) normal flow was selected for the treatment system air stripper. For simplicity and reliability, the treatment system hydraulic profile allows for gravity flow from the well pump discharge point into the clarification/equalization tank until discharge to the POTW outfall. To allow for potential expansion of the system, the hydraulic profile and treatment units were designed for easy expansion to approximately 180 gpm.

Secondary Containment System

Secondary containment is provided using a concrete containment curb 2-feet high around the treatment area inside Building 73. The containment volume provided by the curb will exceed 100 percent of the volume of all the interconnected tanks in the ground-water treatment system as required by 6 NYCRR Part 373.2-10. The floor sump in Building 73 within the containment area contains a submersible pump and three float switches to turn the pump on and off, and to trigger a high level alarm. The pump discharges into the clarification/equalization tank. This floor sump does not have an outlet and is fed by existing floor drains and subfloor piping. The concrete floor in Building 73 contains an industrial floor coating system (TUFCO) which is

resistant to chemical spills and appears to be in good condition. The additional concrete installed for the treatment system received a floor coating compatible with the previously existing system.

Clarification Tank

Small quantities of dense non-aqueous phase liquid (DNAPL) may be drawn into the system during operation. To remove DNAPLs, a clarification and flow equalization step exists at the front end of the process (before the agitated pH adjustment tanks). An existing steel tank in Building 73 (Tank KT-109) was retrofitted for use as the clarification/equalization tank. The tank will provide a storage volume of 24,000 gallons and has an 18-foot diameter. An existing tank opening near the tank bottom was configured with a small drainage valve at the bottom of the flanged opening for removal of DNAPLs.

pH Adjustment Tanks

A two-stage pH adjustment system was implemented because of the possibility of surges of high pH (up to pH 12.5) ground water into the treatment system at unknown and irregular intervals. First-stage and second-stage pH adjustment tanks are 3,000-gallon, with a 50-minute retention time (at 60 gpm) to allow for adequate equalization and mixing. The tanks are constructed of premium fiberglass reinforced plastic (FRP) laminate resin for corrosion resistance. In the first tank, pH will be reduced to approximately 9 with sulfuric acid. Flow to the second tank is via overflow piping between tanks. The pH will be adjusted to approximately neutral pH in the second tank via sulfuric acid addition. Identical constant speed Lightning brand vertical shaft mixers are utilized in each pH adjustment tank. The design sulfuric acid (66^{o} Baume) addition rates were estimated to be a maximum of 0.46 gallons per 1,000 gallons or 0.03 gpm or 1,200 gallons per month at 60 gpm inlet flow. The system is designed to have adequate capacity for future expansion.

The tanks are configured with gravity flow to the air stripper rather than via pump; therefore, the tank heights match the air stripper inlet height. To control emissions into the operating area, ventilation ports at each tank are connected to a process equipment ventilation network which is connected to the air stripper inlet blower.

The acid feed rate estimated assumes that the high pH inflow will be constant, when only surges of high pH influent are expected. The sulfuric acid is stored in a 220-gallon storage tote, constructed of polypropylene, with an HDPE liner for acid resistance. A backup (spare) tote is also provided. These totes are located within the containment area, however, supplemental spill containment for these totes is provided using non-metallic Poly Basin II secondary containment spill pallets each with a 400-gallon capacity. These pallets are constructed of polypropylene for corrosion resistance. Two sulfuric acid programmable metering pumps manufactured by LMI Milton Roy are used. All exposed metal surfaces, piping, and ancillary equipment is protected from corrosion by an appropriate paint or coating as required by 6 NYCCR Part 598.9(e).

Low Profile Air Stripper

A low-profile 6-tray air stripper is included in the treatment system to reduce the discharged quantities of volatile organic compounds which are listed as substances of concern by the city of Niagara Fall's publicly owned treatment works (POTW). The unit has stainless steel trays and a 20 horsepower blower capable of 2,000 cubic feet per minute (cfm). The unit contains a blower inlet silencer to reduce sound to not more than 85 decibels (dB) as measured 3 meters from the blower. The inlet air to the blower will be heated to at least 50 degrees Fahrenheit to increase removal efficiency and to prevent freezing of the unit.

Air Stripper Discharge Stack

In compliance with OSHA Permissible Exposure Limits, the requirements specified in the American Conference of Governmental Industrial Hygienists Threshold Limit Values for all contaminants, and the NYSDEC annual Guidline Concentration and Short-Term Guidline Concentrations for constituents of concern, the air stripper vapor discharge outlet is connected to a discharge stack. The 12-inch diameter FRP vapor discharge stack extends to a height of over 50 feet above ground level and penetrates the roof of Building 73. Based on anticipated ground water concentrations and collection rates, Olin has determined that the emission rate will meet all applicable criteria.

Treated Ground Water Discharge to POTW

The treated air stripper discharge will flow by gravity from a 6-inch stainless steel pipe to a 6-inch diameter HDPE single wall discharge pipe that exits the south wall of Building 73 below the frost depth. This line will connect with the gravity flow storm sewer system which carries the flow to the designated POTW outfall (the 7-S Sump) at the plant. The final plant effluent flow is measured and totalized out of the 7-S sewer pump station before discharge to the city. The flow from each recovery well will be monitored and totalized. Sample points are provided for each recovery well and the combined effluent. The final plant effluent is composite sampled prior to discharge to the POTW.

Electrical

Electric power for the remediation system is provided using the existing Motor Control Center (MCC) located in Building 73. The overloads in the MCC were replaced. A new 600-amp feeder was installed to Building 73 to provide power for the ground-water treatment system. To distribute power to the wells, overhead poles are located near each recovery well and passive relief well.

Instrumentation and Process Controls

Process controls for the system include measurement and control of water levels in the recovery wells and continuous monitoring for the presence of liquid in the leak detection sumps. Flow meters are provided to measure instantaneous and totalized flows from each well and prior to discharge. Acid feed rate and pH measurement instrumentation loops are included. The water level in the air stripper discharge sump will be monitored, and the air temperature in the stripper air stream will be measured and heated. The operation of the ground-water treatment system will be monitored and controlled by the existing central OMNX Control System in place at the plant. This automated system has been expanded and programmed to add the treatment system process operations.

Miscellaneous Construction

Included with the construction of the ground-water treatment system in Building 73 are the following improvements:

- Two eye-wash station emergency showers were installed. Process wash water for the maintenance of equipment was also provided. A 2-inch potable water line was installed to service Building 73.
- An 8 foot by 8 foot one-room modular office building was constructed inside Building 73 for the operator of the ground-water treatment system.
- Heaters are provided in Building 73 to eliminate the possibility of equipment freezing. The existing lighting was upgraded in the building.

STORM WATER MANAGEMENT, GRADING AND PAVING

The corrective measures in the Remedial Plan include the paving of exposed soils and surface drainage controls in the Soil Management Area. To address these requirements, Olin implemented a site grading plan which includes storm sewer improvements to minimize surface water ponding at the plant. Paving of exposed soil areas was included in the project.

Under previous conditions, approximately 70 percent of Plant No. 2 consisted of impervious surfaces; either asphalt paving or buildings. Most of the storm water runoff from these impervious areas was collected by an existing storm water collection and conveyance system, as indicated on the contract drawings. The two primary storm sewer outfalls, known as the 7-S and 8-S sewers, direct flow to the POTW located along Buffalo Avenue.

The remaining 30 percent of the site consisted of a combination of existing concrete floor slabs (left from recent building demolition) and pervious surfaces. The pervious surfaces include gravel-covered areas, grassed areas, and exposed soil. Rainfall onto pervious surfaces would either percolate into the ground or, under heavy rainfall conditions, drain off-site as sheetflow. Runoff from a portion of these pervious areas was collected by the existing storm sewer system.

The storm water management plan for Plant No. 2 consisted of grading and paving of the former pervious surfaces, including areas of recent building demolition. Runoff is collected by a series of new and existing storm inlets, with flow directed into the existing 7-S and 8-S sewers. The paving and drainage system is designed to collect all storm water runoff from newly paved areas, thereby minimizing percolation of rainfall into the ground.

CORRECTIVE MEASURE IMPLEMENTATION SITE OPERATIONS AND MAINTENANCE PLAN

for

GROUND-WATER COLLECTION AND TREATMENT SYSTEM

at

OLIN CHEMICALS FACILITY, NIAGARA FALLS, NEW YORK

Prepared for:

OLIN CHEMICALS

Charleston, Tennessee

Prepared by:

Law Engineering and Environmental Services, P.C.

April 12, 1999

Project 12000-8-0081.02.05

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APPENDICES (continued)

Appendix

1.0 BACKGROUND

The Olin Corporation has implemented a Remedial Plan to address ground-water contamination at Plant 2, which is located in Niagara Falls, New York. In accordance with this plan, a Ground-Water Collection and Treatment System (system) was installed consisting of five recovery wells, five passive relief wells, and a ground-water treatment plant. The goals of the ground-water collection system are to reduce the concentration of Olin-derived hazardous waste constituents in the site ground water and restrict off-site migration of these constituents. Drawing 10-003 indicates the locations of the recovery wells and passive relief wells. As indicated, the piping from the recovery wells is routed to a ground-water treatment plant located in Building 73. As shown in Drawing 05-001, the ground-water treatment plant consists of an equalization tank, a two-stage pH adjustment system, and a low-profile air stripper which gravity discharges into the sewer. The ground-water treatment plant is designed to meet all applicable regulations.

This plan has been prepared for the operations and maintenance (O&M) of the Ground-Water Collection and Treatment System at Plant 2. The main purpose of this O&M plan is to develop a framework and path forward for maintenance and data development for this system. The O&M plan is intended to serve both as a training resource and as a routine guide to assist in the day-to-day O&M of the system. This O&M plan is meant to be used in conjunction with the manufacturer O&M manuals compiled during project construction. O&M manuals for the equipment listed in Appendix A are available at the facility. This plan and the compilation of O&M manuals will be updated by addendum as necessary to reflect changes in project roles and responsibilities, changes in procedures, new procedures, new equipment, or new chemical usages. In addition to the O&M manuals, the following documents applicable to the treatment plant will be made available at the facility:

- General Site Health and Safety Plan;
- Material Safety Data Sheets (MSDSs) for materials used and/or stored as a part of treatment plant O&M;
- 90% Design Report for the Ground-Water Collection and Treatment System and Storm Water Management, Grading and Paving;
- Procurement Records; and
- Construction Certification Report for the Ground-Water Collection and Treatment System and Storm Water Management, Grading and Paving.

This O&M plan is divided into the following sections:

- Section 1.0 briefly describes the purpose of this document.
- Section 2.0 summarizes the design of the system, its major components, and its general operation.
- Section 3.0 addresses system maintenance activities and schedules, operation and safety inspections, operation and maintenance logs, and spare parts.
- Section 4.0 discusses performance monitoring activities.
- Section 5.0 presents reporting requirements.

