STATE OF NEW YORK: DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of Olin Corporation
McKee Road Site
Rochester, New York

Index No. C8-0003-85-06

CONSENT AGREEMENT

Respondent

WHEREAS:

1. The New York State Department of Environmental Conservation (the Department) is responsible for the enforcement of Article 27, Title 13 of the New York Environmental Conservation Law (the ECL), entitled "Inactive Hazardous Waste Disposal Sites."

2. Olin Corporation (Olin) is a corporation authorized to do business in the State of New York and is the owner and operator of a chemical manufacturing facility located at 100 McKee Road, Rochester, New York (the "Site").

3. The Department alleges that hazardous and industrial wastes have been disposed of at the Site and that the Site is an inactive hazardous waste disposal site as that term is defined in § 27-1301(2) of the ECL.

4. Pursuant to ECL § 27-1313(3)(a), whenever the Commissioner of Environmental Conservation (the "Commissioner") finds that hazardous wastes at an inactive hazardous waste site constitute a significant threat to the environment, he may order the owner of such site and/or any

person responsible for the disposal of hazardous wastes at such site (i) to develop an inactive hazardous waste site remedial program, and (ii) to implement such program within reasonable time limits as specified in the order.

5. The Department alleges that hazardous and industrial wastes at or in the vicinity of the Site constitute a significant threat to the environment. The Department has classified this Site as a "2" pursuant to ECL § 27-1305(4).

6. Olin does not admit that the Site constitutes an inactive hazardous waste disposal site as defined in § 27-1301(2) of the ECL. In addition, Olin does not admit that the conditions at the Site constitute a significant threat to the environment, nor does Olin admit that the provisions of ECL § 27-1313(3)(a) are applicable to the Site.

7. Notwithstanding the foregoing, Olin has voluntarily undertaken and completed a remedial program which consists of the installation and operation of a series of groundwater pumping wells to establish a hydraulic barrier at the Site and to recover, analyze and properly discharge any contaminated groundwater, and Olin is prepared to undertake a further investigation of conditions at and in the vicinity of the Site as set forth in the work proposal and plans annexed hereto as Exhibit A, which proposal includes the preparation and conduct of the following:

(a) Description of current site conditions, including historical background information;

(b) Development of site operations plans for sampling, health and safety, and data management;

(c) Further site investigation involving the installation of specified bedrock wells, shallow piezometers, off-site wells, well sampling, and a utilities investigation;

(d) Site investigation analysis, including QA/QC procedures, and analysis of other possible remedial actions; and

(e) Submission of progress and final reports.

8. The Department has accepted and approved the work proposal and plans submitted by Olin.

9. The Department reserves the right to take further action, as appropriate, consistent with applicable statutes, rules and regulations, based upon the results of the work proposal and the reports submitted as a result thereof, and Olin reserves the right to contest the need for and/or the

authority of the Department to seek or undertake any further response action.

10. Olin, having waived its right to an adjudicatory hearing only with regard to the terms and provisions of the work proposal and plans and having consented to the making of this Agreement, agrees to be bound by the provisions, terms and conditions hereof.

NOW, having considered this matter and being duly advised, it is agreed that Olin shall provide for the implementation of the work proposal and plans at the Site as follows:

I. The purpose of this Agreement is to provide for the implementation of the work proposal and plans consistent with applicable state and federal laws, rules and regulations in order to determine whether the remedial program previously implemented by Olin has alleviated any threat to the environment that may have been posed by hazardous wastes present at the Site.

II. Annexed hereto as Exhibit A is the work proposal and plans for the Site providing for the description of the current situation, development of site operations plans, further site investigation, site investigation analysis, and submission of reports. The Sampling Plan, Health and Safety

Plan and Data Management Plan (Task 2 of Appendix A) shall be submitted to the Department within thirty days of the effective date of this Agreement. The work proposal and plans cannot be modified without amendment to the this Agreement.

III. Upon execution of this Agreement by the Commissioner, Olin shall undertake implementation of the work proposal in accordance with the schedule attached hereto as Exhibit B.

IV. The Department shall have the right to take samples and to obtain for the purpose of comparative analysis "split samples" or "duplicate samples", at its option, of all substances and materials sampled by Olin pursuant to this Agreement. As used herein: "Split samples" shall mean whole samples divided into aliquots; "duplicate samples" shall mean multiple samples, collected at the same time from exactly the same location, using the same sampling apparatus, collected into identical containers prepared identically, filled to the same volume, and thereafter identically handled and preserved.

V. Olin shall provide written or oral notice to the Department of any excavating, drilling or sampling to be conducted pursuant to the terms of this Agreement at least five working days in advance of such activities.

VI. Olin shall permit any duly designated officer, employee, consultant, contractor or agent of the Department or the Department of Health to enter upon the Site or areas in the vicinity of the Site which may be under the control of Olin, and any areas necessary to gain access thereto, for inspection purposes and for the purpose of making or causing to be made such sampling and tests as either Department deems necessary, and for the Department to ascertain Olin's compliance with the provisions of this Agreement. Any reasonable request for such entry or inspection shall be honored by Olin conditioned only upon presentation of proper credentials, compliance with Olin's established security procedures for all plant visitors, and compliance with Olin's established safety procedures for any such inspections.

VII. Olin shall use its best efforts to obtain whatever permits, approvals, or authorizations are necessary in order to perform its obligations under this Agreement. Olin shall promptly notify the Department in the event of Olin's inability to obtain such authorizations on a timely basis. In the event Olin is unable to obtain the necessary authorizations required to perform the work proposal, the Department shall, consistent with its legal authority, assist in obtaining all such authorizations Olin was unable to obtain or which Olin could not obtain without terms or conditions which would effectively prevent implementation of the work proposal. If Olin cannot obtain such authorizations

on a timely basis, the time for performance of any obligation dependent upon such authorization shall be appropriately extended upon written request. If Olin cannot obtain such authorization, this Agreement may be appropriately modified.

VIII. Olin may retain a third party professional consultant, contractor and/or laboratory to perform the technical, engineering, construction and analytical obligations required by this Agreement and the work proposal. Where a laboratory owned by Olin is utilized, or professional scientists, engineers, or technicians in the employ of Olin are utilized to fulfill the terms and conditions of this Agreement, said laboratory staff and professionals shall have demonstrable experience, capabilities and qualifications in the type of work which they will be performing.

