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Remedial Design - Action
Report +
Consent order.pdf

ATTACHMENT 2

Program SWR 360010

FOIL NUMBER 98-078

FILE NAME & NUMBER Memo Morte / Harman 78

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releasable folder*

PREPARED BY Wif Kip DATE 4/7/98

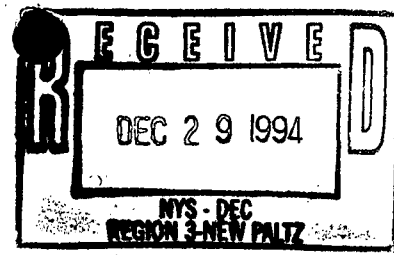
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I - Computer Access Codes

360010

FYI
Jean Ann McGrane



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21 South Putt Corners Road
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Attn: A. Klauss

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Division of Hazardous Waste
Remediation
50 Wolf Road
Albany, N.Y. 12233-7010
Attn: Robert Cozzy

Two copies to:

New York State Dept. of Health
Bureau of Environmental Exposure
2 University Place
Albany, N.Y. 12203
Attn: G. Anders Carlson, Ph.D.
Director

One copy to:

Metro-North General Counsel
Richard K. Bernard
347 Madison Avenue
New York, N.Y. 10017

One copy to:

NYSDEC
Division of Environmental
Enforcement
50 Wolf Road
Albany, N.Y. 12233-5500
Attn: Robert K. Davies, Esq.

One copy to:

NYSDEC
Region 3
21 South Putt Corners Road
New Paltz, N.Y. 12561
Attn: Jean-Ann McGrane
Regional Director

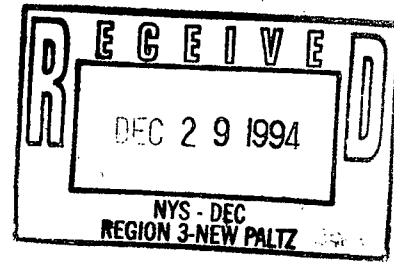
One copy to:

Teitelbaum, Hiller,
Rodman, Paden and Hibsher
260 Madison Avenue
New York, N.Y. 10016
Attn: J. Kevin Healy

K. rep. h. h. h.



Metro-North Railroad



December 23, 1994

New York State Department of
Environmental Conservation
50 Wolf Road
Albany, N.Y. 12233-7010
Attn: Jeffrey McCullough

Re: Harmon Yard Site ID No. 3-60-010 - EQBA Application for
State Assistance

Dear Jeff:

Per the discussion at the meeting of December 19, 1994 at your office, the following revisions are requested or have been made to the chart for the EQBA Assistance. Some of the following items were incorporated in your subsequent faxed budget of December 20, 1994 and approved in our telephone conversation of that same day.

Task 02974 - Due to Metro-North's determination that Aptus - Westinghouse was non-responsive, the incineration contract has been awarded to Chemical Waste Management for a total contract amount of \$4,833,400, an increase of \$35,400 over the Aptus bid.

Aptus was found to be non-responsive for the following major reasons:

1. Aptus refused to provide financial statements for their facility as required by the contract. They provided only Westinghouse financial data stating that it was not Westinghouse Corporate policy to give financials for its subsidiaries. Westinghouse would not co-sign the contract. Westinghouse is also negotiating the sale of the Aptus facility to Rollins.
2. Aptus required payment for materials as the manifest was signed for the material received. The contract requires certificates of disposal for all material before payment is issued. This potentially exposed Metro-North and NYSDEC to additional costs for disposal of material if Aptus should be closed down or for some other reason unable to process the material.
3. Aptus refused to permit Metro-North the right to audit the firms financial records during or upon completion of the work.

Jeffrey McCullough
December 23, 1994
Page 2

4. Aptus was able to only receive fifteen carloads of waste for incineration per week. They have no storage capacity. This would greatly impact the construction schedule and most certainly the Site Work Contractor's cost to perform the work.
5. Aptus took a total of eighteen exceptions to the bid documents. The above were the most critical.

Task M03005 - These costs are almost exclusively administrative costs associated with the time that Mukesh Mehta and myself and the Contract Administration Department spent on the project attending meetings, preparing reports and day-to-day management of the project. We understand that under the EQBA guidelines, these costs are not eligible for reimbursement.

Task M03006 - Per the discussion at the meeting, the costs associated with the implementation of the HASP and CAMP are significant and well beyond the basic construction management services included within the 6% guideline. Metro-North's experience indicates that the average figure is approximately eight and one-half percent for projects of this complexity as shown on the following table. This is primarily due to the contract requirements and Metro-North Capital Program procedures imposed on all consultants and contractors.

For your information, I have attached an analysis of recent Metro-North construction contracts and the corresponding construction management and inspection services as a demonstration of the percentage relationships. Note that the average is higher than the six percent benchmark used by your construction management group.

The attached letter from Hill International indicates that their estimate of the cost for the HASP and CAMP activities was \$134,764 for dedicated labor and an additional \$161,598 for part-time effort. The work associated with the analytical portion of the contract is approximately \$185,900. This accounts for \$482,262 of construction supervision costs that are not encountered on a normal construction project. Using a figure of 8.5% for Metro-North's normal construction management effort, the base amount would be \$318,771 bringing the total estimated cost for EQBA related construction to \$801,033.

Jeffrey McCullough
December 23, 1994
Page 3

These costs will all have to be monitored in the field during the construction before final numbers can be reached. For the sake of this application, we request that you consider the eligible costs to be \$801,033.

Active Construction Project Description	Construction Contract Amount	Construction Management	Percentage (Const.Mgmt./ Construction)
GCT Structural Rehabilitation	\$ 5,455,959	\$ 415,000	7.6
ADA Station Improvements	7,554,498	514,159	6.8
Croton Point Avenue Bridge Construction	6,348,750	576,940	9.1
Croton River Bridge Rehabilitation	8,027,916	753,862	9.4
Park Avenue Viaduct Rehabilitation	82,464,000	9,499,990	11.5
	Average Construction Management Percentage		8.88

Tasks M03007 and M03008 - Metro-North will furnish detailed costs estimates for the force account costs for the relocation of storage areas and construction of the rail spur into the lagoon site. Work is progressing on the rail spur because of weather conditions that would have precluded installation after signing of the State Assistance Contract. As of the end of November, \$137,557 has been spent on this task.

Once discussions are held with the contractor as to the transportation of the materials, Metro-North will submit any costs associated with flagging protection or work train crews.

For the purpose of the State Assistance Contract, Metro-North will accept the zero allocation until the detailed information can be forwarded to NYSDEC for approval.

Jeffrey McCullough
December 23, 1994
Page 4

Task M03240 - Per the discussion at the meeting, Tasks 9 and 10 from ERM's Task Summary Spreadsheet will be deducted from the eligible costs because they deal with the non-EQBA funded activities.

Task 12 was work performed after the November 24, 1992 approval date to determine whether the groundwater under the lagoon was contaminated with dissolved PCB or other hazardous constituents. The costs of such work should therefore, be considered as eligible for EQBA Funding.

Task 15 involves assisting Metro-North as necessary in preparation of the EQBA Application. The justification letter attached to ERM's letter of September 12, 1994 indicates that this task is not eligible for EQBA funding under the guidelines.

Based on the above, a total of \$113,360.96 (for Tasks 9,10,13,14,and 15) should be deducted from the ERM contract amount to determine revised eligible costs.

Task M03560 - No additional comments

Task M03624 - No additional comments

Task M03975 - No additional comments

Task M04014 - Costs to date have been identified as \$77,800. Some demolition work remains to be done in the sludge drying bed area. We request that a total of \$125,000 be considered as the eligible cost for the work.

As discussed at our meeting, Metro-North is willing to accept the allocations set forth in your budget faxed to me on December 20, 1994 (which includes the addition of funds for Task 02974 and deductions for task M03055 and for ERM's work not eligible for the EQBA funding) on the understanding that modifications will later be made in the event that they are deemed to be eligible.

If the changes requested in this letter with respect to the Construction Management costs are found acceptable without additional documentation, we would be pleased to submit a future modification to the application reflective of that change.

Jeffrey McCullough
December 23, 1994
Page 5

We look forward to receiving a contract for execution by Metro-North sometime next week. If there are any questions feel free to call. In my absence please speak to Mukesh Mehta.

Very truly yours,

A handwritten signature in cursive script that reads "Chris Bennett". The signature is written in dark ink and is positioned above the typed name.

Christopher K. Bennett, P.E.
Deputy Director Facilities
Engineering and Design

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
1986 ENVIRONMENTAL QUALITY BOND ACT
TITLE 3 AND TITLE 5 APPLICATION FOR STATE ASSISTANCE
(Revised OUI and OUII)

1. NAME OF APPLICANT (Municipality): **Metro-North Commuter Railroad Company**
2. COUNTY: **Westchester**

TYPE OF PROJECT: ☒ Municipal Hazardous Waste Site Remediation (Grant Program)
☐ Municipal Landfill Closure (Loan Program)
3. PROJECT NAME: **Harmon Railroad Yard Wastewater Equalization Lagoon Remediation New York State Site ID #360010 (OUI and OUII).**
4. DESCRIPTION (Purpose, scope, location): **A description of the purpose, scope and location of the project is contained in Attachment 1 the Record of Decision (previously submitted), the OUI Remedial Design/Remedial Action Workplan found as OUI Attachment 2 (previously submitted) and the OUII Remedial Investigation/Feasibility Study Workplan ("RI/FS") found as OUII Attachment 2 (previously submitted). (Attach Project Narrative, Workplan, etc.)**
5. OBLIGATION: **The project is being undertaken pursuant to a written Stipulation between Metro-North and the DEC. A copy of that Stipulation was attached as Attachment 3 (previously submitted).**
6. SCHEDULE: **Work has or will commence on: for purpose of this application, work on the project began in November 1992. See Attachment 4 (previously submitted). See OUI Attachment 5 for a schedule for the remediation of OUI of the project (previously submitted); a schedule for the OUII RI/FS approved by NYSDEC was previously submitted as OUII Attachments 5 and 6. (date) (Attach Project Schedule).**
7. ESTIMATED PROJECT COST: **OUI and OUII: \$6,247,690 *** (Attach Project Budget, proposed contracts, or information on how contracts for Professional Services will be awarded).
8. NAME AND TITLE OF INDIVIDUAL AUTHORIZED TO SIGN APPLICATION (Please Print): **William Aston, Vice President, Capital Programs.**
9. ADDRESS (Post Office Box No. or Street, City, State and Zip Code) PHONE NO. (Include area code):

METRO-NORTH COMMUTER RAILROAD COMPANY
347 Madison Avenue
New York, New York 10017
(212) 340-2243
ATTENTION: Christopher Bennett

CERTIFICATION: The undersigned does hereby certify that the information in this application and in the attached certified copies of resolution(s), other statements, and exhibits is true, correct and complete to the best of his or her knowledge and belief, and further that any and all statements, data and supporting documents which have heretofore been made for the purpose of receiving State assistance for the project described herein are attached hereto in full.

Signature of individual authorized by resolution (attach copy) to sign application

DATE

FOR STATE USE ONLY

PROJECT NO. _____

DATE RECEIVED _____

DATE COMPLETE _____

*This amount covers only the RI/FS itself for OUII, not the costs of any remediation which the RI/FS process may determine is necessary. A separate, related application will be submitted covering the costs of any remediation for OUII.

HARMON YARD HASP & CAMP COSTS

Please note the Exhibit 8 man days total does not agree with the Estimated Labor Costs Table (Revised 11/2/94). The HASP & CAMP activities cover the first eleven (11) months of the schedule as we have forecasted at this time. Exhibit 8 still does reflect all the functional activities for this phase of the project. We have taken the Estimated Labor Costs Table and broken out the dedicated and associated field time that should be duly charged for these functions. This is summarized as follows by individual function:

1. Dedicated (100%)

<u>Individual</u>	<u>Hours</u>	<u>Cost</u>	
SSO	1,500	\$ 77,616.00	
HASP/CAMP	80	7,912.52	
EP/HAZ Waste	100	7,125.58	
Hyd/Hazmat	200	13,680.13	
EP/Hazmat	<u>600</u>	<u>28,429.63</u>	
	2,480		Sub-Total \$ 134,763.86

2. Dedicated - Partially

PM	400	\$ 47,798.52	
PD	64	7,647.77	
RE	960	82,128.08	
Clerk field	<u>650</u>	<u>24,024.00</u>	
	2,074		Sub-Total \$ <u>161,598.37</u>

Hours Total 4,554

Grand Total \$ 296,362.23

The total hours for HASP & CAMP activities of 4,554 represents 41 % of the total estimated project hours (11,144). This we feel is a reasonable percentage of the effort required for these critical activities.

Hill International
Harmon Yard - CM Services
HACP/ CAMP Tasks by Position

Site Safety Officer (S50)

Responsibilities - See HASP, 2.0

- Perform/Document Site Specific Training
- Verify Respiratory Protection Program
- Site Monitoring Hazard Evaluation
- Monitor Airborne Chemical Concentrations
- Supervise All Site Monitoring
- Maintain A Site Safety & Health Log
- Modify Protective Levels, As Required
- Perform Personal Air Monitoring
- Coordinate Sign-in/Sing-out Procedures
- Respond to Emergencies & Report
- Observe/Document Symptoms of Injury/Illness
- Establish Work Zones (EZ, CRZ, SZ)
- Execute HASP & CAMP
- Perform Real-time Air monitoring
- Review Hill Safety Plan/Procedures
- Review /Approve G/C Safety Plan
- Participate in Pre-construction Coord. of HASP/CAMP
- Establish Monitoring Stations (4 ea)
- Conduct Baseline Air Monitoring
- Review /Update Personnel Training/Medical Records
- Participate In Pre-construction coord. of hasp/canp
- Establish monitoring stations (4 each)
- Conduct Base-Line Air Monitoring
- Review/update personnel training/medical records
- Monitor site access
- Monitor G/C construction activities for compliance
- Monitor G/C safety program / documentation
- Participate in an on-going coordination of Hasp/Camp
- Write daily reports including safety
- Review inspector/contractor reports for safety
- Document initial site conditions
- Maintain kalibrate Hasp/Camp documents as required
- Ensure safety of visitors
- Issue Non-Compliance reports & stop work if necessary

HASP/CAMP (C.I.H.)

- Review / approve in-house safety plan
- Review / approve G/C safety plan
- Clarify Hasp / Camp documents, as required
- Review / Approve G/C submittals for compliance
- Assist in Final RA/RD report to NYS Dec
- Specify /Purchase PPE
- Review Hasp / Camp Noncompliance reports and recommend corrective action.

EP/HAZ WASTE, HYD/HAZMAT, EP/HAZMAT

- Specify / Purchase air monitoring equipment
- Establish monitoring stations
- Perform baseline air monitoring
- Assist ~~SSO~~ 550 in air monitoring (stationary/real-time)
- Assist 550 in personal monitoring
- Analyze/Review Lab-Test Results
- Monitor G/C construction for compliance
- Write daily inspection reports (including safety)
- Review G/C submittals for compliance
- Monitor G/C safety practices
- Document site condi

Project Director (PD)

- Review project requirements including/ Hasp & Camp
- Review / Approve in-house safety plan
- Ensure training & compliance of Hill Staff
- Preconstruction coordination
- Review approved Hasp/Camp coordination
- On-going Hasp / Camp Coordination
- Review RA/RD report to NYSDEC
- Budget/ Authorize Hasp/Camp-related expenses for air-monitoring equipment & P.P.E.
- Conduct Hasp/Camp Procedures in-house audits

Project Manager

- Analyze/ review lab test results
- Review project requirements for Hasp/Camp
- Prepare in-house safety plan/procedures
- Review Gil Safety Plan
- Review /Approve Hasp/ Camp Expenses
Air-monitoring equipment & P.P.F.
- Pre-construction coordination of Hasp/Camp
- On-going coordination of HASP/CAMP
- Review / Approve Hasp/Camp administrative procedures
- Attend Hasp/Camp meetings prior to construction
- Approve/process lab expenses
- Manage in-house staff to meet Hasp/Camp RQRNT's
- Approve/Process P.P.E> Expenditures
- Review /Comment on G/C staging plan I.A.W. Hasp/Camp
- Supervise input to RA /RD report to NYSDEc
- Supervise/Monitor Hasp/Camp on-site during "hot" OPNS

Resident Engineer

- Prepare daily log including safety
- Review project requirements including Hasp & Camp
- Prepare Administrative section of in-house safety plan
- Review G/C safety plan / procedures
- Coordinate Hasp/Camp equipment & P.P.E. purchases
- Conduct pre-construction coordinates mtg's for Hasp/Camp
- Document/distribute/ file results of all mtg's including/Hasp/Camp
- Coordinate mobilization for Hasp/ Camp monitoring, air-samplings
- Establish project files for Hasp/Camp logs, reports, etc.
- Establish / maintain Hasp/Camp Logs,reports, etc.
- Conduct weekly meetings including Hasp & Camp
- Monitor site access for compliance with Hasp
- Conduct/ Document distribute on-going coordinate of Hasp/Camp
- Monitor G/C staging & site activities for compliance
- File/ distribute G/C reports including Hasp & Camp
- Maintain site documentation relating to safety
- Prepare weekly & monthly reports including safety
- Log/track/distribute/lab test results
- Process lab/subconsultant invoices
- Maintain Hasp/Camp equipment & P.P.E. stock
- schedule coordinate inspection staff
- Process Hasp/Camp contract clarifications
- Process P.P.E. purchasing

(Cont Resident Engineer)

- Coordinate visitors to ensure proper safety
- Assemble/Catalog/Deliver record documents
- Coordinate RA/RD report to NYSDEC
- Prepare Hasp/Camp correspondence & memos as RQRD

Field Clerk

- Prepare Hasp/Camp files, logs, reports
- Perform Hasp/Camp Filing & Data Entry
- Perform Database searches for Hasp/Camp issues
- Generate reports (weekly/reentry) including Hasp & Camp
- Type/distribute/file all Hasp/Camp meeting minutes
- Maintain logs for lab and equipment expenses for Hasp/Camp
- Log/track/dist/file all Hasp/Camp related submittals.
- Catalog/document Hasp/Camp record documents
- Type Hasp/Camp related correspondence/memos
- Assemble/type/file/dist. final RA/RD report

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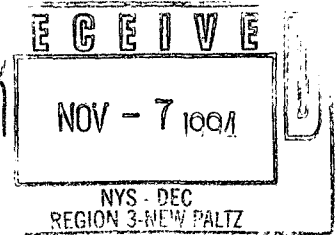
3-60-10



Metro-North Railroad

AIRBORNE EXPRESS

Rem



November 3, 1994

Langdon Marsh, Commissioner
NYS Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233

ATT: Mr. Robert Cozzy
Charles Sullivan, Esq.

Re: Stipulation of Discontinuance
Harmon Yard Site
ID No. 3-60-010

Gentlemen:

This letter is in response to my October 17, 1994 telephone conversation with Mr. Cozzy, Jeff McCullough's October 19, 1994 letter and Tom Gibbons' October 12, 1994 letter. As I indicated to your staff, Metro-North is also requesting an extension of the deadline for submittal of an executed State Assistance Contract for the reasons outlined below.

This will confirm that NYSDEC did receive both the OUI and OUII original EQBA applications. In reference to OUII, please be advised that ERM - Northeast has been authorized to begin the field work, and should be starting this week or next. They are now in the process of receiving safety training at Harmon Yard. The project director for ERM is James A. Perazzo, and he can be contacted directly at (212) 447-1900.

8/11/8

In reference to the Resolution, the one Metro-North attached to the EQBA applications was prepared in conjunction with NYSDEC staff and was reviewed by them before it was submitted to our Board for approval. Similarly, NYSDEC staff specifically requested that Metro-North submit two EQBA applications, one for OUI and one for OUII. Nevertheless, at the Department's request, we have presented the Department's standard Resolution Form to the Board of Directors for their approval. As I indicated to your staff, this will necessarily create delay as the Board is not scheduled to meet until the end of November. Once the new Resolution is approved, we will

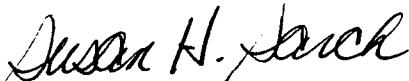
Langdon Mar 1
Page 2
November 3, 1994

submit another EQBA application covering both OUI and OUII to the Department. We are also in the process of revising the cost estimates to reflect the bids recently received.

Under Article IV of the Stipulation, Metro-North is required to submit to the Department an executed State Assistance Contract by November 8, 1994 (90 days after the effective date of the Stipulation). Though Metro-North submitted timely applications and has been diligently proceeding with the requirements, in light of the above, we will be unable to meet this deadline. Pursuant to Article XII of the Stipulation, we request a modification of this deadline, extending the time for submittal an additional 60 days to January 9, 1995.

If you have any questions or need additional information, please do not hesitate to contact me. Thank you for your attention to this matter.

Sincerely,

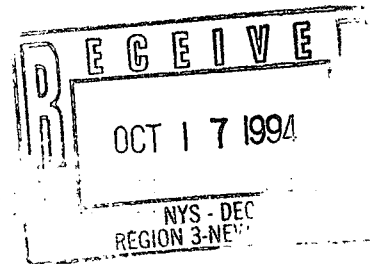


Susan H. Sarch
Associate Counsel
(212) 340-2741

cc: T. Gibbons
J. McCullough
G. Anders Carlson, Ph.D.
Jean-Ann McGrane
Al Klauss, P.E. ✓
R. Bernard
C. Bennett
K. Healy
K. McHale

[39824]

J.Kowalczyk, Esq.
October 14, 1994
Page 2



Distribution:

New York State DEC
Region 3 Office
21 South Putt Corners Road
New Paltz, N.Y. 12561
Attn: A. Klauss

NYSDEC
Pollution Prevention Unit
50 Wolf Road
Albany, N.Y. 12233-7253
Attn: John Iannotti
Director

NYSDEC
Division of Hazardous Waste
Remediation
50 Wolf Road
Albany, N.Y. 12233-7010
Attn: Robert Cozzy

NYSDEC
Division of Environmental
Enforcement
50 Wolf Road
Albany, N.Y. 12233-5500
Attn: Robert K. Davies, Esq.

New York State Dept. of Health
Bureau of Environmental Exposure
2 University Place
Albany, N.Y. 12203
Attn: G. Anders Carlson, Ph.D.
Director

NYSDEC
Region 3
21 South Putt Corners Road
New Paltz, N.Y. 12561
Attn: Jean-Ann McGrane
Regional Director

Metro-North General Counsel
Richard K. Bernard
347 Madison Avenue
New York, N.Y. 10017

Teitelbaum, Hiller,
Rodman, Paden and Hibsher
260 Madison Avenue
New York, N.Y. 10016
Attn: J. Kevin Healy

cc: K.L.Timko, K.McHale, G.A.Dopsch, M.L.Mehta, L.F.Williams

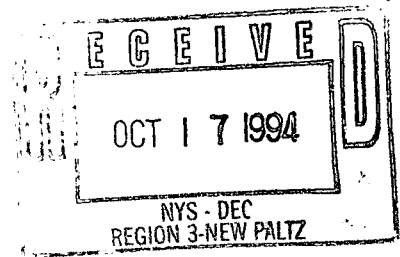
347 Madison Avenue
New York, NY 10017-3739
212 340-3000

Donald N. Nelson
President

3600/0



Metro-North Railroad



October 14, 1994

New York State Department of
Environmental Conservation
Div. of Environmental Enforcement
50 Wolf Road, Room 609
Albany, N.Y. 12233-5500
Attn: Joseph M. Kowalczyk, Esq.

Re: Harmon Lagoon (OUI) Construction Management and Inspection
Proposals

Dear Joe:

Metro-North has received six proposals for the Construction
Management and Inspection Services associated with the
remediation of the Harmon Lagoon. Proposals were received on
October 5, 1994 from the following firms:

ERM Northeast
Kaushik M. Mankad, P.E.
Hill International
Roy F. Weston of New York
Charles A. Manganaro Environmental Consultants
TAMS Consultants, Inc.

Metro-North is currently reviewing these proposals and the
selection committee composed of members of the Contracts,
Safety and Capital Engineering Departments, will meet to
discuss them on October 17, 1994.

We have discussed the need for NYSDEC review of these
proposals with Dan Evans and he has indicated that DEC review
of all proposals is not necessary. The technical proposal and
cost estimate of the consultant selected will be submitted to
NYSDEC for approval prior to contract award.

If there are any questions please feel free to call me at 212-
340-2243.

Sincerely,

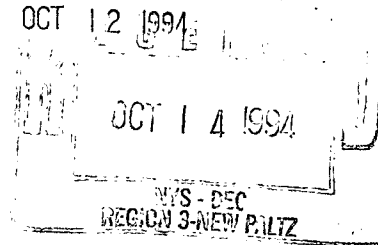
Chris Bennett

Christopher K. Bennett, P.E.
Deputy Director Facilities

Handwritten:
Haw/My
10/19

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-7010

Mr. Christopher K. Bennett, P.E.
Deputy Director
Facilities Engineering
Metro-North Commuter Railroad
347 Madison Avenue, 11th Floor
New York, New York 10017



Langdon Marsh
Commissioner

Dear Mr. Bennett:

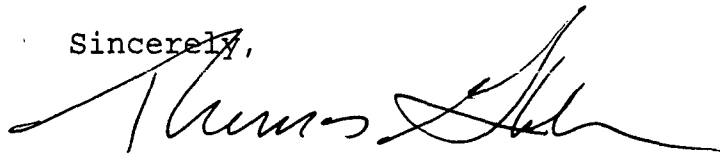
RE: Harmon Railroad Yard Site
OU-II, Site ID. No. 360010
Title 3 Reimbursement

As indicated in my letter of September 14, 1994, ERM is required to submit documentation to demonstrate the reasonableness of the proposed indirect salary cost and profit factor. Enclosed is a copy of the Title 3 Cost Eligibility Guidelines for Municipal-Consultant Contracts to assist you in this effort.

The New York State Department of Environmental Conservation (NYSDEC) has also reviewed Metro North's Application for State Assistance dated September 6, 1994. As we discussed on October 4, 1994, this application should have been submitted to cover both OU-I and OU-II. The present application only covers OU-II. In addition, Attachment No. 7 (Resolution) is incomplete as it does not authorize William Aston, Vice President, Capital Program to act on behalf of the Metro North Commuter Railroad Company in all matters related to financial assistance. Further, this resolution does not include a commitment by Metro-North to fund its share of the costs. In this regard, enclosed is the Department's standard Resolution Form which should be used in its place.

If you have any questions, please call me at 518-457-1641.

Sincerely,



Thomas Gibbons
Engineering Geologist
Bureau of Central Remedial Action
Division of Hazardous Waste
Remediation

cc: R. Cozzy
C. Vasudevan
J. Eckl
R. Burger
A. Klaus

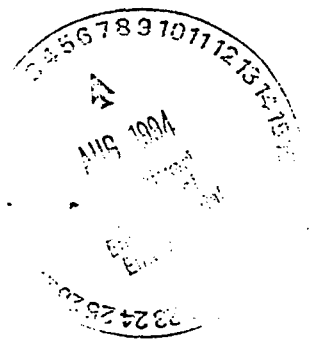


STATE OF NEW YORK
DEPARTMENT OF LAW
ALBANY, NY 12224

G. OLIVER KOPPELL
Attorney General

JAMES A. SEVINSKY
Assistant Attorney General in Charge
Environmental Protection Bureau

VAL WASHINGTON
Deputy Bureau Chief
Environmental Protection Bureau



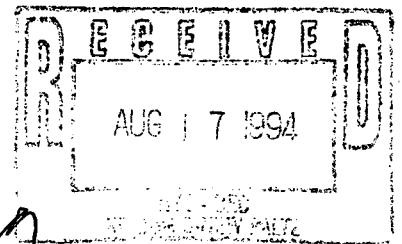
August 4, 1994

Honorable Joseph Harris
Justice of the Supreme Court
Supreme Court Chambers
Albany County Courthouse
Albany, NY 12207

Len

ME

8/27



RE: Metro-North Commuter Railroad Co. v.
Thomas C. Jorling, et al.

Dear Justice Harris:

In accordance with my conversation on August 1st with your law secretary, please find enclosed herewith two original Final Stipulations of Discontinuance (Stipulation) in the above matter. If you find that all is in order, I would appreciate your executing both documents and returning them to me in the enclosed stamped self-addressed envelope, I will see to it that they are filed and distributed appropriately.

Petitioner originally commenced the underlying Article 78 proceeding by Notice of Petition, verified on January 3, 1989 and subsequently amended on July 18, 1989. In an effort to resolve the differences of the parties the matter was marked off the calendar pending settlement negotiations. The document before you is the culmination of that settlement effort. The provisions of the agreement generally provide as follows:

The Proposed Stipulation requires Metro North to complete an approved Environmental Benefit Project with the value of at least \$200,000.00. In addition to resolving the Article 78 proceeding by ordering remediation of the Harmon PCB lagoon and funding of the Benefit Project, the Stipulation requires groundwater investigations and remediation at Metro North's Harmon Yard, Brewster Yard, Port Jervis Yard and North White Plains Yard. The Stipulation, which can be enforced through both administrative and judicial proceedings, includes stipulated penalties regarding the groundwater investigation and remediation.

As evidenced by their signatures all parties are in agreement with this resolution and would appreciate your execution of the document as soon as possible. Should you have any questions please do not hesitate to contact me. Thank you very much for your attention to this matter.

Very truly yours,

DOUGLAS H. WARD
Assistant Attorney General
Environmental Protection Bureau
(518) 474-1968

Enclosures

CC: Robert K. Davies, Esq.
J. Kevin Healy, Esq.

FBI copies to
Lacey
Bitwa
Ferry
Klaiss ✓

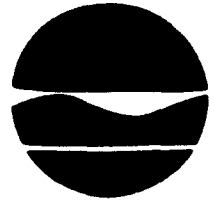
New York State Department of Environmental Conservation

REGION 3

21 South Putt Corners Road

New Paltz, New York 12561

(914) 255-5453



TO: Distribution

DATE: 10/3/91

SUBJECT: M/N Crater/Harman MOU - Stipulation
Compliance Dates:

Attached are the respective dates
for the two subject documents.

Both stip : MOU have been
a hardy been provided to your program
This is an F/I for now but
retain for future use.

Distribution

Haw
myz

R Aldrich

P Doshna

R Pergadia

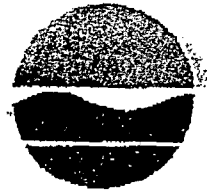
T. Rudolph

T. McEllik

Albert K. Lauer

SIGNATURE

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233



Commissioner

AUG 23 1994

NYS-DEC
REGION 3-NEW PALTZ

TO:

Al Klaus, RSHWE Reg 3

FROM:

BARBARA VEGA / J. Kowalczyk

DATE:

8/22/94

NUMBER OF PAGES:

7 + cover

FOR VERIFICATION OR PROBLEMS CALL:

Barb

AT

OUR RECEIVING TELECOPIER NUMBER: (518) 485-8478

al-

Per Joe Kowalczyk's request, I am sending you a ~~ee~~ summary of Metro-North's ^(simulation only) compliance schedule requirements, and also a letter containing the EBF project information for you to follow through on.

You should receive the summary of MN's MDU compliance schedule within a few days.



New York State Department of Environmental Conservation

MEMORANDUM

TO: Al Klauss RSHWE, Region 3 New Paltz
FROM: Barbara Vega, Legal Assistant, Div. of Env. Enforcement
SUBJECT: Summary of Compliance Requirements of Metro-North's
Stipulation of Discontinuance
DATE: August 22, 1994

STIPULATION OF DISCONTINUANCE

II. Environmental Benefit Project p. 10)

Metro-North shall submit to DEC, an approved environmental benefit project plan with a cost and/or value of at least \$200,000.00. (p. 10) The approved EBP is described in Karen Timko's 1/12/94 letter to J. Kowalczyk. By letter to J. Kowalczyk dated 8/16/94 (attached), Metro-North has requested written approval of the previously approved project.

III. Groundwater Investigations and Remediations (p. 10)

A. Preliminary Site Contamination Studies - Studies shall be submitted for each facility in accordance with the following schedules:

Effective Date of Stipulation (EDS) - 8/5/94.

Harmon Yard	-	12 months after the EDS (8/5/95)
(at p. 13)		
Brewster Yard	-	15 months after the EDS (11/5/95)
(at p. 13)		
Port Jervis	-	18 months after the EDS (2/5/96)
(at p. 13)		
No. White Plains Yard	-	21 months after EDS (5/5/96)
(at p. 13)		

B. Site Investigation and Remediation Studies (p. 13)

Within 60 days after Preliminary Site Contamination Study is approved by DEC, Metro-North shall submit workplans for each facility for Site Investigation and Remediation Studies in accordance with the following schedules:

Harmon	-	9 months after WP approval (p. 14)
Brewster	-	6 months after WP approval (p. 14)
Port Jervis	-	6 months after WP approval (p. 14)
N. White Plains	-	6 months after WP approval (p. 15)

C. Additional Investigation and Remedial Activities
(p. 15)

1. Within 30 days after completion of Site Investigation & Remediation Study for each facility, Metro-North and DEC shall meet regarding conducting such activities. (p. 15)

D. Stipulated Monetary Amounts (p. 15)

3. Begin to accrue on the first day in violation and continue to accrue through final day of correction. Due and payable within 21 days of receipt of notification of assessing penalty. (p. 16)

E. Dispute Resolution (p. 18)

a. Within 5 business days of receipt of written notice of DEC's disapproval of matters in dispute, Metro-North must make written request to meet with DEC staff and discuss. (at p. 19)

IV. EQBA Reports (p. 21)

A. Within 30 days after the EDS (9/5/94) Metro-North shall submit to DEC an application for State assistance and a resolution authorizing the execution of a contract for the State assistance. (p. 21)

B. Within 90 days after the EDS (11/5/94), Metro-North shall submit to DEC an executed State assistance contract. (p. 21)

C. Within 90 day after the EDS (11/5/94) and every six months thereafter, Metro-North shall submit to DEC a report summarizing efforts made in identifying responsible parties associated with the Remedial Program at the Lagoon Site. (p. 21)

V. Lagoon Site Remediation OUI Obligations (p. 22)

B. Remedial Design Contents

Within 90 days after EDS (11/5/94), Metro-North shall submit to DEC a remedial design for the Lagoon Site. (p. 22)

C. Remedial Action Construction and Reporting

1. Within 120 days of DEC's approval of the Remedial Design, Metro-North shall award construction contract for the Remedial Action. (p. 24)

4. Within 60 days after completion of construction, Metro-North shall submit to DEC an O&M Plan. DEC shall notify Metro-North in writing whether it is satisfied that construction activities have been completed. (p. 25)

VI. Lagoon Site Remediation: OUII Obligations (p. 26)

A. RI/FS Work Plan Contents and Submittals

1. Within 60 days after the EDS (10/5/94), Metro-North shall submit to DEC a RI/FS work plan for the Lagoon site. (p. 26)

B. Performance and Reporting of OUII Phase I RI/FS

1. Within 60 days after DEC's approval of the RI/FS work plan, Metro-North shall commence the remedial investigation. (p. 28)

2. Within the timeframe set forth in the RI/FS workplan, Metro-North shall complete the Phase I. (p. 29)

C. Performance and Reporting of Phase II RI/FS (p. 30)

1. Within the timeframe set forth in the RI/FS workplan, Metro-North shall complete the Phase II. (p. 30)

3. Within 30 days after DEC's approval of Phase II, Metro-North shall assist DEC in soliciting public comments on the RI/FS. (p. 31)

VIII. Progress Reports

Metro-North shall submit written quarterly progress reports. (p. 33)

XIII. Entry Upon Site (p. 37)

D. Metro-North shall notify DEC at least 10 working days in advance of commencement of field activities to be conducted pursuant to the Stipulation, and shall provide at least 48 hours advance notice of the commencement of subsequent phases of field activities (p. 39).