The appendices include schedules, checklists, and specific procedures to guide Olin's staff in the day-to-day operation and maintenance of the system.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL REPORT

CLASSIFICATION CODE: 4 REGION: 9 SITE CODE: 932051B
EPA ID#:

NAME OF SITE: Olin Corporation Plant Site

STREET ADDRESS: Buffalo Ave EXTENSION:

TOWN/CITY: Niagara Falls COUNTY: Niagara ZIP: 14302

SITE TYPE: Open dump-X Structure- Lagoon- X Landfill- Treatment pond-

ESTIMATED SIZE: 50 Acres

SITE OWNER/OPERATOR INFORMATION:

CURRENT OWNER NAME.....: Olin Chemicals Group

CURRENT OWNER ADDRESS..: Buffalo Ave.

OWNER(S) DURING USE.....: Olin Chemicals Group

OPERATOR DURING USE.....: Olin Chemicals Group

OPERATOR ADDRESS.....: PO Box 748 Niagara Falls, NY 14302

PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From: 1957 To: 1974

SITE DESCRIPTION: This plant contains areas where mercury brine sludge was spread on the surface as fill. In addition, a pond was used for retaining waste water from the mercury cell room. The pond was reportedly used for a 3 month time frame in 1970. Much of the brine sludge spread adjacent to the cell rooms was excavated and removed to a secure landfill. Portions of the site have been paved. A series of monitoring wells have been installed on the eastern portion of the plant site where organic chemical manufacturing occurred along with other wells throughout the plant site. Mercury and organics have been detected in these wells. Off-site migration via groundwater movement is indicated. There are no known disposal areas for organics on the plant site. Although there is organic contamination in the groundwater, these contaminants likely result from leakage and spillage from past plant operations along with the explosion of the former BHC building in the 1950's. In 1981, Olin/DuPont completed a partial clean up project in Gill creek which is adjacent to the plant. Sediments contaminated with lindane were removed and disposed of in a secure landfill. The U.S.G.S sampled the site of the brine disposal and the mercury pond in 1982. Mercury and some organic parameters were detected. During 1989 the company voluntarily undertook an investigation to extend the hydrogeologic and chemical characterization of the plant site. Under RCRA Section #3013, the plant site and the parking lot were investigated in 1991. The Interim Report was submitted in January 1992. In 1992, Olin/DuPont completed an additional cleanup of Gill Creek. Additional monitoring wells were also installed in 1992 adjacent to Gill Creek. Preliminary Corrective Measure Study (CMS) was submitted in November 1993 with submittal of Final RCRA Facility Investigation (RFI) in August 1994. The RFI was accepted by the DHSR in November 1994 and the CMS was approved in 1995. Implementation of the Remedial Program began in late 1997. The system consists of 5 groundwater extraction wells designed to capture contamination at the eastern end of the plant site. These wells will compliment the plant production wells which capture much of the groundwater contamination.

HAZARDOUS WASTE DISPOSED:

TYPE	QUANTITY (units)
Coal fines	Unknown
Mercury cell brine sludges	264 cubic yards
Organics (TCP, BHC)	Unknown
waste water containing mercury	Unknown

SITE CODE: 931051B

ANALYTICAL DATA AVAILABLE:

Air:	Surface Water:	Groundwater: X	Soil: X	Sediment:

CONTRAVENTION OF STANDARDS:

Groundwater: X	Drinking Water:	Surface Water:	Air:

LEGAL ACTION:

TYPE:	State-	Federal- X (RCRA Permit)	
STATUS:	Negotiation in Progress-		Order Signed-

REMEDIAL ACTION:

Proposed-	Under Design-	In Progress-	Completed-X

NATURE OF ACTION: groundwater pump and treat

GEOTECHNICAL INFORMATION:

SOIL TYPE: Fill, sandy clay

GROUNDWATER DEPTH: Approximately 10'

ASSESMENT OF ENVIRONMENTAL PROBLEMS: Mercury and organic chemicals have been identified in soil, overburden groundwater and plant outfalls. Containment and removal of site contaminants through long term operation of the remedial actions installed at the site minimumize environmental impacts from the site.

ASSESSMENT OF HEALTH PROBLEMS: The entire site is fenced and guarded thus limiting the potential for the public to come into contact with on-site soils. Exposures via drinking water are not expected because all area residents and businesses are served by public water and there are no known private wells in the immediate area.

CLASSIFICATION WORKSHEET

Site: Olin Plant Site County: Niagara Region: 9

1.	Hazardous waste disposed?	[X]Y (to 2)	[ ]N (Stop)	[ ]U (Stop)
2.	Consequential amount of hazardous waste?	[X]Y (to 3)	[ ]N (Stop)	[ ]U (to 3)
3.	Part 375-1.4(a)(1) applies?	[X]N (to 4)	[ ]U (to 4)	[ ]Y (as checked below; Class 2; to 5)

[ ]a. endangered or threatened species
[ ]b. streams, wetlands, or coastal zone
[ ]c. bioaccumulation
[ ]d. fish, shellfish, crustacea or wildlife
[ ]e. fire, spill, explosion or toxic reaction
[ ]f. proximity to people or water supplies

4. Part 375-1.4(a)(2) applies? []N (Class 3; Stop) [ ]U (Class 2a; Stop)
[X]Y (Class 2; to 5):

Remedial work is complete, site is in long term O&M. RCRA group has lead.

5. Factor(s) considered in making this determination:
Remedial work has been completed in accordance with a RCRA Remedial Action Plan that was begun in 1997. The Work was approved by the Div. Of Hazardous Substance Regulation on February 13, 1998.
The O&M Plan was approved on April 12, 1999.

SUMMARY:

Consequential Hazardous Waste	[X] Yes	[ ] No	[ ] Unknown
Significant Threat	[ ] Yes	[X] No	[ ] Unknown

Proposed Classification: 4 Site Number: 932051B

Division of Environmental Remediation

2/9/00 — Date
Michael J. Hinton P.E. EE II — Signature and Title

Division of Hazardous Substance Regulation

2/9/00 — Date
Stanley Radon CAG EG II — Signature and Title

B. WCHTZ

Husch & Eppenberger

Attorneys and Counselors at Law

100 N. Broadway
Suite 1300
St. Louis, Missouri 63102
fax: 314-421-0239
314-421-4800

Direct Dial No.:
Monica L. Fries, Esq.
314-622-0625

June 25, 1997

Annette M. Sansone, Esq.
Assistant Regional Attorney
NYS Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: Olin Corporation-Niagara Falls Plant: Administrative Order on Consent

Dear Ms. Sansone:

Enclosed is a copy of the Notice and Declaration of Restrictive Covenants as recorded with the Niagara County Register of Deeds on May 27, 1997.

Olin will provide the Department with a map outlining the facility property Olin owns. Our efforts have been frustrated, as the attorney Olin originally hired to provide a letter report was unresponsive. Olin has since hired a second attorney to produce this report. Upon receiving the letter report, we will have the property boundaries delineated on a map, and supply a copy of the map to you.

Sincerely,

Monica L. Fries

STL-574060.01

cc W. Wertz w/ enclosure

DO NOT DETACH - THIS IS PAGE 1 OF RECORDED DOCUMENT

LIBER 2740 PAGE 169

OFFICE OF THE CLERK COUNTY OF NIAGARA

WAYNE F. JAGOW, COUNTY CLERK

INS. # 010128

52

County Courthouse, 175 Hawley Street, P.O. Box 461, Lockport, NY 14095
Phone (716) 439-7027 Fax (716) 439-7066

NIAGARA COUNTY CLERK RECORDING PAGE

INSTRUMENT DATE _____ TYPE DECLARATION OF RESTRICTIVE COVENANTS NUMBER OF PAGES 14

RETURN TO: HUSCH & EPPENBERGER
1400 N. BROADWAY #1300
ST. LOUIS MO
63102
Fed Ex Env

Parties: (Print Names In Full)

1st Part OLIN CORPORATION

2nd Part _____

Town/City _____

_____
REAL ESTATE TRANSFER TAX

$ _____

_/_/_

NIAGARA COUNTY

SPACE BELOW RESERVED FOR COUNTY CLERK'S USE ONLY.

RECORDED
97 MAY 27 AM 11:45
NIAGARA COUNTY CLERK'S OFFICE LOCKPORT, N.Y.

MORTGAGE AMOUNT

$ _____

(___)One\two family (___)Other

_____

[ ] Check if to be apportioned

MORTGAGE# _____

RECORDING TAX RECEIPT

BASIC	$	
ADDITIONAL	$	
SPECIAL	$	
TOTAL	$	

State of New York} ss
County of Niagara}
I do hereby certify that I have Received on the within Mortgage, being the amount of the Recording Tax Imposed thereon & paid at recording.

Dated _____, 199_____

_____
Mortgage Tax Clerk of Niagara County

Recorded on the 27th day of May
1997 at 11:45 o'clock a M
in Liber 2740 of Deeds
on page 169 and examined.

Wayne F. Jagow
_____
Niagara County Clerk

This sheet constitutes the Clerk's endorsement required by section 319 of the Real Property Law of the State of New York
DO NOT DETACH

NOTICE AND DECLARATION OF RESTRICTIVE COVENANTS

THIS DECLARATION is made as of the 22nd day of May, 1997 by OLIN CORPORATION, a Virginia corporation ("Declarant").

RECITALS

010128

A. The Declarant owns fee simple title to the real estate and improvements known as the 2400 Buffalo Avenue, located in the City of Niagara Falls in Niagara County, New York, such real property being legally described on Exhibit A attached hereto and incorporated herein by this reference (the "Property").

B. From 1897 through the present, Declarant has operated various chemical manufacturing facilities on the Property.

C. As of the date hereof, Declarant is investigating and evaluating the environmental conditions of the Property.

D. In order to limit possible exposure pathways, Declarant desires to impose upon and subject the Property to this Declaration, which shall become effective upon the recording of this Declaration in the land records of Niagara County, New York.

NOTICE AND DECLARATION

NOW, THEREFORE, the Declarant hereby declares that the Property and any portion thereof is and shall be held, transferred, sold, conveyed, used and occupied subject to the perpetual restrictive covenants hereinafter set forth, which restrictive covenants shall run with the Property and be binding upon all parties having any right, title or interest in the Property or any part thereof, their successors and assigns, and shall inure to the benefit of each owner thereof, and which are for the purpose of protecting the value and desirability of the Property.

1. Notice. Declarant has entered into an Order on Consent ("Order") with the New York State Department of Environmental Conservation ("DEC") to implement a Resource Conservation and Recovery Act ("RCRA") corrective action program to remediate soil and groundwater contamination of the Property. A copy of this Order may be obtained from Declarant or DEC. The terms and conditions of this Order are incorporated herein by reference.

2. Presence of Hazardous Wastes. The potential Declarant-derived hazardous waste constituents are listed in Exhibit B, attached hereto and incorporated herein by this reference, and are found in various concentrations throughout the soil and groundwater of the Property.

3. Restricted Uses. Notwithstanding any laws, rules, regulations, ordinances or orders of

any governmental or quasi-governmental entity, including, without limitation, local municipal and zoning ordinances, the Property, or any portion thereof, shall be used solely for commercial and/or industrial purposes.

4. General Restriction. Notwithstanding the commercial and/or industrial use limitation set forth above, no groundwater shall be extracted from beneath the Property for any purpose other than those commercial/industrial purposes involving non-contact uses, water treatment, or environmental sampling and testing. In addition, soils shall be extracted from beneath the Property only when consistent with industrial/commercial uses and with protocols that maintain adequate protection to human health and safety.