IX. Within sixty days after completion of the well installation elements of the work proposal, Olin shall submit to the Department "as-built" drawings and a statement by a licensed professional engineer registered in the State of New York that such elements of the work proposal were completed in substantial compliance with the work proposal.

X. Within thirty days of receipt of the final report specified in the work proposal, the Department shall advise Olin in writing as to whether the implementation of the work proposal was in accordance with the provisions of said

proposal and this Agreement. If the Department determines that the implementation of the work proposal was not in accordance with the proposal and the parties cannot agree as to whether the work proposal has been properly implemented consistent with the provisions, terms and conditions of this Agreement, the Department may take any action and pursue any remedy to which it might be entitled by law.

If the Department acknowledges that the implementation is in accordance with the work proposal, then such acknowledgment shall constitute a full and complete satisfaction and release of each and every claim, demand, remedy or other action whatsoever against Olin, its officers and directors, which the Department may have pursuant to the provisions, terms and conditions of this Agreement. Such acknowledgment and releases shall not, however, bar the Department from seeking to require or undertake any further action at the Site, nor shall Olin's undertaking and completion of the work proposal preclude Olin from contesting or otherwise objecting to the Department seeking to require or undertake any further action at the Site.

XI. Olin shall provide for, maintain and carry out the periodic monitoring, maintenance, sampling and reporting specified in the work proposal for a two year period following the completion of the work proposal; the Department reserves the right to require long-term monitoring and

maintenance beyond the two year period if deemed reasonably necessary.

XII. Nothing contained in this Agreement shall be construed as barring, diminishing, adjudicating or in any way affecting (1) any legal or equitable rights or claims, actions, suits, causes of action or demands whatsoever the Department may have against anyone other than Olin, its directors, officers, employees, servants, successors and assigns; and (2) the Department's right to enforce the provisions, terms and conditions of this Agreement against Olin, its directors, officers, employees, servants, agents, successors and assigns in the event Olin shall fail to fulfill any of the aforesaid provisions.

XIII. The terms of this Agreement shall not be construed to prohibit the Commissioner or his duly authorized representative from exercising any summary abatement powers as granted pursuant to the ECL.

XIV. The effective date of this Agreement shall be the date this Agreement is signed by the Commissioner. Olin shall commence the implementation of the work proposal and shall complete the implementation of such work in accordance with the schedule annexed hereto as Exhibit B.

XV. If, for any reason, Olin desires that any provision

of this Agreement be changed, Olin shall make timely written application therefor to the Commissioner setting forth reasonable grounds for the modifications sought.

XVI. All communications required by this Agreement to be made between the Department and respondent shall be made in writing and transmitted by United States Postal Service, return receipt requested, or hand delivered to the address as listed hereunder.

A. Communications to be made from Olin to the Department shall be made as follows:

1. One copy to the NYS Department of Environmental Conservation, Division of Environmental Enforcement, 50 Wolf Road, Room 415, Albany, New York 12233, ATTN: Deborah Christian.

2. One copy to the Department of Environmental Conservation, Division of Solid and Hazardous Waste, 50 Wolf Road, Room 209, Albany, New York 12233, ATTN: Norman H. Nosenchuck.

3. One copy to the NYS Department of Environmental Conservation, Region 8, 6274 E. Avon-Lima Road, Avon, New York 14414, ATTN: Frank Shattuck.

4. One copy to New York State Department of Health, Bureau of Toxic Substances Assessment, Room 372, Tower Building, Empire State Plaza, Albany, New York 12237, ATTN: Ron Tramontano.

B. Communications to be made from the Department to Olin shall be made as follows:

1. One copy to Mr. James Brown, Olin Corporation, Post Office Box 249, Lower River Road, Charleston, Tennessee 37310.

2. One copy to Richard Hodgson, Esq., Olin Corporation, Counsel, 120 Long Ridge Road, Stamford, Connecticut 06904.

3. One copy to Hodgson, Russ, Andrews, Woods & Goodyear, Daniel M. Darragh of Counsel, 1800 One M & T Plaza, Buffalo, New York 14203.

C. The Department and Olin respectfully reserve the right to designate other or different addressees on notice to the other party.

D. No information advice or guidance by the Department's officers or employees or representatives upon any plan, report, proposal, study or other document, or

modifications or additions thereto, submitted by Olin to the Department shall relieve Olin of any obligation it may have to obtain the Department's formal written approval of the same.

XVII. The provisions of this Agreement shall be deemed to bind the Department and Olin, its officers, directors, agents, servants, employees, successors and assigns.

XVIII. Nothing herein shall be construed to bind any other entity not specifically bound by the terms of this Agreement.

XIX. Olin shall not suffer any penalty under any of the provisions, terms and conditions of this Agreement, or be subject to any proceedings or actions for any remedy or relief, if it cannot comply with the requirements of this Agreement because of any act of God, war, riot, or other condition as to which negligence or willful misconduct on the part of Olin was not a proximate cause, provided, however, that Olin shall immediately notify the Department in writing when it first obtains knowledge of any such conditions and requests an appropriate extension or modification of the provisions of this Agreement.

XX. This Agreement shall not constitute an admission of law or fact or evidence of the same, nor of any violation of

CONSENT BY RESPONDENT

Respondent, Olin Corporation, waives its right to a hearing herein as provided by law, and consent to the issuing and entering of the foregoing Order, and agrees to be bound by the provisions, terms and conditions thereof.

OLIN CORPORATION

By: R L Yohe

Title: President Chemicals Group

Date: 4/13/87

STATE OF ~~NEW YORK~~ Connecticut)
) ss.:
COUNTY OF Fairfield)

On this 13th day of April, 1987, before me personally came Robert L. Yohe, to me known and being by me duly sworn, did depose and say: that he resides in Connecticut, that he is the President Chemical Group of Olin Corp. the corporation described in and which he executed the above instrument; that he knows the seal of said corporation; that the seal affixed to said instruments is such corporate seal; that he has authority to bind the corporation to said instrument, and that he signed his name thereto by the authority vested in him by the corporation.