XVII. Communications (p. 42)

B. Within 30 days of DEC's approval of any report, Metro-North shall submit to C. Vasudevan a computer media copy of approved report in ASCII format. (at p. 44)

Attachment

AUG-22-1994 15:34 FROM DEE

TO

REG 3 NEW PALTZ P.05

cc: J. Lacey
F. Bifera
C. Vasudevan
J. Kowalczyk
R. Davies
S. Gafar



August 16, 1994

Joseph Kowalczyk, Esq.
New York State Department of
Environmental Conservation
50 Wolf Road
Albany, New York 12233-5500

Re: Stipulation of Discontinuance - Environmental Benefit Project

Dear Mr. Kowalczyk:

In January 1994, Metro-North and NYSDEC reached agreement as outlined in the attached letter dated January 12, 1994, concerning the Environmental Benefit Project referred to in Paragraph II of the Stipulation of Discontinuance ("Stip").

As you know, the Stip has been executed by all parties. In order to comply fully with the requirements of the Stip, and so that I may begin generation of the checks described in the attached letter, I am requesting your written approval of the Environmental Benefit Project previously agreed to and outlined in the attached letter.

Please contact me at (212) 340-2741 if you have any questions.

Very truly yours,

A handwritten signature in cursive script that reads "Karen L. Timko".

Karen L. Timko
Environmental Counsel

cc: C. Bennett
R. Bernard

33582/pf



347 Madison Avenue
New York, NY 10017
Telephone: 212 340-3000

January 12, 1994

Joseph M. Kowalczyk, Jr.
Multimedia Enforcement Counsel
New York State Department of
Environmental Conservation
Albany, New York 12233-5500

Re: Environmental Project

Dear Joe:

Per our conversation during the week of December 20, 1993, I am writing to recap the understanding we have reached concerning an environmental project agreeable to both Metro-North and DEC.

Of the \$200,000.00 to be dedicated to an environmental project, \$116,000.00 of that amount would be given by Metro-North to DEC to be placed in a dedicated account. That dedicated account will be used by DEC as matching funds in furtherance of the Army Corps of Engineers ("ACOE") Hudson Estuary Fish and Wildlife Habitat Restoration Project (the "Study"). The remaining \$84,000.00 would be placed in an escrow or similar interest bearing account while the Study is undertaken. If the Study determines that the ties should be removed from the Croton Estuary and the ACOE determines that it will fund such removal, or if ACOE decides that there are environmental reasons for leaving the ties in place, the \$84,000.00 and interest will be used as matching funds for the Study or, if that is not feasible, the money will be dedicated to another environmental project agreed to by Metro-North and DEC.

If ACOE determines that the ties should come out or that there is no environmental reason for leaving the ties in place, but will not commit to funding the removal of the ties, Metro-North will be permitted to use the \$84,000.00 and accumulated interest to fund the removal of the ties. Any excess money will be used as matching funds for the Study or, if that is not feasible, the money will be dedicated to another environmental project to be agreed upon by DEC and Metro-North.

However, should the ACOE fail to make a determination with respect to the removal of the ties in the Croton Estuary by June 1, 1995 (the projected date for completion of the Study is April

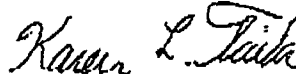
Members of the Board					
Peter E. Sianqi Chairman and Chief Executive Officer	Liyan H. Affinito Bernard B. Beal E. Virgil Conway Warren S. Dohy Barry L. Feinstein	Barbara J. Fife Sally Hernandez-Pinero Herbert J. Libert Prima Mathai-Davis Neil Novesky	Lucius J. Riccio Joan Spence Edward A. Vrooman Alfred E. Werner	Donald H. Nelson President	

JOSEPH M. KOWALCZYK
Page 2
January 12, 1994

1995), Metro-North will be permitted to use the \$84,000.00 and accumulated interest to remove the ties. Any excess money will be used as matching funds for the Study or, if that is not feasible, the money will be dedicated to another environmental project to be agreed upon by DEC and Metro-North. As we discussed, I believe that both ACOE and DEC permits will be required in order to remove the ties so that if there is an environmental basis for leaving the ties in place it will be revealed during the permitting process if it has not already been determined by the Study. If the permitting process does reveal an environmental basis for leaving the ties in place, the \$84,000.00 and associated interest will be used as matching funds for the Study or, if that is not feasible, the money will be dedicated to an alternative environmental project.

In addition, DEC will consider adding a Metro-North representative to the DEC Hudson River Habitat Restoration Advisory Committee.

Very truly yours,



Karen L. Timko
Environmental Counsel
(212) 340-2741

[19086/KT]/26

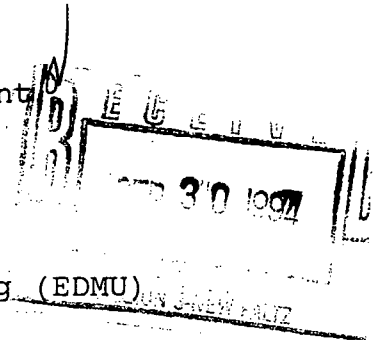
cc: R. Bernard
K. Healy
R. Rubinfeld
C. Bennett
D. Ward (NYS Attorney General's Office)



New York State Department of Environmental Conservation

MEMORANDUM

TO: Al Klauss, RSHWE, Region 3 New Paltz
 FROM: Barbara Vega, Legal Asst., Div. of Env. Enforcement
 SUBJECT: Summary of Compliance Requirements of Metro-North
 Memorandum of Understanding
 DATE: August 30, 1994



Effective Date of Memorandum of Understanding (EDMU)
 8/19/94.

I. Environmental Compliance Review (p. 3)

1. Within 60 days of the EDMU (10/19/94), Metro-North shall submit draft Request for Proposals (RFP) work statement for the performance of an Environmental Compliance Review (ECR) with respect to each facility. (p. 3)

2. The RFP shall call for proposals to include, among other things, a schedule for completion of the projects for each facility according to the following timetable: (p. 4)

Harmon - 9 months from date of contract award

Brewster - 12 months from date of contract award

Port Jervis 15 months from date of contract award

N. White Plains 18 months from date of contract award

4. Within 10 days after the period for submittal of proposals has closed, Metro-North shall submit a list of consultants who have responded. (p. 5)

5. Within 5 months of receipt of written comments from DEC, Metro-North shall submit the proposal provided by the candidate it intends to select, and a proposed scope of work. (p. 5)

5. (f). If DEC disapproves the proposed consultant, Metro-North shall submit an alternative candidate within 30 days (or in accordance with another agreed timetable) of receipt of DEC's notice. (p. 6)

6. Within 60 days after receipt of DEC's approval, Metro-North shall execute a contract for the performance of the environmental compliance review. (p. 6)

9. Metro-North shall cause the consultant to submit draft reports of results for each facility to DEC and Metro-North. Within **60 days** of receipt of draft submittals, DEC and Metro-North may submit written comments to the consultant. Within **90 days** after submittal of draft report, consultant shall submit a final report for each facility. (p.7)

13. Within **30 days** after submittal of the Final Report, Metro-North may submit written response to any disagreements with respect to consultant's findings. (p. 8)

14. Within **120 days** of submittal of the Final Report, Metro-North shall submit its proposals for correcting any violations identified by the consultant. (p. 8)

15. Within **one year** after each Final Report is submitted, Metro-North shall submit a report detailing environmental compliance progress. (p. 9)

II. Environmental Management Evaluation

1. Within **60 days** of the EDMU (10/19/94), Metro-North shall submit a draft "Environmental Management Evaluation" (EME) work statement for use in a RFP. (p. 10)

4. The RFP shall require completion of the EME for each facility in accordance with the following timetable: (p. 11)

Harmon - Within **3 months** after completion/acceptance of the ECR for Harmon.

Brewster - Within **3 months** after completion/acceptance of the EME for Harmon.

Pt. Jervis Within **6 months** after completion/acceptance of the EME for Harmon.

N. White Plains Within **9 months** after completion/acceptance of the EME for Harmon.

6. Within **10 days** after the period for submittal of proposals has closed, Metro-North shall submit list of consultants to DEC. (p. 12)

7. Within **5 months** of receipt of written comments from DEC, Metro-North shall submit the proposal provided by the intended candidate. (p. 12)

8. If DEC disapproves of the proposed consultant, DEC shall notify Metro-North. Metro-North shall submit for approval an alternative candidate within **60 days** of DEC's notice. (p. 13)

12. Within **one year** after each EME report has been submitted, Metro-North shall submit a report detailing progress made in response to recommendations set forth in the EME reports. (p. 15)

III. Best Management Practices Plan (BMP)

2. The BMP shall be submitted in accordance with the following timetable:

- (a) Metro-North shall submit Harmon BMP Plan within **6 months** after the completion of the ECA and the EME for Harmon. (p. 16)
- (c) Metro-North shall put in place the structural elements of the Harmon BMP within **3 months** after DEC approval. (p. 16)
- (d) Within **one year** after the date DEC approves Harmon BMP, Metro-North shall submit a progress report. (p. 17)
- (e) Metro-North shall submit a BMP plan for the Brewster Facility within **90 days** of the report required by subparagraph II, and shall implement non-structural elements of plan within **3 months** after DEC approval. (p. 17)
- (f) Metro-North shall submit a BMP plan for the Port Jervis facility within **5 months** after submittal of the report, and shall implement the non-structural elements within **3 months** after DEC approval. (p.17)
- (g) Metro-North shall submit a BMP plan for the North White Plains facility within **7 months** after submittal of the report, and shall implement non-structural elements within **3 months** after DEC approval. (p. 17)

IV. Environmental Monitor

- 2. (a) Within **30 days** of the EDMU (9/19/94), Metro-North shall pay \$105,000.00 to DEC. (p. 18) Subsequent quarterly payments shall be made to meet the next nine month's anticipated expenses. (p. 19)

5. Within 30 days of receipt of quarterly invoice, Metro-North shall payment to the Office of Environmental Monitors. (p. 20)

9. Within 30 days after the EDMU (9/19/94), Metro-North shall name a "contact person" for the Environmental Monitor. (p. 20)

V. Progress Reports

Beginning 6 months after the EDMU (2/19/95), and every six months thereafter, Metro-North shall submit progress reports. (p. 21)

VII. Stipulated Amounts

4. Stipulated penalties begin to accrue on the first day of violation and continue to accrue through the final day of correction. (p. 24)

VIII. Dispute Resolution

3. (a) Within five business days of receipt of DEC's written disapproval of any matters in dispute, Metro-North must make written request to DEC's staff to discuss circumstances. (p. 27)

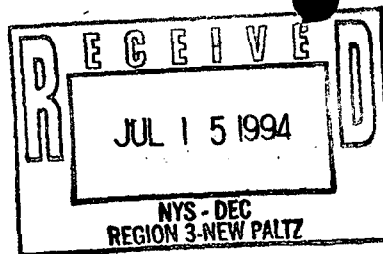
IX. Access

3. Metro-North shall provide DEC at least 10 working days in advance of commencement of field activities, and shall provide 48 hours advance notice of commencement of subsequent phases of activities. (p. 29)

X. Notice of Property Transfer

If Metro-North relinquishes any interest in the facilities, it shall notify DEC, in writing, no fewer than 60 days before date of conveyance. (p. 30)

cc: J. Lacey
F. Bifera
C. Vasudevan
J. Kowalczyk
R. Davies
S. Gafar



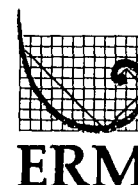
ERM-Northeast

175 Froehlich Farm Blvd.
Woodbury, NY 11797
(516) 921-4300
(516) 921-5679 (Fax)

14 July 1994

VIA FEDERAL EXPRESS

Chittibabu Vasudevan, Ph.D., P.E.
Chief, Eastern Projects Section
Bureau of Hazardous Waste Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233



Christopher K. Bennett, P.E.
Deputy Director, Facilities Engineering
Metro-North Railroad Company
347 Madison Avenue
New York, NY 10017

Re: Harmon Railroad Yard Wastewater Treatment Area (OU-1)
Final Design Deliverable

Dear Sirs:

Enclosed please find three copies each of the following final documents:

- Field Sampling and Analysis Plan (FSAP); and
- Effectiveness Monitoring Plan (EMP).

These documents constitute, in part, the final design submittal for the above referenced project and have been prepared in accordance with the approved Remedial Design/Remedial Action Work Plan.

These documents have been revised to incorporate comments received from NYSDEC and Metro-North on the draft FSAP and EMP as well as modifications based on ERM's internal QA/QC review.

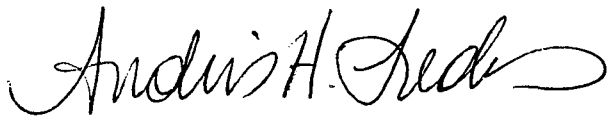
Please note that the draft Construction Quality Assurance Project Plan (CQAPP) and the Contingency Plan (CP) are currently under review by Metro-North and the NYSDEC. The CQAPP and CP will be finalized and forwarded to NYSDEC and Metro-North once comments on these documents have been received by ERM.



Chittibabu Vasudevan and
Christopher K. Bennett
14 July 1994
Page 2

If you have any questions or would like additional copies, please do not
hesitate to contact Scott Ranger, Rob Rivera or me at (516) 921-4300.

Very truly yours,
ERM-Northeast, Inc.



Andris H. Ledins, P.E.
Senior Associate

AHL:btm

enclosures

cc: J. McCullough (NYSDEC)
A. Klauss (NYSDEC) w/ encl.
M. VanValkenburg (NYSDOH) w/ encl.
K. Timko (Metro-North)
M. Mehta (Metro-North)
J. Perazzo (ERM)
J. Iannone (ERM) w/ encl.

Please distribute
attached second
copy to Erin.

360010

Meeting Minutes
Metro-North Railroad Company
June 10, 1994

Location: New York State Department of Environmental Conservation
21 South Putt Corners Road
New Paltz, New York

Attending: Chittibabu Vasudevan (NYSDEC)
Jeff McCullough (NYSDEC)
Al Klauss [Temporarily] (NYSDEC)
Erin O'Dell Keller [Temporarily] (NYSDEC)
Chris Bennett (MNRC)
Mukesh Mehta (MNRC)
John Iannone (ERM)
Andris Ledins (ERM)
Rob Rivera (ERM)



cc: Attendees
K. Timko (MNRC)
D. Evans (NYSDEC)

1. Personnel Changes:

J. McCullough indicated that he and Vasu would not be involved with the Project following approval of the final design. Dan Evans of NYSDEC will be the Construction Project Manager for the OU-I Remedial Action.

2. Pre-Final Design Submittal Comments:

J. McCullough offered the following comments regarding the pre-final design submittal. Comments will be forwarded in writing next week:

- a. Limit Site Preparation payment item (includes mobilization and demobilization) to 5% of the Contract Price, to prevent bidders from front-loading the Contract Price.
- b. Items 01517.A, .B, and .C - do not include instruction on bid form to multiply price by 4 (for crew size) to obtain total cost. Have bidders complete the price item as a total cost. R. Rivera stated that any necessary prorating due to varying crew sizes would be described in the Measurement and Payment Section of the contract documents.

Have
Tim R
R
9/13

- c. Payment Items 02210.B, .C, .D, .E, .F, .G, and 02225.B are not eligible for Title III Environmental Quality Bond Act (EQBA) reimbursement. Also, the design costs for non-Title III work need to be broken out separately. J. McCullough then distributed a copy of Title III (EQBA) Mandatory Provisions to A. Ledins. These must be incorporated into Metro-North's boilerplate for the disposal contract and site work contract.
- d. Vasu stated that the contract documents must require all of contractor's on-site employees to be trained in accordance with OSHA 1910.
- e. Vasu stated that the contract documents must not include any provisions for shutdown of work due to wind speeds. J. Iannone confirmed that the documents only require a work stoppage based on airborne dust levels, as described in the Community Air Monitoring Plan.



3. Project Plans:

Vasu requested a status report regarding submittal of the following project plans, which have not yet been received by NYSDEC:

- Field Sampling & Analysis Plan (FSAP)
- Effectiveness Monitoring Plan (EMP)
- Construction Quality Assurance Project Plan (CQAPP)
- Contingency Plan (CP)
- Community Air Monitoring Plan (CAMP)
- Public Participation Plan

C. Bennett distributed copies of the draft FSAP and EMP for NYSDEC review.

J. Iannone and R. Rivera indicated that the CQAPP, CP, and CAMP should be completed by early next week. Completion of the CAMP will depend on resolution of the Zone B2 and Zone C soil excavation issue.

C. Bennett stated that Metro-North would begin preparation of the Public Participation Plan.

J. Iannone raised the issue, relative to completion of the CAMP, of whether NYSDEC was going to require soil excavation below the lagoon sludge, as stated in Jim Hardy's (NYSDEC) letter of 8 April 1994 to Metro-North. J. Iannone specifically asked for clarification of the following sentences in the letter:

"We also reserve the right to require further actions, including soil excavation, ... if those actions are deemed necessary..."

and

"You are required to operate those [air sparging and vacuum extraction] systems as necessary to remediate that area"

Vasu and J. McCullough stated that they were not aware of Jim Hardy's letter. Vasu indicated that Al Klauss of NYSDEC Spills Bureau would have to address the issue of further soil excavation below sludge. (An effort was made to locate A. Klauss)



These questions were then discussed further as described in items 4 and 5 below.

4. Soil Excavation Below Sludge:

(Al Klauss joined the meeting.)

J. Iannone expressed the need to address any requirements for excavation of Zone B2 and C soils and the scope of any required work now, since the contract documents are being finalized. It was explained that a requirement to excavate this soil would entail a significant delay in implementing the work required by the Record of Decision. The Lagoon sludge cannot be removed, which would expose the underlying soil, until excavation and disposal methods for this soil have been finalized.

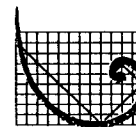
A. Klauss stated that the Division of Spills Management wants high concentrations of TPH in soil removed, based on visual and odor observations. The worst case sample from the Pre-Design Test Boring Program was 64,000 ppm (6.4%) of TPH. NYSDEC would not necessarily require 64,000 ppm contamination to be removed, rather, a decision would be based on field observations following sludge excavation.

J. Iannone and J. McCullough stated that the Pre-Design Test Boring Program revealed analytical, visual and olfactory signs of petroleum down to 20 feet below grade. Al Klauss was asked if the Division of Spills Management intends to require all of this material to be removed? A majority of the material is located below ground water.

C. Bennett stated that the air sparging and venting systems will address the remediation of soil below the sludge. A. Klauss indicated that Jim Hardy may have had a change of heart regarding removal, after discussions with other people within the Division of Spills Management.

J. Iannone indicated that material below the water table is not typically required by the Division of Spills Management to be removed. As discussed earlier in the meeting, a decision by NYSDEC on possible soil excavation requirements needs to be made during design.

The applicability of the "STARS" memo was discussed. J. Iannone's interpretation was that STARS addresses the management of soil which has been excavated, and is not intended to determine which soils require removal. Also, the STARS memo specifically identifies in-situ treatment of petroleum hydrocarbon soil, the approach proposed for the Harmon Yard Lagoon, as an acceptable remediation approach.



ERM

A. Klauss indicated that he would talk to Jim Hardy to try and resolve this issue, and also indicated that J. Iannone and C. Bennett should talk to Mr. Peter Doshna of NYSDEC regarding this issue. Metro-North will notify Vasu of progress regarding discussions with the Division of Spills Management.

5. Air Sparging and Venting:

Vasu stated that NYSDEC's intention is to have these systems turned on immediately following completion of construction.

J. Iannone explained the intended method for implementing the venting and sparging systems due to the heterogeneity of the material in Zones B2 and C.

He advised the attendees that the piping system was laid out based on a conservative design and would be constructed as shown on the Drawings. Once the cap was in place, a pilot study will be conducted under actual field condition to ascertain flow, vacuum pressure and off-gas treatment requirements. If needed, a treatment system would then be designed and constructed utilizing this data. Vasu agreed with this approach.

Vasu asked if a mass balance for hydrocarbons existed. J. Iannone stated that Jim Perazzo has done this for the target chemicals identified in the ROD, as part of the Pre-Design Test Boring Program. Vasu requested ERM revise the evaluation just for TPH.

Issues related to the criteria to be used to monitor the effectiveness of the air sparging and vapor extraction system were discussed. J. Iannone indicated that during operation, the venting system could be monitored for carbon dioxide levels as a performance criteria to measure the organic mass removed. The reason for this is that the total mass of volatile organic compounds in Zones B2 and C is small and will probably be quickly stripped off. The balance of the organic mass is primarily petroleum hydrocarbon compounds with low volatilization rates. Although

the majority of these compounds will probably not be removed through volatilization, their concentrations will decrease through the biodegradation that will be undertaken by the oxygen supplied through the air sparging system. Monitoring for carbon dioxide can be used to monitor the level of biological activity within these zones. That is, the level of carbon dioxide, a by-product of biological degradation, may be used as an indicator of biological activity and the rate at which petroleum hydrocarbon compounds are being destroyed. DEC suggested that Metro-North develop an approach for evaluating the effectiveness of the system, and prepare a formal document.



J. Iannone stated that the air emissions from the venting system will have to be tested and, if necessary, treated. This is a new element to the remedy as outlined in the ROD and in subsequent documents (e.g., the Remedial Design and Remedial Action Work Plan) and suggested that it be discussed at the next citizen's group meeting and the next public meeting. NYSDEC agreed.

J. Iannone mentioned that the concurrent operation of the venting/sparging system and the recovery wells may not be possible as sparging may raise the water table and show an incorrect gradient across the sheeting. NYSDEC will resolve concurrent operation issue.

J. Iannone indicated that the substantive requirements of a NYSDEC air permit may have to be complied with during design and operation of the venting system. C. Bennett inquired as to whether carbon dioxide from the venting system could be fed into the WWTP processes. The biomass in the treatment system may reduce some of the compounds in the off-gas and diminish the need for off-gas treatment. NYSDEC did not oppose consideration of this approach.

Vasu asked if air from the venting system could be recycled to eliminate the point discharge. J. Iannone indicated that this is not possible, since oxygen from the sparging system is used during bioremediation and transformed into carbon dioxide before it is vented. Eventually, most oxygen would be depleted.

6. Community Air Monitoring Plan:

J. Iannone indicated that the community requested that air monitoring conducted at elevations greater than 5 feet in some areas. Therefore, the Community Air Monitoring Plan (CAMP) will be revised so that real-time air monitoring will be performed at the four stationary air monitoring stations for the first week of construction, at 5, 10, 15, and 20 feet above grade. Elevations at which the highest concentrations of respirable particulates are found will be identified, and subsequent real-time air

monitoring during construction will be conducted at these elevations. NYSDEC approved this approach.

J. Iannone and R. Rivera indicated an intention to use plastic pipe for the multiple elevation real-time air monitoring. A. Ledins expressed reservations due to bending and buckling of pipes, and suggested steel pipe. C. Bennett suggested using galvanized top rail (from cyclone fencing) which Metro-North may have at the Yard.

NYSDEC stated that the community wants receptors identified in CAMP. J. Iannone presented community receptor map from CAMP (i.e. the revised Fig. 2-2). NYSDEC stated that St. Agnes School and Eagle Bay Condominium (south of St. Augustine) should be added to Figure 2-2 of CAMP.



J. Iannone stated that the soil excavation issue must be resolved before finalizing the CAMP.

J. Iannone stated that the PCB Risk Assessment will be a separate document. The Risk Assessment calculated potential carcinogenic risks due to PCBs based on the PCB action level defined in the CAMP as $1.0 \mu\text{g}/\text{m}^3$. The calculated additional potential carcinogenic risk, based on a 10 year old child at the perimeter boundary for 10 hours per day for 30 days exposed to $1.0 \mu\text{g}/\text{m}^3$ of PCBs was 1.2×10^{-6} . This is within the USEPA risk range of 1.0×10^{-4} to 1.0×10^{-6} , but slightly higher than the USEPA 1.0×10^{-6} point of departure. The risk assessment also calculated that a $0.8 \mu\text{g}/\text{m}^3$ action level for PCBs would generate a potential carcinogenic risk of 1.0×10^{-6} .

NYSDEC stated that the CAMP should be revised to include a reference to this assessment and an explanation that the $1.0 \mu\text{g}/\text{m}^3$ PCB action level is a maximum value and the $100 \mu\text{g}/\text{m}^3$ action level defined in the CAMP for respirable particulates, which act as a carrier mechanism for PCBs, will limit the emission of PCBs to between 10 and 20 percent of the PCB action level. As a result, the potential risk associated with PCBs will be less than 1.0×10^{-6} .

7. Pre-Final/Final Design Issues:

C. Bennett asked whether ERM has made any changes to Contract Drawings since pre-final design submittal 4/29/94. R. Rivera indicated that ERM had only finalized the existing utility drawing, which would be forwarded to Metro-North for an accuracy review.

C. Bennett stated that Karen Timko has received information that USEPA does not consider the anti-dilution rule to apply to the components of the Old Wastewater Treatment Plant to be decommissioned and demolished.

Therefore, demolition material may be disposed of based on the actual concentrations of PCBs. Demolition will proceed the week of June 13, 1994.

Vasu requested that Metro-North notify the community that demolition activities would commence soon. C. Bennett will send a notification letter to the Village of Croton manager, and will copy NYSDEC.

Vasu requested that the Contingency Plan address a scenario where none of the TSCA incinerators are operational.

C. Bennett asked when drawings and specs could be finalized in light of NYSDEC's minor comments.



R. Rivera indicated that ERM will be making minor changes to the Pre-Final Design regarding consistency and accuracy, but had not revised documents yet, since ERM was awaiting Metro-North and NYSDEC comments. ERM requested three weeks to complete these revisions. Due to July 4 holiday, ERM proposed to submit final documents July 8, 1994. This schedule assumes NYSDEC will not require further soil excavation below lagoon sludge. All parties were agreeable to this schedule.

Vasu questioned the cost of sludge incineration of \$0.63 to \$0.70 per pound, and whether sludge solidification was required in the ROD. A brief discussion took place regarding the incineration industry and how rates are established and impacted by seasonal events, current work load, etc. The decrease in PCB incineration costs over the past few years and the anticipated operation of a new PCB incinerator were discussed.

J. Iannone stated that solidification of sludge was not required in the ROD, but by doing this free liquids will be removed and the sludge solidified in order to ensure safe transportation by minimizing the potential of a spill.

C. Bennett requested ERM to develop a list of bidders. Although the project will be advertised publicly for general bid, Metro-North wants to notify qualified bidders directly.

Metro-North may advertise in August, and is planning a 30 day bid period, with award in mid-October.

Vasu indicated approval of the draft construction schedule which was forwarded with the 4/29/94 pre-final design cover letter.

8. Public Meeting:

C. Bennett requested that ERM prepare a figure of the proposed real-time air monitoring poles for presentation at the next public meeting.

Vasu suggested that we hold two days of Availability Sessions prior to the next public meeting. During these Availability Sessions, representatives of NYSDEC, Metro-North Railroad and ERM-Northeast will be present at the Village of Croton Municipal Building to discuss the planned remediation with the public. The public will be invited to attend at their convenience during these sessions. No formal presentation will be given but representatives will answer specific questions. Vasu suggested the following schedule:



First Availability Session (held the day prior to the Public Meeting):

Times: 2:00 PM to 5:00 PM
and
7:00 PM to 9:00 PM

Second Availability Session (held the day of the Public Meeting):

Times: 10:00 AM to 1:00 PM
and
3:00 PM to 5:00 PM

8:00 PM Public Meeting

The topics to be covered include:

1. Pre-Design Test Boring Program
2. Community Air Monitoring Plan (CAMP)
3. Remedial Action
4. Operable Unit II

It was generally agreed that a one-page Fact Sheet for each topic must be prepared. *{Note: The fact sheet for item 2, the CAMP, should be part of the fact sheet for the Remedial Action, item 3. Karen Timko has prepared a draft fact sheet for topics 1, 2 and 4. ERM will develop a Fact Sheet for item 3.}* In addition, a map of the Site and a copy of the remediation schedule should be included. ERM will prepare a draft of this material (Erin O'Dell Keller of NYSDEC has sent an example to be used for format).

Possible dates for the Public Meeting and the two days of Availability Sessions were discussed, and were tentatively identified as:

- July 11, 12, 13 and 14

- July 19 and 20

Erin joined the meeting and suggested not scheduling Availability Sessions or Public Meetings on Monday or Friday. C. Bennett is to check on the availability of the Village of Croton Municipal Building meeting room for these dates.

Tentative dates were narrowed down to July 13 and 14, subject to meeting room availability. The meeting should not be scheduled for the same night as a Town Board meeting.

Fact Sheets will be mailed to the public, and revised fact sheets (omitting invitation to attend meeting) will be prepared for distribution at the public meeting. *{Note: The date of the public meeting has subsequently been scheduled for 19 July 1994. A meeting with the Harmon Yard Lagoon Citizen's Committee is scheduled for the evening 6 July 1994.}*



9. NYSDEC stated that the NYSDEC on-site representative during the construction activity will not be Jeff McCullough as previously planned. The NYSDEC environmental monitor to be assigned to the Harmon Railroad Yard will monitor the Lagoon remediation work. The Harmon Railroad Yard NYSDEC environmental monitor will be hired by the NYSDEC and will be funded by Metro-North Railroad. The environmental monitor will report to Al Klauss of the NYSDEC.
10. Post-Meeting Discussion with Mr. Peter Doshna of the NYSDEC Division of Spills Management

Following the formal meeting, C. Bennett met with P. Doshna, and the two discussed the soil excavation issue.

P. Doshna was not aware of all of the specific components of the project. (e.g. containment, sparging and capping). P. Doshna requested that a document be prepared that describes the remedy and addresses the following issues. It should be concise and include:

- Mass Diagram (hydrocarbons) - depicting distribution of TPH with depth.
- Discussion of hydraulic control.
- Placement of monitoring wells outside sheeting to gauge the potential migration of contaminants.
- A discussion of deed restrictions.

ERM will submit this information to Metro-North next week.



STATE OF NEW YORK DEPARTMENT OF HEALTH

Center for Environmental Health

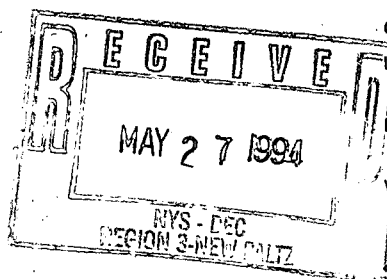
2 University Place

Albany, New York 12203-3399

Mark R. Chassin, M.D., M.P.P., M.P.H.
Commissioner

Paula Wilson
Executive Deputy Commissioner

May 24, 1994



OFFICE OF PUBLIC HEALTH

Lloyd F. Novick, M.D., M.P.H.
Director

Diana Jones Ritter
Executive Deputy Director

William N. Stasiuk, P.E., Ph.D.
Center Director

Mr. Thomas Gibbons
Division of Hazardous Waste Remediation
NYS Dept. of Environmental
Conservation
50 Wolf Road
Albany, New York 12233

RE: Revised Work Plan (OU2)
Harmon Railroad Yard/Lagoon
Site #360010
Croton-on-Hudson, Westchester Co.

Dear Mr. Gibbons:

I have reviewed the May 1994 Addendum to the Remedial Investigation/ Feasibility Study Work Plan for Operable Unit Two. I find it acceptable as the modifications made to the document adequately address my previous comments and concerns.

Should you wish to discuss this work plan further, I may be reached at (518) 458-6305.

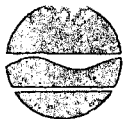
Sincerely,

Mark VanValkenburg
Environmental Health Specialist III
Bureau of Environmental Exposure
Investigation

sg/94144PRO0098

cc: Dr. G.A. Carlson/Mr. S. Bates
Ms. E. Hendrick - WCDOH
Mr. S. Ervolina/Dr. C. Vasudevan - DEC
Mr. R. Pergadia - DEC, Region 3

Handwritten notes: "Haw", "my", and "431"



New York State Department of Environmental Conservation

MEMORANDUM

TO: Albert Klauss, Division of Solid/Hazardous Waste, Region 3
FROM: Chittibabu Vasudevan, Chief, Eastern Projects Section, BERA, DHWR
SUBJECT: Harmon Yard Lagoon Remediation

DATE: MAY 19 1994

Value

The construction phase of the lagoon remediation is scheduled to begin in October of 1994. A draft copy of the "90%" RD document has been sent to you for review.

It is my understanding that the Stipulation Agreement for lagoon remediation and multi-media Memorandum of Understanding (MOU) would be executed in the near future.

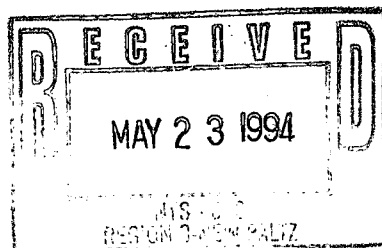
The Memorandum of Understanding has a provision for a full time Environmental Monitor. I have taken the liberty to draft a CC1 form for the Environmental Monitor position provided for in the MOU. Please review this, make the necessary changes and fax this to me at your earliest convenience.

Attachment

Thanks

cc: S. Ervolina
R. Pergadia

*Harmon
my
2/1/94*



Title:

DRAFT

Salary:

Files:

Technical Section:

CC-4 Dated:

Control No.

Budget Action:

Subsequent Action:

STATE OF NEW YORK – DEPARTMENT OF CIVIL SERVICE
CLASSIFICATION AND COMPENSATION DIVISION
THE W. AVERELL HARRIMAN NYS OFFICE BUILDING CA.
ALBANY, NEW YORK 12239

NEW POSITION DESCRIPTION

Prepare a separate description for each new position request, except that one description may cover two or more identical positions in the same organizational unit. Forward original copy only to this Division.