5. Runs with the Land. The perpetual restrictive covenants created in this Declaration are appurtenant to the Property and are (i) made for the direct benefit of the Property; (ii) shall run with the land; (iii) may be enforced as either equitable servitudes or real covenants; and (iv) shall bind and inure to the benefit of every person or entity having any property interest in the Property or any portion thereof.

6. Severability. If any portion of this Declaration shall to any extent be invalid or unenforceable, the remaining provisions of this Declaration shall not be affected thereby, and each provision of this Declaration shall be valid and enforceable to the fullest extent permitted by law.

7. Successors and Assigns Bound. This Declaration shall be perpetual and shall be binding upon and shall inure to the benefit of Declarant, any subsidiary of Declarant, division, parent or wholly owned corporation or affiliate now or hereafter existing, and their respective successors and assigns with respect to the Property and the tenants, subtenants, licensees, vendees, concessionaires and successors and assigns of any of them with any fee, leasehold, license or other interest in the Property.

8. Removal of Restriction. In the event that the DEC or its successor provides Declarant with a written determination that this deed restriction is no longer necessary to protect the public health or the environment, and Declarant is the then owner of record of the Property, Declarant shall file such documents with the Niagara County, New York Recorder of Deeds as are necessary to remove the restrictions contained in this Declaration from the Property.

9. Governing Law. This Declaration shall be governed by and construed in accordance with the laws of the State of New York.

IN WITNESS WHEREOF, the Declarant has executed this Declaration as of the day and year first above written.

OLIN CORPORATION,
a Virginia corporation

By: Curt M. Richards
Name: Curt M. Richards
Title: Director of Environment, Health & Safety

STATE OF Tennessee)
) SS.
COUNTY OF Bradley)

On this 22 day of May, 1997, before me appeared Curt M. Richards, to me personally known, who being by me duly sworn did say that he is the Dir. of Env, Health & Safety of OLIN CORPORATION, a Virginia corporation, and that the seal affixed to the foregoing instrument is the corporate seal of said corporation; and that said instrument was signed and sealed on behalf of said corporation, by authority of its Board of Directors and said he acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal in the County and State aforesaid, the day and year first above written.

Angela J. Goodner
Notary Public

My Commission expires:
November 18, 2000

EXHIBIT A

(Legal Description of Property)

Parcel I:

All that tract or parcel of land, situate in the City of Niagara Falls, County of Niagara and State of New York, being part of Lot 44 Mile Reserve, according to a Map made for the Niagara Falls Power Company and the Niagara Junction Railway, filed in Niagara County Clerk's Office on July 30, 1942 in Book 27 of Microfilmed Maps, Page 2675, bounded and described as follows: Beginning at a stone monument set at the intersection of the South line of Buffalo Avenue and the East boundary line of the right of way of the Niagara Junction Railway Company; thence along said South line of Buffalo Avenue South 88 degrees 39 minutes 30 seconds East, 615.16 feet to a point; thence South 10 degrees 52 minutes West, 321.18 feet to an iron monument; thence South 79 degrees 08 minutes East, 190 feet to an iron monument; thence south 10 degrees 52 minutes West, 260.1 feet to an iron monument set in the North line of a private street known as Adams Avenue; thence along said North line of Adams Avenue North 79 degrees 08 minutes West, 86.23 feet to an iron monument set in the East boundary line of certain lands of The Niagara Falls Power Company set aside for a right of way for the Niagara Junction Railway Company; thence along said boundary line of said right of way North 10 degrees 52 minutes East, 14 feet to an iron monument; thence still along the boundary line of the right of way of the Niagara Junction Railway Company North 69 degrees 03 minutes 46 seconds West, 172.61 feet to an iron monument; thence still along the boundary line of the above mentioned right of way North 52 degrees 21 minutes 46 seconds West, 172.61 feet to a stone monument; thence still along the boundary line of the right of way of the Niagara Junction Railway Company North 36 degrees 21 minutes West, 526.46 feet to the stone monument at the point of beginning. **EXCEPTING** for railway purposes a right of way upon, over and along a strip of land 16 feet in width extending entirely through and across the Northerly side of the above described premises, said strip being bounded on the Northerly side by the South line of Buffalo Avenue and on the Southerly side by a line parallel to said South line of Buffalo Avenue, 16 feet distant therefrom. **ALSO EXCEPTING** for railway purposes a right of way upon, over and along a strip of land 14 feet in width extending entirely through and across the Southerly side of the above described premises and bounded on the Southerly side by the North line of the private street known as Adams Avenue. **ALSO EXCEPTING** for conduit purposes rights of way upon and along a strip of land extending in a Northerly direction from Adams Avenue entirely through and across the Southeasterly portion of the above described premises and also upon and along a further strip of land extending Westerly about 52 feet into the Northeasterly part of

said parcel. **ALSO EXCEPTING THEREFROM** so much lands as were conveyed to E. I Dupont DeNemours and Company by Deed recorded in Liber 1449 of Deeds, Page 711.

Parcel II:

All that tract or parcel of land, situate in the City of Niagara Falls, County of Niagara and State of New York, being part of Lot 44 Mile Reserve according to a map made for the Niagara Falls Power Company and the Niagara Junction Railway filed in Niagara County Clerk's Office on July 30, 1942 in Book 27 of Microfilmed Maps, Page 2675, bounded and described as follows: Beginning at an iron monument set at the intersection of the South line of Buffalo Avenue and the East line of a private street; thence from said point of beginning along the said South line of Buffalo Avenue South 80 degrees 14 minutes East, 560.13 feet to an iron monument; thence South 10 degrees 52 minutes West, 386.75 feet to an iron monument; thence parallel to the North line of a private street known as Adams Avenue, North 79 degrees 08 minutes West, 560.03 feet to an iron monument set in the above mentioned East line of the private street; thence along said East line of said private street North 10 degrees 52 minutes East, 376 feet to the iron monument at the point of beginning. **Excepting** for railway purposes from the above described premises a right of way upon, over and along a strip of land 16 feet in width extending entirely through and across the described premises, and bounded on the North side by the South line of Buffalo Avenue and on the South side by a line parallel to said South line of Buffalo Avenue, 16 feet distant therefrom.

Parcel III:

All that tract or parcel of land, situate in the City of Niagara Falls, County of Niagara and State of New York, being part of Lot 44 Mile Reserve according to a map made for the Niagara Falls Power Company and the Niagara Junction Railway filed in Niagara County Clerk's Office on July 30, 1942 in Book 27 of Microfilmed Maps, Page 2675, bounded and described as follows: Beginning at an iron monument set in the East line of a private street, said monument being distant 376 feet from the South line of Buffalo Avenue, measured along said East line of said private street, said iron monument being set in the Southwest corner of lands of Castner Electrolytic Alkali Company; thence from said monument at the point of beginning along the Southerly boundary line of said lands of said Castner Electrolytic Alkali Company, South 79 degrees 08 minutes East, 560.03 feet to an iron monument set in the Southeast corner of the above mentioned lands of Castner Electrolytic Alkali Company; thence South 10 degrees 52 minutes West, 56.33 feet to an iron monument; thence on a line parallel to and distant 56.33 feet Southerly from the Southerly

boundary line of lands of Castner Electrolytic Alkali Company, measured at right angles thereto, North 79 degrees 08 minutes West, 560.03 feet to an iron monument set in the East line of the hereinbefore mentioned private street between Blocks 14 and 16; thence along said East line of said private street North 10 degrees 52 minutes East, 56.33 feet to the iron monument at the point of beginning.

Parcel IV:

All that tract or parcel of land, situate in the City of Niagara Falls, County of Niagara and State of New York, being part of Lot 45 Mile Reserve, according to a map made for the Niagara Falls Power Company and the Niagara Junction Railway filed in Niagara County Clerk's Office on July 30, 1942, in Book 27 of Microfilmed Maps, Page 2675, bounded and described as follows: Beginning at an iron pin set at a point in the Southerly boundary line of Buffalo Avenue, distant 60 feet Westerly at right angles from the Westerly boundary line of parcel of land heretofore conveyed by The Niagara Falls Power Company to United States of America by Deed recorded in Liber 660 of Deeds, Page 367; thence Southerly along a line parallel to said Westerly boundary line 623.65 feet to a point in the Northerly boundary line of a private street of the Power Company known as Adams Avenue; thence Westerly along said Northerly boundary line of Adams Avenue 387 feet to a point; thence Northerly along a line making an interior angle of 88 degrees 53 minutes 30 seconds with previous course 591.47 feet to a point; thence Northeasterly deflecting to the right at an angle of 25 degrees 20 minutes 10 seconds from previous course 28.29 feet to a point in said Southerly boundary line of Buffalo Avenue; thence Easterly along said Southerly boundary line of Buffalo Avenue 362.95 feet to the place of beginning.

Parcel V:

All that tract or parcel of land, situate in the City of Niagara Falls, County of Niagara and State of New York, being part of Lot 44 Mile Reserve, according to a Map made for the Niagara Falls Power Company and the Niagara Junction Railway filed in Niagara County Clerk's Office on July 30, 1942 in Book 27 of Microfilmed Maps, Page 2675, bounded and described as follows: Beginning at a point in the South line of Buffalo Avenue at the point of its intersection with the Easterly boundary line of Parcel 1 of lands heretofore conveyed by The Niagara Falls Power Company (Constituent) to Castner Electrolytic Alkali Company by Deed recorded in Liber 270 of Deeds, Page 445; thence Easterly along said South line of Buffalo Avenue making an included angle of 99 degrees 31 minutes 30 seconds with the Easterly boundary line of said Parcel 1 of lands conveyed to Castner Electrolytic Alkali Company, 6.69 feet to a brass plug set at an angle

point in said South line of Buffalo Avenue; thence Easterly by deflecting toward the South at an angle of 8 degrees 25 minutes 30 seconds still along said South line of Buffalo Avenue 183.43 feet to an iron monument set at the point of intersection of said South line of Buffalo Avenue with the Westerly boundary line of a parcel of land heretofore conveyed by The Niagara Falls Power Company to E. I. DuPont deNemours & Co., Inc. by Deed recorded in Liber 651 of Deeds, Page 495, which parcel of land is designated in said deed as Parcel 1; thence Southerly along the Westerly boundary line of the last mentioned parcel of land, making an interior angle with the last mentioned course of 88 degrees 54 minutes, 325.77 feet to an iron monument set in a Northeasterly corner of Parcel 1 of lands conveyed to the Castner Electrolytic Alkali Company as aforesaid; thence Westerly at right angles to last mentioned course along a Northerly boundary line of Parcel 1 of lands so conveyed to the Castner Electrolytic Alkali Company, 190 feet to a point; thence Northerly at right angles to last mentioned course along an Easterly boundary line of Parcel 1 so conveyed to the Castner Electrolytic Alkali Company, 321.18 feet to the point of beginning **Excepting** therefrom lands conveyed to E. I. DuPont DeNemours and Company by Deed recorded in liber 1449 of Deeds, Page 711.