Sandra J. Sentemente
Notary Public
Com. Exp: 3/31/91

any law or regulation. The parties hereto may not rely on this Agreement in any action or proceeding other than as specified in paragraph 12(2) hereof. This Agreement shall neither create nor affect the rights of persons or entities who are not parties to or bound by this Agreement.

XXI. 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 Olin's negligence or other culpable conduct in the fulfillment or attempted fulfillment of the provisions hereof by Olin, its directors, officers, employees, servants, agents, successors or assigns.

XXII. The provisions of this Agreement shall constitute the complete and entire Agreement between Olin and the Department with regard to the work proposal to be implemented at the Site, as defined in Exhibit A hereto. No terms, conditions, understandings or agreements purporting to modify

or vary the terms hereof shall be binding unless made in writing and subscribed by the party to be bound.

Dated: Albany, New York
, 1987

HENRY G. WILLIAMS
Commissioner
New York State Department of
Environmental Conservation

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WORK PLAN

OLIN CORPORATION
ROCHESTER, NEW YORK PLANT

ADDITIONAL GROUNDWATER INVESTIGATION

PURPOSE

The purposes of this investigation are to determine the effectiveness of the 1983 remedial measures, to determine if any contamination has migrated into bedrock, and to determine if any contamination has migrated to the Barge Canal.

SCOPE

The investigation consists of five tasks:

Task 1 - Description of Current Situation

Task 2 - Development of Site Operations Plan

Task 3 - Site Investigation

Task 4 - Site Investigation Analysis

Task 5 - Reports

TASK 1 - DESCRIPTION OF CURRENT SITUATION

Olin began investigating groundwater contamination at Rochester in 1981. The location of the Rochester plant is shown in Figure 1. In 1983, a system of ten interception wells was started up to prevent contamination from migrating off Olin property. A site history will be prepared, incorporating all previous study results and summarizing all available information pertinent to the site.

a. Site Background

A summary of the location, pertinent area boundary features, and general site physiography, hydrology and geology will be prepared. The total area of the site and the general nature of the problem, including pertinent history relative to the source of contaminants will be defined.

b. Nature and Extent of Problem

A summary of the actual on-site health and environmental effects will be prepared. Any potential threat to public health and the environment from direct contact, vaporization or contaminated groundwater will be described.

c. History of Response Actions

A summary of any previous response actions conducted by Olin including the site inspection and other technical reports, and their results will be prepared. A list of reference documents and their location shall be included.

d. Define Boundary Conditions

Site boundary conditions to define the areas of site investigations will be established.

e. Site Map

A site map showing all wetlands, floodplains, water features, drainage patterns, tanks, buildings, utilities, paved areas, and other features will be prepared. The site map and all topographical surveys will be of sufficient detail and accuracy to locate and report all work performed at the site. A permanent bench mark tied into the USGS reference system will be established.

TASK 2 - PLANS AND MANAGEMENT

a. Sampling Plan

A Sampling Plan to address all field activities to obtain additional site data will be prepared. The plan will contain a statement of sampling objectives; specification of equipment, analyses of interest, sample types, sample locations and frequency; and schedule. The plan will also include a quality assurance and quality control plan with documentation requirements. The plan will address all levels of the investigation as well as all types of investigations conducted (e.g., hydrogeologic, soils and sediments, and surface water).

b. Health and Safety Plan

A Health and Safety Plan to address hazards that the investigation activities may present will be prepared. The plan will address all applicable regulatory requirements and detail personnel responsibilities, protective equipment, procedures and protocols, decontamination, and training. The plan will identify problems or hazards that may be encountered and their solutions. Any necessary procedures for protecting third parties, such as visitors or the surrounding community, will also be provided.

c. Data Management Plan

A Data Management Plan to document and track investigation data and results will be developed. This plan will identify and set up laboratory and data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents.

TASK 3 - SITE INVESTIGATION

Twenty-two monitoring wells were installed on the site in January 1982. These wells were sampled twice for the volatile and base neutral priority pollutants, supplemented by a list of site specific indicators. Based on these analyses and the geohydrological data developed from the wells, contaminant mass loadings were calculated. To eliminate the off-site migration of any contamination, ten of the monitoring wells were converted to interception wells in July 1983. An

additional eleven piezometers were installed to monitor the interception well effectiveness in August 1983.

a. Hydrogeologic Investigation

1. Bedrock Wells

The shallow overburden groundwater at the plant site has been investigated. Based on the regional literature and inspections of the wall of the Erie Barge Canal and a limestone quarry approximately one mile west-southwest of the site, it appears that the bedrock is relatively impermeable, especially below the first several feet of fractured rock. Olin concluded that there is little potential for migration into and through the bedrock. To provide data on the existence of any contamination in the bedrock and to assess the potential for migration, three bedrock wells will be installed.

The wells will be installed at locations shown on Figure 2. The triangular configuration will allow an accurate determination of groundwater flow direction in the bedrock. Each well will be installed adjacent to an existing overburden well to provide data on vertical hydraulic gradients. The depth of the wells will be the first water bearing zone below the upper fractured bedrock or 80 feet if no water bearing zone is encountered.

The wells will be installed in a manner designed to prevent any contaminant migration from the overburden into bedrock. The outer casing will be grouted into the top of sound bedrock and the grout will be allowed to set before being drilled out. Cuttings and fluids will be drummed for proper disposal. A typical well installation is illustrated on Figure 3.

2. Shallow Piezometers

Five piezometers will be installed in locations shown on Figure 2 to supplement the present piezometer network. The purpose of these piezometers is to monitor interception well drawdown. These additional piezometers along with the ten existing piezometers, twelve existing monitoring wells, and ten interception wells will provide data on which to base an assessment of the interception well effectiveness.

The piezometers will be installed as shown on Figure 4.

3. Off-site Overburden Monitoring Wells

Three overburden monitoring wells will be installed on NYDOT property along the Erie Barge Canal, downgradient of the site. The well locations are shown on Figure 2. The typical well construction will be as shown on Figure 5.