1. Requested Title Environmental Engineer <u>2</u>	2. Title Code	3. Requested Salary Grade or Rate 24	4. REQUESTED JURISDICTIONAL CLASS <input type="checkbox"/> Competitive <input checked="" type="checkbox"/> Exempt <input type="checkbox"/> Non-Competitive <input type="checkbox"/> Labor
5. Department Environmental Conservation	6. Dept./Div. Code 09000	7. Division, Bureau or Institution Hazardous Waste Remediation	8. Suggested Negotiated Unit: PS
9. Section, Unit or Other (Specify) Multi Media Pollution Prevention	10. Geog. Loc. Code Region 3	11. Work Address (Include Building and Room No.) Reg. 3 Sub-Office, 21 S. Putt Corners Rd., New Paltz	
12. Duration of Job <input type="checkbox"/> Permanent <input checked="" type="checkbox"/> Temporary for <u>12</u> Mos. <input type="checkbox"/> Seasonal	13. No. of Positions 1	14. Line Item No. (s)	15. Func. <input type="checkbox"/> General <input type="checkbox"/> Internal <input type="checkbox"/> Spec. Rev. – Fed. <input type="checkbox"/> Flood <input checked="" type="checkbox"/> Spec. Rev. – Other <input type="checkbox"/> Capital <input type="checkbox"/> Enterprise

16. Who will be the immediate superior for this position?
NAME: Albert Klauss

TITLE: Regional Solid and Hazardous Waste Engineer

17. SUPERVISION OVER OTHERS. Give the following information about other positions over which the incumbent of this position will exercise supervision. Attach an additional sheet with this same information if more space is needed.

TITLE	NAME OF INCUMBENT	NATURE OF SUPERVISION
N/A		

18. List the names and titles of persons doing substantially the same kind and level of work as will be done in the incumbent of this new position.

NAME	TITLE	LOCATION OF POSITION

COMPLETE ONLY IF NEW TITLE REQUESTED.

19. What minimum qualifications should be required for this position if filled by means of open-competitive examination?

EXPERIENCE: (List Amount and Type)

EDUCATION:

	Years
High School	<u>4</u>
College	<u>4</u>
Other	

} with specialization

Engineering

ESSENTIAL KNOWLEDGE, SKILLS AND ABILITIES:

LICENSES:

Possess NYS Professional Engineering
License

*A position is in the competitive class unless the Civil Service Commission specifically places it in a different class. If you request non-competitive, exempt or labor, state detailed reasons separately and send directly to the Commission, with a copy of this form, at the time that the classification request is made.

DRAFT

CONTROL NO. _____ DATE _____

JOB POSTING REQUEST

Item No. _____ Title and Grade SG24

Division _____ Actual Work Location New Paltz

Region (if applicable) 3 Expect to Exhaust List: Yes _____
No _____

Status of Item _____

Type of Appointment Permanent

Unique Job Requirements: New York State drivers license, Health and Safety Certification, ability to wear an air purifying respirator. Potential required overtime.

Job Functions (Essential Functions must be clearly delineated):

- *1. On-site monitoring of field investigations including site survey, geophysical work, installation of monitoring wells and the taking of environmental samples (groundwater, surface water, sediment, soil and air, etc.).
- *2. On-site monitoring of construction activities including: excavation and placement of waste and other contaminated medias and placement of geosynthetic and earthen materials; construction of support structures such as roads, culverts, drainage structures, and oil recovery systems.
- *3. The incumbent must have or be capable of completing 40 hour training course in Health and Safety at hazardous materials sites and must be fit tested and capable of wearing an air purifying respirator. Health and safety certification must be maintained.
- *4. Monitor compliance with the Stipulation Agreement, including work plans and contract documents through site inspections, preparation of warning letters to responsible parties, preparation of case reports and case initiation forms and attendance at compliance conferences.

*All functions above are essential to this position.

Authorized Signature

Environmental Engineer D

PERFORMANCE PROGRAM

A. TASKS/OBJECTIVES

1. Participate in activities involved in the investigation and remediation of the Metro-North Harmon Yard Railroad Facility under a Stipulation Agreement and Memorandum of Understanding through the following: monitoring of site survey, geophysical work, installation of monitoring wells, and environmental sampling; the undertaking of necessary paperwork to ensure that all activities are properly documented for reimbursement to Metro-North under EQBA, such as field notes and a project log; monitoring of activities to determine compliance with approved work plan (tasks listed in Item 3 below); observe activities including site security measures, oil mitigation, and any other activities approved by the DEC; review of all documents submitted by Metro-North and its consultant, comply with all DEC Health and Safety Regulations; and, attend public informational meetings.
2. Participate in enforcement activities through the following; the taking of environmental samples, the performing of site inspections, the preparation of Case Initiation Forms and Case Reports, the preparation of Compliance Schedules, the participation at enforcement meetings with the site operator, property owner, or other responsible parties, and testifying at DEC hearings or in State or Federal court.
3. Monitor Stipulation Agreement/Memorandum of Understanding Compliance, including work plan, through site inspections, preparation of warning letters to Metro-North, preparation of Case Reports and Case Initiation Forms, attendance at compliance conferences..
4. Respond to questions from other DEC units, other state or federal agencies, consulting engineers, elected governmental officials and the public and private industries concerning the Harmon Yard Site under the Stipulation agreement.
5. Undertake administrative activities such as: the preparation of the monthly report, time and attendance sheets, vehicle mileage reports, travel vouchers and facility status reports; the processing of FOIL requests including the review of files and the logistics of either having files photocopied or made available for inspection; the preparation of response letters for the signature of the Regional Director, the Commissioner, and/or the Governor; and, under the direction of the program supervisor, participate in the preparation and monitoring of the program work plan.
6. Under the direction of the program supervisor or the Regional Director, undertake or participate in designated projects.

DRAFT

Environmental Engineer 2

B. PERFORMANCE STANDARDS

1. Prepared material will be clear, accurate, well-organized and conform to DEC and Division Policies, Part 375 and TAGM's. All field notes will be neat, accurate and completed prior to leaving the site each day. The project Log Book shall be maintained and updated daily. Both books shall provide enough information to adequately and accurately describe each day's activities and provide information to substantiate completion of reimbursable work tasks. All technical reviews shall be prepared and submitted on a timely basis. Both the Region 3 RSHE or his designee and the Division HWR Project Manager shall be kept informed of all activities in a timely manner.
2. All prepared material will be neat, accurate, well-organized and conform to DEC and Division Policies, Part 375 and TAGM's. All field and meeting notes will be accurate and entered promptly in the files. Reports will be prepared in a timely manner. Attendance at meetings will be prompt; participation will be professional and presented material will conform to DEC and Division Policies, TAGM and Part 375. Testimony at hearings or in court will be accurate and professional.
3. Inspections are thorough and carried-out in a timely manner. A memorandum or inspection report will be prepared to memorialize the inspection. The prepared material shall be consistent with Item 1 above.
4. Response to requests shall be accurate, courteous and conform to DEC and Division policies.
5. All administrative activities shall be neat, accurate, well-organized and submitted or undertaken in a timely manner, consistent with deadlines set by the program supervisor.
6. The tasks shall be carried-out consistent with the requirements of Performance Standards 1 and 2 above.

Supervisor _____ Date _____

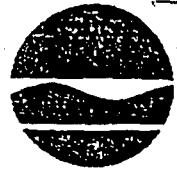
Employee _____ Date _____

Reviewer _____ Date _____

New York State Department of Environmental Conservation

21 South Platt Corners Road New Paltz, NY 12561-1696

FAX (914) 255-3414



360010

Row

Langdon Marsh
Acting Commissioner

FAX COVER SHEET

TO:

Vasu

Albany DHSR

Page 7010

FROM:

J Hardy

Region 3

DATE:

5/19/97

NUMBER OF PAGES

1 + cover

MESSAGE:

Hen

5/24

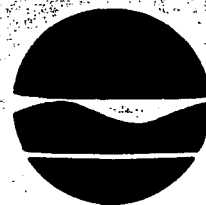
New York State Department of Environmental Conservation

REGION 3

21 South Putt Corners Road

New Paltz, New York 12561

(914) 255-5453



TO: Al Klaus

DATE: 5/19/94

SUBJECT:

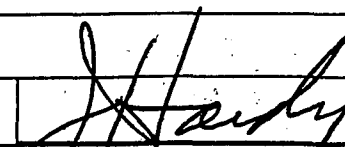
Petroleum Remediation - Cator Harmon

I have raised the potential of ~~some~~
sponge air leakage with proposed
wells design without seal.

Bob Rivera of ERM said he
will address this question in their next
submittal.

Otherwise, the proposed remedial
plan is acceptable

cc P. Dastre


SIGNATURE

Ram 5/16/94

Please review as
appropriate and
provide your
comments to Vasu.
cc to me.

ae

175 Froehlich Farm Blvd.
Woodbury, NY 11797
(516) 921-4300
(516) 921-5679 (Fax)



ERM

TO NYSDEC, REGION 3
21 SOUTH PUTT CORNERS ROAD
NEW PALTZ, NY 12561-1696

GENTLEMEN:

WE ARE SENDING YOU ☒ Attached ☐ Under se☐ Shop drawings☐ Prints☐ Copy of letter☐ Change order☐☐

Return to me
5/16/94 - Jim to provide
comments after response from
consultant.

ig items:

COPIES	DATE	NO.	DESCRIPTION
1			90% DRAFT SPECIFICATIONS
			90% DRAFT DRAWINGS
			UNDER SEPARATE COVER
			VIA FEDEX.

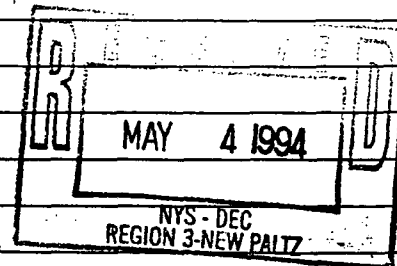
THESE ARE TRANSMITTED as checked below:

☐ For approval☐ Approved as submitted☐ Resubmit _____ copies for approval☐ For your use☐ Approved as noted☐ Submit _____ copies for distribution☐ As requested☐ Returned for corrections☐ Return _____ corrected prints☐ For review and comment☐☐ FOR BIDS DUE

19

☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS



COPY TO _____

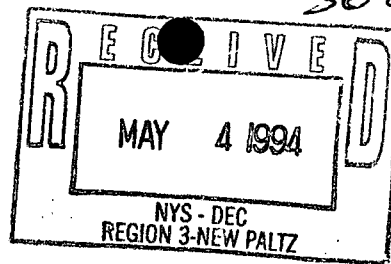
SIGNED: DENISE LABONSKI

Clear copy in
release file

360 010

3 May 1994

Thomas L. Gibbons
Project Manager
Bureau of Eastern Remedial Action
Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233



ERM-Northeast
475 Park Avenue South
7th Floor
New York, NY 10016
(212) 447-1900
(212) 447-1904 (Fax)

**Re: Remedial Investigation/Feasibility Study Work Plan
Operable Unit II
Harmon Railroad Yard/Lagoon
NYSDEC Site No. 3-60-010**



Dear Mr. Gibbons:

This letter transmits three copies of the revised sections of the above referenced RI/FS Work Plan. These sections of the work plan have been revised to incorporate the final comments sent to Mr. Christopher Bennett in your letter dated March 7, 1994 (received at Metro-North Commuter Railroad (Metro-North) on March 8, 1994). The work plan was approved in your March 7 letter, but execution of the plan was made contingent upon the final comments being addressed. The modifications made in this addendum are consistent with your comments as presented in the March 7 letter.

The enclosed only represent the modified pages of the RI/FS Work Plan text, Quality Assurance Project Plan (QAPP) and Health and Safety Plan (HASP). The additions to these sections are outlined to facilitate review. The following portions of this letter also summarize the responses to the individual final comments indicating, where appropriate, how the document was modified. This summary follows the presentation of comments in your letter.

Have
T. Gibbons
Any comments
sent to
T. Gibbons

Reference	Comment Resolution
Page 1-1, Section 1.1	The discussion in the second paragraph concerning the selected remedy for OU-I has been removed from the text.
Page 1-7, Section 1.2	The text has been modified to indicate that the soil component may also include unconsolidated material impacted by the NAPL layer.

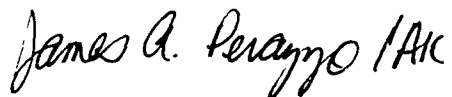
680002\06\TG_3MAYB.LTR

<i>Reference</i>	<i>Comment Resolution</i>
Page 1-8, Section 1.3	The text has been modified to indicate that only one round of ground water samples will be collected from new and existing monitoring wells. The need for additional sampling round will be determined jointly by Metro-North and NYSDEC based on the results of the first round.
Pages 2-9 and 3-24, Sections 2.2 and 3.5.2	The text in Section 2.2 (Page 2-8) has been expanded to include a discussion of the sediment sampling results from the Croton Point Sanitary Landfill RI. The text of Section 3.5.2 (Page 3-25) has been modified to indicate that the sediment data in the landfill report will be used to provide a broader view of the outfall area. Additional sediment sampling will be conducted if, based on the initial results, Metro-North and NYSDEC jointly agree that such sampling is necessary.
Page 3-2, Section 3.1.2	The text has been revised to incorporate the language provided by NYSDEC (Page 3-5).
Page 3-5, Section 3.1.2	The text has been revised to incorporate the language provided by NYSDEC (Pages 3-5 and 3-17).
Page 3-11, Section 3.2.2	The text has been modified throughout this section to indicate that the NAPL borings will be left in place until the completion of the NAPL Delineation task, and that a graded sand will be used in their construction.
Page 3-13, Section 3.2.2	The text has been modified throughout the section to indicate that two-inch diameter wells will be used. As per our telephone conversation on March 21, 1994, the well screens will be installed so that the screens straddle the water table.
Page 3-16, Section 3.2.2	The text has been revised to incorporate the language provided by NYSDEC (Page 3-17).
Page 7-2, Section 7.0	The schedule has been revised to reflect sampling changes discussed above.
QAPP, Comment 1	The text has been modified to include Pesticides/PCBS.

<i>Reference</i>	<i>Comment Resolution</i>
QAPP, Comment 2	The requirements for timing of sample delivery are stated on Page 4-2, no changes have been made to the text.
QAPP, Comment 3	The analytical laboratory will adhere to NYSDEC ASP requirements. No modification to the text was necessary.
HASP, Section 4.0	The text of the HASP (Page 4-2) has been modified to incorporate monitoring of the perimeter of the exclusion zone. Section 4.0 of the HASP has been added to the Work Plan in summary form (Section 3.8, Page 3-29).
General Comments, Para. 1	As stated in Sections 2.2 and 3.5.2, additional sediment sampling will be determined by NYSDEC and Metro-North after the sampling specified in the work plan is implemented.
General Comments, Para. 2	The sediment sampling results will be evaluated in the context of the DFW Technical Guidance.
General Comments, Para. 3	The text has been modified to reflect the collection of one surface water sample in the vicinity of the discharge area in Croton Bay (Work Plan Pages 1-7, 1-8, 1-9, 1-11, Sect. 2-4, Page 3-1, Sect. 3.6, Page 3-31; QAPP Pages 1-1, 1-2, 1-4, 3-1, 3-2, 3-4, 5-1, Table 5-6, Page 9-2). Surface water data from the Croton Point Sanitary Landfill RI will be used to define background surface water quality.

Please call if there are any questions.

Sincerely,
ERM-Northeast

A handwritten signature in cursive script that reads "James A. Perazzo /AK".

James A. Perazzo
Project Director

T. Gibbons
3 May 1994
Page 4

cc: Christopher K. Bennett, P.E. (Metro-North - three copies)
Mark Van Valkenburg (NYSDOH - one copy)
E. Hendrick (WCHD - one copy)
Albert Klaus (NYSDEC - one copy)





STATE OF NEW YORK
DEPARTMENT OF HEALTH

Center for Environmental Health

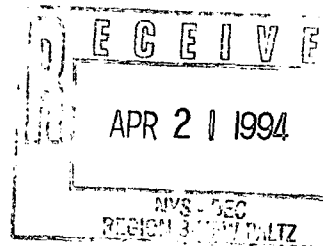
2 University Place

Albany, New York 12203-3399

Mark R. Chassin, M.D., M.P.P., M.P.H.
Commissioner

Paula Wilson
Executive Deputy Commissioner

April 11, 1994



OFFICE OF PUBLIC HEALTH

Lloyd F. Novick, M.D., M.P.H.
Director

Diana Jones Ritter
Executive Deputy Director

William N. Stasiuk, P.E., Ph.D.
Center Director

Mr. Jeffrey McCullough
Bureau of Eastern Remedial Action
Division of Hazardous Waste Remediation
NYS Dept. of Environmental Conservation
50 Wolf Road,
Albany, New York 12233

RE: **Decommissioning/Demo Plan**
Harmon Yard Wastewater Treatment Area
Site # 360010
Croton-on-Hudson, Westchester County

Dear Mr. McCullough:

As a follow-up to our April 8th telephone conversation, I decided to send you this written response. I have completed my review of the February 25, 1994 draft Decommissioning and Demolition Plan for the Old Wastewater Treatment Plant. I believe the draft plan, if carried out as described, will be protective of the surrounding community based on the following items discussed within the plan: access restricted by orange snow fencing and warning tape (section 4.1); dust controls (i.e., polyethylene sheeting on fencing, water misting, temporary work stoppage) (section 4.4); and continuous real-time air monitoring for fugitive dust (section 4.5). For the record, the discussion in section 4.0 regarding worker health and safety training appears to be an OSHA matter outside my scope of review and comment.

Should you wish to discuss this issue further, I can be reached at (518) 458-6305.

Sincerely,

Mark E. VanValkenburg

Mark E. VanValkenburg
Environmental Health Specialist III
Bureau of Environmental Exposure
Investigation

sms/94101PRO0585

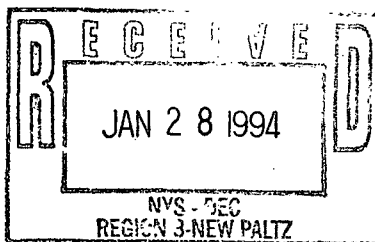
cc: Dr. A. Carlson/Mr. S. Bates
Ms. E. Hendrick, WCDOH
Mr. S. Ervolina/Mr. C. Vasudevan, DEC
Mr. R. Pergadia, DEC Reg.3

clean copy in
releasable file

Al Kanan

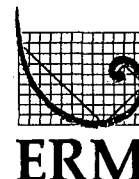
ERM-Northeast

175 Froehlich Farm Blvd.
Woodbury, NY 11797
(516) 921-4300
(516) 921-5679 (Fax)



27 January 1994

Thomas L. Gibbons
Project Manager
Bureau of Eastern Remedial Action
Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233



RE: Remedial Investigation/Feasibility Study Work Plan
Operable Unit II
Harmon Railroad Yard/Lagoon
NYSDEC Site No. 3-60-010

Rec'd
comment
and to Tom
cc: Al
[Signature]
2/3

Dear Mr. Gibbons:

This letter transmits 4 copies of the above referenced RI/FS Work Plan. This work plan incorporates the comments sent to Mr. Christopher Bennett in your letter dated December 10, 1993 which was received at Metro-North Commuter Railroad (MNCR) on December 20, 1993. The modifications to this work plan document are consistent with your comments as modified pursuant to the discussion during the January 10, 1994 meeting at NYSDEC offices in Albany, NY.

This letter also summarizes the response to your individual comments as discussed at the January 10, 1994 meeting indicating, where appropriate, how the document was modified. This summary follows the presentation of comments in your letter.

Reference	Comment Resolution
Pg. i-vii TOC	The table of contents has been revised following the changes to the document.
Pg. 1-7, Sec. 1.2	The reference to "hydraulically downgradient of the Site" was removed from the text. As discussed at the January 10, 1994 meeting, the mere presence of LNAPL will not be part of OU-II unless constituents are present which dictate involvement of hazardous waste remediation.

<i>Reference</i>	<i>Comment Resolution</i>
Pg. 1-8, Sec. 1.3	As discussed at the meeting, the language in the work plan was not meant to forestall additional sampling after the specified monitoring period (actually May 1994 to December 1994). It was only intended to indicate a milestone which concluded data collection and required completion of appropriate reports. The NYSDEC retains the right to continue monitoring and/or delay the preparation of the reports until additional data is gathered.
Pg. 1-9, Sec. 1.3	The implementation of the hydrogeologic model will only occur with the approval of NYSDEC and MNCR. The text has been revised.
Pg. 1-10, Sec. 1.3	As discussed at the January 10, 1994 meeting, the work plan currently indicates the risk assessment to be optional. The relevant portion of the text has been revised. Similarly, the feasibility study will only be done if a risk assessment is completed. Hence, the feasibility study portion of the text has also be revised.
Pg. 3-4, Sec. 3.1.2	The measurement of additional parameters (pH, temperature and specific conductance) have been included in the field protocols. However, these will not be strictly applied in determining whether the wells are developed.
Pg. 3-5, Sec. 3.1.2	The water levels and NAPL thickness in each well will be noted before and after development. The text has been revised. As discussed at the January 10, 1994 meeting, the purpose of evaluating NAPL chemistry is to gain insight as to whether NAPL in different wells is from the same source and/or possibly part of a contiguous plume. It is not to define or quantify the individual Target Compound List (TCL) and Target Analyte List (TAL) constituents in NAPL.

<i>Reference</i>	<i>Comment Resolution</i>
Pg. 3-7, Sec. 3.1.2 and 3.2.2	<p>As discussed at the January 10, 1994 meeting, additional test borings will be drilled at points around the lagoon between areas where wells indicate NAPL is not present. The borings will be fitted with temporary monitoring points only if observations or field tests indicate NAPL is likely to be present. The scope of work in the text has been revised to include six additional test borings.</p> <p>It was also emphasized at the January 10, 1994 meeting that MNCR did not operate in off-site areas which were once part of the railroad yard. Nevertheless, MNCR recognizes the need to investigate NAPL which is shown to be migrating from the Site to off-site areas. MNCR will endeavor to gain access from the County if investigative activities are required along the County road adjacent, and hydraulically downgradient, of the lagoon. This road would be the most likely off-site area to be impacted by NAPL if it were migrating to the west. If under a Phase II investigative effort, access to other areas becomes warranted, MNCR will coordinate this access with NYSDEC.</p> <p>The proposed spacing of test borings/temporary monitoring points has been adjusted in the text to 10 to 100 feet. The final spacing will be made on a location specific basis and will be a field decision made in conjunction with the NYSDEC representative. Also, the text has been revised to indicate that NAPL delineation will continue until no NAPL has been identified.</p> <p>As discussed at the January 10, 1994 meeting, continuous split spoons will be collected at each initial boring which is drilled at a known location of NAPL. All the samples will be used to describe lithology. The samples from the capillary fringe and just into the water table will also be subject to field tests to determine whether NAPL is present. If a subsequent set of borings is installed within 100 feet of the first set, continuous split spoon samples within the unsaturated zone are not necessary for lithologic verification. However, similar soil samples will be collected from the capillary fringe and into the water table at these subsequent locations. If the subsequent set of borings is over 100 feet from the first set, continuous split spoon sampling will be done.</p>

<i>Reference</i>	<i>Comment Resolution</i>
Pg. 3-10, Sec. 3.2.2	The text has been revised to illustrate the NAPL recharge rate in three of the existing monitoring wells which contain NAPL. These recharge rates indicate a measurable quantity of NAPL, if present, should be able to accumulate in a temporary monitoring point within an eight hour period.
Pg. 3-15, Sec. 3.2.2	As discussed at the January 10, 1994 meeting, this comment was dismissed.
Pg. 3-17, Sec. 3.2.2	The additional field parameters will be monitored. The text has been modified.
Pg. 3-19, Sec. 3.4.2	A bar scale has been added to the figure.
Pg. 3-23, Sec. 3.5.2	As discussed at the January 10, 1994 meeting, the number of sample locations on the figure accurately represents those described in the text. Also, NYSDEC was going to try and assemble the existing sediment data from the Croton Landfill Investigation for use during the RI. Additionally, Total Organic Carbon (TOC) has been added to the analytical schedule for sediment.
Pg. 3-25, Sec. 3.6.2	As discussed at the January 10, 1994 meeting, no monitoring wells will be installed within the footprint of the former lagoon. The remedial plan currently specifies the installation of recovery wells within the lagoon.
Pg. 3-26, Sec. 3.1.2	Again, additional field parameters will be measured. The text has been modified.
Pg. 3-26, Sec. 3.7	The text was not modified to include a discussion of soil sampling to be completed during the OU-1 remedy because this soil sampling will be of surface soils. Moreover, the existing data indicates the soils in the area of the currently delineated Zone A soil boundary near WB-9 exhibit PCB concentrations less than 0.5 mg/kg. Hence, soil removal beyond this area is remote.
Pg. 4-1, Sec. 4.0	The text has been modified to reflect both MNCR and NYSDEC approval prior to commencing the hydrogeologic modeling effort.
Pg. 4-6, Sec. 4.3.1.2	The text has been modified to reflect "up to three days of pumping may be necessary...."
Pg. 5.0, Sec. 5.1	Additional descriptions of the environmental risk analysis, including the Fish and Wildlife Impact Analysis Document requirements have been included in the text.

<i>Reference</i>	<i>Comment Resolution</i>
Pg. 6-9, Sec. 6.2.5	The text has been revised to indicate the FS report, if completed, will address impacts to river sediments.
QAPP	Items 1 and 2 of the comments have been incorporated into the QAPP document. However, as discussed at the January 10, 1994 meeting, the laboratory (Worldwide Geoscience, Inc.) which was designated to perform the NAPL analysis is not an ELAP laboratory. Since the task of Worldwide Geoscience is to assess NAPL samples to denote similarities in petroleum constituent patterns and not to quantify concentrations of TCL and TAL constituents, the information that they generate will not be used to delineate contamination, assess risks or establish remedial action levels. Hence, there is no need to subject the data from Worldwide Geoscience to the NYSDEC CLP program.
General Comments	<p>As discussed during the telephone conversation on January 27, 1994, a budget and level of effort is in preparation by ERM in accordance with its MNCR contract. This budget and level of effort will be transmitted through Chris Bennett of MNCR.</p> <p>The risk assessment portion of the work plan now includes a description of the NYSDEC Fish and Wildlife Impact Analysis Document. However, as discussed at the January 10, 1993 meeting, this work will only be done if NYSDEC and MNCR authorize performance of the optional risk assessment.</p>

Please call if there are any questions.

Sincerely,

Colleen Kovarik

Colleen Kovarik
Senior Project Hydrogeologist

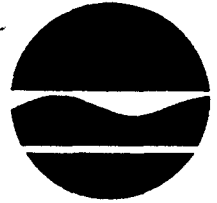
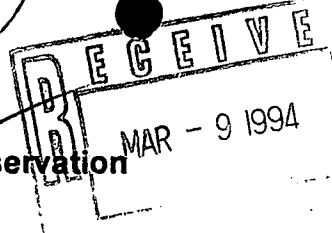
James A. Perazzo csc

James A. Perazzo
Senior Associate

cc: Christopher Bennett, P.E. (MNCR-3 copies)
Mark Van Valkenburg (NYSDOH-1 copy)
E. Hendrick (WCHD-1 copy)
Albert Klaus (NYSDEC-1 copy)

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York, 12233

Ram



March 7, 1994

Langdon Marsh
Acting Commissioner

Mr. Christopher K. Bennett, P.E.
Deputy Director
Facilities Engineering
Metro-North Commuter Railroad
347 Madison Avenue, 11th Floor
New York, NY 10017

Dear Mr. Bennett:

Re: Harmon Railroad Yard Site
OUII, Site ID# 360010
Revised RI/FS Work Plan

The New York State Department of Environmental Conservation (NYSDEC) has reviewed your January 27, 1994 revised Remedial Investigation/Feasibility Study (RI/FS) work plan, "Remedial Investigation/Feasibility Study Work Plan, Operable Unit II, Harmon Yard/Lagoon" prepared by ERM-Northeast, Inc. This work plan is approved, however, execution of this plan cannot be carried out until the following final comments have been addressed.

As outlined in our letter dated February 25, 1994, a more detailed budget must be submitted which is consistent with Schedule 2, Payment Requirements, of the NYS Superfund Standby Contract.

Page 1-1, Section 1.1

Remove the discussion in the second paragraph concerning the selected remedy for OU-1.

Page 1-7, Section 1.2

The soil component may also include unconsolidated material impacted by the NAPL Layer.

Page 1-8, Section 1.3

One sampling round will be adequate for new and existing monitoring wells. If significant contamination is identified, a second round should be collected during the second phase RI.

Pages 2-9 and 3-24, Sections 2.2 and 3.5.2

A broader view of the outfall area which includes Croton Bay, Croton River and upland areas would provide a better perspective and help tie in data from the Croton Landfill RI/FS Study. As indicated in our December 10, 1993 comment letter, a broader sediment sampling profile will be necessary to account for possible redistribution of sediments.

Page 3-2, Section 3.1.2

If the air lift method is used to redevelop the wells, care must be taken to ensure that the bottom of the air lift is at least ten feet above the well intake so that air entrapment does not affect the productivity of the well. In addition, an oilless compressor must be used.

Page 3-5, Section 3.1.2

The wells must be developed to below 50 NTUs. If this is not attainable, it may signal a problem with well construction and possibly a need for well replacement. NYSDEC must be consulted in this situation before ERM "considers the well developed". The purpose of monitoring the other water quality parameters (specific conductance, temperature and pH) is to ensure that water coming into the well is representative of formation water. These parameters may indicate well problems such as excessive drilling fluids in the formation or poor well construction which may chemically impact the groundwater or allow groundwater from cased-off zones to enter the well. While these symptoms may often be difficult to identify, they sometimes are apparent based on these parameters in which case corrective action may be in order.

Page 3-11, Section 3.2.2

There may be considerable benefit in making those NAPL borings which encounter NAPL (or residual oil) permanent installations. This would allow long-term monitoring of the NAPL layer, especially if a remedial action is implemented.

Page 3-13, Section 3.2.2

What is the basis for constructing permanent groundwater monitoring wells such that the screen straddles the water table. Given the problems with monitoring in wells which are impacted by NAPL, it may be more appropriate to construct the screen below the water table so that any NAPL migration would not render the well useless.

Unless there is a strong argument for constructing four-inch wells, a two-inch well construction is normally acceptable. In addition, well construction, development and purging are less costly and easier.

Page 3-16, Section 3.2.2

In the second paragraph, see previous comments relating to the air lift method and well development monitoring parameters.

Page 7-2, Section 7.0

Update the project schedule.

Quality Assurance Project Plan

1. On page 5-1, second paragraph - Analytical methods are noted. No Pest/PCB is listed, however, on tables 5-3, 5-4 and 5-5, Pest/PCBs by method NYSDEC 91-3 is listed. Please add Pest/PCBs to this paragraph and list the method to remain consistent with the tables.
2. All samples must be delivered to the analytical laboratory within 24-48 hours of collection.

Tom
of listed fluctuation
causes GW surface
to be above
top of screen;
impact of
hydrocarbon
contamination
may be lost

Done
3/11

3. The analytical laboratory will be expected to adhere to NYSDEC ASP requirements. Where discrepancies occur between laboratory SOPs and the ASP, the ASP procedures will be adhered to.

Health and Safety Plan

In Section 4.0 of the Health and Safety Plan, action levels have been established for vapors and particulates in the breathing zone. Similar monitoring must be conducted periodically along the perimeter of the exclusion zone. Work should be halted and corrective actions must be implemented if net particulate levels (downwind minus upwind) exceed 0.1 mg/m^3 or if total VOC levels exceed 5 ppm.

Section 4.0 should be included in the main body of the work plan in summary form so that the main features of this section (monitoring, action levels and personal protective requirements) are more visible.

General Comments

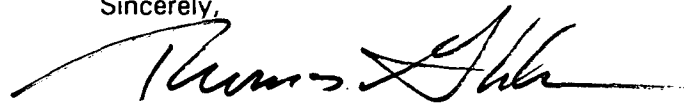
As indicated in our letter of December 10, 1993, Page 3-7, Section 3.2.1 and 3.2.2, if data from soil borings between the lagoon and Haverstraw Bay indicate that contaminants may have migrated to this bay, sediment samples must be taken. Background data must also be obtained should sediment data be necessary.

Sediment contamination must be evaluated using the DFW Technical Guidance for Screening Contaminated Sediments. A copy of this document is enclosed.

Surface water data should be obtained in the vicinity of the discharge area in Croton Bay. Background water data should also be obtained. The Croton Landfill RI/FS should also be evaluated to determine if any surface water data from this study has already been obtained from this area.

Please incorporate the above comments into the final work plan document by March 18, 1994. If you have any questions, please call me at (518) 457-1708.

Sincerely,



Thomas L. Gibbons
Engineering Geologist
Bureau of Eastern Remedial Action
Div. of Hazardous Waste Remediation

Enclosure

cc: E. Hendrick, WCHD

bcc: C. Vasudevan
B. Seeley
P. Carella
R. Wither
M. VanValkenburg, DOH
A. Klauss, Region 3

360010
New York State Department of Environmental Conservation

MEMORANDUM

TO:
FROM:
SUBJECT:
DATE:

Chittibabu Vasudevan
Ram Pergadia

Comments on ERM-Northeast's March 8, 1994 Lagoon Containment
Proposal--(Site ID 360010).
March 11, 1994

1. As shown in the proposal, the sheeting does not have enough anchorage to be stable under an open excavation condition. It may be that a tie-back or strong-back arrangement is envisaged. This should be monitored closely during design and construction. Especially important is to predetermine the excess pressure that will be caused by the grouting operation on the sheetings.
2. It is interesting to note that what ERM is proposing is close enough to meet the requirements of a permanent disposal unit. The arrangement could have been very easily adapted to enclose and contain the sludge in situ. With a little more engineering, a grouted liner and a flexible in-situ treatment system could have been incorporated in the cell--a proposal that was, in fact, suggested long time ago. As it stands, a million dollar solution is being forsaken for a \$15 million one.

cc:

C. Goddard
A. Klauss
S. Ervolina

Ram / Hari

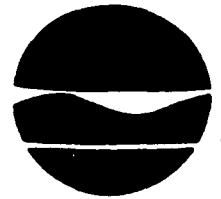
The sample
protocol is a done
deal. MN has
agreed to it and we
will leave as is.

C.J. Hendy-

or

FILE 360010

New York State Department of Environmental Conservation
Region 3
21 South Platt Corners Road
New Paltz, NY 12561-1696
914-255-5453



March 3, 1994

CHRISTOPHER BENNETT
METRO-NORTH COMMUTER RAILROAD
347 MADISON AVENUE
NEW YORK NY 10017

Re: Field Investigation Workplan
Harmon Railroad Yard
Croton, Westchester Co.

Dear Mr. Bennett:

Per my discussions with Laura Truettner, your proposal for Field Investigation, originally submitted September 1993, is acceptable with the following provisions.

1. Measures must be taken to assure that an adequate period of time is allowed for temporary wells to accumulate product.
2. At some time dissolved contamination will be measured at each potential source regardless of the presence or absence of free product.
3. Additional temporary or permanent wells may be required dependent on future information developed regarding sources, groundwater gradient or extent of contamination.

* Also, please be advised that the Division of Hazardous Waste Remediation has informed us the proposal is acceptable to them as written.

Thank you for your cooperation.

Sincerely,

James Hardy
James Hardy
Environmental Engineer I

Handwritten: 3/9
JH/lab

cc: J. Kowalzc
S. Ervolina/C. Vasudevan
A. Klauss
P. Doshna
H. Agrawal
K. Weed
J. Ferry

a:bennett

* AL/JIM

PLEASE REFER TO RAM!
NOTE TO YOU (SEE ATTACHED
OF 2/22/94. HE FEELS
STRONGLY THAT MN SHOULD
NOT HAVE TO RESAMPLE ANY AREA
THAT WAS INVESTIGATED UNDER PHASE II. HAH!