Parcel VI:

All that tract or parcel of land, situate in the City of Niagara Falls, County of Niagara and State of New York, being part of Lot 44 Mile Reserve, according to a Map made for the Niagara Falls Power Company and the Niagara Junction Railway filed in Niagara County Clerk's Office on July 30, 1942 in Book 27 of Microfilmed Maps, Page 2675, bounded and described as follows: Beginning at a point in the South line of Buffalo Avenue at the Northeast corner of Parcel 2 of lands heretofore conveyed by The Niagara Falls Power Company (Constituent) to the Castner Electrolytic Alkali Company by Deed recorded in Liber 270 of Deeds, Page 445; thence Easterly along said South line of Buffalo Avenue making an included angle of 91 degrees 06 minutes with the Easterly boundary line of said Parcel 2 of lands conveyed to Castner Electrolytic Alkali Company, 200 feet to the point of intersection with the Westerly boundary line of a private street of Power Company known as Alundum Road; thence Southerly along said Westerly boundary line of Alundum Road, making an included angle with the last mentioned course of 88 degrees 54 minutes, 606.99 feet to an iron monument set in the Northerly boundary line of Adams Avenue, a private street of Power Company, said monument being distant 54 feet Northerly at right angles from the Northerly boundary line of lands heretofore conveyed by The Niagara Falls Power Company to Niagara Junction Railway Company by Deed recorded in Liber 215 of Deeds, Page 498; thence Westerly along a line parallel to and distant 54 feet Northerly from the aforesaid Northerly boundary line of Niagara Junction Railway Company, being also the Northerly line of said Adams Avenue, 560 feet to an iron monument set in the Southeast corner of

Parcel 2 of lands heretofore conveyed by The Niagara Falls Power Company to E. I. DuPont deNemours & Co., Inc. by Deed recorded in Liber 651 of Deeds, Page 495; thence Northerly along the Easterly boundary line of said Parcel 2 of lands conveyed to E. I. DuPont deNemours & Co., Inc., 160.17 feet to an iron monument set in the Northeasterly corner of the last mentioned parcel of land, said monument being also located in the Southerly boundary line of lands heretofore conveyed by The Niagara Falls Power Company (Constituent) to the Castner Electrolytic Alkali Company by Deed recorded in Liber 303 of Deeds, Page 326; thence Easterly at right angles to last mentioned course along the Southerly boundary line of lands conveyed to Castner Electrolytic Alkali Company by Deed dated December 22, 1904, 360.03 feet to the Southeast corner of the lands conveyed by Deed dated December 22 1904; thence Northerly at right angles to last mentioned course along the Easterly boundaries of lands conveyed to Castner Electrolytic Alkali Company by Deed dated December 22 1904, and Parcel 2 so conveyed to Castner Electrolytic Alkali Company by said Deed dated March 13, 1901, 443.08 feet to the point of beginning.

Parcel VII:

All that tract or parcel of land, situate in the City of Niagara Falls, County of Niagara and State of New York, being part of Lot 44 Mile Reserve, according to a Map made for the Niagara Falls Power Company and the Niagara Junction Railway filed in Niagara County Clerk's Office on July 30, 1942 in Book 27 of Microfilmed Maps, Page 2675, bounded and described as follows: Beginning at a point in the South line of Buffalo Avenue at the Northeast corner of Parcel 4 hereinbefore described; thence Easterly 60.01 feet along said South line of Buffalo Avenue to a point; thence Southerly making an interior angle of 88 degrees 54 minutes with the last mentioned course 608.15 feet to a point in the Northerly boundary line of Adams Avenue, a private street of Power Company, said point being distant 54 feet Northerly at right angles from the Northerly boundary line of lands heretofore conveyed by The Niagara Falls Power Company (Constituent) to the Niagara Junction Railway Company by Deed recorded in Liber 215 of Deeds, Page 498; thence Westerly along a line parallel to and distant 54 feet Northerly from aforesaid Northerly boundary line of Niagara Junction Railway Company, being also the Northerly line of Adams Avenue 60 feet to an iron monument set at the Southeast corner of Parcel 4 hereinbefore described; thence Northerly along the East line of said Parcel 4, 606.99 feet to the point of beginning.

Parcel VIII:

All that tract or parcel of land, situate in the City of Niagara Falls, County of Niagara and State of New York, being part of Lot 44 Mile Reserve, according to a Map made for the Niagara Falls Power Company and the Niagara Junction Railway filed in Niagara County Clerk's Office on July 30, 1942 in Book 27 of Microfilmed Maps, Page

2675, bounded and described as follows: Beginning at a point in the South line of Buffalo Avenue at the point of its intersection with the East line of a private street of Power Company known as Alundum Road, being also the Northeast corner of Parcel 5 hereinbefore described; thence Easterly along said South line of Buffalo Avenue, making an included angle of 91 degrees 06 minutes with said East line of Alundum Road, 348 feet to a point; thence Southerly at right angles to said South line of Buffalo Avenue 9 feet to a point; thence Easterly at right angles to last mentioned course along a line parallel to and 9 feet Southerly of said South line of Buffalo Avenue 13.91 feet to a point; thence Southerly along a line making an interior angle of 88 degrees 54 minutes with last mentioned course, 606 feet to a point in the Northerly boundary line of Adams Avenue, a private street of Power Company, said point being distant 54 feet Northerly at right angles from the Northerly boundary line of lands heretofore conveyed by The Niagara Falls Power Company to the Niagara Junction Railway Company by Deed recorded in liber 215 of Deeds, Page 498; thence Westerly at right angles to last mentioned course along a line parallel to and distant 54 feet Northerly from the aforesaid Northerly boundary line of the Niagara Junction Railway Company, being also the Northerly line of Adams Avenue, 362 feet to a point in the aforesaid Easterly boundary line of Alundum Road, being also the Southeast corner of Parcel 5 hereinbefore described; thence Northerly along the Easterly boundary line of Alundum Road, 608.15 feet to the point of beginning.

Parcel IX:

All that tract or parcel of land, situate in the City of Niagara Falls, County of Niagara and State of New York, being part of Lots 44 and 45 Mile Reserve, according to a Map made for the Niagara Falls Power Company and the Niagara Junction Railway filed in Niagara County Clerk's Office on July 30, 1942 in Book 27 of Microfilmed Maps, Page 2675, bounded and described as follows: Beginning at the Southeast corner of lands conveyed to the Mathieson Alkali Works by deed recorded in Liber 683 of Deeds, Page 485; thence Westerly along the Southerly line of the conveyances to said Mathieson Alkali Works, 387 feet to the Southwest corner of said conveyance; thence Northerly along the Westerly line of said conveyance making an angle of 88 degrees 53 minutes 30 seconds in the Northeast quadrant, 591.47 feet to a point; thence at a deflection angle to the right of 25 degrees 20 minutes 10 seconds and continuing along a Westerly line of said conveyance, 28.29 feet to the Northwest corner of said conveyance, said point also being the South line of Buffalo Avenue; thence Westerly along the Southerly line of said Avenue, 103.78 feet to a Northeast corner of lands conveyed to Mathieson Alkali Works by Deed recorded in Liber 701 of Deeds, Page 1; thence Southerly along the Easterly line of the last mentioned conveyance at right angles to the South line of said avenue, 9 feet to a point; thence Easterly at right angles and parallel with Buffalo Avenue, 13.91 feet to a Northeast corner of the last mentioned conveyance to Mathieson Alkali Works;

thence Southerly along the Easterly line of said conveyance making an angle of 88 degrees 54 minutes 00 seconds in the Southwest quadrant, 606 feet to the Southeast corner of the last mentioned conveyance to Mathieson Alkali Works, said point also being the North line of Adams Avenue, a private street; thence Westerly along the North line of said Adams Avenue, 982 feet to a Southwest corner of the last conveyance to Mathieson Alkali Works; thence South at right angles to the last mentioned course and through the land of the Niagara Mohawk Power Corporation, 16.5 feet to a point in a line which is parallel with and 16.5 feet Southerly (measured at right angles) from the North line of said Adams Avenue; thence Easterly along said parallel line continuing through the land of Niagara Mohawk Power Corporation, 1434.7 feet to a point in a straight line which is the Southerly extension of the East line of the lands so conveyed to Mathieson Alkali Works by Deed recorded in Liber 683 of Deeds, Page 485, as aforesaid; thence Northerly at right angles along the last mentioned line, 16.5 feet to the point of beginning.

Parcel X:

All that tract or parcel of land, situate in the City of Niagara Falls, County of Niagara and State of New York, being part of Lot 44 Mile Reserve, according to a Map made for the Niagara Falls Power Company and the Niagara Junction Railway filed in Niagara County Clerk's Office on July 30, 1942 in Book 27 of Microfilmed Maps, Page 2675, bounded and described as follows: For a point of reference, commence at the point of intersection of the Southerly line of Buffalo Avenue, a public avenue (66 feet wide) with the Easterly line of Chemical Road (45 feet wide); thence Southerly along the Easterly line of Chemical Road, 432.33 feet to a point where the Northerly line of Parcel No. 2, as shown on the aforesaid Map filed in Book 27 of Maps page 2675, intersects the Easterly line of Chemical Road, said point also being 160.17 feet Northerly along the Easterly line of Chemical Road from the intersection of the Northerly line of Adams Avenue (100 feet wide) with the Easterly line of Chemical Road; thence Easterly along the Northerly line of Parcel No. 2, 71.77 feet to the point of beginning of the parcel of land herein described and running thence (1) Easterly along the Northerly line of Parcel No. 2, 128.23 feet to the Northeast corner of Parcel No. 2; thence (2) Southerly along the Easterly line of Parcel No. 2, 12.75 feet to a point, said point being 147.42 feet Northerly along the Easterly line of Parcel No. 2 from the intersection of the Northerly line of Adams Avenue (100 feet wide) with the Easterly line of Parcel No. 2; thence (3) Westerly and parallel with the Northerly line of Parcel No. 2, 128.23 feet to a point; thence (4) Northerly and parallel to the Easterly line of Parcel No. 2, 12.75 feet to the point or place of beginning.

Parcel XI:

All those certain pieces or parcels of land situate in the City of

Niagara Falls, County of Niagara and State of New York, being parts of Lot 44 of the Mile Reserve, so called, owned respectively by The Niagara Falls Power Company and by Niagara Junction Railway Company, herein designated as Parcels "A" and "B" as follows:

Parcel "A:"

Being a part of Lots 3 and 4 of the Steadman Farm and of premises heretofore conveyed to The Niagara Falls Power Company (Constituent) by Peter A. Porter and by Vincent M. Porter, et al., by deeds dated March 10, 1890 and March 6, 1890, recorded in Niagara County Clerk's Office in Liber 198 of Deeds at Pages 458 and 479, respectively, described as follows:

Beginning at a monument in the North line of a private street known as Adams Avenue at the Southwest corner of Parcel 1 of lands heretofore conveyed by The Niagara Falls Power Company (Constituent) to Castner Electrolytic Alkali Company, predecessor of the party of the second part hereto, by deed dated March 13, 1901 and recorded in said Clerk's Office in Liber 270 of Deeds at Page 445; thence Westerly along the Northerly boundary of Adams Avenue North 79 degrees 8 minutes West, 157.49 feet to a point in the Northerly boundary of Parcel "A" of lands conveyed to Niagara Junction Railway Company by The Niagara Falls Power Company (Constituent) by deed dated June 11, 1892 and recorded in said Clerk's Office in Liber 215 of Deeds at Page 498; thence along said railway boundary deflecting to right by curve with radius of 540.69 feet, a tangent to said curve at said point making an angle with said street line of 25 degrees 48 minutes 53.5 seconds, 159.90 feet; thence still along said railway boundary North 36 degrees 21 minutes West 47.21 feet to a point in the Southwesterly boundary of said lands heretofore conveyed to Castner Electrolytic Alkali Company; thence along said Southwesterly boundary of lands so conveyed South 52 degrees 21 minutes 46 seconds East, 172.61 feet; thence still along said Southwesterly boundary South 69 degrees 3 minutes 46 seconds East 172.61 feet; thence along the Westerly boundary of said lands South 10 degrees 52 minutes West, 14 feet to the point of beginning, containing 0.202 of an acre of land.