4. Well Sampling

The present monitoring program at the site consists of quarterly water elevation measurements at each well, continuous measurement of water flow from the interception well system, quarterly analysis of chloropyridines in intercepted water, and semiannual analysis of the Ness Machine Company noncontact cooling water well for the volatile organic priority pollutants and chloropyridines. This program will continue, with the water elevation measurement program supplemented by the new piezometers.

The bedrock and off-site overburden (Canal) wells will be sampled initially and approximately three months later for the volatile organic priority pollutants and chloropyridines. Any contaminants identified and confirmed by these results will be analyzed quarterly thereafter.

Analytical procedures, including quality assurance, will be equivalent to those required by EPA under their Contract Laboratory Program for the volatile organic pollutants and chloropyridines. The laboratory to be used will be approved by DEC.

b. Utilities Investigation

An investigation will be conducted to assess the potential for migration along bedding of underground utilities. Each underground utility crossing the site boundary will be identified. The construction specifications and installation details of each utility will be determined by a review of all available drawings, specifications, field notes, and other information. Based on the information compiled, the potential for migration along the bedding will be assessed. If a significant potential exists, a work plan for field investigation will be prepared.

TASK 4 - SITE INVESTIGATION ANALYSIS

A thorough analysis and summary of all site investigations and their results will be prepared. The objective of this task will be to ensure that the investigation data are sufficient in quality (e.g., QA/QC procedures have been followed) and quantity to prepare the feasibility study report.

The results and data from all site investigations will be organized and presented logically so that the relationships between overburden and bedrock investigations are apparent. All site investigation data will be analyzed and a summary of the type and extent of contamination at the site will be developed. The summary will describe the quantities and concentrations of specific chemicals at the site. The nearby populations and activities and pathways that may result in an actual or potential threat to public health or the environment will be described.

TASK 5 - REPORTS

a. Progress Reporting Requirements

Quarterly reports will be prepared by Olin to describe the technical progress of the project. These reports will discuss the following items:

1. Identification of site and activity
2. Status of work at the site and progress to date
3. Percentage of completion and schedule status
4. Difficulties encountered during the reporting period
5. Actions being taken to rectify problems
6. Activities planned for the next month

The quarterly progress report will list target and actual completion dates for each element of activity, including project completion, and will provide an explanation of any deviation form the milestones in the work plan.

b. Final Report

A final report covering the investigation will be prepared and submitted to DEC. The report will include the results of Tasks 1 through 5, and include additional information in appendices.

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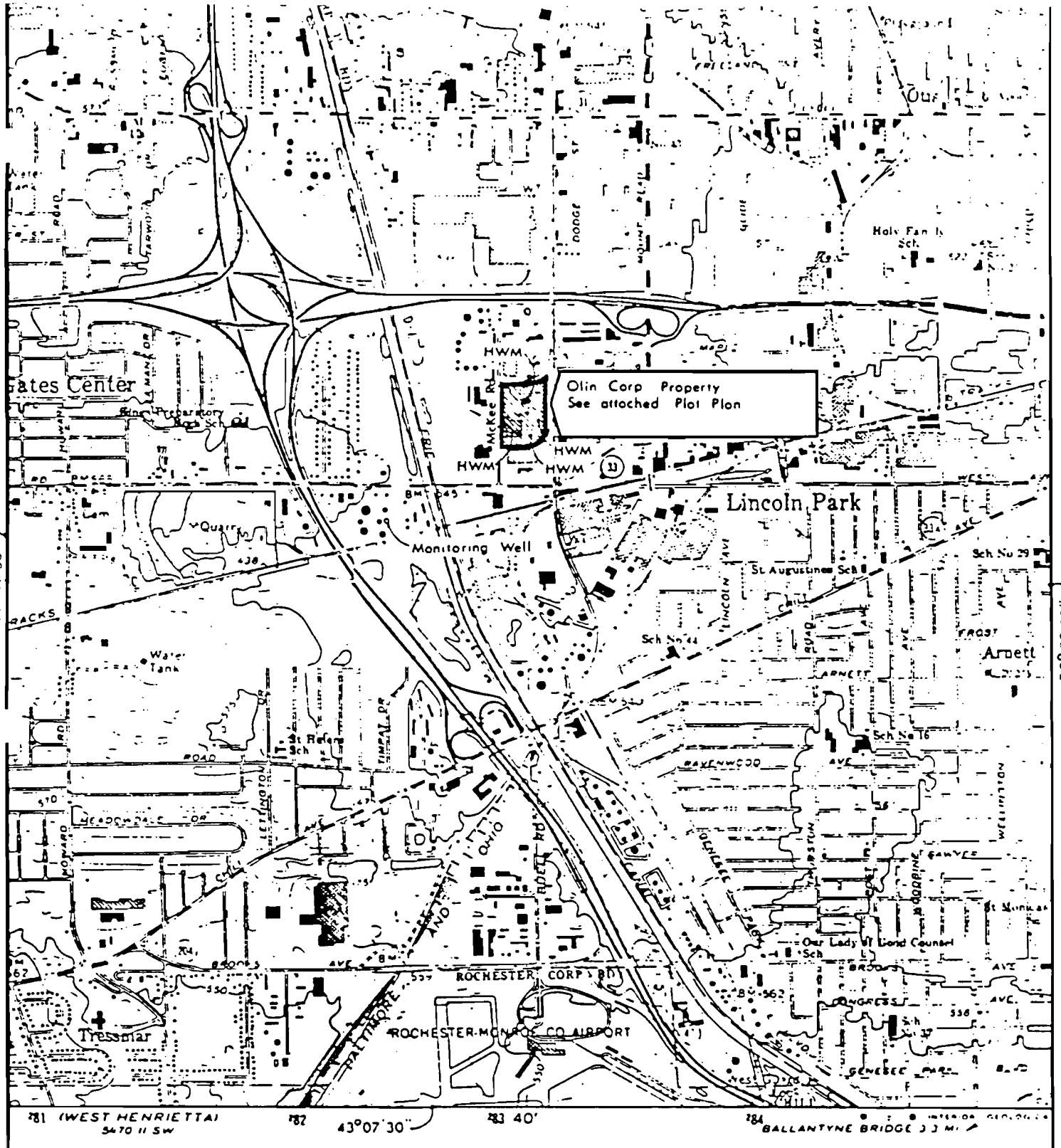