SPEED MEMO

FILE

TO:

JIM HARDY

DATE:

1-21-94

SUBJECT:

METRO NORTH

360019

FROM:

HARI AGRAWAL

AT THE RECENT MEETING WITH METRO NORTH I RAISED A QUESTION AS TO A POSSIBLE NEED FOR TCLP TESTING FOR METALS OF SOIL SAMPLES IN CERTAIN PARTS OF THE SITE. I HAVE SINCE REVIEWED THE PHASE II REPORT AGAIN AND YES, WHILE THE DRUM STORAGE AREA HAD HIGH METALS CONTAMINATION (LEAD & CHROMIUM, IN ADDITION TO IRON, COPPER, NICKEL & ZINC), THESE SAMPLES WERE ALSO SUBJECTED TO EP TOX & NONE FAILED.

THEREFORE, PLEASE DISREGARD THE ISSUE I RAISED ABOUT THE NEED FOR TCLP TESTING OF SOILS FOR METALS. JUST GO AHEAD WITH THE TCL ANALYSIS

AS PROPOSED BY METRONORTH

AL I strongly advise you not to have M-xr to repeat the testing that we did as a part of our Phase I analysis
CC: T.S. MANICKAM, RHSC, DHWR, ALBANY TOPO

AL KLAUSS / RAM PERGADIA / FILE

Any other misbinding said or implied would be a failure to exercise professional judgement

[Signature]



New York State Department of Environmental Conservation

MEMORANDUM

TO: Michael J. O'Toole, Jr., Director, Division of Hazardous Waste Remediation
FROM: Chittibabu Vasudevan Thru Salvatore Ervolina, Director, BERA *SVS*
SUBJECT: Harmon Yard Lagoon Site (3-60-010) Remediation

DATE: January 19, 1994

The selected remedy as outlined in the September 1992 Record of Decision (ROD) includes:

- Incineration of the PCB-contaminated lagoon sludge at an off-site TSCA-permitted stationary incinerator.
- Disposal of PCB-contaminated soil greater than 10mg/kg at an off-site TSCA-permitted chemical waste landfill.
- Placement of a clay liner over the remediated lagoon area to ensure at least two feet separation between high groundwater and backfill soil.
- Excavate and then place and consolidate low level (less than 10 mg/kg) PCB-contaminated surficial soil (Zone A) in the remedial lagoon area.
- Placement of a clay cover over the low level PCB-contaminated surficial soil that was placed in the remediated lagoon area.
- Enhancement of the existing free-product recovery system.
- Decontamination, demolition, and proper disposal of the Old Wastewater Treatment Plant for those components of the Old Wastewater Treatment Plant that have been found to be contaminated. (In conjunction with the remediation, Metro-North will be decommissioning the remainder of the Old Wastewater Treatment Plant).

Of the estimated 8,850 tons of contaminated soil, about 5,100 tons of soil situated below the lagoon sludge was expected to exceed the ROD cleanup level of 10mg/kg (ppm) for subsurface soils. This estimate was based on several samples taken during the RI.

In order to better characterize the subsurface soil below the lagoon and pond, an intensive test boring program was implemented in July 1993. Seventy-eight samples in 12 borings, to a maximum depth of 26 feet, were collected and analyzed for PCBs, VOCs, SVOCs and total petroleum hydrocarbons (TPH). In addition, TCLP analysis was performed on six subsurface samples.

PCB concentrations in Zone B1 (unsaturated soils surrounding the lagoon) soil samples were less than the cleanup level of 10 mg/kg and hence Zone B1 will not require any remediation. PCBs were detected in only a few Zone B2 (unsaturated soil beneath the sludge) and Zone C, (saturated soil beneath the sludge) ranging from 0.68 ppm to 7.1 ppm, well below the cleanup level of 10 ppm. Four organic indicator chemicals exceeding cleanup levels were detected. However, the TCLP results suggest that the subsurface soil samples are not a characteristic hazardous waste.

There was measurable TPH in 66 of the 72 samples analyzed. The TPH data is summarized in the attached table. The detected concentrations ranged from 30 mg/kg to 83,000 mg/kg (ppm), with a mean value of 22,090 mg/kg (ppm).

Metro-North's consultant, ERM-Northeast, recommended that the soils beneath the sludge be excavated to an elevation of 3 ft. above sea level (MSL) and subsequently removed for off-site disposal as a non-hazardous waste. Metro-North was advised at the January 10, 1994 meeting in Albany among Metro-North, NYSDEC and ERM that the soil beneath the sludge which did not exceed the PCB cleanup level of 10 ppm was not part of the remediation included in the 1992 ROD. Metro-North was also advised that any remediation of subsurface soil will not be eligible for Title 3 reimbursement.

Since Harmon Yard is a multi-media site, the TPH data was sent to Al Klauss, of Region 3, seeking his assessment of the data. Mr. Klauss requested in his January 14, 1994 memorandum (copy attached) that we advise Metro-North of the following:

- The soil at such high TPH concentration is a source of probable groundwater contamination and, therefore, should be removed;
- The soil TPH concentrations raise the probability of the presence of free product. This issue should be resolved and appropriate remediative steps should be taken.

Based on the test boring results and Region 3 recommendation, Robert Davies of the Division of Environmental Enforcement will advise Metro-North of the following:

- Remediation of Zone A (top 2 feet of the surficial soil surrounding lagoon) exceeding 1992 ROD cleanup levels will be eligible for reimbursement under Title 3;
- Remediation of all sludge will be eligible for Title 3 reimbursement;
- Since the test boring data indicate that the Zone B1 (unsaturated soil beneath Zone A surrounding the lagoon) soil samples did not exceed the 1992 ROD cleanup level, there is no need to remediate Zone B1;
- Since Zone B2 (unsaturated soil beneath the sludge) and Zone C (saturated soil beneath the sludge) soils contain less than 10 mg/kg (ppm) of PCBs, remediation of Zone B2 and Zone C soils will not be eligible for Title 3 reimbursement. The soils in Zones B2 and C at such high TPH concentrations (thousands of ppm) are a source of probable groundwater contamination and, therefore, should be removed at this time. Appropriate remediative steps should also be taken to address the presence of free products in Zone B2 and C;
- Pre-design test boring expenses will be eligible for Title 3 reimbursement.

If you need further information or would like to discuss this, please let us know.

Attachments

cc w/att.: - A. DeBarbieri
C. Goddard
J. Kowalchyk
R. Davies
A. Klauss, Region 3

bcc w att.: - S. Ervolina
C. Vasudevan
C. Sullivan
J. McCullough
T. Gibbons
R. Pergadia, Region 3

CV:tfz

Total Petroleum Hydrocarbons (TPH)
Zone B2 and C Soil
Pre-Design Test Boring Program
Harmon Yard Wastewater Lagoon

Page 1 of 3

Boring Number	Sample	Depth Interval	TPH (ppm)
B1	B1-1	2-4'	67,500
	B1-2	4-6'	83,000
	B1-3	6-10'	58,000
	B1-4	10-14'	22,000
	B1-5	14-16'	14,000
	B1-6	16-18'	280
	B1-7	18-20'	210
B2	B2-1	2-4'	43,500
	B2-2	4-6'	54,000*
	B2-3	4-6'	-
	B2-4	6-10'	55,000
	B2-5	10-12'	32,000
	B2-6	14-18'	7,400
B3	B3-1	2-4'	48,000
	B3-2	4-8'	31,000
	B3-3	10-14'	20,000*
	B3-4	10-14'	-
	B3-5	14-18'	15,000
	B3-6	18-22'	11,000
	B3-7	24-26'	8,700
B4	B4-1	6-10'	26,500
	B4-2	10-13'	20,000
	B4-3	13-16'	12,000
B5	B5-1	4-6'	46,500
	B5-2	6-10'	61,000*
	B5-3	6-10'	-
	B5-4	10-14'	48,000
	B5-5	14-16'	14,000
	B5-6	20-22'	790

Total Petroleum Hydrocarbons (TPH)
Zone B2 and C Soil
Pre-Design Test Boring Program
Harmon Yard Wastewater Lagoon

Page 2 of 3

Boring Number	Sample	Depth Interval	TPH (ppm)
B6	B6-1	4-6'	18,000
	B6-2	6-8'	41,000
	B6-3	8-10'	39,000
	B6-4	10-14'	24,500
	B6-5	14-16'	25,000
	B6-6	18-20.5'	31,000
	B6-7	20.5-22'	15,000
B7	B7-1	4-6'	41,000
	B7-2	6-8'	61,000
	B7-3	8-10'	30,000
	B7-4	10-14'	19,000*
	B7-5	10-14'	-
	B7-6	14-16'	17,000
	B7-7	16-20'	8900
	B7-8	20-24'	11,600
	B7-9	24-26'	<130
B8	B8-1	4-6'	11,000
	B8-2	6-8'	52,000
	B8-3	8-10'	6,900
	B8-4	10-12'	6,700
	B8-5	12-14'	3,400
	B8-6	16-18'	73
	B8-7	18-20'	870
B9	B9-1	2-4'	17,000
	B9-2	4-6'	21,000*
	B9-3	4-6'	-
	B9-4	6-8'	15,000
	B9-5	8-10'	1,800
	B9-6	10-12'	33

Total Petroleum Hydrocarbons (TPH)
Zone B2 and C Soil
Pre-Design Test Boring Program
Harmon Yard Wastewater Lagoon

Page 3 of 3

Boring Number	Sample	Depth Interval	TPH (ppm)
B10	B10-1	2-4'	28,000
	B10-2	4-6'	68,000
	B10-3	6-10'	20,000
	B10-4	10-12'	280
	B10-5	14-16'	< 31
	B10-6	16-18'	< 31
	B10-7	18-20'	< 30
B11	B11-1	2-4'	20,500
	B11-2	4-6'	28,000
	B11-3	6-8'	13,000
	B11-4	8-10'	10,000
	B11-5	10-12'	< 32
	B11-6	16-19'	30
B12	B12-1	2-4'	41,000
	B12-2	4-6'	47,000
	B12-3	6-8'	1,400
	B12-4	8-10'	730
	B12-5	10-12'	< 32
	B12-6	12-14'	56
	B12-7	12-14'	-

New York State Department of Environmental Conservation

MEMORANDUM

TO: C. Vasudevan - DHWR Albany
FROM: A. Klauss, Region 3
SUBJECT: PHC Contamination - M/H Lagoon PCB Remediation

DATE January 14, 1994

As we discussed this date, please advise Metro North of the following regarding the PHC contamination in the soil beneath the lagoon PCB sludge.

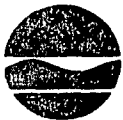
- 1) The soil at such PHC concentration (i.e. 10's of thousands ppm) is a source of probable groundwater contamination and therefore should be removed at this time.
- 2) The soil PHC concentrations raise the probability of the presence of free product. This issue should be resolved and appropriate remediative steps should be taken.

Advise Metro North to contact me if they have any questions.

AK/lab

cc: P. Doshna/J. Hardy
R. Pergadia

10



New York State Department of Environmental Conservation

MEMORANDUM

TO: C. Vasudevan - DHWR Albany
FROM: A. Klauss, Region 3
SUBJECT: PHC Contamination - M/H Lagoon PCB Remediation

DATE: January 14, 1994

As we discussed this date, please advise Metro North of the following regarding the PHC contamination in the soil beneath the lagoon PCB sludge.

- 1) The soil at such PHC concentration (i.e. 10's of thousands ppm) is a source of probable groundwater contamination and therefore should be removed at this time.
- 2) The soil PHC concentrations raise the probability of the presence of free product. This issue should be resolved and appropriate remediative steps should be taken.

Advise Metro North to contact me if they have any questions.

AK/lab

cc: P. Doshna/J. Hardy
R. Pergadia

How
1/21



STATE OF NEW YORK DEPARTMENT OF HEALTH

Center for Environmental Health

2 University Place

Albany, New York 12203-3399

Mark R. Chassin, M.D., M.P.P., M.P.H.
Commissioner

Paula Wilson
Executive Deputy Commissioner

OFFICE OF PUBLIC HEALTH

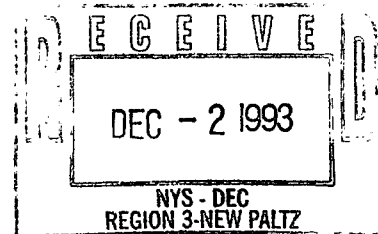
Lloyd F. Novick, M.D., M.P.H.
Director

Diana Jones Ritter
Executive Deputy Director

William N. Stasiuk, P.E., Ph.D.
Center Director

November 30, 1993

Mr. Thomas Gibbons
Bureau of Eastern Remedial Action
Division of Hazardous Waste Remediation
NYS Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233



RE: Draft RI/FS Work Plan: OU-2
Harmon Yard Wastewater Treatment Area
Site # 360010
Croton-on-Hudson, Westchester County

Dear Mr. Gibbons:

I have completed my review of the November 11, 1993 draft Remedial Investigation and Feasibility Study (RI/FS) Work Plan for Operable Unit Two (OU-2) at the Harmon Railroad Yard Wastewater Treatment Area. Enclosed are my comments.

1. Page 3-7, Additional Well Installation to Confirm NAPL Extent.

After reading the explanation given on pages 3-7, 3-12 and 3-27, it's still not clear why the temporary NAPL delineation wells shouldn't be installed off-site under the Phase I field program. Following the 8 to 12 hours of equilibration and NAPL confirmation, additional wells could be installed, off-site if necessary, to determine the areal extent of the NAPL plume. Of special interest is the off-site area to the west between monitoring well WB-9 and the Hudson River.

2. Page 3-10, NAPL Confirmation.

Based on previous experience, the NYSDEC on-site representative should observe and confirm all NAPL occurrences in the field, leaving no question as to the areal extent of NAPL. NAPL confirmation should not be left solely to the PRP's consultant.

3. Page 3-13, Last Paragraph.

The permanent groundwater monitoring wells will be constructed so that the five foot long well screen straddles the water table. Please clarify if this accounts for the tidal fluctuations of the adjacent Hudson River.

4. Page 3-15, Air Monitoring.

The second paragraph states that ambient air in the vicinity of staged soil cuttings will be monitored. The work plan makes no other mention of air monitoring except for the protection of field personnel (Appendix B, Health and Safety Plan).

Handwritten notes: "Haw", "me", and "12/3" with a large checkmark.

The work plan should include a section on Community Air Monitoring. Ground intrusive activities may potentially release airborne contaminants in the form of dust or vapors. These contaminants could blow off-site, potentially exposing sensitive populations (i.e., residents of the Halfmoon Bay condominiums) or contaminating off-site properties. Community air monitoring should include real-time air monitoring for volatile organic compounds (VOCs) and particulates at the downwind perimeter of each designated exclusion/work zone when activities are in progress. All readings must be recorded and available for State review. Please refer to the November 16, 1993 draft Community Air Monitoring Plan for Operable Unit One which specifies recommended action levels for total VOCs and particulates as well as corrective measures to mitigate releases/exposures.

5. Page 3-23, Sediment Characterization.

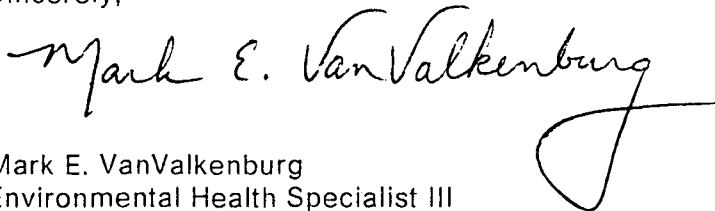
- a. Please clarify why there are currently no plans to sample the Hudson River sediments west of the site.
- b. It appears highly likely that additional Croton Bay sediment sampling will be necessary under the Phase 2 RI downstream of the discharge outfall. The full extent of sediment contamination must be determined so that a remedial alternative can be selected which is protective of public health.
- c. Croton Bay sediments have been extensively sampled under the investigation for the Croton Point landfill. This data should be reviewed for its potential usefulness.

6. Page 3-26, Additional Sampling.

As I understand it, confirmation sampling of surface and subsurface soils to identify the vertical and horizontal extent of Zone A soils (greater than 500 ppm PCBs) and of Zone B1 soils (greater than 10 ppm PCBs) will be performed as part of the lagoon remediation. Based on my review of the November 8, 1993 draft Preliminary Design Report for Operable Unit One, the surfaces soils off-site and west of monitoring well WB-9 (toward the Hudson River) will likely be sampled and removed if necessary. This confirmation/post-excavation soil sampling beyond the site perimeter fence line should satisfy my concerns about potential off-site surface soil contamination from past operations at the old wastewater treatment plant. I recommend that section 3.7 of this RI/FS work plan briefly mention the additional soil sampling to be performed under Operable Unit One.

Should you wish to discuss these comments further, I may be reached at (518) 458-6305.

Sincerely,



Mark E. VanValkenburg
Environmental Health Specialist III
Bureau of Environmental Exposure
Investigation

Imw/93333PRO0532

cc: Dr. A. Carlson/Mr. S. Bates
Mr. L. Wilson
Ms. E. Hendrick - WCDOH
Mr. S. Ervolina/Mr. C. Vasudevan - DEC
Mr. R. Pergadia - DEC Region 3



STATE OF NEW YORK
DEPARTMENT OF HEALTH

Center for Environmental Health

2 University Place

Albany, New York 12203-3399

Mark R. Chassin, M.D., M.P.P., M.P.H.
Commissioner

Paula Wilson
Executive Deputy Commissioner

OFFICE OF PUBLIC HEALTH

Lloyd F. Novick, M.D., M.P.H.
Director

Diana Jones Ritter
Executive Deputy Director

William N. Stasiuk, P.E., Ph.D.
Center Director

September 27, 1993

SEP 29 1993

REGION 3-NEW PALTZ

Mr. Jeffrey McCullough
Bureau of Eastern Remedial Action
Division of Hazardous Waste Remediation
NYS Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233

RE: Preliminary Draft
Community Air Monitoring Plan
Harmon Yard Lagoon
Site #360010
Croton-on-Hudson, Westchester County

Dear Mr. McCullough:

At your request, I have reviewed the September 3, 1993 preliminary draft Community Air Monitoring Plan for the Harmon Yard Lagoon remediation activities. Enclosed are my comments.

1. Air monitoring locations should be situated as close to the exclusion/work zone perimeter as physically possible.
2. One of the stationary air monitoring sites should be located upwind, in the direction of the prevailing winds as determined by available meteorological data. Applicable background/baseline meteorological and air analysis data are available through the Westchester County Department of Health for this specific site and through the NYS Department of Environmental Conservation for the adjacent Croton Point Landfill (#360001). Two of the remaining monitoring stations should be placed so that they lie between the exclusion/work zone and potentially downwind receptors such as 1) residents of the adjacent Halfmoon Bay condominium development and 2) Metro-North employees in the adjacent railroad yard. Traffic flow patterns should also be taken into consideration when locating monitoring stations.
3. Due to the presence of relatively high concentrations of PCBs in wet sludges and soils, air monitoring must be performed for PCBs at the upwind and downwind perimeter of the exclusion/work zone during field activities for PCB vapors and PCBs in dust. The sampling and analytical methodology for PCBs as proposed by ERM-Northeast is acceptable as this type of sampling train will capture both the particulate and vapor phases. The method detection limit of .03 micrograms per cubic meter should be stated.
4. As stated in previous correspondence, analytical results must be available, at least verbally, the following day prior to the start-up of work activities. Dust/vapor suppression techniques must be implemented when/if total PCB levels exceed the action level of one (1) ug/m³.
5. Continuous real-time direct-reading air monitoring for particulates and volatile organic compounds must be performed at the upwind and downwind perimeters of the exclusion/work zone as described in my previous

correspondence (5/4/93 to Vasudevan) and within the enclosed generic Community Air Monitoring Plan. Upwind air monitoring helps to establish comparative background conditions. A portable meteorological station, windsock, and/or fluorescent orange ribbons are needed to identify upwind and downwind throughout the work activities. Real-time air monitoring equipment must be moved accordingly whenever wind direction changes. The air monitoring technician or health and safety officer is responsible for maintaining a continuous downwind position. Staged soils/sludges must be monitored if they are staged outside of the primary exclusion zone.

6. Pre-remediation air monitoring "to ensure an accurate representation of background airborne concentrations" is acceptable.
7. Please clarify the meaning of the phrase "two full shifts" used in the third paragraph on page 5. Does that mean that stationary air monitoring for respirable particulates, PCBs, and the four (4) site-specific volatile organic compounds will be performed twice (2x) per day?
8. The text should list the seven (7) techniques which have been shown to be effective for controlling the generation and migration of dust during construction activities as outlined in the NYSDEC TAGM 4031, Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites.
9. If total volatile organic compound concentrations downwind exceed upwind concentrations by 5 parts per million (ppm), all remediation work activities must be halted, monitoring continued, and work practices modified to prevent further emissions. I don't understand where the consultant came up with 7 ppm.
10. To address recent public comments, the community air monitoring plan should discuss the reason for not performing air monitoring within the downwind community. The text should explain that sampling is performed as close to the contaminant source as possible to detect potential airborne emissions and take appropriate corrective actions so that community exposures do not occur. The goal of the plan is to prevent community exposures during remedial activities. We want to detect and correct potential problems on-site before contaminants can migrate off-site into the neighboring community.

For reference purposes only, I have also enclosed the air monitoring protocol being used at the adjacent Croton Point Landfill which is designed to be protective of the Halfmoon Bay condominium residents. Although these two separate sites (i.e., municipal landfill, wastewater lagoon) differ greatly in many physical and chemical aspects, I used the landfill protocol as guidance. If you have any questions regarding these comments, please call me at (518) 458-6305. I look forward to reviewing a revised Community Air Monitoring Plan.

Sincerely,



Mark E. VanValkenburg
Environmental Health Specialist III
Bureau of Environmental Exposure
Investigation

lmw/93267PRO0080

Attachments

cc: Dr. G. A. Carlson/Mr. S. Bates/Mr. L. Wilson
Ms. E. Hendrick - WCDOH, w/att.
Mr. S. Ervolina/Dr. C. Vasudevan - DEC
Mr. R. Pergadia - DEC Region 3



STATE OF NEW YORK
DEPARTMENT OF HEALTH

Center for Environmental Health

2 University Place

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Commissioner

Paula Wilson
Executive Deputy Commissioner

OFFICE OF PUBLIC HEALTH

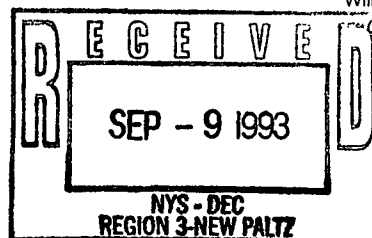
Lloyd F. Novick, M.D., M.P.H.
Director

Diana Jones Ritter
Executive Deputy Director

William N. Stasiuk, P.E., Ph.D.
Center Director

September 3, 1993

Mr. Jeffrey McCullough
Eastern Remedial Section
NYS Dept. of Environmental Conservation
50 Wolf Road
Albany, NY 12233



RE: Draft SDP
Harmon Yard Lagoon
Site #360010
Croton-on-Hudson, Westchester Co.

Dear Mr. McCullough:

I have completed my review of the August 11, 1993 draft Sampling and Decommissioning Plan (SDP) for the Old Wastewater Treatment Plant. I find the draft plan acceptable. My only comment is that the "final decommissioning plan" within the SDP Report as outlined on page 7-1, section 7.0 should be submitted in draft for State review and comment.

Should you wish to discuss this issue further, feel free to call me at (518) 458-6305.

Sincerely,

Mark E. VanValkenburg
Environmental Health Specialist III
Bureau of Environmental Exposure
Investigation

lmw/93246PRO0012

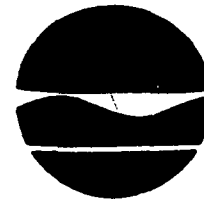
cc: Dr. A. Carlson/Mr. S. Bates
Ms. E. Hendrick - WCDOH
Mr. S. Ervolina/Mr. C. Vasudevan - DEC
(Mr. R. Pergadia - DEC Region 3)

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in
releasable
file

3600/0

New York State Department of Environmental Conservation

REGION 3
21 South Putt Corners Road
New Paltz, New York 12561
(914) 255-5453



TO: Distribution

DATE: 8/31/94

SUBJECT: Metro North - MAU and Stipulation

Attached is a copy of both
signed documents. Please review
and be prepared to discuss its implications
regarding your program requirements when
the OSEM is hired. The OSEM should
be on board by Oct/Nov. 94-

C. Manfredi

R Stanton

R Aldrich

P. Doshna

R Pergadia

RAM/AL

AS DISCUSSED BEFORE:
I HAVE NO INVOLVEMENT
CENTRAL

(1)

ON 360 010
OFFICE LEAD

(2)

ON 360 019 UNLESS
SPLITS FIND SOME
NEW HW EVIDENCE OF
THE SITE IS
DISPOSAL
AND DISCUSS
HAS NO
INVT
9/26

ack R Klam

SIGNATURE

clear copy in releasable file

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF ALBANY

_____ X
In the Matter of the Application of :
METRO-NORTH COMMUTER RAILROAD :
COMPANY, :
Petitioner, :
for an Order and Judgment under :
CPLR Article 78 :
against :
THOMAS C. JORLING, COMMISSIONER :
NEW YORK STATE DEPARTMENT OF :
ENVIRONMENTAL CONSERVATION, AND :
NEW YORK STATE DEPARTMENT OF :
ENVIRONMENTAL CONSERVATION, :
Respondents. :
_____ X

Index No. 583-89
STIPULATION OF
DISCONTINUANCE

OFFICE OF
ALBANY COUNTY CLERK
ALBANY, N.Y.
AUG 10 3 43 PM '94

WHEREAS, Langdon Marsh as ~~Assistant~~ Commissioner of the New York State Department of Environmental Conservation ("Commissioner") and the New York State Department of Environmental Conservation (the "Department") are responsible for enforcement of the Environmental Conservation Law ("ECL") and Navigation Law ("NL") of the State of New York, and Titles 6 and 17 of the Official Compilation of the Codes, Rules and Regulations of the State of New York ("NYCRR") and any Orders issued thereunder.

WHEREAS, Metro-North Commuter Railroad Company ("Metro-North") is a public benefit corporation created pursuant to Public Authorities Law Section 1266, which operates the Harlem, Hudson, and New Haven commuter railroad lines.

WHEREAS, Petitioner, Metro North Commuter Railroad Company, commenced this Article 78 proceeding by Notice of Petition, verified on January 3, 1989, subsequently amended on July 18, 1989, against respondents Thomas C. Jorling, Commissioner and the Department seeking an order vacating a September 8, 1988 Order (Index No. WP-163-85) by the Commissioner, as amended on March 23, 1989, and March 15, 1990, which required inter alia, that petitioner: (1) pay a civil penalty in the sum of \$100,000; (2) submit a chemical and physical analysis of wastes at the Croton-Harmon facility; (3) remediate the PCB equalization lagoon; and (4) remediate the drum storage area.

WHEREAS, the properties operated by Metro-North include certain service facilities known as the Port Jervis Yard, located in Port Jervis, New York; the Harmon Yard, located in Croton-on-Hudson, New York, which is divided into two NYSDEC sites: the Harmon Lagoon Site 3-60-010 (the "Lagoon Site") and the Harmon Yard; the Brewster Yard, located in the Town of Southeast, New York; and the North White Plains Yard, located in the City of White Plains and the Town of Greenburgh, New York (said service facilities being hereinafter referred to collectively as the "Facilities" and individually as "each Facility").

WHEREAS, the Facilities have been in operation for more than 100 years and prior to Metro-North's creation in 1983, the Facilities were owned and operated by private corporate entities.

WHEREAS, sampling undertaken by Metro-North in cooperation with the Department has found petroleum contamination to exist at the Harmon Yard and the Brewster Yard, and petroleum contamination may also exist at the other Facilities.

WHEREAS, Metro-North acknowledges its responsibility, pursuant to the provisions of the ECL and the NL, to remediate any petroleum that it may have discharged, or any hazardous substances that it may have released from the equipment and facilities it has operated at the Facilities.

WHEREAS, other materials constituting or containing hazardous or regulated substances may have been released into the environment at the Facilities, as a result of operations taking place over the past 100 years.

WHEREAS, the Harmon Yard is an approximately 100 acre maintenance and repair yard owned by Penn Central Corporation of Cincinnati, Ohio and/or its subsidiaries, and presently leased by the Petitioner. A map of the Harmon Yard is

attached as Appendix "A" of this Stipulation. The "Lagoon Site" is defined as an approximately 7.5 acre portion of the Harmon Yard and includes an approximate 1.3 acre lagoon and pond system, the Old Wastewater Treatment Plant and associated appurtenances (i.e., coagulation and settling tanks, sand and carbon filter systems and sludge drying beds.) The waste-water lagoon at the Lagoon Site is contaminated with polychlorinated biphenyls ("PCBs").

WHEREAS, the Lagoon Site is an inactive hazardous waste disposal site, as that term is defined at ECL 27-1301.2, which presents a significant threat to the public health and environment. The Department has classified the Lagoon Site as a Classification "2"; which means the Department has determined the Lagoon Site to be a "significant threat to the public health or environment-action required" pursuant to ECL 27-1305.4.b.

WHEREAS, the Department and Metro-North have agreed that Metro-North shall develop and implement an inactive hazardous waste disposal site remedial program ("Remedial Program") for the Lagoon Site, pursuant to the Record of Decision ("ROD") signed by Deputy Commissioner Ann Hill DeBarbieri on September 17, 1992 which shall include the following provisions in the Remedial Program:

A. The design and implementation of the selected remedial alternative, and the operation, maintenance and monitoring of the selected remedial alternative for Operable Unit I ("OUI"). OUI is comprised of an approximate 1.3 acre former lagoon and pond system (the "lagoon"), soil surrounding the lagoon and pond system and the components of the Old Wastewater Treatment Plant which the ROD requires be remediated (i.e., the sludge drying beds.) In addition, other components of the Old Wastewater Treatment Plant (i.e., the coagulation and settling tanks and the sand and carbon filter systems) are to be decommissioned. Remediation is required for the sludge within the lagoon and for the soil around the perimeter of and below the lagoon. The soil has been divided into four zones: Zone A, Zone B1, Zone B2 and Zone C. Each of these soil zones are defined as follows:

Zone A: Zone A soils are those soils, within the top 2 feet of the surface around the perimeter of the lagoon (as shown on Figure A-5 of the ROD) with concentrations of chemicals in excess of the cleanup levels set forth in the ROD.

Zone B1: Zone B1 soils are the unsaturated soils beneath Zone A extending down to the ground water table (as shown in Figure A-3 and A-4 of the ROD) with concentrations of PCBs in excess of the 10 mg/kg level as set forth in the ROD.

Zone B2: Zone B2 soils are defined as the unsaturated soils beneath the lagoon sludge (as shown in Figures A-3 and A-4 of the ROD) with concentrations of PCBs in excess of the 10 mg/kg level as set forth in the ROD.

Zone C: Zone C soils are defined as the saturated soils below Zone B2 soils which contain PCBs in concentrations of 10 mg/kg or greater.

B. The preparation of a Remedial Investigation/Feasibility Study ("RI/FS"), and, if required by the Department, design and implementation of the selected remedial alternative, and operation, maintenance and monitoring of the selected remedial alternative for Operable Unit II ("OUII"). OUII is comprised of ground water, non-aqueous phase liquid NAPL (if present), soil and sediment affected by past releases from the Lagoon Site. The ground water component of OUII is that portion of the saturated zone (including saturated soils below the limit of Zone C soils) which has been impacted by discharges from the Lagoon Site. The NAPL component of OUII is the separate phase hydrocarbon layer that is present on the water table surface and extends hydrogeologically downgradient of the Lagoon. The soil component of OUII is hazardous waste material adjacent to the former discharge line and associated with the Lagoon which conveyed wastewater to the outfall point at Croton Bay. The sediment component of OUII is sediment in Croton Bay or the

Hudson River which has been adversely impacted by discharges and/or releases from the Lagoon Site.

WHEREAS, the Department, by letter dated March 29, 1993, has notified Metro-North that all Title 3 eligible costs incurred in remediating the Lagoon Site after November 23, 1992, will be considered "eligible" remedial expenses under ECL Article 52, Title 3.

WHEREAS, execution of this Stipulation is a precondition to eligibility for financial assistance pursuant to ECL Article 52, Title 3, and Metro-North hereby consents to and agrees not to contest the authority or jurisdiction of the Department to enforce the obligations assumed by Metro-North pursuant to this Stipulation, and agrees not to contest the validity of this Stipulation or its terms.

WHEREAS, pursuant to Metro-North's obligations under ECL Article 52, Title 3, Metro-North shall make all reasonable efforts, as required by the Department, in identifying all other responsible parties and compelling other responsible parties to bear the cost of the Remedial Program at the Lagoon Site, including commencement and diligent prosecution of civil judicial action to obtain appropriate relief from those other responsible parties.

WHEREAS, Metro-North will investigate and, where appropriate, remediate the petroleum and other contamination that may exist at the Facilities. It is doing so with the intention of seeking compensation for the expenses it thereby incurs from current facility owners and previous Facility operators.

WHEREAS, the Department and Metro-North wish to establish a framework for Metro-North's investigation and remediation of contamination at the Facilities, and the development of a schedule for the performance of the work.

WHEREAS, on August 21, 1986, administrative proceedings were commenced by the Department in connection with certain environmental conditions at the Harmon Yard.

WHEREAS, during the course of those proceedings, the Commissioner issued an Order, dated September 8, 1988; an amended Order, dated March 23, 1989; and a second amended Order, dated March 15, 1990. These Orders (the "Commissioner's Orders") directed Metro-North, inter alia, to remediate the waste water lagoon and to pay a \$100,000.00 penalty, \$50,000.00 of which was payable within 30 days and the balance suspended, conditioned upon Metro-North's compliance with the requirements specified therein.

WHEREAS, the Parties wish to settle their differences with respect to the above-described matters, and to establish arrangements for the timely, proper, and comprehensive investigation and cleanup of contamination at the Harmon Yard and the other Facilities.

WHEREAS, the Department and Metro-North have agreed that a purpose of this Stipulation is for Metro-North to voluntarily dismiss with prejudice the above-entitled CPLR Article 78 action challenging the Commissioner's orders and for Metro-North to develop and implement an Inactive Hazardous Waste Disposal Site Remedial Program ("Remedial Program") for the Lagoon Site, pursuant to the Record of Decision ("ROD") signed by Deputy Commissioner Ann Hill DeBarbieri on September 17, 1992.

NOW THEREFORE, upon the application of G. Oliver Koppell, Attorney General of the State of New York and the consent of all parties to this action as evidenced by the signatures of their attorneys below, it is hereby;

STIPULATED AND AGREED, as follows:

I. PRIOR ORDERS SUPERSESSION AND RELEASES

Metro-North's obligations pursuant to the Commissioners Orders are hereby withdrawn, released and superseded by the remedial obligations Metro-North has assumed under this Stipulation.