Parcel "B"

Being a part of Lot 3 of the Steadman Farm and of Parcel "A" of lands conveyed by The Niagara Falls Power Company (Constituent) to Niagara Junction Railway Company as mentioned in Parcel "A" hereof described as follows:

Beginning at a stone monument at the intersection of the Northeasterly boundary of Niagara Junction Railway right of way with the Southerly boundary of Buffalo Avenue, said point of intersection being the Northwest corner of Parcel 1 conveyed as aforesaid to Castner Electrolytic Alkali Company; thence along the Southwesterly boundary

of said Parcel 1 and the same produced, being the Northeasterly boundary of said railway right of way, South 36 degrees 21 minutes East, 573.67 feet; thence by curve to left with radius of 540.69 feet still along said railway boundary, being also along the Southwesterly boundary of Parcel "A" hereof, 159.90 feet to the North line of Adams Avenue; thence along the North line of said avenue, North 79 degrees 8 minutes West, 34.73 feet to an iron monument; thence by curve deflecting to left with radius of 556.69 feet, 133.41 feet to an iron monument; thence North 36 degrees 21 minutes West on a line parallel to and 16 feet Westerly from the first described course of this parcel measured at right angles thereto, 586.03 feet to an iron monument in the South line of Buffalo Avenue; thence along the South line of said avenue South 88 degrees 39 minutes 30 seconds East, 20.22 feet to the point of beginning, containing 0.267 of an acre of land.

Parcel "B" as here described embraces the Easterly 16 feet of the Niagara Junction Railway right of way between the South line of Buffalo Avenue and the North line of Adams Avenue.

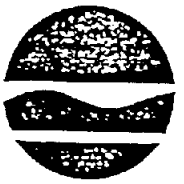
EXHIBIT B

POTENTIAL OLIN-DERIVED HAZARDOUS WASTE CONSTITUENTS MEASURED IN SOIL AND GROUNDWATER OLIN NIAGARA FALLS PLANT

Parameter	*CAS No.*	*Groundwater Protection Standard (μ/L)*
Volatile Organic Compounds		
Benzene	71-43-2	5.0
Acid/Base/Neutral/Pesticides Compounds		
Phenol	108-95-2	5.0
2,4,5-Trichlorophenol	95-95-4	5.0
2,3,4,6-Tetrachlorophenol	58-90-2	5.0
2-Chlorophenol	95-57-8	5.0
Chlorobenzene	108-90-7	5.0
1,2,4-Trichlorobenzene	120-82-1	5.0
m-Dichlorobenzene	541-73-1	5.0
o-Dichlorobenzene	95-50-1	4.7
p-Dichlorobenzene	106-46-7	4.7
α-BHC	319-84-6	.035
β-BHC	319-85-7	.023
δ-BHC	319-86-8	.025
Alcohols		
Methanol	67-56-1	1.8×10^4
Inorganics		
Mercury (total)		2.0

B. Wertz

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York 14203-2999
(716)851-7190



John P. Cahill
Acting Commissioner

April 14, 1997

Mr. Michael J. Bellotti, P.G.
Olin Corporation
1186 Lower River Road
P. O. Box 248
Charleston, TN 37310

Dear Mr. Bellotti:

Olin Chemicals
Niagara Falls, NY
Order on Consent #R9-4171-94-08

Please find enclosed a fully executed copy of the captioned order. Although Olin executed the order in January 1997, the Department delayed its execution pending receipt of Attachment A, the final Facility map, which is referenced in Paragraph 4 of the order.

Despite our mutual expectation that the final Facility map would be forthcoming when Olin executed the order, it has not yet been submitted. Insofar as the final map is subject to review and acceptance by Department Staff, the meaning of "Facility" for the purpose of this order remains outstanding. Attachment A to the order has been annotated to indicate that the map will be appended to the order at a future date. Please advise me when the Facility map will be submitted.

Also enclosed is the April 8, 1997 letter of Mr. Stanley Radon, CPG forwarding the Department's Final Decision and Response to Comments in this matter.

Thank you for your cooperation and assistance during the negotiation of the order and discussion of the Remedial Plan.

Very truly yours,

Annette M. Sansone

Annette M. Sansone
Assistant Regional Attorney

Enclosures

cc: William Wertz, Ph.D (w/encls)
Mr. Frank Shattuck, P.E. (" ")

STATE OF NEW YORK: DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of the Development and Implementation of a Remedial Program for a Resource Conservation and Recovery Act ("RCRA") Facility, Under Article 27, Title 9 and Article 71, Title 27 of the Environmental Conservation Law of the State of New York by:

ORDER ON CONSENT

INDEX #R9-4171-94-08

OLIN CORPORATION
Respondent

Site Registry # 9-32-051A and # 9-32-051B

WHEREAS:

1. The New York State Department of Environmental Conservation (the "Department") is responsible for enforcement of Article 27, Title 9 of the Environmental Conservation Law of the State of New York ("ECL"), entitled "Industrial Hazardous Waste Management." This Order is entered into pursuant to the Department's authority under, inter alia, ECL Article 27, Title 9 and ECL § 71-2727(3).

2. Olin Corporation ("Olin"), a corporation organized and existing under the laws of the Commonwealth of Virginia, does business in the State of New York. Olin owns, operates, and maintains the Olin Chemicals facility (the "Facility") located at 2400 Buffalo Avenue in the City of Niagara Falls, County of Niagara, State of New York.

3. In November, 1984, the U. S. Environmental Protection Agency ("EPA") issued a RCRA operating permit to Olin for the storage and treatment of hazardous waste at the Facility. Olin closed the permitted units in 1989. The Facility site is a listed inactive hazardous waste site having Site Registry numbers 9-32-051A and 9-32-051B.

4. In September, 1989, the EPA issued an Administrative Consent Order ("AOC"), Index No. RCRA-89-3013-0208, pursuant to Section 3013 of RCRA which order required Olin to conduct a RCRA Facility Investigation ("RFI"). Results of the RFI indicate that hazardous constituents, in concentrations exceeding RCRA Action Levels, Safe Drinking Water Act Maximum Contaminant Levels ("MCLS"), and New York State Groundwater Standards are present in soil and groundwater at the Facility. For the purposes of implementing this Corrective Action Order, "Facility" shall mean the areas designated as Plant 1, Plant 2, and the area east of Gill Creek as shown on the map attached hereto as Attachment A.

5. At the request of the EPA and the Department, Olin submitted a Phase I Corrective Measures Study ("CMS") dated November 22, 1993 to evaluate soil and groundwater conditions at the Facility.

6. In response to comments by the EPA and the Department on the Phase I CMS, Olin submitted a Phase II Corrective Measures Study ("CMS") dated March 30, 1995 to further evaluate groundwater conditions and treatment options at the Facility.

7. The Phase II CMS was approved by the EPA and the Department on September 27, 1995.

8. On June 27, 1996, the Department issued a Statement of Basis describing the corrective actions selected by the Department to remediate the soil and groundwater contamination at the Facility.

9. Olin submitted to the Department a work plan for implementation of the corrective actions selected by the Department in the Statement of Basis. The work plan, entitled "Corrective

Measures Implementation Plan, Olin Chemical Corp., Niagara Falls, New York" and dated February 9, 1996 was approved by the Department by letter dated March 19, 1996. The aforesaid work plan together with the Department's approval letter shall be deemed the Department-approved Remedial Plan. The Remedial Plan and the Department's approval letter are hereby incorporated by reference into this Order as Appendices A and B and made an enforceable part of this Order.

10. Pursuant to ECL § 71-2727(3), the Commissioner of the Department may issue orders requiring corrective action, including corrective action beyond the facility boundary where necessary to protect human health and the environment, for all releases of hazardous waste or constituents from any solid waste management unit at any treatment, storage or disposal facility which is either permitted or seeking a permit under Title 7 or 9 of Article 27 of this chapter, or which has interim status according to regulations adopted thereunder, regardless of the time at which the waste was placed in such unit.

11. The Department and Olin agree that the goal of this Corrective Action Order is to establish the terms and conditions under which Olin will: (i) implement a RCRA corrective action program, which shall include implementation of the Remedial Plan and the development and implementation of a Remedial Operations and Maintenance Plan, and (ii) provide financial assurances for implementation of the Remedial Plan and for operation and maintenance of the remedial systems.

12. Olin, without admitting or denying any violation of law or regulation, hereby waives its right to a hearing as provided by law on the matters recited herein and consents to the issuance and entry of this Order and agrees to be bound by its terms. Olin consents to and agrees not to contest the authority or jurisdiction of the Department to issue or enforce this Order, and agrees not to contest the validity of this Order or its terms.

NOW, having considered this matter and being duly advised, IT IS ORDERED THAT:

I. Implementation of Remedial Action

Within thirty (30) days of the effective date of this Order, which shall also be the effective date of the Remedial Plan described in Paragraph 9 above, Olin shall commence implementation of the Remedial Plan in accordance with the schedule contained therein and the terms of this Order. All plans, reports, and schedules (collectively hereinafter referred to as "submittals" or "Olin submittals") required pursuant to the Remedial Plan or this Order are, upon Olin's receipt of the Department's written approval, incorporated by reference into this Order. Upon incorporation, the provisions of each such document shall be binding upon Olin and have the same legal force and effect as the requirements of this Order.

II. Implementation of O & M Plan

Olin shall submit an Operations and Maintenance Plan ("O & M Plan") in accordance with the schedule contained in the Remedial Plan. Upon receipt of the Department's written approval of the O & M Plan, Olin shall implement the O & M Plan in accordance with the schedule contained therein and the terms of this Order.

Any subsequent modification of the O & M Plan shall require the written approval of the Department which approval shall not be unreasonably withheld.

III. Financial Assurances

Within thirty (30) days following the Department's approval of the Final Design Report for On-Site Corrective Measures, Olin shall provide to the Department a cost estimate for On-Site Corrective Measures and shall provide financial assurance for implementation of the Corrective Measures pursuant to one of the methods set forth in 6 NYCRR § 373-2.8(f).

Within thirty (30) days following the Department's approval of the O & M Plan, Olin shall provide to the Department a cost-estimate for Operation and Maintenance of the On-Site Corrective Measures and shall provide financial assurance for Operation and Maintenance of the Corrective Measures pursuant to one of the methods set forth in 6 NYCRR § 373-2.8(f).