Map Scale 1 24,000

1000 0 1000

FEET

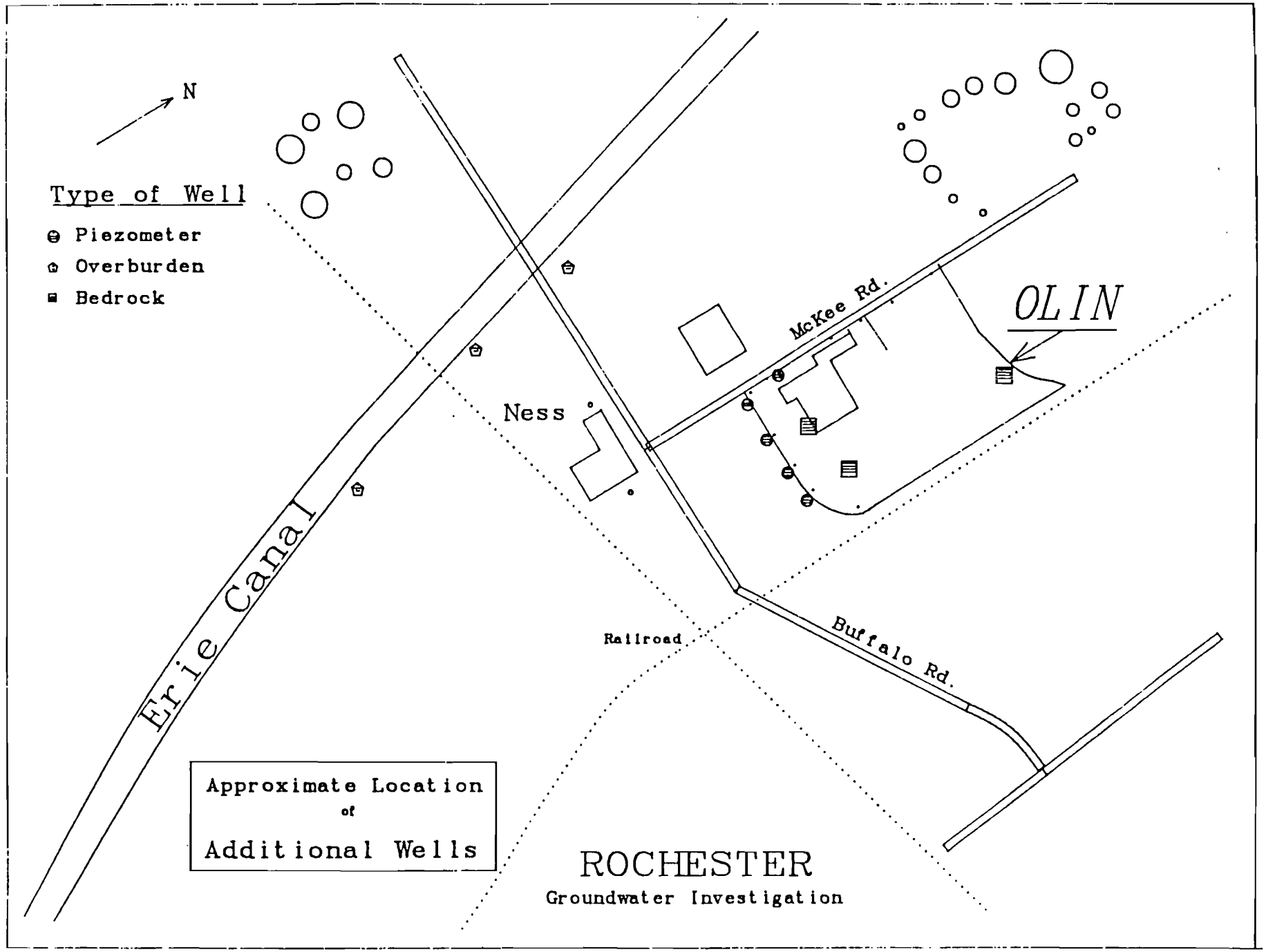
From USGS Map of Rochester West, N Y

UTM GRID AND 1976 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

FIGURE 1

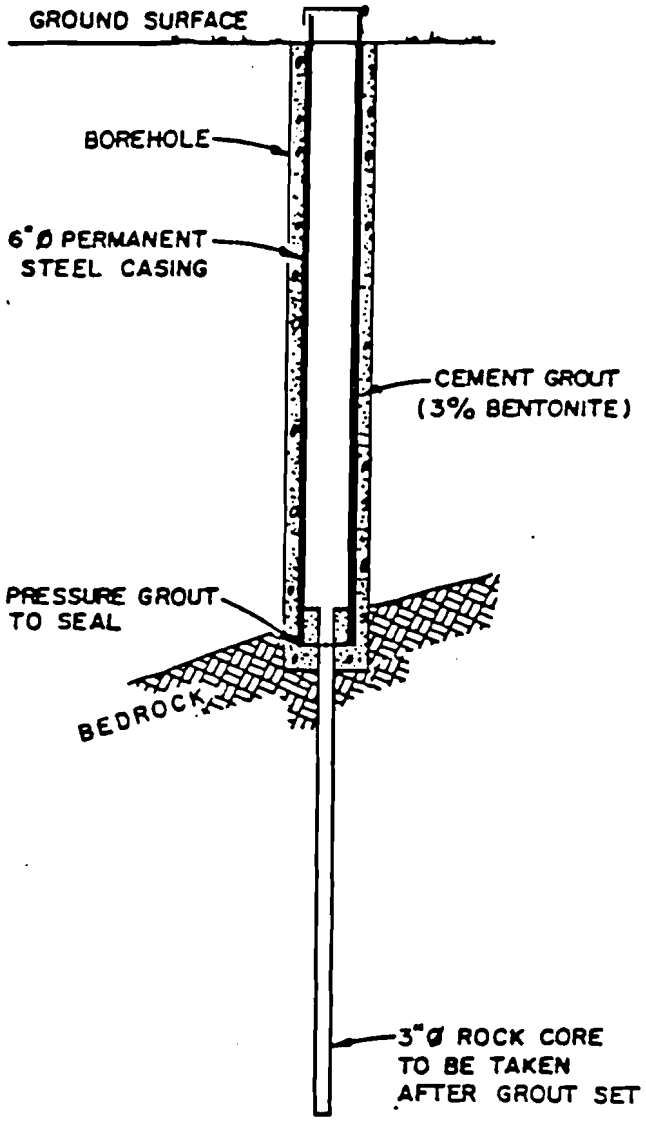
Location Map
Olin Corporation
Rochester, N.Y.