II. ENVIRONMENTAL BENEFIT PROJECT

Metro-North shall undertake and satisfactorily complete a Department-approved environmental benefit project with a cost and/or value of at least Two Hundred Thousand Dollars (\$200,000.00). Within 90 days after Metro-North is notified of the Department's environmental benefit project approval, Metro-North shall submit to the Department for approval a project plan for such project that, upon approval, shall be incorporated into and become an obligation under this Stipulation.

III. GROUNDWATER INVESTIGATIONS AND REMEDIATION

A. Preliminary Site Contamination Studies

1. Metro-North shall prepare and submit to the Department for review and approval a Preliminary Site Contamination Study with respect to each Facility, which shall provide initial information to assist in the identification of those areas that may need remedial and/or corrective action. The Preliminary Site Contamination Studies will be considered by the Department in determining which areas of the Facilities must be investigated further. The Preliminary Site Contamination Study for each Facility shall include:

a. a summary description of the activities that have been conducted since Metro-North took over operations at the Facility which may have resulted in the

release of hazardous materials or the discharge of petroleum into the environment;

b. based upon all available information, a summary description of the activities and operations conducted by previous operators of the Facility, which may have resulted in the release of hazardous materials or the discharge of petroleum into the environment;

c. a facility site plan, identifying the areas, buildings, storage tanks, pipelines, or other structures where Metro-North (and, to the extent possible, its predecessors) has: (i) carried on refueling operations; (ii) stored waste oils, pesticides, solvents, hazardous materials, or petroleum products; (iii) serviced railroad cars, locomotives, motor vehicles, or any of their components; (iv) conducted cleaning operations involving the use of solvents; or (v) carried on other operations or activities that may have resulted in the release of hazardous materials or the discharge of petroleum into the environment;

d. aerial photographs, to the extent they are available from Metro-North's files, public libraries, or publicly accessible repositories located in the New York Metropolitan area;

e. information regarding known spills or releases, including a description of the substance or substances released or spilled, and the approximate location of any such incident;

f. an identification and description of the existing and available reports of investigations, feasibility studies, geologic logs for soil borings, groundwater monitoring data, data from and construction details on any existing groundwater recovery systems, or other technical information describing hydrogeologic conditions at the involved Facility;

g. a preliminary assessment of surface and subsurface conditions to the extent such conditions can be described based upon visual inspections at the facility and available information;

h. recommendations with respect to any short-term corrective action required to minimize health and/or environmental impacts;

i. an evaluation of the adequacy of existing information for determining contamination, including an assessment of groundwater monitoring well locations and an assessment of the range of contaminants for which information is available;

j. recommendations with respect to further investigations needed to define the nature and extent of contamination and to select and undertake appropriate remedial actions;

k. a bibliography of all reports, data, and other information reviewed in connection with preparation of the reports.

2. Upon request by the Department, Metro-North shall submit to the Department copies of any reports or other information identified pursuant to subparagraphs III(A)(1)(f) or III(A)(1)(k) hereof.

3. The Preliminary Site Contamination studies shall be submitted in accordance with the following schedule:

Harmon Yard (formerly	--	12 months after the
site 360019)		effective date hereof
Brewster Yard	--	15 months after the
		effective date hereof
Port Jervis Yard	--	18 months after the
		effective date hereof
North White Plains Yard	--	21 months after the
		effective date hereof

B. Site Investigation and Remediation Studies

1. A Site Investigation and Remediation Study shall be conducted with respect to each Facility and submitted to the Department for approval in accordance with the schedule below. Such investigations shall implement the recommendations set forth in the Preliminary Site Contamination Studies pursuant to paragraph (A)(1) above, and shall include at least the following:

a. the installation of monitoring wells and the collection and analysis of groundwater and soil samples, if required by the Department for a comprehensive assessment of the environmental condition of the involved Facility;

b. a description of the need to implement short-term corrective actions and interim remedial measures to bring conditions at the Facility into conformity with relevant and appropriate rules, regulations, standards, criteria, or guidelines;

c. a description of the need to implement long-term comprehensive investigations and/or remedial activities, to bring conditions at the Facility into conformity with relevant and appropriate rules, regulations, standards, criteria, or guidelines;

d. a proposed schedule for all recommended additional investigations or remedial activities.

2. Metro-North shall submit to the Department for its approval a work plan for conducting the Site Investigation and Remediation Study required for each facility within 60 days after the Preliminary Site Contamination Study with respect to the involved facility has been approved by the Department.

3. The Site Investigation and Remediation Studies shall be submitted in accordance with the following

schedule: Harmon (formerly Site 360019) -- 9 months after

work plan approval

Brewster

-- 6 months after

work plan approval

Port Jervis

-- 6 months after

work plan approval

North White Plains

-- 6 months after
work plan approval

C. Additional Investigation and Remedial Activities

1. Within 30 days after completion of the Site Investigation and Remediation Study for each Facility, Metro-North and the Department shall meet to identify any additional investigations and remedial activities necessary to bring conditions at the Facility involved into conformity with relevant and appropriate rules, regulations, standards, criteria, or guidelines, and the schedule for conducting such activities. Metro-North shall undertake any additional investigations and remedial activities which may be required, pursuant to a schedule agreed to by the Parties. In the event the Parties are unable to agree upon the additional investigations and remedial activities Metro-North is to undertake, or upon the schedule for such activities, the matter shall be resolved in accordance with the "dispute resolution" provisions of this Article.

D. Stipulated Monetary Amounts

1. In the event Metro-North fails to comply with its obligations under Article III Groundwater Investigations and Remediation of this Stipulation ("Article III"), the following stipulated amounts shall be paid by Metro-North promptly upon demand by the Department:

<u>Period of Non-Compliance</u>	<u>Payment Per Day</u>
Day 1-15	\$750.00
Day 16-30	\$1,500.00

Day 31-60	\$2,500.00
Day 61 and thereafter	\$3,500.00

2. For purposes of this paragraph, with respect to activities other than submittals or Revised Submittals, "fail to comply" shall include the failure to perform the specified act in the manner required by this Article or by the date required by Article III. With respect to submittals and Revised Submittals, the term "fail to comply" shall include the failure by Metro-North to submit an original or revised document within the time limits set forth in or established pursuant to Article III or submission of a document that is of such poor quality as not to qualify as a good faith submission.

3. The stipulated amounts shall begin to accrue on the day that failure to comply with any obligation of Article III occurs, and shall continue to accrue until Metro-North either performs the required action or completes corrective action satisfactory to the Department. In the event that the Department determines that Metro-North has failed to comply with any of terms of Article III, the Department may serve upon Metro-North a Notice of Failure to Comply, which shall set forth the nature of the failure to comply and the calculation of the stipulated amounts due. Within twenty-one (21) days after receipt of a Notice of Failure to Comply, Metro-North shall deliver the full stipulated amounts due to the Department. In the event that Metro-North does not pay the stipulated amounts, then this Stipulation of

Discontinuance, together with the Notice of Failure to Comply may be filed and enforced as a civil judgment for the total stipulated amount set forth in the Notice of Failure to Comply. The assessment of stipulated amounts due as set forth above shall not limit the Department's right to seek such other relief as may be authorized by law.

4. In the event the Department serves upon Metro-North a Notice of Failure to Comply with respect to a matter that is the subject of a modification request made pursuant to paragraph F of Article III, or of dispute resolution in accordance with the procedures set forth in paragraph E of Article III, Metro-North's obligation to pay stipulated amounts shall be tolled during the period that such dispute resolution process is underway or such modification request is being considered. In the event Metro-North prevails with respect to any such dispute, or if it is finally determined that Metro-North's modification request should be granted, then no stipulated amounts shall become due. Otherwise, stipulated amounts, calculated from the day that Metro-North's failure to comply with Article III first occurred, shall become due and payable.

5. Fifty percent (50%) of any stipulated amounts incurred by Metro-North pursuant to this provision shall be forgiven upon Metro-North's timely achievement of the next subsequent related milestone date set forth in this Stipulation.

E. Dispute Resolution

This provision shall only apply to disputes arising with respect to Article III, which Article is intended to include all activities not funded under EQBA.

1. In the event that a dispute arises between Metro-North and the Department with respect to the adequacy of a submittal, or with respect to other matters relating to Metro-North's compliance with Article III, the parties shall confer together in good faith to resolve any differences that may exist. If, after conferring together in good faith, the parties are unable to resolve such differences, the matter shall be resolved in accordance with this provision.

2. If Metro-North fails to adequately address the Department's comments in a Revised Submittal, or Metro-North disputes any measures required by the Department pursuant to Article III, Metro-North shall be in violation of this Stipulation unless Metro-North invokes this provision. If this procedure is invoked, Metro-North shall comply with the final determination of the Department, failing which it shall be in violation of this Stipulation. In such event, the Department may pursue the remedies set forth in paragraph XX hereof, or any other remedies that may be available to it under the law.

3. Disputes governed by this provision will be resolved in accordance with the following procedures:

a. Within five business days of receipt of written notice of the Department's disapproval of a Revised Submittal or of other matters in dispute, Metro-North must make a written request for an opportunity to meet with the Regional Director and other involved Department staff to discuss the surrounding circumstances. The Regional Director shall consider any information presented by Metro-North in resolving the dispute and will render the Department's final determination regarding matters subject to Dispute Resolution pursuant to Article III(E) of this Stipulation.

b. If the matter in dispute may affect the public, the Department may, in its discretion, permit intervention by petition.

c. All determinations by the Department pursuant to Article III(E) shall be final and binding upon Metro-North unless within thirty days of receipt of the Department's determination by the attorney of record for Metro-North, Metro-North petitions the Supreme Court, Albany County for review. Metro-North shall bear the burden of proof with respect to any matter in dispute, and a Department determination shall not be set aside except upon a finding that the determination was arbitrary, capricious, or contrary to law. The filing of a petition by Metro-North pursuant to this paragraph shall not stay or excuse performance of work or timely transmission of submittals with respect to the disputed issue, except by agreement of the Department or by

order of the court upon Metro-North's application. Metro-North shall have the burden of establishing, before the court, the necessity or appropriateness of such stay or excuse.

F. Modification

This provision shall only apply to the modification of any provision of Article III, which Article is intended to include all activities not funded under EQBA.

If Metro-North desires that any provision of Article III be changed, Metro-North shall make timely written application therefore to the Commissioner or his designee, setting forth reasonable grounds for the relief sought together with any supporting documentation tending to establish such grounds. Timely written application shall be as soon as reasonably possible after Metro-North identifies the grounds for such relief. Reasonable grounds for such modification would include any reasonable and unavoidable delay resulting from Metro-North's inability to expend funds due to the failure of the Metropolitan Transportation Authority ("MTA") Capital Program Review Board to approve a program of capital projects which includes items required for facilitating compliance with this Article, provided that Metro-North has requested such approval and used its best efforts to obtain such approval. However, for purposes of this provision there shall be a presumption that, if the proposed MTA five-year Capital plan does not contain appropriations for funds

necessary to comply with this Stipulation, Metro-North has not used its best efforts. Metro-North shall bear the burden of proof with respect to rebutting such presumption. The Commissioner shall not unreasonably withhold consent to the requested change and shall promptly respond to the request.

IV. EQBA REPORTS

A. Within 30 days after the effective date of this Stipulation, Metro-North shall submit to the Department an application, in a format acceptable to the Department, for State assistance pursuant to ECL Article 52, Title 3, and a resolution, in a format acceptable to the Department, authorizing the execution of a contract for such State assistance.

B. Within 90 days after the effective date of this Stipulation, Metro-North shall submit to the Department an executed State Assistance Contract.

C. Within 90 days after the effective date of this Stipulation and every six months thereafter (unless the Department informs Metro-North otherwise), Metro-North shall provide a written report to the Department of the efforts that it has made in identifying all other responsible parties and compelling other responsible parties to bear the costs associated with the development and implementation of a Remedial Program at the Lagoon Site.

V. LAGOON SITE REMEDIATION: OUI OBLIGATIONS

A. Remedial Design/Remedial Action Workplan Submittals

Metro-North has submitted to the Department a workplan for the remedial design and construction at the Lagoon Site which was approved by the Department in July, 1993; the workplan shall be incorporated into and become an obligation of this Stipulation.

B. Remedial Design Contents

1. Within 90 days of the effective date of this Stipulation, Metro-North shall submit to the Department a remedial design to implement the remedial alternative for the Lagoon Site selected by the Department in the ROD (the "Remedial Design"). The Remedial Design shall be prepared by and have the signature and seal of a professional engineer who shall certify that the Remedial Design was prepared in accordance with this Stipulation.

2. The Remedial Design shall include the following:

a. A detailed description of the remedial objectives, which are to be defined in the Workplan, and the means by which each essential element of the selected remedial alternative will be implemented to achieve those objectives, including, but not limited to:

i. the construction and operation of any structures;

ii. the collection, destruction, treatment, and/or disposal of hazardous wastes and substances and their constituents and degradation products, and of any soil or other materials contaminated thereby;

iii. the collection, destruction, treatment, and/or disposal of contaminated groundwater, leachate, and air;

iv. physical security and posting of the Lagoon Site;

v. health and safety of persons living and/or working at or in the vicinity of the Lagoon Site;

vi. quality control and quality assurance procedures and protocols to be applied during implementation of the Remedial Design; and

vii. monitoring which integrates needs which are present on-Site and off-Site during implementation of the Department-selected remedial alternative.

b. "Biddable Quality" documents for the Remedial Design including, but not limited to, documents and specifications prepared, signed, and sealed by a professional engineer. These plans shall satisfy all applicable local, state and federal laws, rules and regulations;

c. A time schedule to implement the Remedial Action;

d. The parameters, conditions, procedures, and protocols to determine the effectiveness of the Remedial

Design, including a schedule for periodic sampling of groundwater monitoring wells on-Site and off-Site;

e. A description of operation, maintenance, and monitoring activities to be undertaken after the Department has approved construction of the Remedial Action, including the number of years during which such activities will be performed;

f. A contingency plan to be implemented if any element of the Remedial Action fails to achieve any of its objectives or otherwise fails to protect human health or the environment;

g. A health and safety plan for the protection of persons at and in the vicinity of the Lagoon Site during construction and after completion of construction. This plan shall be prepared in accordance with 29 C.F.R. 1910 by a certified health and safety professional; and

h. A citizen participation plan which incorporates appropriate activities outlined in the Department's publication, "New York State Inactive Hazardous Waste Citizen Participation Plan," dated August 30, 1988, and any subsequent revisions thereto.

C. Remedial Action Construction and Reporting

1. Within 120 days of the Department's approval of the Remedial Design, Metro-North shall award a contract to commence construction of the Remedial Action.

2. Metro-North shall implement the Remedial Action in accordance with the Department-approved Remedial Design.

3. During implementation of all construction activities identified in the Remedial Design, Metro-North shall have on-Site a full-time representative who may be a consultant engaged in connection with the project, qualified to supervise the work done.

4. Within 60 days after completion of the construction activities identified in the Remedial Design, Metro-North shall submit to the Department a detailed post-remedial action operation and maintenance plan ("O & M Plan"); "as-built" drawings and a final engineering report (each including all changes made to the Remedial Design during construction); and a certification by a professional engineer that the Remedial Design/Remedial Action was implemented and all construction activities were completed in accordance with the Department-approved Remedial Design. The O & M Plan, "as built" drawings, final engineering report, and certification must be prepared, signed, and sealed by a professional engineer.

5. Upon the Department's approval of the O & M Plan, Metro-North shall implement the O & M Plan in accordance with the requirements of the Department-approved O & M Plan.

6. After receipt of the "as-built" drawings, final engineering report, and certification, the Department shall notify Metro-North in writing whether the Department is

satisfied that all construction activities have been completed in compliance with the approved Remedial Design.

7. If the Department concludes that any OUI element of the Remedial Program fails to achieve its objectives or otherwise fails to protect human health or the environment, Metro-North shall implement the approved contingency plan or take whatever additional action the Department determines necessary to achieve those objectives or to ensure that the Remedial Program otherwise protects human health and the environment. Any dispute between the parties with respect to any additional action required will be resolved pursuant to the "Dispute Resolution" provisions of this Stipulation, unless such additional action is funded under EQBA.

VI. LAGOON SITE REMEDIATION: OUII OBLIGATIONS

A. RI/FS Work Plan Contents and Submittals

1. Within 60 days after the effective date of this Stipulation, Metro-North shall submit to the Department a detailed work plan describing the methods and procedures to be implemented in performing an RI/FS for the Lagoon Site ("RI/FS Work Plan").

2. a. The RI/FS Work Plan shall include, but not be limited to, the following:

(1) A chronological description of the anticipated RI/FS activities, together with a schedule for the performance of those activities. The workplan shall

provide for performance of the RI/FS in two phases, neither of which, will interfere with the OUI Remedial Action. The "Phase I" activities are to commence during the OUI remedial design and construction; and the second phase--covering all other RI/FS activities (the "Phase II" activities") are to commence within 90 days after receipt of the Department's approval of the Phase I component of the OUII RI/FS Report.

(2) A Sampling and Analysis Plan that shall include:

(a) A quality assurance project plan that describes the quality assurance and quality control protocols necessary to achieve the initial data quality objectives. This plan shall designate a data validation expert and must describe such individual's qualifications and experience.

(b) A field sampling plan that defines sampling and data gathering methods in a manner consistent with the "Compendium of Superfund Field Operations Method" (EPA/540/P-87/001, OSWER Directive 9355.0-14, December 1987) as supplemented by the Department.

(3) A health and safety plan to protect persons at and in the vicinity of the Lagoon Site during the performance of the RI/FS which shall be prepared in accordance with 29 CFR 1910 and all other applicable standards by a certified health and safety professional. Metro-North shall add supplemental items to this plan

necessary to ensure the health and safety of all persons at or in the vicinity of the Lagoon Site during the performance of any work pursuant to this Stipulation.

(4) A citizen participation plan that is, at a minimum, consistent with both the Department's publication, "New York State Inactive Hazardous Waste Site Citizen Participation Plan," dated August 30, 1988, and any subsequent revisions thereto, and 6 NYCRR Part 375.

(5) The RI/FS Work Plan shall incorporate all elements of a RI/FS as set forth in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA") [42 U.S.C. 9601 et seq.], as amended, the National Contingency Plan ("NCP") of March 8, 1990 [40 CFR Part 300], the USEPA guidance document entitled "Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA," dated October 1988, and any subsequent revisions to that guidance document in effect at the time the RI/FS Work Plan is submitted, and appropriate USEPA and Department technical and administrative guidance documents.

B. Performance and Reporting of OUII Phase I RI/FS

1. Within 60 days after the Department's approval of the RI/FS Work Plan, Metro-North shall commence the Remedial Investigation of those activities that will not be impacted by the OUI remediation.

2. Metro-North shall perform the Remedial Investigation in accordance with the Department-approved RI/FS Work Plan.

3. During the performance of the Remedial Investigation, Metro-North shall have on-Site a full-time representative, who may be a consultant engaged by Metro-North, who is qualified to supervise the work done.

4. Within the time frame set forth in the RI/FS Work Plan, Metro-North shall complete the Phase I component of the RI/FS that shall:

a. include all data generated and all other information obtained during the Phase I component of the Remedial Investigation:

b. include fate and transport of contaminants, risk assessment, and the Phase I component of the FS (including an initial screening and development of alternatives);

c. provide all of the assessments and evaluations set forth in CERCLA, the NCP, and the guidance documents identified in Subparagraph VIII.A.(2)(a)(5);

d. identify any additional data that must be collected during a Phase II component of the RI;

e. include a certification by the individual or firm with primary responsibility for the day to day performance of the Phase I component of the Remedial Investigation that all activities that comprised

the Remedial Investigation were performed in full accordance with the Department-approved RI/FS Work Plan.

C. Performance and Reporting of Phase II RI/FS

1. Metro-North shall perform the Phase II component of the Remedial Investigation in accordance with the requirements and timetable set forth in the Department-approved RI/FS workplan.

2. Within the timeframe set forth in the RI/FS workplan, Metro-North shall complete the Phase II component of the RI/FS that shall:

a. include all data generated and all other information obtained during the Phase II component of the Remedial Investigation;

b. include fate and transportation of contaminants, risk assessment, and the Phase II component of the FS (including a screening of remedial alternatives, detailed analysis of remedial alternatives, recommend remedial alternatives and prepare conceptual design);

c. provide all of the assessments and evaluations set forth in CERCLA, the NCP, and the guidance documents identified in subparagraph VIII.A.(2)(a)(5);

d. include a certification by the individual or firm with primary responsibility for the day-to-day performance of the Remedial Investigation that all activities that comprised the Remedial Investigation were performed in full accordance with the Department-approved RI/FS workplan.

3. Within 30 days after the Department's approval of the Phase II component of the RI/FS, Metro-North shall cooperate and assist the Department in soliciting public comment on the RI/FS and the proposed remedial action plan resulting therefrom, in accordance with CERCLA, the NCP, the guidance documents identified in Subparagraph VIII.A.(2)(a)(5), and with any Department policy and guidance documents in effect at the time the public comment period is initiated. After the close of the public comment period, the Department shall select a final remedial alternative for the Lagoon Site in a ROD. The ROD shall be incorporated into and become an obligation of this Stipulation whereby Metro-North shall be obligated to undertake the activities specified therein. Such obligations shall be subject to the dispute resolution provisions hereof, in the event they are not funded under EQBA.

D. Remediation

If the ROD for OUII requires implementation of a selected remedial alternative, the design and construction of same shall comply with the requirements specified in Subparagraph V .B and V .C of this Stipulation.

VII. INTERIM REMEDIAL MEASURES

Metro-North may propose interim remedial measures ("IRMs") for the Lagoon Site on an as-needed basis. In proposing each IRM, Metro-North shall submit to the

Department a work plan which includes a chronological description of the anticipated IRM activities together with a schedule for the performance of those activities. Upon the Department's determination that the proposal is an appropriate interim remedial measure and upon the Department's approval of such work plan, the work plan shall be incorporated into and become an obligation under this Stipulation; and Metro-North shall submit to the Department for its review and (as appropriate) approval, in accordance with the schedule contained in the Department-approved work plan, detailed documents and specifications prepared, signed, and sealed by a professional engineer to implement the Department-approved IRM. Such documents shall include a health and safety plan, contingency plan, and (if the Department requires such) a citizen participation plan that incorporates appropriate activities outlined in the Department's publication, "New York State Inactive Hazardous Waste Citizen Participation Plan," dated August 30, 1988, and any subsequent revisions thereto. Metro-North shall then carry out such IRM in accordance with the requirements of the approved work plan, detailed documents and specifications, and this Stipulation. Within the schedule contained in the Department-approved work plan, Metro-North shall submit to the Department a final engineering report prepared by a professional engineer that includes a certification by that individual that all activities that comprised the IRM were

performed in full accordance with the Department-approved work plan, detailed documents and specifications, and this Stipulation. Within the schedule contained in the Department-approved work plan, Metro-North shall submit to the department a report or reports documenting the performance of the IRM. Metro-North shall notify the Department of any significant difficulties that may be encountered in implementing the Department-approved work plan, detailed documents, or specifications and shall not modify any obligation unless first approved by the Department.

VIII. PROGRESS REPORTS

Metro-North shall submit to each of the parties set forth in Subparagraph XVII written quarterly progress reports that: (i) describe the actions which have been taken toward achieving compliance with this Stipulation during the previous quarter; (ii) include a summary of all validated results of sampling and tests and all other validated data received or generated by Metro-North or Metro-North's contractors or agents in the previous quarter conducted pursuant to this Stipulation; (iii) identify all work plans, reports, and other deliverables required by this Stipulation which were completed and submitted during the previous quarter; (iv) describe all actions, including, but not limited to, data collection and implementation of work plans,

which are scheduled for the next quarter and provide other information relating to the progress at the Lagoon Site; (v) include information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the Metro-North's obligations under the Stipulation, and description of efforts made to mitigate those delays or anticipated delays; (vi) include any modifications to any work plans that Metro-North has proposed to the Department or that have been approved by the Department; and (vii) describe all activities undertaken in support of the Citizen Participation Plan during the previous quarter and those to be undertaken in the next quarter. Metro-North shall submit these progress reports to the Department by the tenth day of the first month of each calendar quarter following the effective date of this Stipulation.

IX. REVIEW OF SUBMITTALS

A. (1) The Department shall review each of the submittals Metro-North makes pursuant to this Stipulation 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 this Stipulation and generally accepted technical and scientific principles. The Department shall notify Metro-North in writing of its approval or

disapproval of the submittal, except for the submittal discussed in Subparagraph VI.A.(2)(a)(3).

(2) a. If the Department disapproves a submittal, it shall so notify Metro-North in writing and shall specify the reasons for its disapproval. Within 30 days after receiving written notice that Metro-North's submittal has been disapproved, or such other time as may be agreed to by the Parties, in consideration of the time reasonably required to respond to the Department's objections, Metro-North shall make a revised submittal to the Department that addresses and resolves all of the deficiencies raised in the Department's notice. If no reasonable time is agreed to above, then the 30 day time limit applies.

b. After receipt of the revised submittal, the Department shall notify Metro-North in writing of its approval or disapproval. If the Metro-North fails to rectify the submittal in accordance with the Department's notice of disapproval, Metro-North shall be in violation of this Stipulation and the Department may take any action or pursue whatever rights it has pursuant to any provision of statutory or common law. If the Department approves the revised submittal, it shall be incorporated into and become an obligation of this Stipulation.

B. The Department may require Metro-North to modify and/or amplify and expand a submittal if the Department

determines, as a result of reviewing data generated by an activity required under this Stipulation or as a result of reviewing any other data or facts, that further work is necessary.

X. VIOLATIONS AND ENFORCEABILITY

The Department shall maintain the discretion to enforce the terms and obligations assumed under this Stipulation by the commencement of administrative proceedings pursuant to uniform procedures and/or judicial proceedings, including, where appropriate, contempt of court. Provided, however, that contempt of court shall not be available to the Department unless it first obtains an administrative or judicial order compelling compliance and Metro-North's non-compliance continues.

XI. FORCE MAJEURE

Metro-North shall not suffer any penalty under this Stipulation or be subject to any proceeding or action if it cannot comply with any requirement hereof because of war, riot or unforeseeable disaster arising exclusively from natural causes which the exercise of ordinary human prudence could not have prevented. Metro-North shall, within five days of when it obtains knowledge of any such condition, notify the Department in writing. Metro-North shall include in such notice the measures taken and to be taken by Metro-

North to prevent or minimize any delays and shall request an appropriate extension or modification of this Stipulation. Failure to give such notice in a timely manner shall constitute a waiver of any claim that a delay is not subject to penalties. Metro-North shall have the burden of proving that an event is a defense to compliance with this Stipulation pursuant to this Subparagraph by clear and convincing evidence.

XII. MODIFICATION OF PROVISIONS RELATING TO EQBA ACTIVITIES

This provision shall only apply to the modification of any provision of this Stipulation other than a provision of Article III (the Article intended by the Parties to include the activities not funded under EQBA).

If Metro-North desires that any relevant provision of this Stipulation be changed, Metro-North shall make timely written application to the Commissioner, setting forth reasonable grounds for the relief sought. Timely written application shall be as soon as reasonably possible after Metro-North identifies the grounds for such relief. The Commissioner shall not arbitrarily withhold consent to the requested change and shall promptly respond to the request.

XIII. ENTRY UPON SITE

A. Metro-North shall permit any duly designated officer, employee, consultant, contractor or agent of the

Department to enter upon one of Metro-North's Facilities or areas in the vicinity of one of Metro-North's Facilities which may be under the control of Metro-North, and shall assist the Department in gaining access to any additional areas necessary for inspection purposes and for the purpose of making or causing to be made such sampling and tests as the Department deems necessary and for ascertaining Metro-North's compliance with the provisions of this Stipulation. Although no prior notification to the Metro-North of such inspections is required, the Department will give prior notice of site inspections where it deems it appropriate to do so.

B. Metro-North shall use best efforts to obtain all permits, easements, rights-of-way, rights-of-entry, and approvals necessary to perform its obligations under this Stipulation. If any access required to perform this Stipulation is not obtained despite best efforts, Metro-North shall promptly so notify the Department in writing, and shall include in that notification a summary of the steps that Metro-North has taken to attempt to obtain access. Thereafter, the Department may as it deems appropriate, assist Metro-North in obtaining access.

C. Metro-North shall provide the Department with the opportunity and the Department shall have the right to obtain split samples, duplicate samples, or both, of all substances and materials sampled by Metro-North, and the Department also

shall have the right to take its own samples. Likewise, the Department shall provide Metro-North with the opportunity to obtain split samples, duplicate samples, or both, of all substances and materials sampled by the Department. Metro-North shall make available to the Department the results of all sampling and/or tests or other data generated by Metro-North with respect to implementation of this Stipulation and shall submit these results in the progress reports required by this Stipulation following completion of quality assurance/quality control reports on such data.

D. Metro-North shall notify the Department at least 10 working days in advance of the commencement of field activities to be conducted pursuant to this Stipulation, and shall provide at least 48 hours advance notice of the commencement of subsequent phases of field activities to be conducted pursuant to this Stipulation.

E. Metro-North shall provide a copy of this Stipulation to each contractor hired to perform work required by this Stipulation and shall condition all contracts entered into hereunder upon performance in conformity with the terms of this Stipulation. Metro-North shall nonetheless be responsible for ensuring that Metro-North's contractors and sub-contractors perform the work to be done under this Stipulation in accordance with this Stipulation.

F. During implementation of the Remedial Design for OUI and, if there is one, for OUII, Metro-North shall provide

the Department with suitable office space at the Lagoon Site, including access to a telephone, and shall permit the Department full access to all records and job meetings.

XIV. DEPARTMENT RESERVATION OF RIGHTS

A. Except as specifically provided in this Stipulation, nothing contained in this Stipulation shall be construed as barring diminishing, adjudicating or in any way affecting:

1. Any legal or equitable rights or claims, actions, proceedings, suits, causes of action, or demands whatsoever that the Department or the State may have against Metro-North including, but not limited to any alleged violations of the ECL, rules, or regulations promulgated thereunder or permits issued thereunder with respect to investigatory, remedial, or corrective action or with respect to claims for natural resources damages as a result of the release or threatened release of hazardous substances, petroleum, or other pollutants at or from Metro-North's facilities or areas in the vicinity of Metro-North's operations; provided that in any proceeding commenced with respect to matters for which stipulated penalties hereunder have been paid, such payments shall be considered in the assessment of penalties.

2. any legal or equitable rights or claims, actions, proceedings, suits, causes of action, or demands

whatsoever that the Department, the State or Metro-North may have against anyone other than Metro-North, its officers, directors, agents, servants, employees, successors, and assigns;

3. the Department's right to the extent provided by law to enforce this Stipulation against Metro-North's successors or assigns in the event that Metro-North shall fail to fulfill any of the terms or provisions hereof; and

4. the Department's right to require that Metro-North undertake additional measures, including interim remedial measures, required to protect public health or the environment.

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

XV. INDEMNIFICATION

Metro-North 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 Stipulation by Metro-North, and/or Metro-North's directors, officers, employees, servants, agents, successors and assigns.

XVI. PUBLIC NOTICE

If Metro-North proposes to convey the whole or any part of Metro-North's property interest in any of the facilities, Metro-North 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 notify the transferee in writing, with a copy to the Department, of the applicability of this Stipulation. The terms "convey" and "conveyance" as used in this Paragraph, mean a sale, transfer, or relinquishment of property interest of at any of the facilities other than in connection with a corporate reorganization.

XVII. COMMUNICATIONS

A. Except as otherwise provided below, all written communications required by this Stipulation shall be transmitted by United States Postal Service, by private courier service, or hand delivered as follows:

Communication from Metro-North shall be sent to:

1. Chittibabu Vasudevan, Ph.D., P.E.

Section Chief

Division of Hazardous Waste Remediation

New York State Department of Environmental
Conservation

50 Wolf Road

Albany, New York 12233-7010

2. Robert K. Davies, Esq.
Senior Attorney
Division of Environmental Enforcement
50 Wolf Road
Albany, New York 12233-5500
3. G. Anders Carlson, Ph.D.
Director, Bureau of Environmental
Exposure Investigation
New York State Department of Health
2 University Place
Albany, New York 12203
4. Jean-Ann McGrane, Regional Director
21 South Putt Corners Road
New Paltz, New York 12561
5. Al Klauss, P.E.
Regional Solid and Hazardous Waste Engineer
21 South Putt Corners Road
New Paltz, New York 12561

B. Copies of work plans and reports shall be submitted
as follows:

1. Four copies (one unbound) to Chittibabu
Vasudevan, Ph.D., P.E., Section Chief,
Division of Hazardous Waste Remediation.
2. Two copies to G. Anders Carlson, Ph.D.,
Director, Bureau of Environmental Exposure
Investigation.

3. One copy to Jean-Ann McGrane, Regional Director.

4. One copy to Robert K. Davies, Senior Attorney.

5. Two copies to Al Klauss, Regional Solid and Hazardous Waste Engineer.

B. Within 30 days of the Department's approval of any report submitted pursuant to this Stipulation, Metro-North shall submit to Chittibabu Vasudevan a computer "read only" magnetic media copy of the approved report in American Standard Code for Information Interchange (ASCII) format.

C. All written communications required pursuant to Article III of this Stipulation shall be sent to:

Al Klauss, P.E., NYSDEC Region 3
21 South Putt Corners Road
New Paltz, New York 12561-1696

-and-

Joseph Kowalczyk, Esq., NYSDEC
50 Wolf Road
Albany, New York 12233-5500

D. Communication to be made from the Department to the Metro-North shall be sent to:

- Richard K. Bernard, Esq.
General Counsel
Metro-North Commuter Railroad Company
347 Madison Avenue, 19th Floor

New York, New York 10017

- Kenneth McHale

Metro-North Commuter Railroad Company

c/o North White Plains Yard Master's Office

Fisher Lane

North White Plains, New York 10603

- Chris Bennett

Metro-North Commuter Railroad Company

347 Madison Avenue, 11th Floor

New York, New York 10017

E. The Department and Metro-North reserve the right to designate additional or different addressees for communication or written notice to the other.

XVIII. MISCELLANEOUS

A. All activities and submittals required by this Stipulation, except those required by Article III, shall address both on-Site and off-Site contamination resulting from the disposal of hazardous wastes at the Lagoon Site.

B. Metro-North shall retain professional consultants, contractors, laboratories, quality assurance/quality control personnel, and data validators acceptable to the Department to perform the technical, engineering, and analytical obligations required by this Stipulation. The experience, capabilities, and qualifications of the firms or individuals selected by Metro-

North shall be submitted to the Department within 30 days after the effective date of this Stipulation, or within 30 days after they have been selected, if any such firm is selected after the effective date of this Stipulation. The Department's approval of these firms or individuals shall be obtained before the start of any activities for which the Metro-North and such firms or individuals will be responsible. The responsibility for the performance of the professionals retained by Metro-North shall rest solely with Metro-North.