IV. Progress Reports

Olin shall submit, to the parties identified in Paragraph XV, copies of written progress reports as required under the Department-approved Remedial Plan.

V. Review of Submittals

A. 1. The Department shall review each of the submittals Olin makes pursuant to this Order to determine whether it was prepared, and whether the work done to generate the data and other information in the submittal was done, in accordance with the Remedial Plan, this Order, and generally accepted technical and scientific principles. The Department shall notify Olin in writing of its approval or disapproval of the submittal.

2. a. If the Department disapproves a submittal, it shall so notify Olin in writing and shall specify the reasons for its disapproval. Within thirty (30) days after receiving written notice that Olin's submittal has been disapproved, Olin shall make a revised submittal to the Department that addresses all of the Department's stated reasons for disapproving the first submittal. Olin may request, and the Department may grant, additional time for Olin to make a revised submittal.

b. After receipt of the revised submittal, the Department shall notify Olin in writing of its approval or disapproval. If the Department approves the revised submittal, it shall be incorporated into and become an enforceable part of this Order. If the Department disapproves the revised submittal, Olin shall be in technical violation of this Order unless Olin invokes the Dispute Resolution process recited in Paragraph VI to effect an agreement with the Department.

B. The Department may determine, as a result of reviewing data generated by an activity required under this Order or as a result of reviewing any other data or facts, that additional work is necessary. The Department may also determine, as a result of reviewing data generated by an activity required under this Order, or as a result of reviewing any other data or facts, that the need for continuing the work required by this Order should be reviewed and, if necessary, reduced or terminated in whole or in part. If the Department determines that either additional work is necessary or that the work required by the Order should be reduced or terminated, it shall do so in writing setting forth the reasons for its decision. A reasonable period of time

within which to implement the Department's determination shall be specified by the Department in its notice. Olin shall either undertake to implement the Department's determination or shall respond to the Department's determination through the Dispute Resolution procedure in Paragraph VI of this Order.

VI. Dispute Resolution

A. Any dispute that arises between the Department and Olin regarding Department approval of any Olin submittal or any determination by the Department pursuant to Paragraph V.B. requiring additional work shall, in the first instance, be the subject of informal negotiations between the parties. In the event that these informal negotiations reach an impasse, either party may notify the other in writing that an impasse has been reached. Receipt of a notice of impasse shall commence a fifteen (15) calendar day negotiation period during which the parties may continue negotiations to break the impasse and resolve their dispute. The negotiation period may be extended by written agreement between the parties.

In the event that the parties are unable to resolve their dispute within the fifteen (15) day negotiation period, upon the fifteenth day, either party may make a written request (with a copy to the other party) to meet with the Director of the Division of Solid and Hazardous Materials ("Division Director") in an effort to resolve the dispute. The Department shall not deny this request. Olin, the Department Staff, and the Division Director shall be available to meet within a reasonable time of the request.

At the meeting with the Division Director, each party shall have an opportunity to present its position on the

disputed issue(s). The party requesting the meeting shall present its position first. The Division Director shall consider the matter(s) in dispute *de novo* and shall notify the parties in writing of his/her determination as soon as is reasonably practicable after the meeting.

Within thirty (30) days of receipt of written notice of the Director's determinations, Olin shall either: (a) notify the Department that it intends to comply with the Division Director's decision and shall, if required, submit a revised draft submittal within the timeframe provided by the Division Director, or, in the alternative, (b) invoke the Alternative Dispute Resolution process provided for in Paragraph VII.

Upon review, the Department shall either approve the revised draft submittal or provide Olin with written comments. Olin shall have a reasonable time in which to amend the revised draft to respond to the Department's comments.

If the amended revised draft submittal fails to adequately address the Department's comments, the dispute remains unresolved and subject to Alternate Dispute Resolution as set forth in Paragraph VII.

Olin's obligations under this Order which are disputed or are dependent upon disputed items shall be stayed pending the Division Director's decision.

VII. Alternative Dispute Resolution

In the event that any dispute regarding Department approval of any Olin submittal or any Department determination requiring additional work arising under this Order cannot be

resolved by the Division Director or through informal discussion between the parties, either party shall be entitled to invoke the Alternative Dispute Resolution ("ADR") process by making a written request to the Department's Office of Hearings and Mediation Services ("OHMS") for arbitration by an Administrative Law Judge ("ALJ") from OHMS. The ALJ to be assigned by OHMS must be acceptable to both parties.

Any request for assignment of an ALJ shall include a written statement of the issues in dispute, the relevant facts upon which the dispute is based, and factual data, analysis or opinion supporting the requester's position, and all supporting documentation on which the requester relies (hereinafter, "Statement of Position"). The requester's Statement of Position shall be served concurrently on the other party.

The other party shall serve its Statement of Position upon the requester and the OHMS, including supporting documentation, no later than fifteen (15) business days after receipt of the requester's Statement of Position.

The ALJ may request additional information from either side and may conduct a pre-hearing conference (either in person or telephonically), to be scheduled at the convenience of all participants, before proceeding with dispute resolution. The requester shall have the burden of going forward.

The process to be employed for resolving a dispute shall be determined by the agreement of the parties. If the parties are unable to agree, the ALJ shall decide, after discussion with the parties, how to proceed. The process the ALJ employs shall be binding on both parties and shall not be subject to challenge.

The Department shall maintain an administrative record of any proceedings under this paragraph. The record shall include the Statement of Position of each party, any relevant information submitted by the parties, and the ALJ's writings to the parties. The record shall be available for review by the public in accordance with the Public Officers Law § 87 (Freedom of Information Law) and implementing regulations.

Upon review of the administrative record as developed pursuant to this paragraph, the ALJ shall issue a written final decision. The determination of the ALJ shall be a final agency decision which Olin shall have the right to challenge under Article 78 of the CPLR provided that a Petition is filed within thirty (30) calendar days of receipt of the final decision issued by the ALJ acting as the Commissioner's designee.

Olin's obligations under this Order which are disputed or are dependent upon disputed items shall be stayed pending a final decision and the exhaustion of all appeals unless a court of competent jurisdiction determines otherwise. The invocation of the procedures recited in this paragraph shall constitute an election of remedies by Olin and such election of this remedy shall constitute a waiver of any and all other remedies which may otherwise be available to Olin regarding the matter(s) in dispute.

VIII. Penalties

A. Olin's failure to comply with any term of this Order will constitute a violation of this Order and the ECL and may subject Olin to an enforcement action by the Department and the imposition of a payable penalty. Such penalties will begin to accrue on the first day Olin is in violation of the terms of this

Order and will continue to accrue through the final day of correction of any violation. Payment of the penalties shall not in any way alter Olin's obligation to complete performance under the terms of this Order. The Department, in its discretion, may elect not to impose any penalties upon Olin.

B. Olin shall not suffer any penalty under this Order or be subject to any proceeding or action if it can not comply with any requirement hereunder because of war, riot, or an unforeseeable disaster arising from natural causes which the exercise of ordinary human prudence could not have prevented. Olin shall, within ten (10) working days of receiving knowledge of any such condition, notify the Department in writing. Olin shall include in such notice the measures taken and to be taken by Olin to prevent or minimize any delays and may request an extension or modification of this Order, as appropriate. Olin shall have the burden of proving that an event is a defense to compliance with this Order.

IX. Entry upon Facility

Olin hereby consents to the entry upon the Facility or areas in the vicinity of the Facility which are under the control of Olin by any duly designated employee, consultant, contractor, or agent of the Department or any State agency for the purposes of inspection, sampling, and testing and to assure Olin's compliance with this Order. To the extent possible, the Department shall conduct such visits during normal business hours and shall coordinate these visits with Olin in advance of any such visit. Olin may request that the visits be rescheduled, however, the Department shall not be bound by Olin's request to reschedule. All consultants, contractors, agents of the Department or any State

Agency shall provide at the time of entry or in advance of the time of entry to the Facility, a letter from the Department or State Agency specifying that he/she is a consultant, contractor, or agent of the Department or a State Agency assigned to this matter. All persons entering the Facility for purposes of observing field activities and/or obtaining samples will follow the Health & Safety Plan and Olin's appropriate safety rules. During implementation of the Remedial Plan, if requested and to the extent possible, Olin shall provide the Department with suitable work space at the Facility, including access to a telephone, and shall permit the Department full access to all records pertaining to matters addressed by this Order.

X. Reimbursement of State Oversight Costs

A. While this Order is in effect, Olin shall make an annual payment of Three-thousand Dollars ($3,000) to reimburse the State of New York for the Department's oversight costs. Oversight costs shall include, but are not limited to: direct labor, fringe benefits, indirect costs, travel, analytical costs, and contractor costs incurred by the State of New York for work related to the RCRA corrective action at the Facility commencing with the effective date of this Order, as well as for reviewing and revising submittals made pursuant to this Order, overseeing activities conducted pursuant to this Order, and for collecting and analyzing samples.

B. Such payment shall be made by certified check payable to the Department of Environmental Conservation. Payment shall be sent to the Bureau of Program Management, Division of Hazardous Waste Remediation, NYSDEC, 50 Wolf Road, Albany, NY

12233-7010. Payment for the first year shall be made within thirty days (30) of Olin's receipt of a copy of a fully executed Order. Payments for subsequent years shall be made on or before the anniversary date of the first payment.

C. During the sixth and subsequent years that this Order is in effect, Respondent may petition the Department for a reduction or elimination of the payment required under this paragraph. The Department will make its determination to reduce or eliminate payment for the sixth and subsequent years based upon the amount of oversight costs incurred by the Department in the previous year.

D. In the event that State oversight costs significantly exceed the annual payment of Three-thousand Dollars ($3,000), the Department reserves the right to increase the reimbursement rate subject to providing Olin with an itemization of the Department's costs and Olin's right to invoke the Dispute Resolution process to effect agreement.

XI. Department Reservation of Rights

A. Nothing contained in this Order shall be construed as barring, diminishing, adjudicating, or in any way affecting any of the Department's civil, criminal, or administrative rights or authorities. Except for those matters subject to Dispute Resolution or Alternate Dispute Resolution ("DR/ADR") as provided for in Paragraphs VI and VII, respectively, the Department reserves its right to commence an enforcement action to compel Olin's performance of any obligation Olin has under this Order. Any submittal already approved by the Department shall not be subject to DR/ADR and may be subject to enforcement by the Department as an

obligation of Olin.

B. Nothing contained in this Order shall be construed to prohibit the Commissioner or his duly authorized representative from exercising any summary abatement powers.

C. The groundwater contamination which has been observed at Olin's property east of Gill Creek, which Olin alleges is attributable to migration from the neighboring Solvent Chemical Inactive Hazardous Waste Site, is hereby explicitly excluded from remediation under this Order.

However, the Department hereby reserves its right to require Olin to undertake further investigations and to implement any necessary additional remedial measures to address the presence of any Olin-derived constituents in the groundwater at the Facility, including Olin's property east of Gill Creek. Nothing contained in this Order shall be construed as barring, diminishing, adjudicating, or in any way affecting any legal or equitable rights or claims, actions, suits, causes of action, or demands whatsoever that the Department may have against Olin or any other party with respect to areas or resources that may have been affected or contaminated as a result of the disposal of hazardous or industrial wastes at the Facility or the release or migration of hazardous or industrial wastes from the Facility or from areas in the vicinity of the Facility.