Drawing No.	RWS	Oct 80
A-288		



Olin Corporation Chemicals Group Environmental Affairs Department Charleston, TN

Figure 2



BEDROCK WELL

figure 3

6" DIAMETER CASING INSTALLATION

Figure 4

Overburden Piezometer

Typical Construction

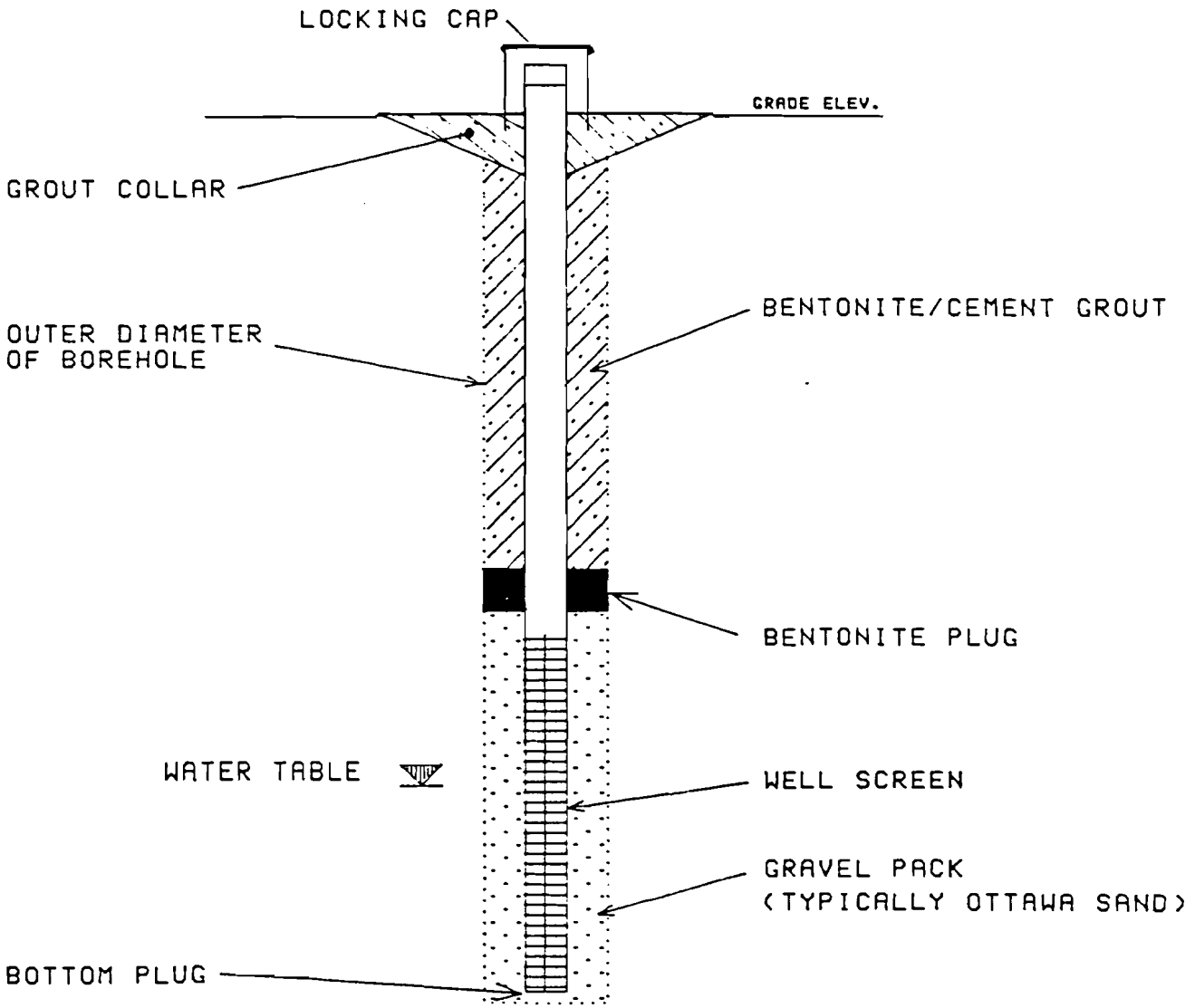
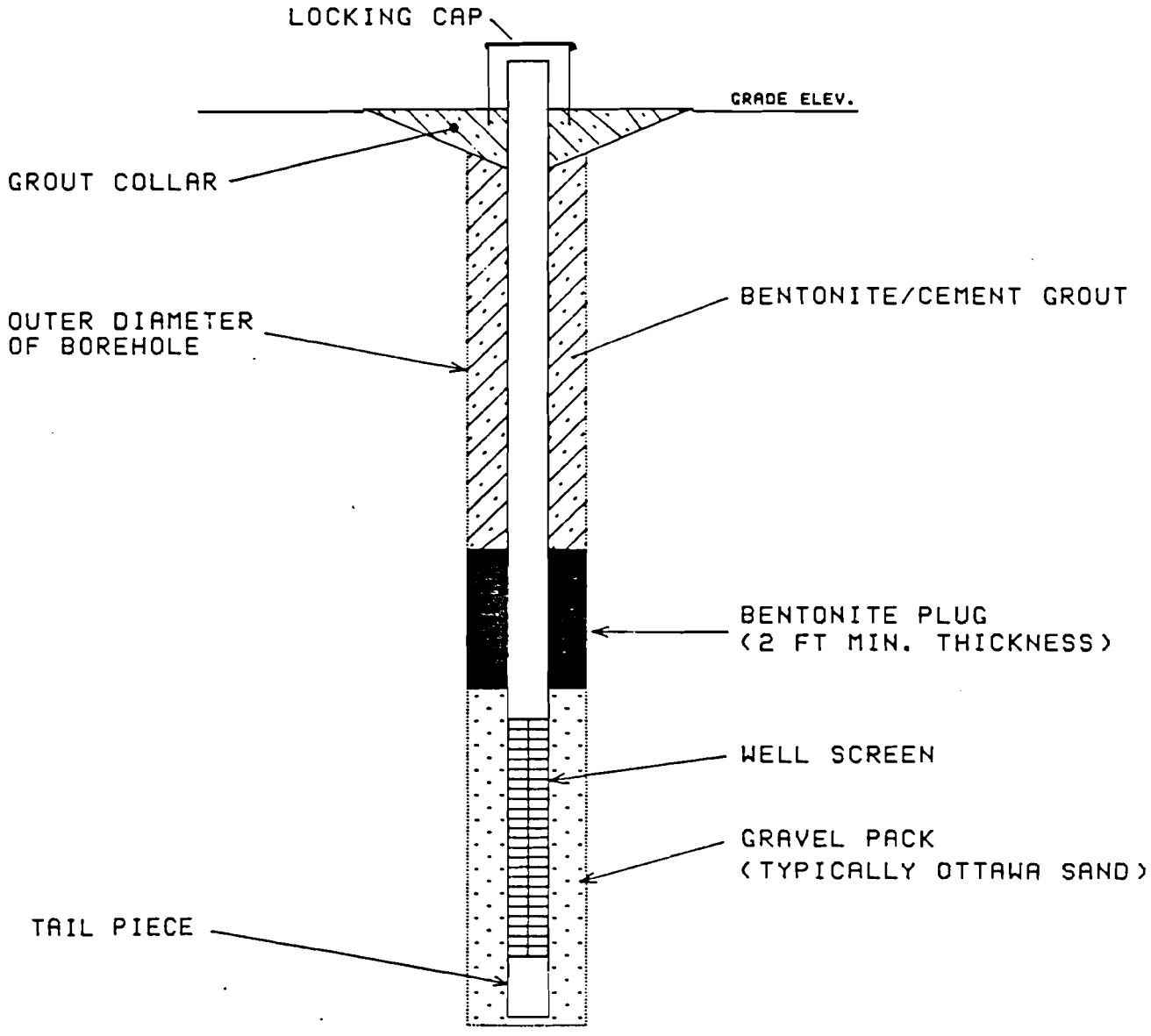
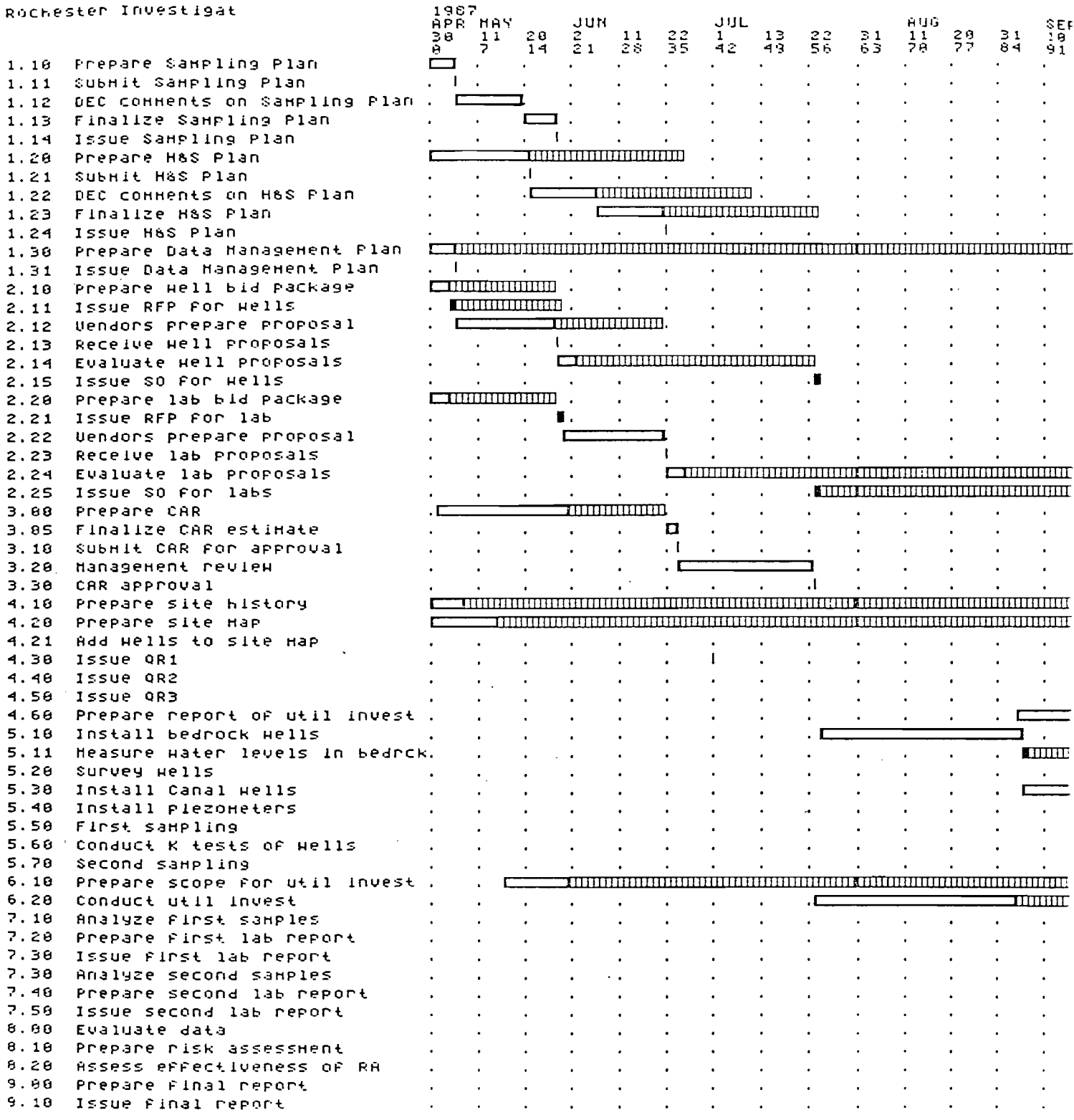