C. Metro-North , its successors and assigns shall be bound by this Stipulation, and Metro-North shall cause its officers, directors, agents, servants and employees to comply herewith. Any change in ownership or corporate status of Metro-North including, but not limited to, any transfer of assets or real or personal property shall in no way alter Metro-North's responsibilities under this Stipulation.

D. All references to "professional engineer" in this Stipulation are to an individual registered as a professional engineer in accordance with Article 145 of the New York State Education Law.

E. All references to "days" in this Stipulation are to calendar days unless otherwise specified.

F. The section headings set forth in this Stipulation are included for convenience of reference only

and shall be disregarded in the construction and interpretation of any of the provisions of this Stipulation.

G. 1. The terms of this Stipulation shall constitute the complete and entire Stipulation agreed to by the Department and Metro-North. No term, condition, understanding, or agreement purporting to modify or vary any term of this Stipulation shall be binding unless made in writing and subscribed by the party to be bound. No informal advice, guidance, suggestion, or comment by the Department regarding any report, proposal, plan, specification, schedule, or any other submittal shall be construed as relieving Metro-North of Metro-North's obligation to obtain such formal approvals as may be required by this Stipulation.

2. If Metro-North desires that any provision of this Stipulation, other than Article III, be changed, Metro-North shall make timely written application, signed by the Metro-North, to the Commissioner setting forth reasonable grounds for the relief sought. Copies of such written application shall be delivered or mailed to:

Robert K. Davies, Esq. and

Chittibabu Vasudevan, Ph.D., P.E.

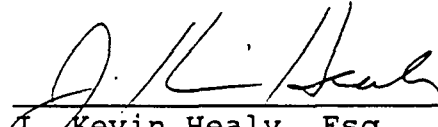
(3) If Metro-North desires that any provision of Article III of this Stipulation be changed, Metro-North shall make timely written application, signed by the Metro-North, to the Commissioner or his designee setting forth

reasonable grounds for the relief sought. Copies of such written application shall be delivered or mailed to:


Joseph M. Kowalczyk, Jr., Esq. and
Albert Klauss, P.E.

IT IS FURTHER STIPULATED AND AGREED, by and between petitioner, by its attorney, J. Kevin Healy, Esq. and respondent, by its attorney G. Oliver Koppell, Attorney General of the State of New York, Douglas H. Ward, Esq., Assistant Attorney General of counsel, that the above-entitled action is settled, and that the respective causes of action contained in the Petition and Amended Petition are dismissed with prejudice.

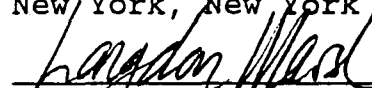
Dated 6-27-94


J. Kevin Healy, Esq.
Attorney for Petitioner
Teitelbaum, Hiller, Rodman,
Paden & Hibsher, P.C.
260 Madison Avenue
New York, New York 10016

Dated 8/4/94

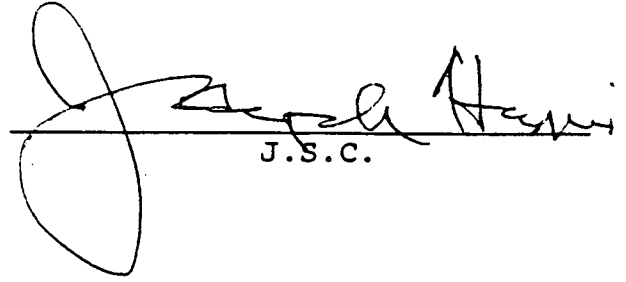

G. Oliver Koppell
Attorney General of the State
of New York
Attorney for Petitioners
Douglas H. Ward, of Counsel
Attorney for Petitioners
120 Broadway, 26th Floor
New York, New York 10271

Dated July 23, 1994


Langdon Marsh
~~Acting~~ Commissioner
New York State Department
of Environmental Conservation
50 Wolf Road
Albany, New York 12233

SO ORDERED:

Dated AUGUST 5, 1994
ALBANY, N.Y.


J.S.C.

(RD3:METNORTH.STP/a)

**MEMORANDUM OF UNDERSTANDING BETWEEN
THE NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION AND METRO-NORTH
COMMUTER RAILROAD COMPANY ("METRO-NORTH")**

WHEREAS,

1. The New York State Department of Environmental Conservation (the "Department") is responsible for the enforcement of the Environmental Conservation Law ("ECL") and Navigation Law of the State of New York, and Titles 6 and 17 of the Official Compilation of the Codes, Rules and Regulations of the State of New York ("6 N.Y.C.R.R.") and any agreement entered into thereunder.

2. It is the policy of the State of New York to conserve, improve, and protect its natural resources and environment and control water, land, and air pollution, in order to enhance the health, safety, and welfare of the people of the State and their overall economic and social well being.

3. It is the responsibility of the Department to promote and coordinate management of water, land, fish, wildlife, and air resources to assure their protection, enhancement, provision, allocation, and balanced utilization consistent with the environmental policy of the State and to take into account the cumulative impact upon all of such resources in making any determination in connection with a license, order, permit, certificate, or other similar action.

4. Metro-North is a public benefit corporation created pursuant to Public Authorities Law Section 1266, which operates the Harlem, Hudson, and New Haven commuter railroad lines.

5. The properties operated by Metro-North include certain service facilities known as the Port Jervis Yard, located in Port Jervis, New York; the Harmon Yard, located in Croton-on-Hudson, New York; the Brewster Yard, located in the Town of Southeast, New York; and the North White Plains Yard, located in the City of White Plains and the Town of Greenburgh, New York (said service facilities being hereinafter referred to collectively as the "Facilities").

6. Over the past ten years, Metro-North has entered into a number of consent orders with the Department, addressing various violations alleged with respect to its operations at the Facilities. The parties wish to avoid future regulatory proceedings and to this end, have agreed that Metro-North will undertake a comprehensive environmental compliance audit and management review, and will institute a "Best Management Practices" Plan at each of the Facilities. They have further agreed that the Department will assign an Environmental Monitor to observe Metro-North's operations, at Metro-North's expense.

7. The Department and Metro-North are desirous of working together to reduce the risk of accidents and minimize discharges, releases, and emissions of hazardous substances and other pollutants from the Facilities and enhance Metro-North's compliance with the ECL and NL.

8. This Memorandum of Understanding is designed to assist Metro-North in protecting the health, safety, and quality of life of its employees and the public, and in exercising responsible

stewardship of natural resources that may be impacted by its activities. Metro-North's commitment to protecting public health and the environment is evidenced by the commitments it has made in this Memorandum of Understanding.

9. The Department and Metro-North wish to set out their arrangements and understandings with respect to the matters described in the foregoing paragraphs.

NOW, THEREFORE, the parties hereto agree as follows:

I. Environmental Compliance Review

1. Within 60 days of the effective date of this Memorandum of Understanding, Metro-North shall submit to the Department for review and comment a draft work statement for use in a Request for Proposals ("RFP") for the performance of a comprehensive environmental compliance review with respect to each of the Facilities. The RFP shall provide for a study that will:

(i) assess Metro-North's compliance with applicable federal and state environmental laws, including all relevant statutes, rules, regulations, and Department permits; (ii) identify past and present operations, practices, and policies that contribute to actual environmental contamination or the risk of environmental contamination, including but not limited to impacts on groundwater; (iii) identify issues to be addressed in a Best Management Practices Plan ("BMP Plan") and recommend appropriate BMP measures; and (iv) identify any circumstances that may result in environmental contamination or the violation of any federal or state environmental law or regulation unless prompt corrective

action is taken, to the extent such circumstances can be determined from existing information and visual site inspections.

2. The RFP shall call for proposals from engineering consulting firms in good standing, with broad interdisciplinary staffs, and shall require candidates to: (i) provide evidence that they routinely and competently conduct environmental compliance reviews; (ii) identify the personnel who will conduct the study, substantiating that such individuals have the education, training, and professional experience required for the proper performance of the work; and (iii) include a schedule for the completion of the project, which shall require delivery of separate reports for each of the Facilities in accordance with the following timetable:

Harmon (formerly Site 360019)	--	9 months from date of contract award
Brewster	--	12 months from date of contract award
Port Jervis	--	15 months from date of contract award
North White Plains	--	18 months from date of contract award

Said schedule shall provide for a close-out meeting with the Department and Metro-North prior to preparation of a draft report, submission of draft reports simultaneously to the parties, follow-up meetings, and the submission of final reports.

3. The Department shall provide Metro-North with written comments on the proposed RFP as soon as practicable.

4. Metro-North shall submit to the Department a list of the consultants which have responded to the RFP, within 10 days after the period for submittal of proposals has closed. Metro-North shall make the proposals available for review by the Department, upon request.

5. Within 5 months of its receipt of written comments from the Department, Metro-North shall submit to the Department for its review and approval the proposal provided by the candidate it intends to select for the project, and a proposed scope of work (including any changes to the draft work statement contained in the RFP). When reviewing Metro-North's proposed consultant for approval or disapproval, the Department will consider factors including the following:

- (a) whether the proposed consultant is an engineering consulting firm with a broad interdisciplinary staff;

- (b) references submitted by the proposed consultant;

- (c) evidence that the proposed consultant routinely conducts environmental compliance reviews;

- (d) the proposed consultant's number of years of experience in performing environmental compliance reviews;

- (e) whether the proposed consultant is also a state or federal contractor; and

- (f) the previous experiences of the Department and other government agencies with the proposed consultant.

If the Department disapproves the consultant proposed or the proposed scope of work, it shall so notify Metro-North and

specify the reasons therefor. Metro-North shall thereafter submit for approval an alternative candidate, or a revised scope of work, as the case may be, for approval within 30 days of Metro-North's receipt of the Department's notice of disapproval, or in accordance with such other timetable as may be agreed to by the parties. In the event the Department disapproves such second submittal and Metro-North has not invoked the dispute resolution provisions set forth in paragraph VIII hereof, Metro-North shall be in breach of this Memorandum of Understanding.

6. Metro-North shall execute a contract for the performance of the Environmental Compliance Review in conformance with the scope of work approved by the Department, and direct that the work proceed, within 60 days after receipt of the Department's approval pursuant to subparagraph I(5) hereof.

7. Metro-North shall give the Consultant its full cooperation in conducting the environmental compliance reviews, such cooperation to include but not be limited to authorizing the Consultant to examine any and all of Metro-North's records and other materials in conducting of its study and providing to the Consultant upon request access to any and all of Metro-North's employees requested by the Consultant. Provided that Metro-North shall not be required to produce documents that would result in the waiver of the attorney-client privilege. However, Metro-North will redact the privileged material and provide the remainder of the document, or documents as the case may be, to the consultant along with a factual summary that responds fully to

inquiries from the consultant concerning matters relevant to the environmental compliance review.

8. The formal reporting process will begin with respect to each Facility with a close-out meeting among the consultant, Metro-North, and the Department. During the close-out meeting, the consultant will communicate all observations and findings resulting from its compliance review. Any ambiguities will be clarified prior to preparation of a draft report.

9. Metro-North shall cause the consultant to submit draft reports of the results of its study with respect to each Facility simultaneously to the Department and Metro-North. Upon the request of either the Department or Metro-North, meetings shall be convened to discuss with the consultant any matter relating to the contents of such draft reports. The Department and Metro-North may submit to the consultant written comments regarding a draft report within 60 days of its submittal. Within 90 days after submittal of a draft report (or thereafter, if the parties so agree), the consultant shall submit simultaneously to the Department and Metro-North a final report with respect to each Facility (the "Final Report").

10. All copies of any draft environmental compliance audit submitted hereunder with respect to a Facility shall be returned to Metro-North, upon approval of the final report required for that Facility. Metro-North shall not review any draft or final Environmental Compliance Reports prior to submittal to the Department.

11. All materials prepared by the consultant with respect to the activities described in the Final Report shall be kept on file in the consultant's offices for a period of 7 years.

12. Each Final Report shall: (i) identify all instances of non-compliance with federal and state environmental laws, rules, regulations, or permits; (ii) include a certification that, except as otherwise specified in the report, the Facility is in compliance with all federal and state statutory or regulatory requirements that are within the scope of work; (iii) make recommendations regarding measures needed to achieve compliance in those areas where violations were found to exist; (iv) identify issues to be addressed in a BMP Plan and recommend appropriate measures; and (v) identify any circumstances which the consultant believes may result in environmental contamination or the violation of any federal or state environmental law or regulations, unless prompt corrective action is taken.

13. Within 30 days after submittal of the Final Report, Metro-North may submit a separate written response setting forth with particularity any disagreement that it may have with respect to the consultant's findings.

14. Within 120 days of submittal of a Final Report, Metro-North shall provide the Department with its proposal for:

(i) curing any statutory or regulatory violation identified by the consultant; and (ii) correcting any circumstances that have been found by the consultant to contribute to actual environmental contamination or the risk of environmental

contamination. Metro-North and the Department shall thereafter meet to discuss such proposal and to identify the measures required to achieve compliance with all applicable statutes and regulations in accordance with a schedule acceptable to the Department. In the event the parties reach agreement on such matters, this Memorandum of Understanding may be modified or, if the Department so requires, an order on consent shall be issued to require Metro-North to undertake the measures identified by the parties, in accordance with such mutually agreeable schedule. Should Metro-North and the Department be unable to reach agreement with respect to the measures needed to achieve compliance, or with regard to the schedule for implementation of such measures, the Department may take such administrative or judicial enforcement action as it deems appropriate. Nothing in this provision may be construed to limit the ability of the Department to take any enforcement action authorized by law or to waive any defense that Metro-North may have in such proceeding.

15. Metro-North shall submit to the Department within one year after each of the Final Reports required pursuant to paragraph I(8) hereof has been submitted, a report detailing the steps it has taken to come into compliance with applicable federal and state environmental laws, and to address any other issues or circumstances identified by the consultant in the Final Report.

II. Environmental Management Evaluation

1. Within 60 days of the effective date of this Memorandum of Understanding, Metro-North shall submit to the Department for review and comment a draft work statement for use in an RFP for the performance of an "Environmental Management Evaluation" with respect to each of the Facilities.

2. The RFP shall seek proposals from firms having a broad-based interdisciplinary staff with expertise in environmental matters, and shall provide for a study that evaluates Metro-North's corporate policies and practices with respect to:

- (i) achieving and maintaining compliance with applicable federal and state environmental laws, regulations, and policies; and
- (ii) reducing the potential for adverse impacts to public health and the environment. The study shall evaluate with particularity at least the following with respect to Metro-North's compliance with environmental laws and potential impacts on public health and the environment:

- (a) data evaluation practices, capabilities, and policies for the preparation of compliance reports required under state and federal environmental laws, regulations, or permits;

- (b) practices for responding to regulatory directives or changes in applicable laws or regulations, which would require modification of operating procedures at the involved Facilities;

- (c) organization lines of authority and organizational relationships between environmental staff at each facility, the manager in charge of operations at each Facility and Metro-

North's corporate officers responsible for environmental management and operations;

(d) staffing and personnel training policies and practices with respect to activities regulated under, or affecting Metro-North's compliance with state and federal environmental laws, regulations and policies;

(e) environmental control equipment and operation and maintenance procedures for relevant equipment regulated under or affecting Metro-North's compliance with state and federal environmental laws, regulations and policies;

(f) incident reporting, including but not limited to, manifest exception reports and any unpermitted disposal, release, or discharge;

(g) maintenance of facility records regarding disposition of all wastes;

(h) quality assurance and quality control programs;
and

(i) self inspections and reporting.

3. The RFP shall request the consultants responding to provide their recommendations as to any additional matters that should be addressed in the performance of a comprehensive environmental management evaluation for each of the involved Facilities.

4. The RFP shall require completion of Environmental Management Evaluations with respect to each of the Facilities in accordance with the following timetable:

Harmon	--	within 3 months after completion and acceptance of the Environmental Compliance Review for Harmon Yard
Brewster	--	within 3 months after completion and acceptance of the Environmental Management Evaluation for Harmon Yard
Port Jervis	--	within 6 months after completion and acceptance of the Environmental Management Evaluation for Harmon Yard
North White Plains	--	within 9 months after completion and acceptance of the Environmental Management Evaluation for Harmon Yard

5. The Department shall provide Metro-North with written comments on the proposed RFP as soon as practicable.

6. Metro-North shall submit to the Department a list of the consultants which have responded to the RFP, within 10 days after the period for submittal of proposals has closed. Metro-North shall make the proposals available for review by the Department, upon request.

7. Within 5 months of receipt of written comments from the Department, Metro-North shall submit to the Department for its review and approval the proposal provided by the candidate it intends to select for the project, and a proposed scope of work (including any changes Metro-North proposes to make to the draft work statement contained in the RFP). When reviewing Metro-North's proposed consultant, the Department will consider factors including the following:

(a) whether the proposed consultant is an engineering consulting firm with a broad interdisciplinary staff;

(b) references submitted by the proposed consultant;

(c) evidence that the proposed consultant routinely conducts environmental management reviews;

(d) the proposed consultant's number of years of experience in performing environmental management evaluations;

(e) whether the proposed consultant is also a state or federal contractor; and

(f) the previous experiences of the Department and other government agencies with the proposed consultant.

8. If the Department disapproves the consultant proposed or the proposed scope of work, it shall so notify Metro-North and specify the reasons therefor. Metro-North shall thereafter submit for approval an alternative candidate or revised scope of work, as the case may be, for approval within 60 days of Metro-North's receipt of the Department's notice of disapproval. In the event the Department disapproves such second submittal, and Metro-North has not invoked the dispute resolution provisions set forth in paragraph VIII hereof, Metro-North shall be in breach of this Memorandum of Understanding.

9. Metro-North shall execute a contract for the performance of the Environmental Management Evaluations, and direct that the work proceed, within 60 days after receiving the Department's approval, pursuant to subparagraph II(7) hereof.

10. Metro-North shall give the Consultant its full cooperation in conducting the environmental evaluations, such cooperation to include but not be limited to authorizing the Consultant to examine any and all of Metro-North's records and other materials required in conducting its evaluation and providing to the Consultant upon request access to any and all of Metro-North's employees requested by the Consultant provided that Metro-North shall not be required to produce documents that would result in the waiver of any attorney-client privilege. However, Metro-North will redact the privileged material and provide the remainder of the document, or documents as the case may be, to the consultant along with a factual summary that responds fully to inquiries from the consultant concerning matters relevant to the environmental compliance review.

11. Metro-North shall deliver to the Department reports with respect to each of the Facilities in accordance with the timetable specified in subparagraph II(4) hereof. The reports shall set forth the consultant's recommendations regarding the improvements Metro-North might make in its corporate policies and practices with respect to: (i) achieving and maintaining compliance with applicable federal and state environmental laws, regulations, and policies; and (ii) reducing the potential for adverse impacts to public health and the environment.

Metro-North and the Department shall meet with the consultant to consider the recommendations contained in each such report and to discuss the basis for those recommendations. In the event that

subsequent to those discussions the Department requires further information available to the consultant as a result of its work under the contract, Metro-North shall cause the consultant to provide such information in a form, and according to a timetable, acceptable to the Department. The Department's review of the reports submitted hereunder shall be limited to determining whether they satisfy the scope of work approved pursuant to paragraph II(7) hereof.

12. Metro-North shall submit to the Department within one year after each of the Environmental Management Evaluation reports required by this Memorandum of Understanding has been submitted, a report detailing the changes it has made to its corporate policies and practices in response to the recommendations set forth in the Environmental Management Evaluation reports. The reports provided to the Department pursuant to this paragraph shall itemize the steps taken to implement each of the recommendations made by the consultant, and shall identify those recommendations that have not yet been implemented, in whole or in part.

III. Best Management Practices Plans

1. Taking into account the recommendations included in the Environmental Compliance Reports and Environmental Management Reports, Metro-North shall develop and implement a Best Management Practices Plan ("BMP Plan") acceptable to the Department with respect to each of the Facilities. The BMP Plans

will be designed to prevent or minimize the potential for release of reportable quantities of hazardous substances, as listed in 6 N.Y.C.R.R. Part 597, to the waters or land of the State. The BMP Plans shall also provide for timely notification to the Department of any such releases, sufficient emergency equipment, and other procedures necessary to respond to such releases, and development of a spill prevention plan. The requirements for the BMP Plans and schedule regarding their development and implementation are attached as Appendix A. Upon approval by the Department, Metro-North shall implement the BMP Plans pursuant to the schedules contained therein.

2. The Plans shall be developed and submitted in accordance with the following timetable:

(a) Metro-North shall submit a BMP Plan satisfying the requirements set forth in Appendix A for the Harmon Yard (the "Harmon BMP Plan") within 6 months after completion of the Environmental Compliance Audit and Environmental Management Evaluation for Harmon.

(c) Metro-North shall put into place the non-structural elements of the Harmon BMP Plan within 3 months after its approval by the Department. Any structural elements shall be put into place in accordance with a schedule agreed to by the parties.

(d) Metro-North shall submit to the Department, within one year after the date on which the Department has approved the Harmon BMP Plan, a report describing the steps taken to put the

Harmon BMP Plan into place, the improvements realized at Harmon operations by virtue of the Harmon BMP Plan, and the expenses incurred as a result of such implementation. Metro-North shall set out in such report any adjustments it proposes to improve the Harmon BMP Plan. Metro-North may effectuate such adjustments, so long as the BMP Plan, as so adjusted, meets the requirements of Appendix A.

(e) Metro-North shall submit a BMP Plan meeting the requirements of Appendix A for the Brewster Facility within 90 days after submittal of the report required by subparagraph II 11 hereof, and shall implement the non-structural elements of such plan within 3 months after its approval by the Department. Any structural elements shall be put into place in accordance with a schedule agreed upon by the parties.

(f) Metro-North shall submit a BMP Plan meeting the requirements of Appendix A for the Port Jervis Facility within 5 months after submittal of the report required by subparagraph II 11 hereof, and shall implement the non-structural elements of such plan within 3 months after its approval by the Department. Any structural elements shall be put into place in accordance with a schedule agreed upon by the parties.

(g) Metro-North shall submit a BMP Plan meeting the requirements of Appendix A for the North White Plains Facility within 7 months after submittal of the report required by subparagraph II 11 hereof, and shall implement the non-structural elements of such plan within 3 months after its approval by the

Department. Any structural elements shall be put into place in accordance with a schedule agreed upon by the parties.

IV. Environmental Monitor

1. Metro-North shall make payment to the Department for the funding of one full-time equivalent on-site environmental monitor, whose primary duties shall be to monitor Metro-North's activities and operations to determine Metro-North's compliance with Department permits, the ECL, the Navigation Law, and any rules or regulations promulgated pursuant thereto and to monitor the implementation of the activities required by this Memorandum of Understanding and existing and future Orders. In order to fund this position, Metro-North will establish an environmental monitor account with the Department. Notwithstanding Metro-North's contribution of funds to the Department with respect to the Environmental Monitor, the parties understand and acknowledge that any individual serving in such capacity shall be and remain an employee of the Department, and shall not be deemed to be in the employ of, or an independent contractor to Metro-North.

2. The following requirements will govern the funding and activities of the environmental monitor:

(a) Within 30 days of the effective date of this Memorandum of Understanding, Metro-North shall pay to the Department the sum of One Hundred Five Thousand Dollars (\$105,00.00). This sum is based on an estimate of the first year costs and is subject to quarterly revision. Subsequent quarterly payments shall be made to maintain an account balance sufficient

to meet the next nine months' anticipated expenses. Such quarterly payments shall be made in accordance with the following provisions.

3. Costs covered by the fund established for the on-site monitor shall include:

(a) direct personal service costs for full-time equivalent and fringe benefits, including the cost of replacement personnel for the regularly assigned monitor;

(b) direct non-personal service costs, including costs associated with a vehicle, if necessary, equipment and appropriate laboratory costs and fees;

(c) inflation and negotiated salary increases; and

(d) overhead or support costs at a calculated indirect cost rate based on a federally approved plan.

4. The Department may revise the required payment on a quarterly basis to include the costs of monitoring to the Department, as set forth in subparagraph V(3) above. This quarterly revision may take into account factors such as inflation, salary increases, and the amount of time required for monitoring compliance. Any accrued interest shall be applied to the account balance. The Department shall provide Metro-North with a written explanation of the basis for any modification of the annual amount.

5. Within 30 days of receipt of a quarterly statement/invoice from the Department that a payment is due, Metro-North shall forward payment to the Department, Attention:

Office of Environmental Monitors, 50 Wolf Road, Room 608, Albany, New York 12233-1500.

6. Failure to make the required payments shall be a breach of this Memorandum of Understanding, and the Department reserves all rights to take appropriate action to enforce the above payment provisions. Failure to make a required payment shall, in addition, subject Metro-North to the obligation to pay to the Department the stipulated amounts provided for in paragraph VII of this Memorandum of Understanding.

7. This provision shall not limit the Department's right to require additional monitors in the future as a permit condition or as a result of an enforcement action.

8. Upon written request by Metro-North, the Department shall make available to Metro-North any records (e.g., vouchers, time records) relating to such monitor costs, consistent with the Public Officers Law and 6 N.Y.C.R.R. Part 616 DEC will maintain such records in accordance with any relevant records retention policies.

9. Within 30 days after the effective date of this Memorandum of Understanding, Metro-North will identify for the Department an individual who will serve as the "contact person" for the Environmental Monitor. Such contact person will coordinate on behalf of Metro-North all communications and correspondence with the Environmental Monitor.

10. Metro-North may request to be relieved by the Department from its obligations under this provision pursuant to

the Modification provision of this Agreement. This provision shall remain in effect unless the Department, after review of such request, determines that assignment of an environmental monitor to Metro-North is no longer warranted in light of all facts and circumstances existing at the time such request is made.

V. Progress Reports

Beginning six months from the effective date of this Memorandum of Understanding and every six months thereafter during implementation, Metro-North shall submit to the Department progress reports that:

(a) describe the actions that have been taken toward achieving compliance with this Memorandum of Understanding during the preceding six months;

(b) identify all reports, and other deliverables required by this Memorandum of Understanding that were completed and submitted during the preceding six months;

(c) describe the actions that are scheduled for the next six months;

(d) include information regarding unresolved delays encountered or anticipated that may affect the future schedule for implementation of Metro-North's obligations under this Memorandum of Understanding, and efforts made to mitigate those delays and anticipated delays.

VI. Submittal Review and Approval

1. Whenever the Department's review and approval is required under the terms of this Memorandum of Understanding, including the attachments, with respect to any document, plan, or other required submittal, unless otherwise provided for above, the following provisions shall apply:

(a) After receipt of a submittal, the Department shall determine if it fulfills the terms of this Memorandum of Understanding and shall provide written notification to Metro-North of its approval or disapproval of the submittal.

(b) In the event that the Department disapproves any submittal, it shall in writing specify the reasons for such disapproval with sufficient particularity so as to allow Metro-North to remedy any alleged deficiency.

(c) When any submittal is disapproved by the Department, Metro-North shall submit a revision to such document, plan, or other submission ("Revised Submittal") within thirty (30) days of its receipt of the Department's notice of disapproval, or in accordance with such other time period as may be agreed to by the parties in consideration of the time reasonably required to respond to the notice of disapproval. If no reasonable time is agreed to above, then the thirty (30) day time limit applies. Such Revised Submittal shall address each deficiency noted in the Department's notice.

(d) The Department shall review the Revised Submittal to determine if it fulfills the terms of this Memorandum of Understanding and shall provide written notification to Metro-

North of its approval or disapproval of the Revised Submittal. In the event Metro-North fails to correct the submittal in accordance with the notice of disapproval, Metro-North shall be deemed to have breached the terms of this Memorandum of Understanding, unless it has invoked the dispute resolution provisions hereof.

2. Whenever the Department's review or review and comment (but not approval) is provided for under the terms of this Memorandum of Understanding, including the attached appendices, with respect to any submittal, Metro-North shall consider any Department comments.

VII. Stipulated Amounts

1. In the event Metro-North fails to comply with its obligations under Paragraphs I or IV hereof, of those provisions of paragraph III that require the development (as distinct from the implementation) of an approvable BMP Plan for each of the Facilities, the following stipulated amounts shall be paid by Metro-North promptly upon demand by the Department:

<u>Period of Non-Compliance</u>	<u>Amount Per Day</u>
Day 1-15	\$1,000.00
Day 16-30	\$2,000.00
Day 31-60	\$3,000.00
Day 61 and thereafter	\$5,000.00

2. In the event Metro-North fails to comply with its obligations under paragraph II hereof, the following stipulated

amounts shall be paid by Metro-North promptly, upon demand by the Department:

<u>Period of Non-Compliance</u>	<u>Amount Per Day</u>
Day 1-15	\$ 500.00
Day 16-30	\$1,000.00
Day 31-60	\$1,500.00
Day 61 and thereafter	\$2,500.00

3. For purposes of this paragraph, with respect to activities other than submittals or Revised Submittals, "fail to comply" shall include the failure to perform the specified act in the manner required by this Memorandum of Understanding or by the date required by this Memorandum of Understanding. With respect to submittals and Revised Submittals, the term "fail to comply" shall include the failure by Metro-North to submit an original or revised document within the time limits set forth in or established pursuant to this Memorandum of Understanding and submission of a document that is of such poor quality as not to qualify as a good faith submission.

4. The stipulated amounts shall begin to accrue on the day that failure to comply with any obligation of this Memorandum of Understanding occurs, and shall continue to accrue until Metro-North either performs the required action or completes corrective action satisfactory to the Department. In the event that the Department determines that Metro-North has failed to comply with any of terms of paragraphs I, II, or IV, of this Memorandum of Understanding, or those provisions of paragraph III relating to

the development of BMP Plans, the Department may serve upon Metro-North a Notice of Failure to Comply, which shall set forth the nature of the failure to comply and the calculation of the stipulated amounts due. Within twenty-one (21) days after receipt of a Notice of Failure to Comply, Metro-North shall deliver the full stipulated amounts due to the Department. In the event that Metro-North does not pay the stipulated amounts, then this Memorandum of Understanding, together with the Notice of Failure to Comply may be filed and enforced as a civil judgment for the total penalty amount set forth in the Notice of Failure to Comply. The assessment of stipulated penalties as set forth above shall not limit the Department's right to seek such other relief as may be authorized by law.

5. Fifty percent (50%) of any stipulated amounts incurred by Metro-North pursuant to this provision shall be forgiven upon Metro-North's timely achievement of the next subsequent related milestone date set forth in this Memorandum of Understanding.

6. If Metro-North fails to retain a consultant to perform any of the work required hereunder within the time period set forth in this Memorandum of Understanding, and pays stipulated penalties to the Department as a result of such failure, those penalties shall be forgiven in full in the event that all reports to be prepared by such consultant are submitted in compliance with the schedule set forth herein.

7. In the event the Department serves upon Metro-North a Notice of Failure to Comply with respect to a matter that is the

subject of a modification request made pursuant to paragraph XIV hereof, or of dispute resolution in accordance with the procedures set forth in paragraph VIII, Metro-North's obligation to pay stipulated penalties shall be tolled during the period that such dispute resolution process is underway or such modification request is being considered. In the event Metro-North prevails with respect to any such dispute, or if it is finally determined that Metro-North's modification request should be granted, then no stipulated penalties shall become due. Otherwise, stipulated penalties, calculated from the day that Metro-North's failure to comply with this Memorandum of Understanding first occurred, shall become due and payable.

VIII. Dispute Resolution

1. In the event that a dispute arises between Metro-North and the Department with respect to the adequacy of a submittal, or with respect to other matters relating to Metro-North's compliance with the requirements of this Memorandum of Understanding, the parties shall confer together in good faith to resolve any differences that may exist. If, after conferring together in good faith, the parties are unable to resolve such differences, the matter shall be resolved in accordance with this provision.

2. If Metro-North fails to adequately address the Department's comments in a Revised Submittal, or Metro-North disputes any measures required by the Department pursuant to this Memorandum of Understanding, Metro-North shall be in violation of

this Memorandum of Understanding unless Metro-North successfully invokes this provision. If this procedure is invoked, Metro-North shall comply with the final determination of the Department, failing which it shall be in violation of this Memorandum of Understanding. In such event, the Department may pursue whatever remedies may be available at law.

3. Disputes governed by this provision will be resolved in accordance with the following procedures:

(a) Within five business days of receipt of written notice of the Department's disapproval of a Revised Submittal or of other matters in dispute, Metro-North must make a written request for an opportunity to meet with the Regional Director and other involved Department staff to discuss the surrounding circumstances. The Regional Director shall consider any information presented by Metro-North in resolving the dispute.

(b) Stipulated penalties will be tolled from the Department's receipt of Metro-North's written request for opportunity to meet with the Regional Director, in accordance with paragraph VII hereof.

(c) If the matter in dispute may affect the public, the Department may, in its discretion, permit intervention by petition.

(d) All determinations by the Department shall be final and binding upon Metro-North unless within thirty days of receipt of the Department's determination by the attorney of record for Metro-North, Metro-North petitions the Supreme Court,

Albany County for review. Metro-North shall bear the burden of proof with respect to any matter in dispute, and a Department determination shall not be set aside except upon a finding that the determination was arbitrary, capricious, or contrary to law. The filing of a petition by Metro-North pursuant to this paragraph shall not stay or excuse performance of work or timely transmission of submittals with respect to the disputed issue, except by agreement of the Department or by order of the court upon Metro-North's application. Metro-North shall have the burden of establishing, before the court, the necessity or appropriateness of such stay or excuse.

IX. Access

1. Metro-North shall permit any duly designated officer, employee, consultant, or agent of the Department to enter upon any areas of the Facilities under Metro-North's control, and shall assist the Department in gaining access to any additional areas necessary for inspection purposes and for the purpose of making or causing to be made such sampling and tests as the Department deems necessary and for ascertaining Metro-North's compliance with the provisions of this Memorandum of Understanding. Although no prior notification to Metro-North of such inspections is required, the Department will give such prior notification whenever it deems it appropriate to do so.

2. Metro-North shall use best efforts to obtain all permits, easements, rights-of-way, rights-of-entry, and approvals necessary to perform its obligations under this Memorandum of

Understanding. If any access required to perform Metro-North's obligations under this Memorandum of Understanding is not obtained despite best efforts, Metro-North shall promptly so notify the Department in writing, and shall include in that notification a summary of the steps that Metro-north has taken to attempt to obtain access. Thereafter, the Department may, as it deems appropriate, assist Metro-North in obtaining access.

3. Metro-North shall notify the Department at least 10 working days in advance of the commencement of field activities to be conducted pursuant to this Memorandum of Understanding, and shall provide at least 48 hours' advance notice of the commencement of subsequent phases of field activities to be conducted pursuant to this Memorandum of Understanding.

4. Metro-North shall provide a copy of this Memorandum of Understanding to each consultant hired to perform work required by this Memorandum of Understanding and shall condition all contracts entered into hereunder upon performance in conformity with the terms of this Memorandum of Understanding. Metro-North shall nonetheless be responsible for ensuring that Metro-North's consultants perform the work to be done under this Memorandum of Understanding in accordance with this Memorandum of Understanding, except to the extent, with respect to the Environmental Compliance Studies, it is unable to exercise control over the contents of the reports prepared by the consultant.