XII. Compliance Schedule for Assessment of Newly Identified Solid Waste Management Units ("SWMUs")

A. Notification of Assessment

Olin shall notify the Department, in writing, of any additional Solid Waste Management Units ("SWMUs") not listed in the

, which are identified during the course of
nitoring, field investigations, environmental audits,
within thirty (30) calendar days after discovery.

SWMU Assessment Report

If, after reviewing the aforesaid notice from Olin,
notifies Olin that a SWMU Assessment Report is
shall, within thirty (30) calendar days after
ice from the Department, submit either a SWMU
rt or a letter to the Department indicating why such
necessary. Any Report which may be required must
minimum, the following information for each newly
:

type of unit;

location of each unit on a topographic map of appropriate scale;

dimensions, capacities, and structural descriptions of the unit (supply available engineering drawings);

function of unit;

dates that the unit was operated;

description of the wastes that were placed or spilled at the unit;

description of any known releases from the unit (to include groundwater data, soil analyses, air monitoring data, and surface water data);

the results of any sampling and analysis required for the purpose of determining whether releases of hazardous wastes and constituents have occurred, are occurring, or are likely to occur from the unit; and

whether this unit, individually or in combination with the other units described in the Remedial Plan, is a significant source of contaminant release. .

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WMU Sampling and Analysis
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all results obtained from

F. Assessment Conclusions

Based upon the results of the SWMU Sampling and Analysis Report, the Department shall determine the need for further investigations at the specific unit(s) covered in the SWMU Assessment Report. If the Department determines that such investigations are needed, the Department shall require Olin to prepare a RCRA Facility Investigation Work Plan for such unit(s) within thirty (30) calendar days of receipt of notification from the Department. Any dispute that arises between the Department and Olin regarding Department approval of any such submittal or any Department determination that additional work is required pursuant to Paragraph XII shall be subject to the Dispute Resolution process recited in Paragraph VI.

XIII. Indemnification

Olin shall indemnify and hold the Department, the State of New York, and their representatives and employees harmless for all claims, suits, actions, damages, and costs of every name and description arising out of or resulting from the fulfillment or attempted fulfillment of this Order by Olin and/or any of Olin's directors, officers, employees, servants, agents, successors, and assigns. This provision does not require Olin to indemnify or hold harmless the Department, the State of New York and its servants, agents, representatives, and employees for any unlawful, willful, malicious or negligent acts or omissions of the Department of the State of New York, or their representatives, agents, or employees.

XIV. Public Notice

A. Within sixty (60) days after the effective date of this Order, Olin shall file a Declaration of Covenants and

Restrictions with the County Clerk of Niagara County to give all parties who may acquire any interest in the Facility notice of this Order.

B. Within thirty (30) days after the effective date of this Order, Olin shall incorporate a notice in the Facility's deed or in a similar instrument which would normally be examined in a title search for the Facility that will, in perpetuity, notify a potential purchaser of any portion of the Facility of the following: (i) the types, concentrations, and locations of hazardous wastes or hazardous constituents at the Facility and (ii) that all future uses of the property must be industrial or commercial in nature and must be compatible with the presence of hazardous waste or hazardous constituents at the Facility. Olin shall forward to the Department a copy of this notice within ten (10) working days of filing.

C. If Olin proposes to convey the whole or any part of Olin's ownership interest in the Facility, Olin shall, not fewer than 60 days before the date of conveyance, notify the Department in writing of the identity of the transferee and of the nature and proposed date of the conveyance and shall provide the transferee, with a copy of this Order together with a copy of the aforesaid written notice to the Department.

XV. Communications

All written communications required by this Order shall be transmitted by United States Postal Service, by private courier service, or hand delivered or by telecopier or e-mail (followed by hard copy), as follows:

A. Communications from Olin shall be sent to:

William Wertz, Ph.D.
Division of Solid and Hazardous Materials
New York State Department of
Environmental Conservation
50 Wolf Road
Albany, New York 12233-7251
Telecopier: 518-457-9240
E-mail: william.wertz@dec.mailnet.state.newyork.us

Mr. Frank Shattuck, P.E.
New York State Department of
Environmental Conservation
Region 9 Headquarters
270 Michigan Avenue
Buffalo, New York 14203-2999
Telecopier: 716-851-7226

Mr. James Reidy, P.E.
U. S. Environmental Protection Agency
Region II Office
290 Broadway
New York, New York 10007-1866
Telecopier: 212-637-4437

B. Communications to Olin shall be sent to:

Mr. Michael J. Bellotti, P.G.
Olin Corporation
1186 Lower River Road
P. O. Box 248
Charleston, TN 37310
Telecopier: 423-336-4505
E-mail: mjbellotti@corp.olin.com

Mr. James W. Strassburg
Plant Manager
Olin Corporation
2400 Buffalo Avenue
P. O. Box 748
Niagara Falls, NY 14302-0748
Telecopier: 716-278-6495

XVI. Miscellaneous

A. All activities and submittals required by this Order shall address the impact of Facility releases both at the Facility and beyond the Facility boundary, where necessary.

B. Olin shall retain professional consultants, contractors, laboratories, quality assurance/quality control personnel, and third party data validators acceptable to the Department to perform the technical, engineering, and analytical obligations required by this Order. The experience, capabilities, and qualifications of the firms or individuals selected by Respondent shall be submitted to the Department within thirty (30) days after the effective date of this Order. The Department's approval of these firms or individuals shall be obtained before the start of any activities for which Olin and such firms or individuals will be responsible. The Department shall notify Olin of such approval in writing and the Department's approval will not be unreasonably withheld. In the event that the Department does not approve of selected firms or individuals, the Department will so notify Olin in writing and will provide Olin with a reasonable time to select alternative firms or individuals. The responsibility for the performance of the professionals retained by Olin shall rest solely with Olin. All schedules will be stayed until such time as Olin receives written confirmation of the Department's approval.

C. The Department shall have the right to obtain split samples, duplicate samples, or both, of all substances and materials sampled by Olin, and the Department shall also have the right to take its own samples. Olin shall make available to the Department the results of all sampling and/or tests or other data generated by Olin with respect to implementation of this Order and shall submit these results in the progress reports required by this Order.

D. Olin shall have the right to obtain split samples, duplicate samples, or both, of all substances and materials sampled by the Department, and Olin shall also have the right to take its own samples. Olin shall also have the right to obtain analysis of all samples and/or tests or other data generated by the Department or State of New York, their agents and employees with respect to implementation of this Order.

E. Olin shall notify the Department at least ten (10) working days in advance of the initiation of any field activities to be conducted pursuant to this Order.

F. Olin shall use reasonable efforts obtain all permits, easements, rights-of-way, rights-of-entry, approvals, or authorizations necessary to perform Olin's obligations under this Order. In the event that Olin's good-faith efforts to obtain necessary authorizations are unsuccessful, Olin may request that Olin's obligations under this order be modified in accordance with the procedure set forth in Paragraph XVI.L.2. All schedules affected by lack of access will be stayed and penalties will not be assessed pending the Department's decision to modify Olin's obligations under this order owing to Olin's lack of access.

G. Olin and Olin's officers, directors, agents, servants, employees, successors, and assigns shall be bound by this Order. Any change in ownership or corporate status of Olin including, but not limited to, any transfer of assets or real or personal property shall in not way alter Olin's responsibilities under this Order. Olin's officers, directors, employees, servants, and agents shall be obliged to comply with the relevant provisions of this Order in the performance of their designated duties on

CONSENT BY RESPONDENT

Respondent hereby consents to the issuing and entering of the foregoing Order, waives its right to a hearing herein as provided by law, and agrees to be bound by the provisions, terms and conditions contained therein.

mlf Respondent Curt M. Richards

By Curt M. Richards

Title Director of Environmental Remediatic

Date January 13, 1997

(Seal)

Corporate

State of Tennessee)
County of Bradley)

On this 13th day of January, 1997, before me personally came to me Curt M. Richards known, who being by me duly sworn did depose and say that he resides at 9401 Magical View, Chattanooga, TN 37421 that he is the Director of Remediation the corporation described in and which executed the foregoing instrument; and that he signed his name as authorized by said corporation.

J Evelyn McMillan
NOTARY PUBLIC
my comm. expires 10-29-2000

Individual

State of)
County of)

On this day of , 199 , before me came , to me known and known to me to be the individual described in and who executed the foregoing consent and he duly acknowledged to me that he executed the same.

NOTARY PUBLIC

Attachment A

April 3, 1997

Owing to Olin's difficulty in obtaining a final title report, "Attachment A" which shall constitute the final "Facility" map referenced in Paragraph 4 of this Order has not yet been provided to the Department. Execution of this Order by the Department was delayed pending receipt of the final Facility map, however, insofar as Olin has already commenced activities required by the Order, the Department does not wish to further delay its execution of the Order.

Attachment A will be finalized and appended to the executed Order following Staff's receipt, review, and acceptance of the final report and/or Facility map which is still to be submitted by Olin.

A. Sylvester

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Hazardous Site Control, Room 252
50 Wolf Road, Albany, New York 12233-7010
Phone: (518) 457-8807 • **FAX:** (518) 457-8989
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

MAR 30 2001

This letter was sent to the people on the attached list.

Dear :

The Department of Environmental Conservation (DEC) maintains a Registry of sites where hazardous waste disposal has occurred. Property located at Buffalo Avenue in the City of Buffalo and County of Niagara and designated as Tax Map Numbers 159.11-1-16, 159.11-1-17, 159.11-1-18, and 159.15-1-6 was recently reclassified as a Class 4 in the Registry. The name and site I.D. number of this property as listed in the Registry is Olin Corporation Plant Site, Site #932051B.

The Classification Code 4 means that the site is properly closed – requires continued management.

We are sending this letter to you and others who own property near the site listed above, as well as the county and town clerks. We are notifying you about these activities at this site because we believe it is important to keep you informed.

If you currently are renting or leasing your property to someone else, please share this information with them. If you no longer own the property to which this letter was sent, please provide this information to the new owner and provide this office with the name and address of the new owner so that we can correct our records.

The reason for this recent classification decision is as follows:

- Remedial construction at the Olin Plant site has been completed under the authority of the Resource Conservation Recovery Act (RCRA) program. The site is now in long term Operation and Maintenance (O&M) with review of annual reports. RCRA permit conditions allow review and assessment every 5 years to revise permit conditions as needed. Reclassification of the site to Class 4 is necessary to reflect the long term O&M now underway at the site.