Figure 5

Overburden Monitoring Well

Typical Construction

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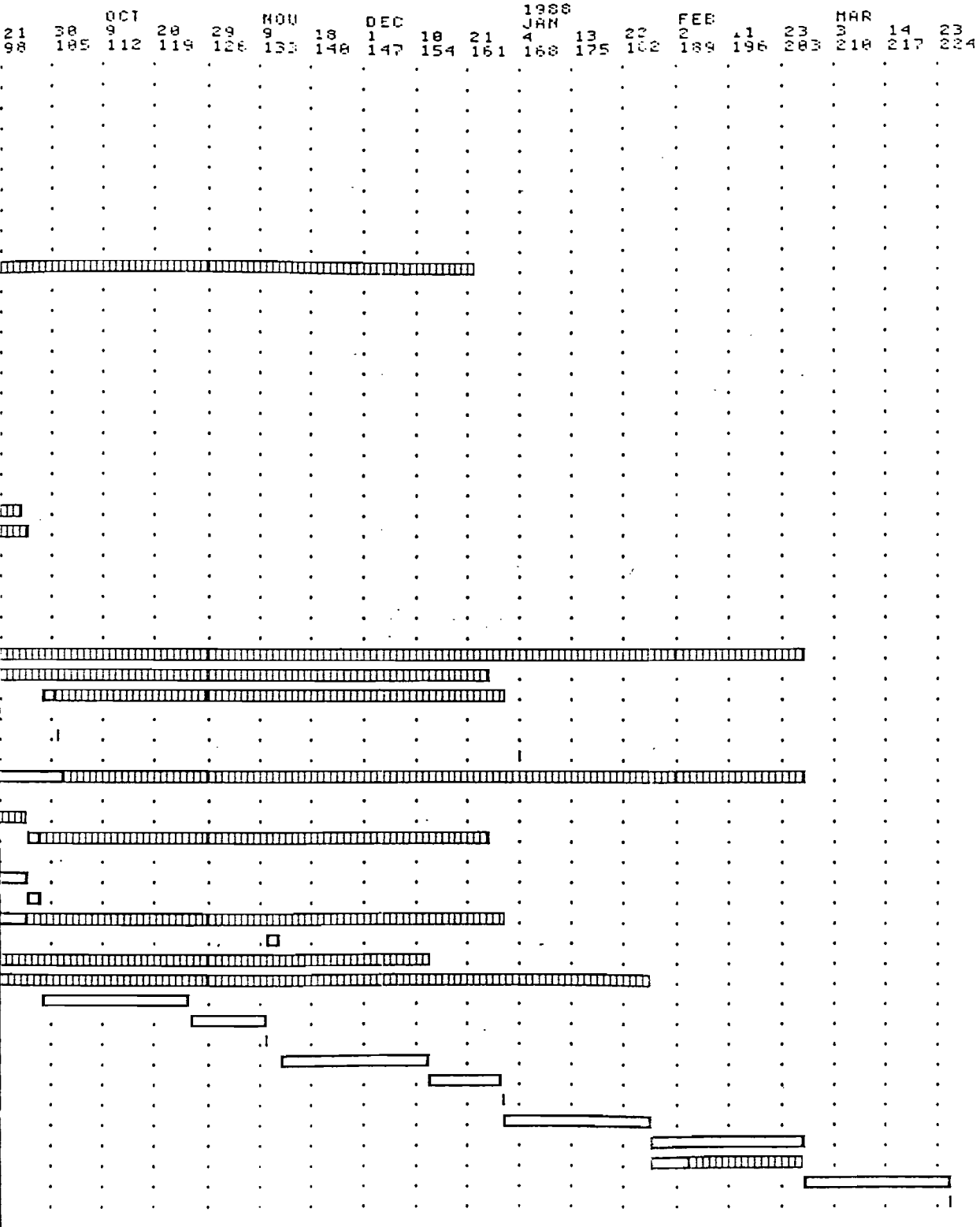
8 7 14 21 28 35 42 48 56 63 70 77 84 91
1.10 Prepare Sampling Plan
1.11 Submit Sampling Plan
1.12 DEC comments on Sampling Plan
1.13 Finalize Sampling Plan
1.14 Issue Sampling Plan
1.20 Prepare H&S Plan
1.21 Submit H&S Plan
1.22 DEC comments on H&S Plan
1.23 Finalize H&S Plan
1.24 Issue H&S Plan
1.30 Prepare Data Management Plan
1.31 Issue Data Management Plan
2.10 Prepare well bid package
2.11 Issue RFP for wells
2.12 Vendors prepare proposal
2.13 Receive well proposals
2.14 Evaluate well proposals
2.15 Issue SO for wells
2.20 Prepare lab bid package
2.21 Issue RFP for lab
2.22 Vendors prepare proposal
2.23 Receive lab proposals
2.24 Evaluate lab proposals
2.25 Issue SO for labs
3.00 Prepare CAR
3.05 Finalize CAR estimate
3.10 Submit CAR for approval
3.20 Management review
3.30 CAR approval
4.10 Prepare site history
4.20 Prepare site map
4.21 Add wells to site map
4.30 Issue QR1
4.40 Issue QR2
4.50 Issue QR3
4.60 Prepare report of util invest
5.10 Install bedrock wells
5.11 Measure water levels in bedrck
5.20 Survey wells
5.30 Install Canal wells
5.40 Install piezometers
5.50 First sampling
5.60 Conduct K tests of wells
5.70 Second sampling
6.10 Prepare scope for util invest
6.20 Conduct util invest
7.10 Analyze first samples
7.20 Prepare first lab report
7.30 Issue first lab report
7.30 Analyze second samples
7.40 Prepare second lab report
7.50 Issue second lab report
8.00 Evaluate data
8.10 Prepare risk assessment
8.20 Assess effectiveness of RA
9.00 Prepare final report
9.10 Issue final report

IBIT B



HEDULE

DWATER INVESTIGATION

RIL 1987