X. Notice of Property Transfer

If Metro-North proposes to convey, transfer, or relinquish the whole or any part of its interest in the Facilities, Metro-North 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.

XI. Reservation of Enforcement Powers

The terms of this Memorandum of Understanding shall not be construed to prohibit the Commissioner or his duly authorized representative from exercising any summary abatement or other enforcement powers, including those either at common law or as granted pursuant to statute or regulation; provided that the Administrative Law Judge in any proceeding commenced with respect to matters constituting a failure to comply with this Memorandum of Understanding shall take into account any stipulated penalties paid hereunder by Metro-North in determining whether additional penalties should be imposed.

XII. Indemnification

Metro-North 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 Memorandum of Understanding by Metro-North, its directors, officers, employees, servants, agents, successors, or assigns.

XIII. Effective Date

The effective date of this Memorandum of Understanding shall be the date this Memorandum of Understanding is signed by both Metro-North and the Commissioner or his designee.

XIV. Force Majeure

Metro-North shall not suffer any penalty under this Memorandum of Understanding, or be deemed to be in violation hereof or be subject to any proceeding or action, if it cannot comply with any requirement hereof because of an act of God; war, strike, riot or other catastrophe as to which negligence or willful misconduct on the part of Metro-North was not the proximate cause. Provided, however, that Metro-North shall, within one business day, notify the Division of Environmental Enforcement by telephone and the Department in writing, pursuant to the COMMUNICATIONS provision of this Agreement, within 5 business days when it obtains knowledge of any such condition and request an appropriate extension or modification of this Agreement. Metro-North shall include in such notice the measures taken and to be taken by Metro-North to prevent or minimize any delays. Failure to give notice pursuant to this paragraph constitutes a waiver of any claim that a delay is not subject to penalties. Relief under this clause shall not be available to Metro-North, with regard to a particular event, if Metro-North fails to provide timely notice of such event. Metro-North shall have the burden of proving entitlement to relief under the clause by clear and convincing evidence.

XV. Modification

If Metro-North desires that any relevant provision of this Memorandum of Understanding be changed, Metro-North shall make timely written application therefore to the Commissioner or his designee, setting forth reasonable grounds for the relief sought together with any supporting documentation tending to establish such grounds. Timely written application shall be as soon as reasonably possible after Metro-North identifies the grounds for such relief. Reasonable grounds for such modification would include any reasonable and unavoidable delay resulting from Metro-North's inability to expend funds due to the failure of the Metropolitan Transportation Authority ("MTA") Capital Program Review Board to approve a program of capital projects which includes items required for facilitating compliance with this MOU, provided that Metro-North has requested such approval and used its best efforts to obtain such approval. However, for purposes of this provision there shall be a presumption that, if the proposed MTA five-year Capital plan does not contain appropriations for funds necessary to comply with this MOU, Metro-North has not used its best efforts. Metro-North shall bear the burden of proof with respect to rebutting such presumption. The Commissioner shall not unreasonably withhold consent to the requested change and shall promptly respond to the request.

XVI. Freedom of Information Act Compliance

The Department shall disclose any reports, documents, or other materials submitted pursuant to this Memorandum of Understanding to third parties only in accordance with the provisions of Article 6 of the Public Officers Law and 6 N.Y.C.R.R. Part 616.

XVII. Communications

1. All communications required to be made between the Department and Metro-North shall be made in writing and transmitted by the United State Postal Service, Return Receipt Requested, or hand-delivered to the addresses set forth in paragraph 2 and 3 below. Alternatively, Federal Express or a comparable courier service may be utilized. All communications will be considered submitted or approved on the date of deposit with the U.S. Postal Service or delivery to a recognized carrier service.

2. Communication to be made from Metro-North to the Department pursuant to this Memorandum of Understanding shall be made as follows:

(a) One copy to the Division of Environmental Enforcement, 50 Wolf Road, Room 609, Albany, New York 12233-5500, Attention: Joseph M. Kowalczyk, Esq.

(b) One copy to the New York State Department of Environmental Conservation, Region 3 Office, 21 South Putt Corners Road, New Paltz, New York 12561, Attention: Al Klauss.

(c) One copy to the Pollution Prevention Unit, NYSDEC, 50 Wolf Road, Room 231, Albany, New York 12233-7253, Attention: John Iannotti, Director.

3. Communication to be made from the Department to Metro-North pursuant to this Memorandum of Understanding shall be made as follows:

(a) One copy to Richard K. Bernard, Esq., General Counsel, Metro-North Commuter Railroad Company, 347 Madison Avenue, New York, New York 10017.

(b) One copy to Kenneth McHale, Metro-North Commuter Railroad Company, c/o North White Plains Yard Master's Office, Fisher Lane, North White Plains, New York 10603.

(c) One copy to Chris Bennett, Metro-North Commuter Railroad Company, 347 Madison Avenue, 11th Floor, New York, New York 10017.

4. The Department and Metro-North respectively reserve the right to designate other or different addressees on written notice to the other.

XVIII. Reservation of Rights

Except as specifically provided in this Memorandum of Understanding, nothing contained in this Memorandum of Understanding shall be construed as barring, diminishing, adjudicating or in any way affecting:

(a) any legal or equitable rights or claims, actions, proceedings, suits, causes of action, or demands whatsoever that the Department may have against Metro-North for any alleged

violations of the ECL, rules, or regulations promulgated thereunder or permits issued thereunder or with respect to investigatory, remedial, or corrective action or with respect to claims for natural resources damages as a result of the release or threatened release of hazardous substances, petroleum, or other pollutants at or from Metro-North's facilities or areas in the vicinity of Metro-North's operations;

(b) any legal or equitable rights or claims, actions, proceedings, suits, causes of action, or demands whatsoever that the Department or Metro-North may have against anyone other than Metro-North, its officers, directors, agents, servants, employees, successors, and assigns;

(c) The Department's right to the extent provided by law, to enforce this Memorandum of Understanding against Metro-North's successors or assigns in the event that Metro-North shall fail to fulfill any of the terms or provisions hereof; and

(d) the Department's right to require that Metro-North undertake additional measures, including interim remedial measures, required to protect public health or the environment.

XIX. Binding Effect of Memorandum of Understanding

The provisions of this Memorandum of Understanding shall inure to the benefit of and be binding upon the Department and Metro-North, its successors and assigns and Metro-North shall cause its officers, directors, agents, employees, and all persons, firms, and corporations acting subordinate thereto to comply herewith.

XX. Enforceability of BMP Plans

Metro-North shall not be subject to stipulated penalties under paragraph VII hereof for any failure to implement a BMP Plan developed under this Memorandum of Understanding.

Notwithstanding the foregoing, the Department may enforce Metro-North's obligation to implement any such plan by means of an administrative proceeding commenced under Articles 17 and 71 of the ECL. However, Metro North does not hereby waive any defense it may have in such proceeding.

XXI. Option to Retain One Consultant

Metro-North may elect to retain one firm to perform the consulting work required under this Memorandum of Understanding, upon the issuance of a single RFP. Such comprehensive RFP, and any resulting contract, shall meet all applicable requirements of this Memorandum of Understanding.

XXII. Formal Terms

The provisions hereof shall constitute the complete and entire Memorandum of Understanding between Metro-North and the Department. 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.

ACCEPTED AND AGREED:

METRO-NORTH COMMUTER RAILROAD
COMPANY

By: *[Signature]*
Ans

STATE OF NEW YORK)
COUNTY OF New York) ss:

On this 24th day of June 1994 before me
personally came Donald N. Nelson, to me
known, who being duly sworn, did depose and say the he is the
PRESIDENT of Metro-North Commuter
Railroad Company, described in and which executed the foregoing
instrument.

[Signature]

NOTARY PUBLIC

RICHARD K. BERNARD
Notary Public, State of New York
No. 4968446
Qualified in Westchester County
Commission Expires June 25, 1996

Dated: July 23, 1994

NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

By: *[Signature]*

Langdon Marsh
~~Assistant~~ Commissioner

APPENDIX A

BEST MANAGEMENT PRACTICES

Metro-North shall develop and implement acceptable Best Management Practices Plans ("BMP Plan") for the facilities to prevent or minimize the release of reportable quantities of hazardous substances as defined in 6 NYCRR Part 597 to the waters or land of the State. In general, the program should include the prevention planning steps of safety audits, hazard analysis and risk reduction implementation. Within 30 days of the effective date of this Memorandum of Understanding, Metro-North shall provide to the Department copies of any prevention planning program documents, if any, that may now be in effect at the facilities.

1. Metro-North shall review all facility components or systems (including material storage areas; in plant transfer, process and material handling areas; loading and unloading operations; and sludge and waste disposal areas) where toxic or hazardous pollutants are used, manufactured, stored or handled to evaluate the potential for the release of significant amounts of such pollutants. In performing such an evaluation, Metro-North shall consider such factors as the probability of equipment failure or improper operation, settlement of facility air emissions, the effects of natural phenomena such as freezing temperatures and precipitation, fires and the facility's history of spills and leaks. For hazardous pollutants, the list of reportable quantities as defined in 6 NYCRR Part 597 shall be used as a guide in determining significant amounts of releases. For toxic pollutants, the relative toxicity of the pollutant shall be considered in determining the significance of potential releases. For nuisance compounds, such as dye, potential visual or aesthetic impacts detrimental to the usage of waters of the State shall be considered.

The review shall address all substances present at the facility that are listed as toxic pollutants under Section 307(a)(1) of the Clean Water Act or as hazardous pollutants under Section 311 of the Act or that are identified as Chemical of Concern by the Industrial Chemical Survey.

2. Whenever the potential for a significant release of nuisance compounds or toxic or hazardous pollutants is determined to be present, Metro-North shall identify Best Management Practices ("BMPs") that have been

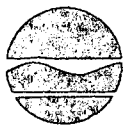
established to prevent or minimize such potential releases. Where BMPs are inadequate or absent, appropriate BMPs shall be established. In selecting appropriate BMPs, Metro-North shall consider typical industry practices such as spill reporting procedures, risk identification and assessment, employee training, inspections and records, preventive maintenance, good housekeeping, materials compatibility and security. In addition, Metro-North will consider structural measures (such as secondary containment devices) where appropriate.

3. Development of the BMP Plans shall include sampling of waste stream segments for the purpose of toxic "hot spot" identification. The economic achievability of technology-based end-of-pipe treatment will not be considered until plant site "hot spot" have been identified and contained, removed or minimized through the imposition of site-specific BMPs or application of intent facility treatment technology.
4. The BMP Plans shall be documented in narrative form and shall include any necessary plot plans, drawings or maps. Other documents already prepared for the facility such as a safety manual or a Spill Prevention, Control and Countermeasure Plan ("SPCC Plan") may be used as part of the plan and may be incorporated by reference. A copy of the BMP Plan shall be maintained at each facility and shall be made available to the Department upon request. Metro-North shall notify the Department once the BMP is developed and will advise the Department annually regarding the status of implementation of the BMP. As a minimum, the plan should consider including the following BMP's:
 - a. BMP Committee
 - b. Reporting of BMP Incidents
 - c. Risk Identification and Assessment
 - d. Employee Training
 - e. Inspection and Records
 - f. Preventive Maintenance
 - g. Good Housekeeping
 - h. Materials Compatibility
 - i. Security
5. The BMP Plans shall be modified whenever changes at the facility materially increase the potential for significant releases of toxic or hazardous pollutants or where actual releases indicate the

plan is inadequate. Any substantive modification of the BMP Plan shall be submitted to the Department for review and approval.

6. The term "significant release" as used herein means any release which may:
- a. Cause or contribute to a violation of an effluent limitation in its SPDES permit, or water quality standards; or
 - b. Exceed a Reportable Quantity, pursuant to NYCRR Part 597; or
 - c. Contain substances which Metro-North is not authorized to discharge by its SPDES permit.

a:\mou2.fnl
JK3



*clear copy in
release file* *Ram* *Fy Files*

New York State Department of Environmental Conservation

MEMORANDUM

TO: Distribution
FROM: Chittbabu Vasudevan, Chief, Eastern Projects Section, BERA
SUBJECT: Harmon Railroad Yard Wastewater Treatment Area Site #3-60-010 *[Signature]*

DATE: August 2, 1993

Attached for your review is a copy of the Remedial Design/Remedial Action (RD/RA) Work Plan for the Harmon Railroad Yard wastewater treatment area, Operable Unit I (OUI).

If you have any questions or comments on the work plan, please direct them to either Jeff McCullough, or myself, at (518) 457-1708.

Distribution

J. Cooper, DFW
A. Klauss, Region 3
J. Kelleher, DOW

Attachment

cc: J. McCullough
B. Bentley
E. O'Dell, Region 3

RECEIVED

AUG - 4 1993

NYS - DEC
Region 3-New Paltz

METRO-NORTH COMMUTER RAILROAD

Remedial Design/Remedial Action

Work Plan

Harmon Railroad Yard Wastewater Treatment Area

Croton-On-Hudson, New York

23 June 1993

Prepared for:

Metro-North Commuter Railroad

347 Madison Avenue,

New York, NY 10017

Prepared By:

ERM-Northeast

475 Park Avenue South

New York, NY 10016

and

175 Froehlich Farm Boulevard

Woodbury, NY 11797



ERM

METRO-NORTH COMMUTER RAILROAD

*Remedial Design/Remedial Action
Work Plan*

*Harmon Railroad Yard Wastewater Treatment Area
Croton-On-Hudson, New York*

23 June 1993

Prepared for:

*Metro-North Commuter Railroad
347 Madison Avenue,
New York, NY 10017*

Prepared By:

**ERM-Northeast
475 Park Avenue South
New York, NY 10016
and
175 Froehlich Farm Boulevard
Woodbury, NY 11797**

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1.0

INTRODUCTION

1.1

PURPOSE AND ORGANIZATION OF REPORT

At the request of Metro-North Commuter Railroad (Metro-North), ERM-Northeast (ERM) has prepared this Remedial Design/Remedial Action (RD/RA) Work Plan ("the Work Plan") for remediation of the Harmon Railroad Yard Wastewater Treatment Area in Croton-on-Hudson, New York. The purpose of this Work Plan is to describe the tasks involved in preparation of the remedial design, construction and operation and maintenance of the selected remedy for this area.

The information used in the RD/RA Work Plan is based on a series of documents prepared by Fred C. Hart Associates, Inc. and McLaren/Hart Environmental Engineering Corporation. These documents include: the Remedial Investigation Report dated November 27, 1989; the Endangerment Assessment dated December 28, 1989; the revised Feasibility Study dated February 1992; the Product Investigation Report dated November 20, 1990 and the Ground Water Sampling Report dated May 22, 1991.

In September 1992, NYSDEC released the Record of Decision (ROD) for the Harmon Railroad Yard Wastewater Treatment Area in which the remedy for the site was selected. Briefly, the remedy involves the excavation of sludge from the lagoon area and off-site incineration; and the excavation of soils from under and around the sludge, and depending upon the concentration of certain compounds in the soils, off-site disposal or consolidation and on-site disposal of the soils. A clay liner will be placed in the lagoon prior to backfilling of the soils and a clay cover will be placed over the remediated lagoon. The components of the Old Wastewater Treatment Plant and its appurtenances that have been found to be contaminated will also be decontaminated and disposed of properly.

In conjunction with the remediation, Metro-North will be decommissioning the remainder of the Old Treatment Plant for operational reasons.

This Work Plan has been organized into eight sections. The first section contains a summary of all of the data collected at the wastewater treatment area and a brief description of the remedy selected for this area. The second section contains a brief description of the pre-design studies that are being conducted to further characterize the soils around and under the lagoon. The pre-design studies are being conducted separately from the Remedial Design, but the data will be integrated into the design as necessary. Section 3.0 describes the permitting requirements and a plan for satisfying the requirements on this project. The fourth section contains a description of the remedial design and the fifth section contains a more detailed description of the remedy and a description of the tasks involved in implementation of the remedy. The sixth section contains a description of the operation and maintenance procedures that will be implemented upon completion of the remedy. Section 7.0 presents the proposed project organization and Section 8.0 present the proposed project schedule.

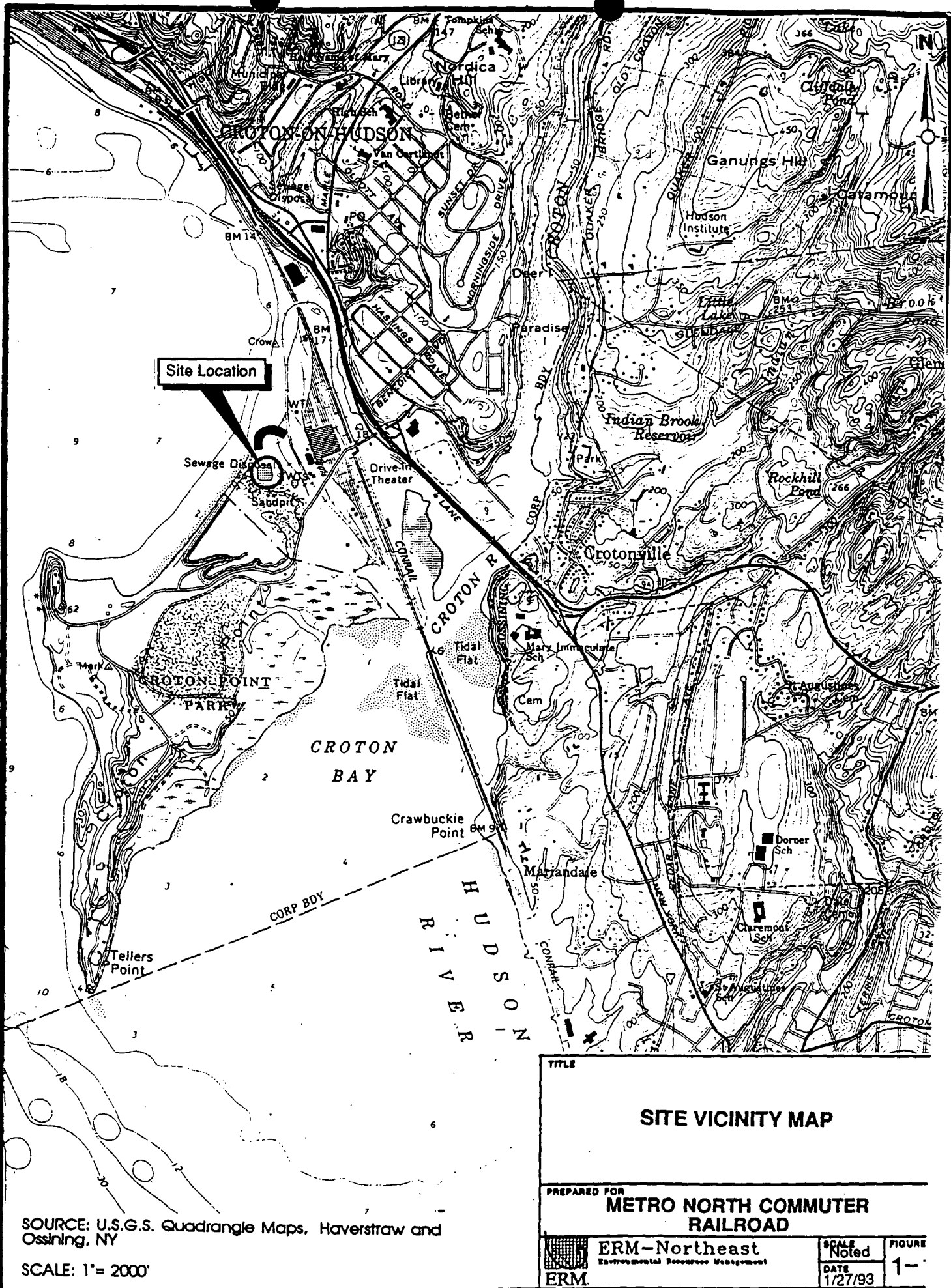
1.2

SITE DESCRIPTION AND HISTORY

The Harmon Railroad Yard is a railroad maintenance and repair yard, operated by Metro-North since 1983, and located in Croton-on-Hudson, Westchester County, New York. The yard is approximately 100 acres in size and its location is shown in Figure 1-1. The Harmon Yard Wastewater Treatment Area is located in an approximately 7-1/2 acre fenced area and is hereinafter referred to as the "Site" (Figure 1-2).

The Site contains the following facilities:

- A wet well/dry well pump station for transfer of wastewater for subsequent flow equalization and treatment. Oil removed from the



SOURCE: U.S.G.S. Quadrangle Maps, Haverstraw and Ossining, NY

SCALE: 1"= 2000'

TITLE

SITE VICINITY MAP

PREPARED FOR

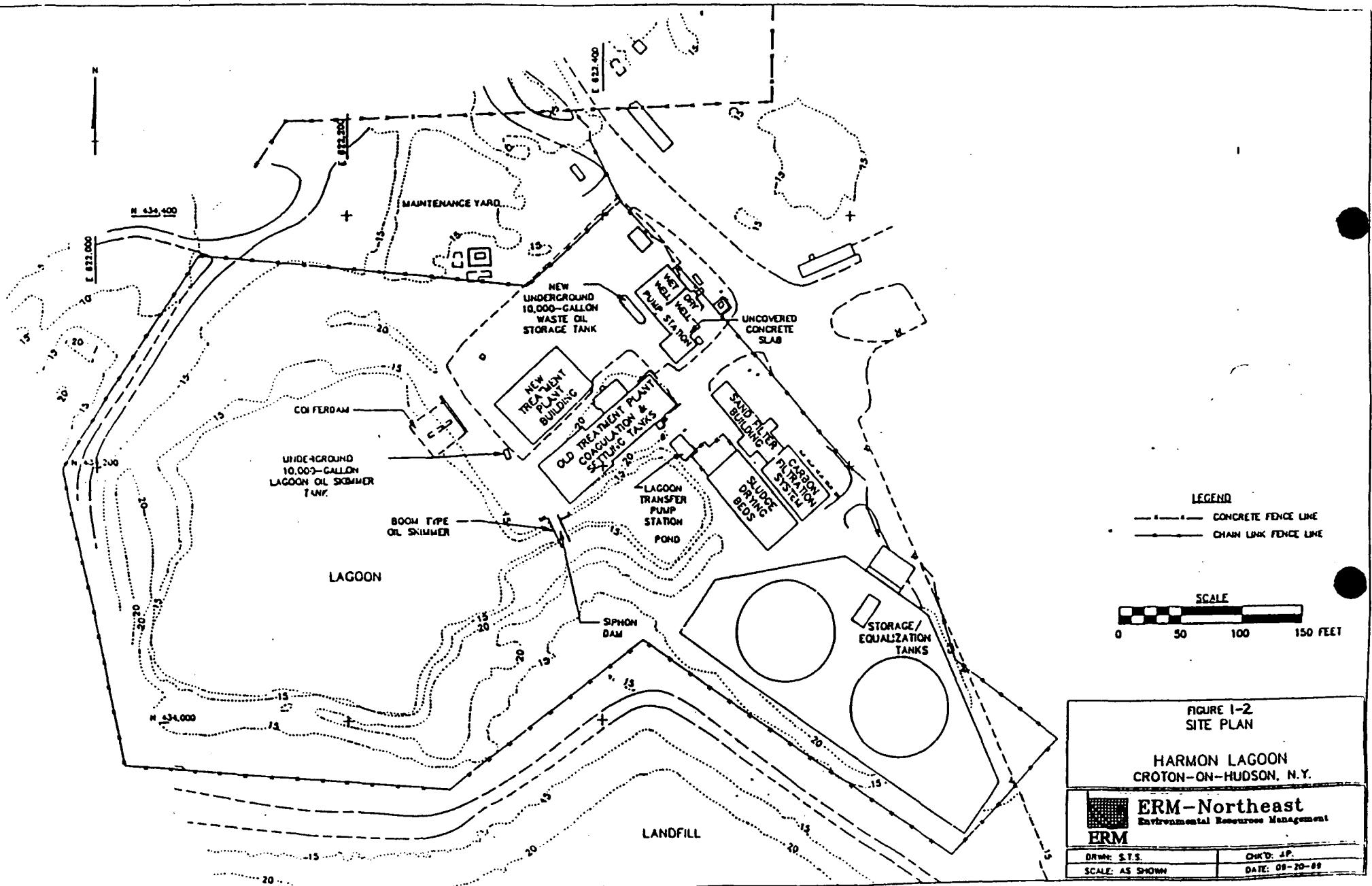
**METRO NORTH COMMUTER
RAILROAD**



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Environmental Resource Management

SCALE
Noted
DATE
1/27/93

FIGURE
1-



LEGEND

- CONCRETE FENCE LINE
- CHAIN LINK FENCE LINE

SCALE



FIGURE 1-2 SITE PLAN

HARMON LAGOON
CROTON-ON-HUDSON, N.Y.



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Environmental Resources Management

DRWN: S.T.S.

CHK'D: J.P.

SCALE: AS SHOWN

DATE: 08-20-88

wet well is stored in a 10,000 gallon underground tank (Wet Well Oil Storage Tank).

- An Old Treatment Plant which consists of two parallel flowpaths, each containing prechlorination and chemical coagulation (alum/polymer) treatment, and a settling basin.
- A lagoon/pond system that was formerly used to equalize storm and waste water flows to the Old Treatment Plant. Any oil that was removed from the lagoon during its operation was stored in a 10,000 gallon underground storage tank (Lagoon Oil Skimmer Tank). This tank has since been removed and therefore is not addressed further in this Work Plan.
- An out-of-doors ("outside") sludge drying bed for dewatering sludge generated by the Old Wastewater Treatment Plant settling basins.
- The Carbon Filtration Building, also known as the "OHM Plant" which consisted of two processing flowpaths each of which include activated carbon and sand filtration. The combined effluent from the two parallel trains was chlorinated prior to discharge. The OHM Plant received wastewater from the Old Treatment Plant.
- An Equalization System consisting of two 600,000 gallon above ground steel tanks situated in a concrete diked area and the necessary pumps and appurtenances for transferring equalized wastewater to treatment facilities.
- A new Treatment Plant which consists of prechlorination, chemical coagulation (alum/polymer), parallel plate clarifier (Lamella separator), biological treatment, clarifier, sand filtration, post chlorination, and sludge dewatering equipment. The New

Treatment Plant only receives wastewater from the Equalization System.

- Indoor sludge drying beds for drying sludges from the New Treatment Plant.
- A sampling station for periodic sampling of treatment effluent from the new system.

In 1980, polychlorinated biphenyls (PCBs) were discovered in the effluent discharge from the Old Treatment Plant. The source of PCBs was identified as the maintenance areas where empty transformers were given a final rinse by Conrail, a predecessor railroad. The rinseate from this activity contained residual PCBs and was conveyed to the equalization lagoon. Since the treatment process was not capable of removing PCBs, residual PCBs were found in the Old Treatment Plant, its appurtenances, the lagoon and the pond. Once the source of the problem was discovered, the rinsing operation at the maintenance area was discontinued and the contaminated areas of the shop, the conveyance pipelines and the wet well were cleaned by Paul M. Mallon Company under the supervision of NYSDEC. Only portions of the Old Treatment Plant and the equalization lagoon and pond remain contaminated. At that time, Conrail contracted with O.H. Materials Co., (OHM) of Findlay, Ohio to furnish, install and operate the OHM Plant to ensure that subsequent discharges from the wastewater treatment area did not contain PCBs.

In 1985, Metro-North constructed the New Treatment Plant at the Site. The New Treatment Plant processes influent wastewater streams from the wet well which are received from the maintenance areas of the yard. Such influent wastewater streams do not contain PCBs from the lagoon or the Old Treatment Plant. The New Treatment Plant effluent discharges to the river without passing through carbon filters. Now that the Equalization

System is on-line, the lagoon, the Old Treatment Plant and the associated appurtenances will only be utilized during lagoon cleanup or as otherwise permitted by the NYSDEC Division of Water.

1.3

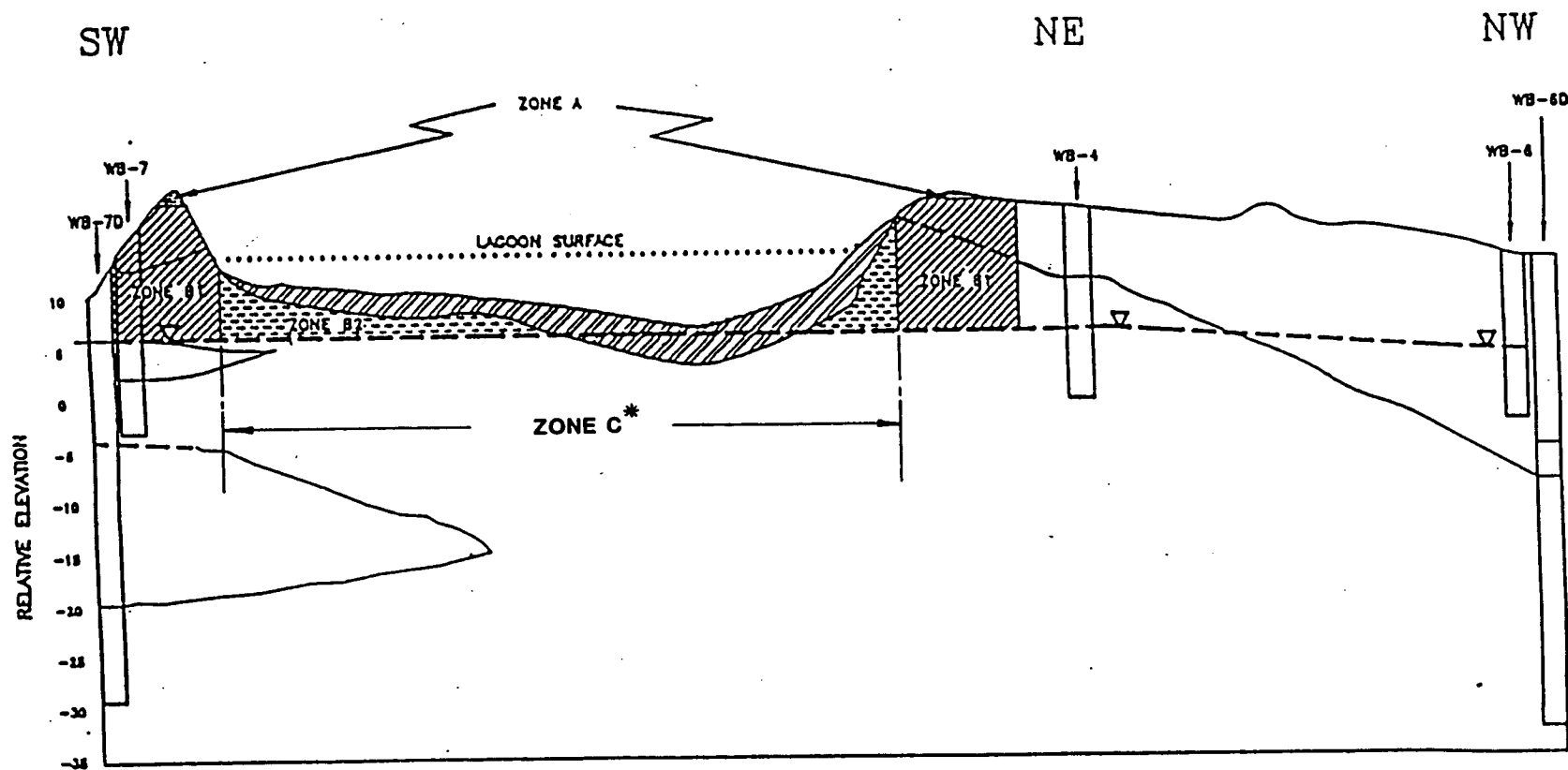
BRIEF DESCRIPTION OF REMEDIAL DESIGN/REMEDIAL ACTION (RD/RA)

The scope of the RD/RA at the Harmon Railroad Yard Wastewater Treatment Area was defined in the September 1992, ROD. The purpose of this section is to provide an overview of the Remedial Action proposed for the site and a brief description of the tasks involved in the Remedial Design.

The Remedial Action described in this Work Plan is intended to address Operable Unit 1 (OU-I) of the Site. OU-I is comprised of the approximately 1.3 acre former lagoon and pond system (the "lagoon"), soil surrounding the lagoon and pond system and the components of the Old Waste Water Treatment Plant (WWTP) which the ROD requires be remediated (i.e., the sludge drying beds).