If you have questions, need additional information, or have information which you believe would be useful to us, please call the Department of Environmental Conservation's toll-free number: **1(800)342-9296.** The Department of Health maintains a Health Liaison Program (HeLP) toll-free number: **1(800)458-1158 Ext. 2-7530.**

Sincerely,

Dennis J. Farrar
Acting Chief
Site Control Section

bcc: D. Farrar
J. Swartwout
P. Buechi, R/9
S. Doleski, R/9
M. Podd, R/9
A. Sylvester
A. Carlson
L. Ennist

AS/srh

N. Sylvester

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Hazardous Site Control, Room 252
50 Wolf Road, Albany, New York 12233-7010
Phone: (518) 457-8807 • **FAX:** (518) 457-8989
Website: www.dec.state.ny.us

John P. Cahill
Commissioner

MAR 15 2001

Olin Chemicals Group
P.O. Box 748, Buffalo Avenue
Niagara Falls, NY 14302

Dear Sir/Madam:

As mandated by Section 27-1305 of the Environmental Conservation Law (ECL), the New York State Department of Environmental Conservation (NYSDEC) must maintain a Registry of all inactive disposal sites suspected or known to contain hazardous waste. The ECL also mandates that this Department notify the owner of all or any part of each site or area included in the Registry of Inactive Hazardous Waste Disposal Sites as to changes in site classification.

Our records indicate that you are the owner or part owner of the site listed below. Therefore, this letter constitutes notification of change in the classification of such site in the Registry of Inactive Hazardous Waste Disposal Sites in New York State.

DEC Site No.:	932051B
Site Name:	Olin Corporation Plant Site
Site Address:	Buffalo Avenue, Niagara Falls, NY 14302

Classification change from 2 to 4

The reason for the change is as follows:

- Remedial construction at the Olin Plant site has been completed under the authority of the Resource Conservation Recovery Act (RCRA) program. The site is now in long term Operation and Maintenance (O&M) with review of annual reports. RCRA permit conditions allow review and assessment every 5 years to revise permit conditions as needed. Reclassification of the site to Class 4 is necessary to reflect the long term O&M now underway at the site.

Enclosed is a copy of the New York State Department of Environmental Conservation, Division of Environmental Remediation, Inactive Hazardous Waste Disposal Site Report form as it appears in the Registry and Annual Report, and an explanation of the site classifications. The Law allows the owner and/or operator of a site listed in the Registry to petition the Commissioner of the New York State Department of Environmental Conservation for deletion of such site, modification of site classification, or modification of any information regarding such site, by submitting a written statement setting forth the grounds of the petition. Such petition may be addressed to:

John P. Cahill
Commissioner
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-0001

For additional information, please contact me at (518) 457-0747.

Sincerely,

Dennis J. Farrar
Acting Chief
Site Control Section
Bureau of Hazardous Site Control
Division of Environmental Remediation

Enclosures

bcc: R. Marino
D. Farrar
J. Swartwout
A. Sylvester

w/Enc. (Copy of Site Report form only)
A. Grant
A. Carlson, DOH
S. Ervolina
P. Buechi, R/9
A. Snyder, R/9
S. Doleski, R/9
E. Belmore

AS/srh

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Environmental Remediation

Inactive Hazardous Waste Disposal Report

Site Name: Olin Corporation Plant Site | **Site Code:** 932051B
Class Code: 4 | Region: 9 | County: Niagara | EPA Id:
Address: Buffalo Avenue | City: Niagara Falls | Zip: 14302
Latitude: 43 4' 56" | Longitude: 79 1' 56"
Site Type: Dump Pond | Estimated Size: 50 Acres

Site Owner / Operator Information:
Current Owner(s) Name: Olin Chemicals Group
Current Owner(s) Address: Buffalo Avenue | Niagara Falls | NY 14302
Owner(s) during disposal: Olin Chemicals
Operator(s) during disposal: Olin Chemicals Corp
Stated Operator(s) Address: PO Box 748 | Niagara Falls | NY
Hazardous Waste Disposal Period: From 1957 To 1974

Site Description:
This plant contains areas where mercury brine sludge was spread on the surface as fill. In addition, a pond was used for retaining waste water from the mercury cell room. The pond was reportedly used for a 3 month time frame in 1970. Much of the brine sludge spread adjacent to the cell rooms was excavated and removed to a secure landfill. A series of monitoring wells have been installed on the eastern portion of the plant site where organic chemical manufacturing occurred along with other wells throughout the plant site. Mercury and organics have been detected in these wells. Off-site migration via groundwater movement is indicated. There are no known disposal areas for organics on the plant site. Although there is organic contamination in the groundwater, these contaminants are the likely result of leakage and spillage from past plant operations along with an explosion of the former BHC building in the 1950's. In 1981, Olin/DuPont completed a partial clean up project in Gill Creek which is adjacent to the plant. Sediments contaminated with lindane were removed and disposed of in a secure landfill. The U.S.G.S. sampled the site of the brine disposal and the mercury pond in 1982. Mercury and some organic parameters were detected. During 1989 the company voluntarily undertook an investigation to extend the hydrogeologic and chemical characterization of the plant site. Under RCRA Section #3013, the plant site and the parking lot were investigated in 1991. In 1992 Olin/DuPont completed an additional cleanup of Gill Creek. Additional monitoring wells were also installed in 1992 adjacent to Gill Creek. Preliminary Corrective Measure Study (CMS) was submitted in November 1993 with submittal of Final RCRA Facility Investigation (RFI) in August 1994. The RFI was accepted by the DHSR in November 1994 and the CMS was approved in 1995. Implementation of the Remedial Program began in late 1997. The system consists of 5 groundwater extraction wells and an on-site treatment plant designed to capture contamination at the eastern end of the plant site. These wells will compliment the plant production wells which capture much of the groundwater contamination.

Confirmed Hazardous Waste Disposal:	**Quantity:**
Coal fines	unknown
Mercury cell brine sludges	264 Cubic yards
Organics (TCP, BHC)	unknown
Waste water containing mercury	unknown

Analytical Data Available for: Groundwater Soil
Applicable Standards Exceeded in: Groundwater
Geotechnical Information:
Soil/Rock Type: Fill over sand-rich clay.
Depth to Groundwater: Range: 5 to 10 feet.

Legal Action: Type: Federal Consent Order | Status: Order Signed
Remedial Action: Complete | Nature of action: groundwater pump and treat system

Assessment of Environmental Problems:
Mercury and organic chemicals have been identified in soil, overburden groundwater and plant outfalls. Containment and removal of site contaminants through long term operation of the remedial actions installed at the site minimize environmental impacts from the site.

Assessment of Health Problems:
The entire site is fenced and guarded which minimizes the potential for the public to come into contact with on-site soils. Exposures via drinking water are not expected because all area residents and businesses are served by public water and there are no known private wells in the immediate area.

A L O A V E N U E

48" SEWER
30" SEWER

N 19971.40
E 5075.32
END LINE PR-2

N 20000.04
E 5176.11
END LINE RW-2

N 19983.45
E 5231.84
END LINE PR-3

N 19957.65
E 5331.82
END LINE RW-3

N 19859.85
E 5329.77
END LINE PR-4

N 19758.97
E 5321.62
END LINE RW-4

N 19646.18
E 5315.12
END LINE PR-5

N 19561.54
E 5305.61
END LINE RW-5

SEE DRAWING NO. D-7734-840-05-001 FOR BUILDING 73 DETAILS

FUTURE RECOVERY WELL PIPING (NOT IN CONTRACT)

TIE IN 6" TREATED WATER TO STORM WATER SYSTEM SEE DRAWING D-7734-840-00-004

PROPOSED 8" STORM SEWER SEE DRAWING D-7734-840-00-004

GROUND-WATER TREATMENT SYSTEM BUILDING

BEGIN 24" SPRING

REMOVE EXISTING FENCE AS REQUIRED FOR CONSTRUCTION

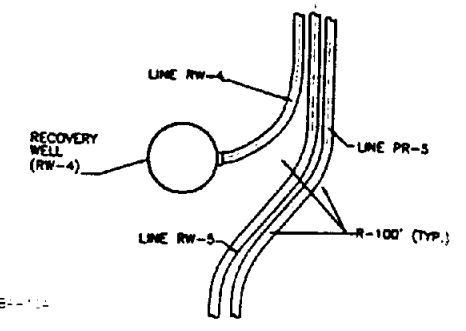
G I L L C R E E K

LEGEND:

- WATER QUALITY MONITORING WELLS
- GC-1 — GILL CREEK MONITORING POINTS
- PN-4 — A/B-ZONE PIEZOMETER NESTS
- RW-4 — GROUND-WATER RECOVERY WELLS
- RW-3/OBA-17AB — EXISTING GROUND-WATER RECOVERY WELLS (WITH PRE-EXISTING MONITORING WELL)
- PR-3 — PASSIVE RELIEF WELLS
- NIAGHLOR MONITORING WELL (APPROX. LOC.)
- NIAGHLOR MONITORING WELL (APPROX. LOC.)
- CONCRETE SLAB (FORMER BUILDING OR EQUIPMENT FOUNDATION)
- 73 — REMAINING BUILDING AND BUILDING NUMBER
- OLIN PROPERTY LINE
- GROUNDWATER TREATMENT SYSTEM DISCHARGE PIPING
- GROUND WATER COLLECTION PIPING
- EXISTING PIPE BRIDGE
- APPROXIMATE LIMITS OF IDENTIFIED SOLID WASTE MANAGEMENT UNITS
- RAILROAD TRACKS
- FENCE LINE
- 575 — EXISTING CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- LIMITS OF PROPOSED PAVING
- 575.5 — FINISHED CONTOUR
- 572.4 — PROPOSED SPOT ELEVATION
- EXISTING STORM INLET
- PROPOSED STORM INLET
- EXISTING STORM INLET/MANHOLE TO BE MODIFIED
- EXISTING MANHOLE
- PROPOSED MANHOLE
- STM-4 — STORM INLET DESIGNATION
- MH-1 — MANHOLE DESIGNATION
- 8" HDPE — 8-INCH DIAMETER HIGH DENSITY POLYETHYLENE STORM DRAIN

NOTES:

1. ALL WELLS SHALL BE LOCATED AT LEAST 10 FEET FROM THE CENTERLINE OF ANY RAILROAD TRACKS.
2. WELL LOCATIONS MAY BE ADJUSTED WITH PRIOR ENGINEERS APPROVAL.
3. EXISTING UTILITIES ARE NOT SHOWN. CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO ANY EXCAVATIONS.



RECOVERY PIPE INSTALLATION

DETAIL 1 — N.T.S.

SCALE IN FEET
0 40 80

CAD DRAWING - DO NOT CHANGE MANUALLY
CAD File: D10003 Diskette No: _____

E.S.R. NO.	C.A.R. NO.	REV.	DESCRIPTION	DRAWN	DATE	CHKD.	APPR.
		1	ISSUED FOR RECORD	BSS	4/20/94	SKS	
		0	ISSUED FOR CONSTRUCTION				

DRAWN BS Snyder 4/20/94
CHECKED S.Spitzer 4/20/94
APPROVED GJC

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, P.C.

Olin CHEMICALS PLANT NIAGARA FALLS, NY.

PLANT 2 AREA 8400
NIAGARA FALLS PLANT
GROUND-WATER TREATMENT
COLLECTION AND DISCHARGE PIPING

PROJECT NO.	C.A.R. NO.	SCALE	DRAWING NO.	REV.
		AS NOTED	D-7334-840-10-003	1

STATE OF NEW YORK — 062440 — PROFESSIONAL ENGINEER

CADD FILE: /DWG3/D1 \COMS1/D10003 DATE: 12/13/93