In addition, other non-contaminated components of the old WWTP (i.e., the coagulation and settling tanks and the sand and carbon filter systems) will be decommissioned for operational reasons. Remediation is required for the sludge within the lagoon and for the soil around the perimeter of and below the lagoon. The soil has been divided into four zones: Zone A, Zone B1, Zone B2, and Zone C. Figures 1-3 and 1-4 show the relationship of each of these soil zones to the lagoon and the soil zones are defined as follows:

Zone A: Zone A soils are those soils, within the top 2 feet of the surface around the perimeter of the lagoon with concentrations of PCBs, magnesium and 2-methylnaphthalene

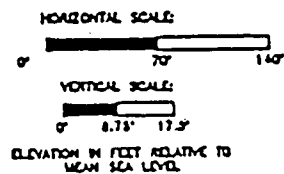


LEGEND

- LAGOON SEDGE
- ZONE A 0-2' INTERVAL
- ZONE B1 UNSATURATED SOIL SURROUNDING LAGOON
- ZONE B2 UNSATURATED SOIL BELOW LAGOON

WATER TABLE

ZONE C* - THE VERTICAL EXTENT OF ZONE C SOIL TO BE DETERMINED



LOCATION OF CROSS SECTION

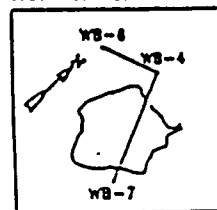


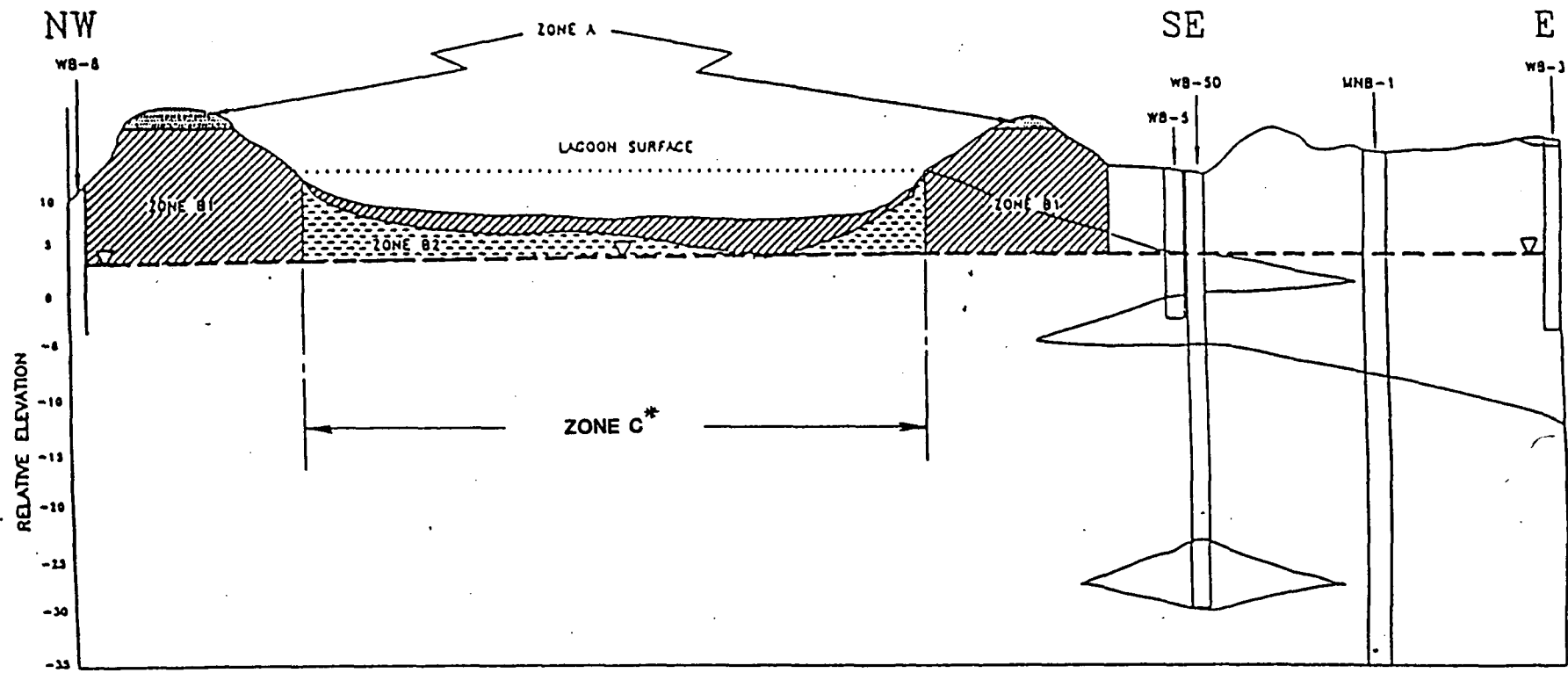
FIGURE 1-3

N-S PROPOSED LIMITS OF UNSATURATED
SOIL IN ZONES B1 AND B2

HARMON LAGOON
GROTON-ON-HUDSON, NEW YORK



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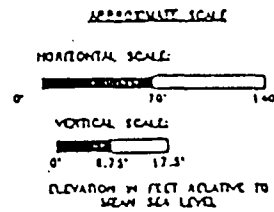


LEGEND

- LAGOON SLUDGE
- ZONE A 0-1' INTERVAL
- ZONE B1 UNSATURATED SOIL SURROUNDING LAGOON
- ZONE B2 UNSATURATED SOIL BELOW LAGOON

WATER TABLE

ZONE C* - THE VERTICAL EXTENT OF ZONE C SOIL TO BE DETERMINED



LOCATION OF CROSS SECTION

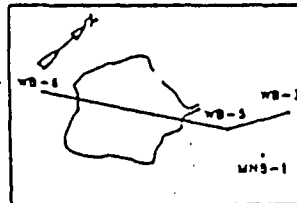


FIGURE 1-4

E-W PROPOSED LIMITS OF UNSATURATED SOIL IN ZONES B1 AND B2

HARMON LAGOON
CROTON-ON-HUDSON, NEW YORK



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Environmental Resources Management

ERM

in excess of the cleanup levels specified by the ROD for Zone A soil.

Zone B1: Zone B1 soils are the unsaturated soils beneath Zone A extending down to the ground water table with concentrations of PCBs, magnesium and 2-methylnaphthalene in excess of the cleanup levels specified by the ROD for Zone B1 soil.

Zone B2: Zone B2 soils are defined as the unsaturated soils beneath the lagoon sludge containing: (1) PCBs in concentrations exceeding the 10 ug/kg cleanup level specified in the ROD; or (2) other chemicals of interest in concentrations exceeding the cleanup level to be determined for Zone B2 soil by the NYSDEC in conjunction with Metro-North, based on the results of the Pre-Design Test Boring Program discussed in Section 2.0 of this RD/RA Work Plan.

Zone C: Zone C soils are defined as the saturated soils (i.e., below the seasonal low water table) below Zone B2 soils which contain: (1) PCBs in concentrations exceeding the 10 ug/kg cleanup level specified in the ROD; or (2) other chemicals of interest in concentrations exceeding the cleanup level to be determined for Zone C soil by the NYSDEC in conjunction with Metro-North, based on the results of the Pre-Design Test Boring Program discussed in Section 2.0 of this RD/RA Work Plan.

The remedy for the Harmon Railroad Yard Wastewater Treatment Area involves the following:

1. Incineration of PCB contaminated lagoon sludge at an off-site TSCA-permitted stationary incinerator.

2. Disposal of soils from zones A and B1 that contain more than 50 mg/kg PCBs at an off-site TSCA-permitted chemical waste landfill.
3. Disposal of soils from zones A and B1 that contain more than 10 mg/kg PCBs but less than 50 mg/kg PCBs at an off-site RCRA-permitted landfill.
4. Disposal of soils from Zone B2 that contain greater than 50 mg/kg PCBs at an off-site TSCA-permitted chemical waste landfill.
5. Disposal of soil from Zone B2 that contains PCBs in concentrations exceeding 10 mg/kg but less than 50 mg/kg and other chemicals of interest in concentrations exceeding cleanup levels at an off-site RCRA permitted landfill. Cleanup levels for Zone B2 soil for chemicals of interest other than PCBs are to be determined by the NYSDEC in conjunction with Metro-North. The determination of cleanup levels for chemicals of interest other than PCBs in Zone B2 soil will be determined based on the results of the Zone B2 soil sampling and analysis (refer to Section 2.0, Pre-Design Test Boring Program). The ROD established a cleanup level for PCBs in Zone B2 soil of 10 ug/kg.
6. Remediation of soil from Zone C that contains PCBs in concentrations exceeding 10 mg/kg and other chemicals of interest in concentrations exceeding cleanup levels to be determined by the NYSDEC in conjunction with Metro-North. Cleanup levels for chemicals of interest other than PCBs in Zone C soil will be determined based on the results of the Zone C soil sampling and analysis (refer to Section 2.0, Pre-Design Test Boring Program). The ROD established a cleanup level for PCBs in Zone C soil of 10 ug/kg. As discussed in Section 5.3.3.4, there is not enough information currently available regarding Zone C soil to be able to

select general response actions for Zone C soil. Instead, information from the Pre-Design Test Boring Program (see Section 2.0) will be used by NYSDEC in conjunction with Metro-North to select general response actions for Zone C soil. As a result, remediation of Zone C soil, if needed, may be included in the remedial design activities to be conducted in accordance with this Work Plan or it may be addressed in: (1) a separate OU-I design and construction effort; or (2) the work to be performed as part of OU-II.

7. Placement of clay liner over the remediated lagoon area to ensure at least two feet separation between high groundwater and backfill soil.
8. Excavation, placement and consolidation of low level (i.e., less than 10 mg/kg) PCB contaminated Zone A and Zone B1 soil in the remediated lagoon area.
9. Placement of a clay cover over the low level PCB contaminated Zone A and Zone B1 soil that was placed in the remediated lagoon area.
10. Enhancement of the existing free product recovery system.
11. Decontamination, demolition, and proper disposal of those components of the Old Wastewater Treatment Plant that have been found to be contaminated. (In conjunction with the remainder of the remediation, Metro-North will be decommissioning other components of the Old Wastewater Treatment Plant.)

The Remedial Design will include a detailed description of the remedial objectives and the means by which each essential element of the remedy will be implemented to achieve those objectives. The design will contain the final contract documents for construction of the remedy, a description of the manner in which hazardous materials, ground water and leachate will be handled, a health and safety plan that will ensure protection of on-site workers and community, quality control and quality assurance procedures to be applied during implementation of the remedy and a schedule. The design will be accompanied by individual plans that will address effectiveness monitoring, contingencies, interim remedial measures and citizen participation.

1.4 *SITE GEOLOGY AND HYDROGEOLOGY*

1.4.1 *Site Geology*

Two geologic cross-sections, roughly perpendicular to each other, were constructed from the boring data collected during the Remedial Investigation (RI). The cross-sections are shown in Figures 1-5 and 1-6.

The geology at the Site consists primarily of a grey to brown medium-grained sand with some silt. On the southwestern side of the Site, in the vicinity of WB-7D, the grey sand appears to grade into a grey silty sand, and there is another silt layer found in the vicinity of WB-5 (Figure 1-6).

For the most part, however, the gray sand is fairly uniform at the Site. Up to 25 feet of a brown sandy silt unit was found on top of the grey sand at borings WB-8 and WB-5. This unit is probably fill material that was brought in to construct the berm around the lagoon and is fairly continuous around the lagoon. The fill material changes in nature from a brown sand with trace silt on the western and eastern sides of the lagoon to a brown

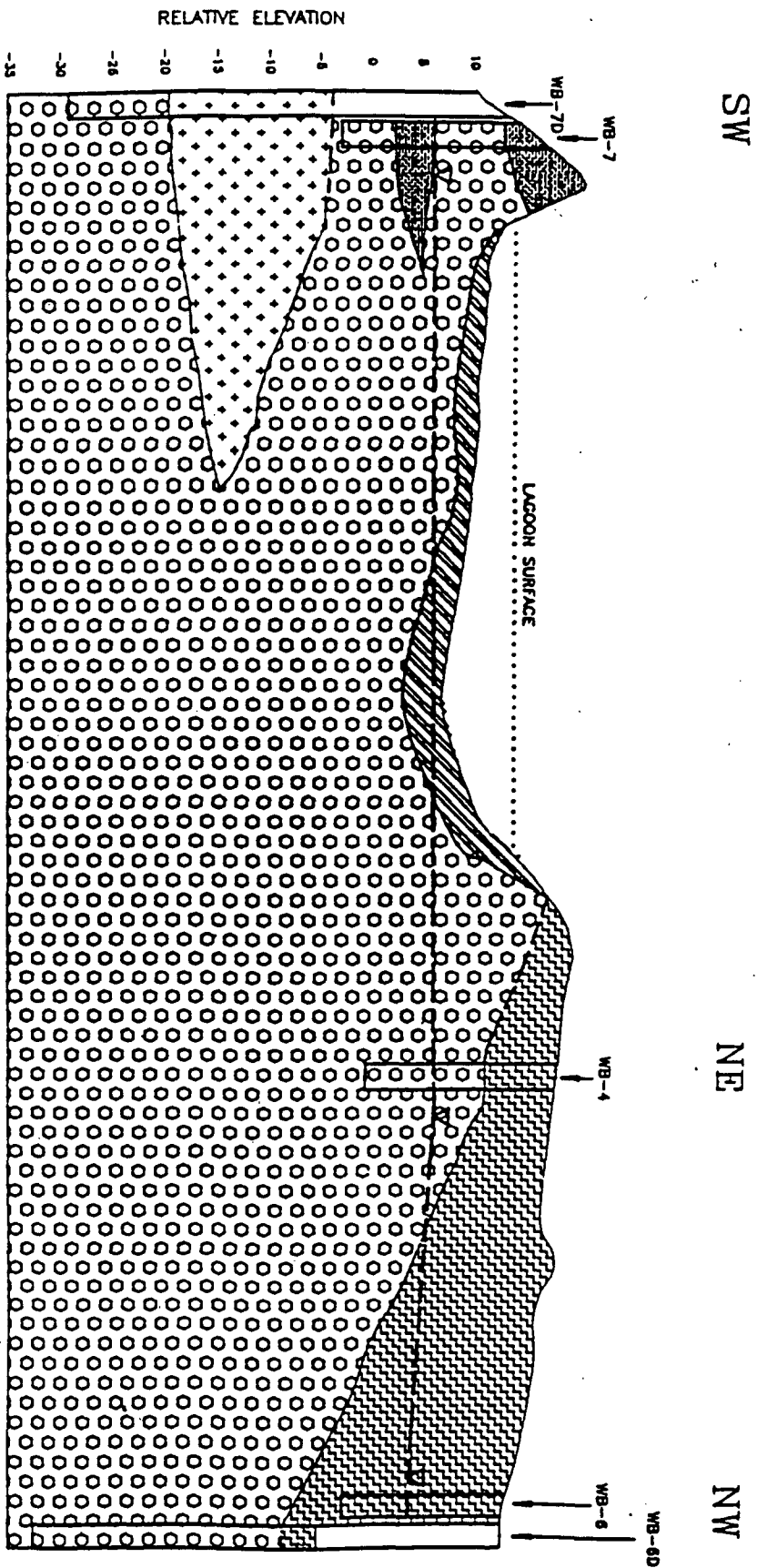


FIGURE 1-5

N-S GEOLOGICAL CROSS SECTION
WB 7-4-6

HARMON LAGOON
GROTON-ON-HUDSON, NEW YORK



ERM-Northeast
Environmental Resources Management

ERM

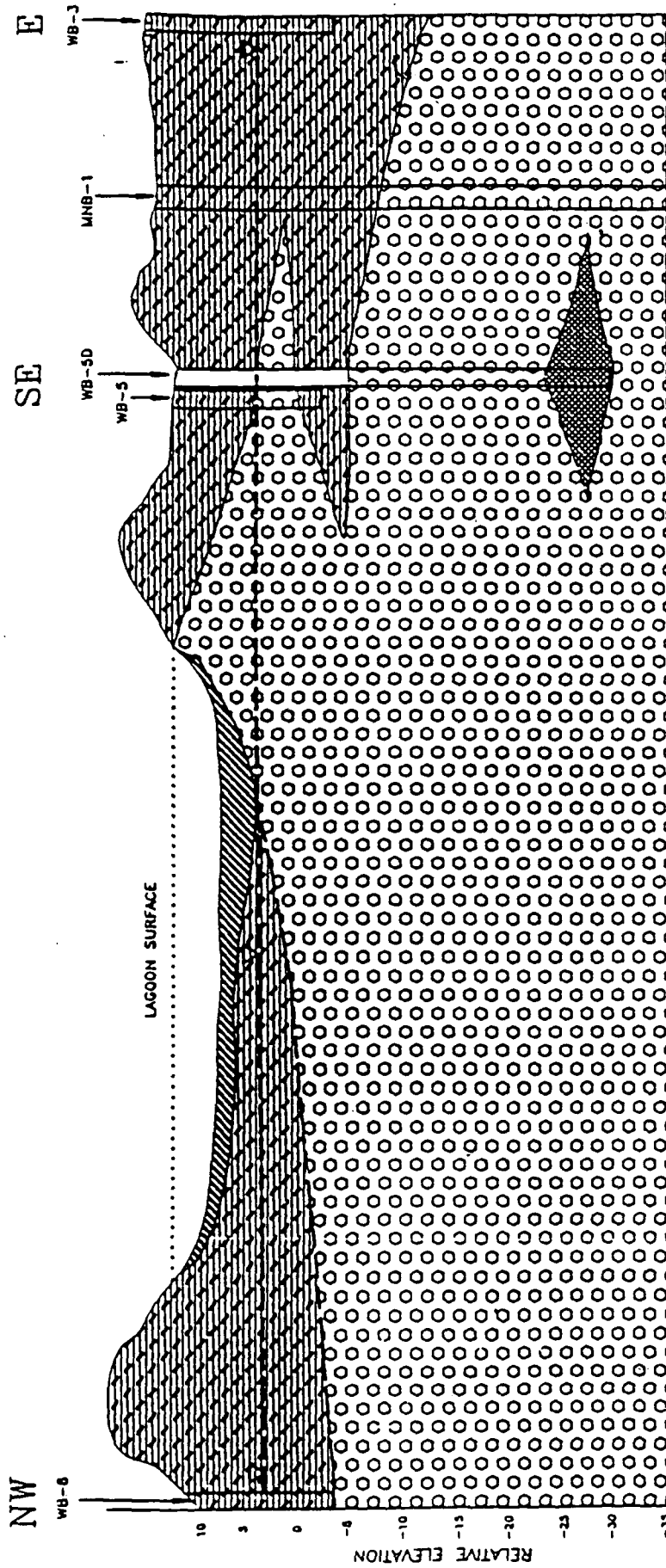
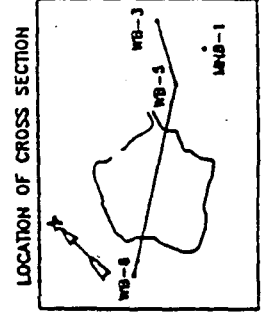
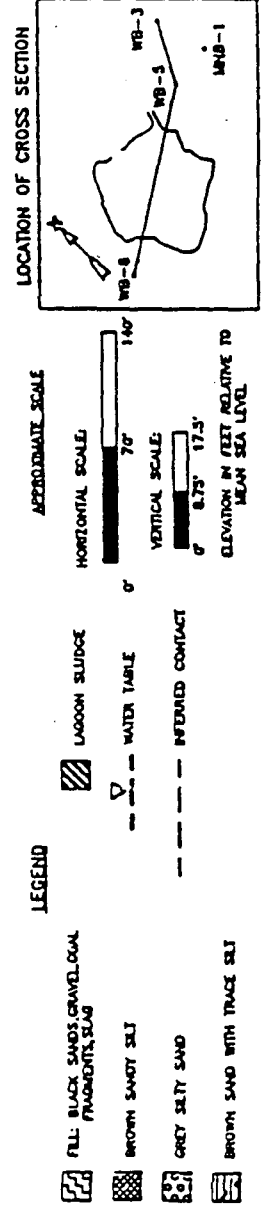


FIGURE 1-6

E-W GEOLOGICAL CROSS SECTION
WB 8-5-3

HARMON LAGOON
CROTON-ON-HUDSON, NEW YORK

ERM-Northeast
Environmental Resources Management



silt and clay on the south and to a black sandy fill on the northern side of the lagoon between WB-4 and WB-6. The northern borings, WB-4 and WB-6, were observed to have up to 20 feet of nonhomogeneous fill.

Bedrock was not encountered in any of the deep borings which extended to 45 feet below grade. Based on the previous drilling done prior to the construction of the equalization tanks at the Site, the depth to bedrock appears to exceed 200 feet in the immediate area of the Site.

1.4.2. *Site Hydrogeology*

Based on the ground water elevation data collected during the RI, a ground water flow map was constructed for the shallow ground water at the Site (Figure 1-7). The ground water flows in a generally north-northwestern direction, although localized variations in flow direction are present. These variations may be due to a lack of recharge in the paved areas on the western portion of the Site or possibly some slow recharge from the lagoon which creates a minor mound on the eastern side of the lagoon. A comparison of the water level measurements in the lagoon and in the shallow ground water shows that the water elevation in the lagoon is higher than that in the shallow ground water. The low permeability of the lagoon and pond sludges probably prevents significant flow between the lagoon and the shallow ground water zone. However, the limited recharge from the lagoon to the shallow water table may be enough to create a small mound, particularly where the lagoon sludge is in direct contact with the ground water table. The variation in ground water flow direction on the southern side of the Site may be caused by the ground water mound associated with the landfill. A second set of ground water level measurements were collected from all of the wells in 1990. The flow maps constructed from this data are shown in Figure 1-8 and the flow lines look somewhat different from the 1989 map. The flow direction is still to the north-northwest, but the contours lines are more regular and do not

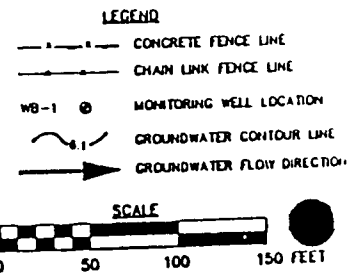
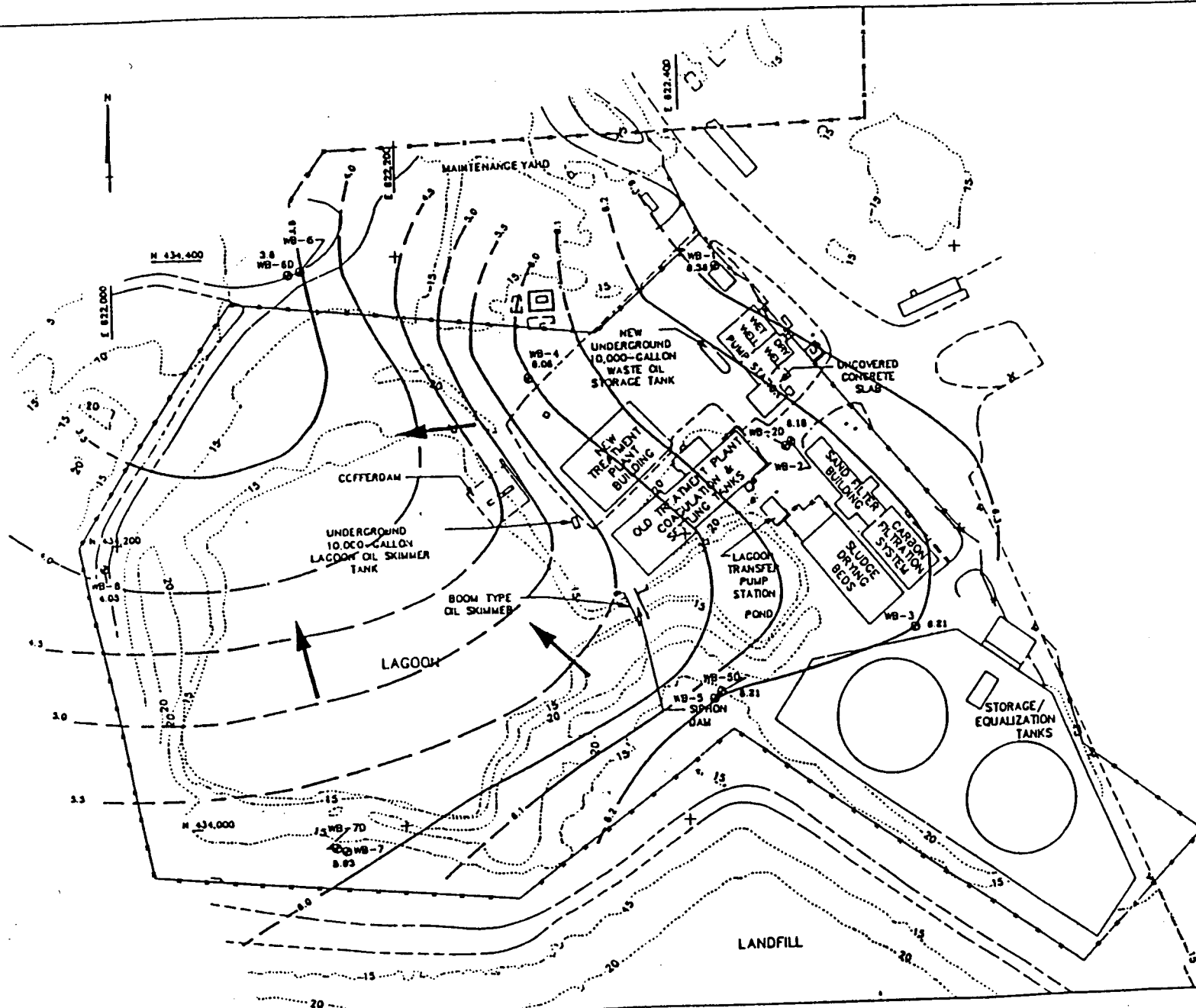


FIGURE 1-7
SHALLOW GROUNDWATER FLOW MAP
(JULY 27, 1989)
HARMON LAGOON
CROTON-ON-HUDSON, N.Y.

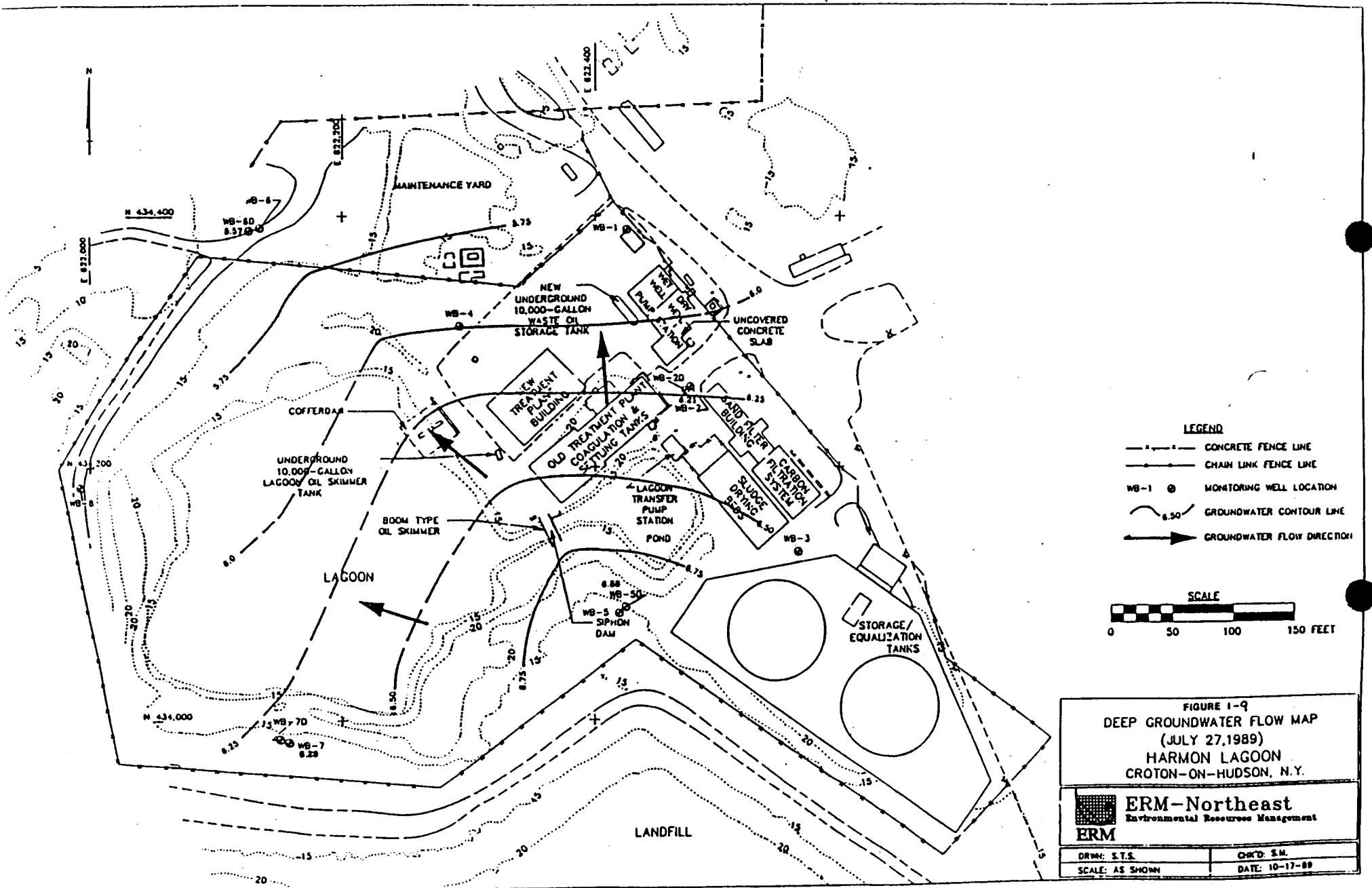
ERM-Northeast
Environmental Resource Management

DRWN: S.T.S.	CHKD: S.M.
SCALE: AS SHOWN	DATE: 10-17-89

suggest any mounding on the upgradient side of the lagoon or any influence from the landfill. Estimated ground water flow velocities in the shallow zone range from 0.4 to 0.5 feet per day.

An assessment of the tidal influence on the shallow ground water zone was also made at the Site. Tidal fluctuations in the shallow wells were relatively small and varied from about 0.02 and 0.14 feet. These fluctuations were recorded over an eight hour period during which time the river elevation changed by 4.8 feet (U.S. Department of Commerce, 1989).

Ground water elevation data were also collected from the deep wells during the RI and a deep ground water flow map was constructed (Figure 1-9). The map indicates that the predominant direction of ground water flow in the deep zone is to the north-northwest towards the Hudson River. The flow direction in the deep zone is more uniform than that in the shallow zone. The localized variations in flow direction created by the presence of the lagoon and the landfill in the shallow zone do not affect ground water in the deep zone. The deep ground water flow map constructed from the 1990 water level data is shown in Figure 1-10. This map looks very different from the 1989 flow map for the deep zone. The flow direction appears to have changed by 90°, and ground water in the deep zone now appears to moving to the south west. These flow maps are only based on four monitoring points and although the data from wells WB-7D, WB-6D and WB-2D were fairly consistent from 1989 to 1990, the water level at WB-5D changed in a more significant manner. It is unclear whether the change is due to a local or short-term effect or not. Additional rounds of water level measurements will be collected from the wells during the Operable Unit II ground water investigation at the lagoon to further evaluate the flow direction in the deeper zone of the shallow aquifer.



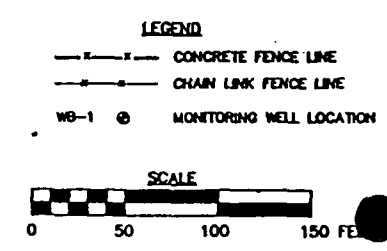
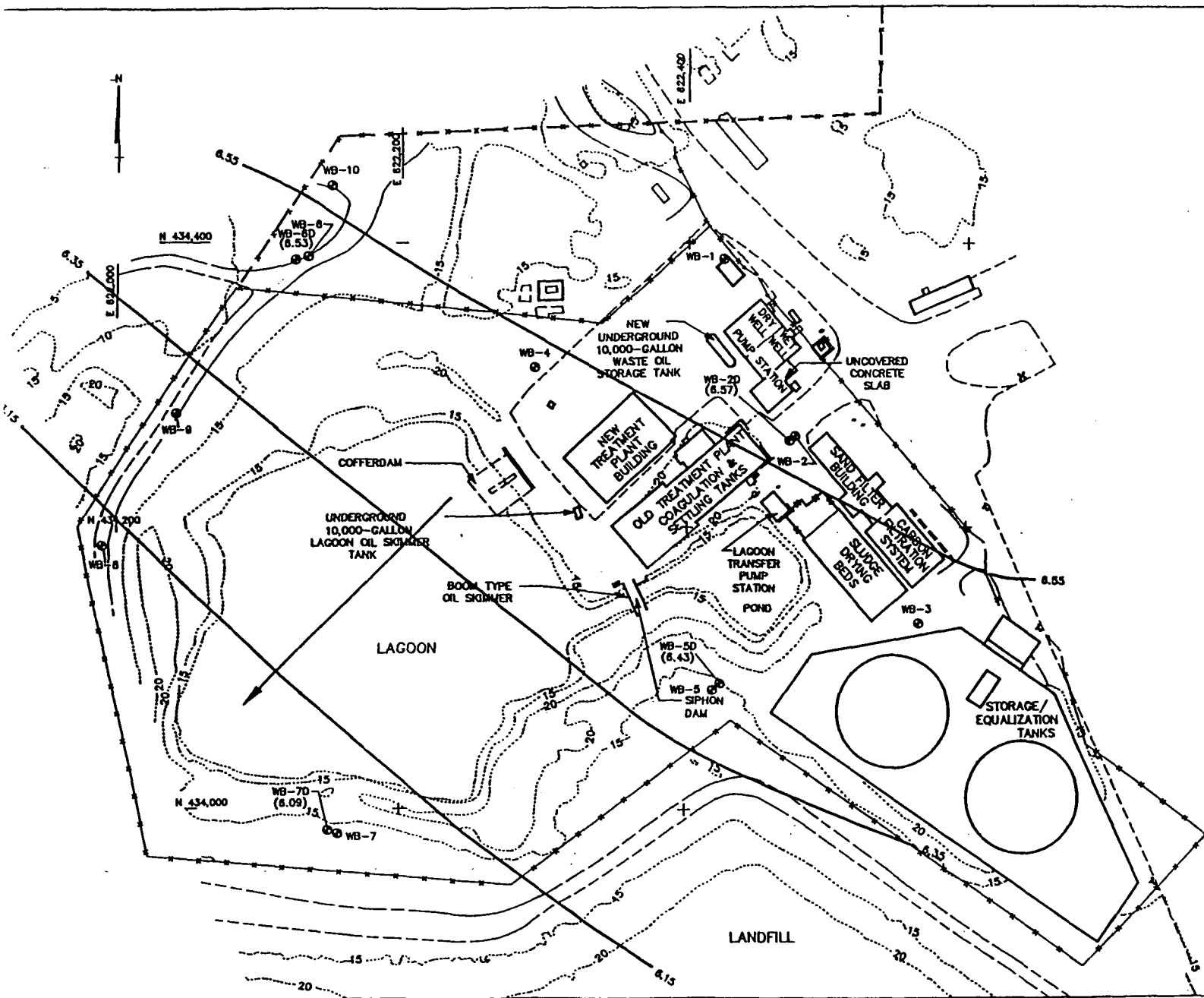


FIGURE 1-10
DEEP GROUNDWATER FLOW MAP
AUGUST 3, 1990
HARMON LAKE
CROTON-ON-HUDSON, N.Y.

ERM-Northeast
Environmental Resources Management
ERM

DRWN: S.T.S./Y.S.	CHKD: F.B.
SCALE: AS SHOWN	DATE: 8-30-90

The estimated ground water flow velocities in the deep ground water zone ranged from 0.16 to 0.20 feet per day. These flow rates are slightly slower than those calculated for the shallow zone. However, given the assumptions inherent in these calculations, the difference is probably insignificant.

The data collected during the RI suggest that, in general, the vertical ground water flow gradient at the Site is upward and that the Site is located within a discharge zone. Given the proximity of the Hudson River to the Site, one would expect this area to be an area of discharge into the Hudson River. It is significant that the lagoon is located in a discharge area since the upward vertical gradient will inhibit the downward migration of any compounds in the shallow ground water zone to the deep ground water zone.

1.5 SUMMARY OF DATA COLLECTED FROM LAGOON AND POND

1.5.1 *Distribution of Sludge in Lagoon and Pond*

Based on the data collected during the RI, it appears that the sludge accumulates in two areas in the lagoon. The southern portion of the lagoon contained up to eight feet of sludge and the northeastern portion of the lagoon contained up to four feet. The accumulation of sludge on the northeastern side of the lagoon is probably the result of sediment that was discharged directly into the lagoon. Since the prevailing winds tended to push surface oil and sediments to the southern side of the lagoon, some fallout from the oil probably accounted for the accumulation in this area. The sludge blanket was thinnest along the shoreline and the western half of the lagoon; the areas furthest from the discharge pipe.

The thickness of sludge in the pond ranged from zero feet along the shore to up to three feet on the western side of the pond. The greatest sludge

accumulation corresponded to the deepest portion of the pond. Since the thickest accumulation of sludge is found just downgradient of the siphon dam, it is likely that the sludge migrated into the pond as water migrated from the lagoon through the siphon dam into the pond.

1.5.2

Summary of Analytical Data from Lagoon and Pond

The only PCB detected in the sludge was Arochlor 1254, and it ranged in concentration from 7.6 to 950 mg/kg in the lagoon and from below the detection limit to 290 mg/kg in the pond. The concentration of PCBs in the majority of the samples was less than 100 mg/kg PCBs. The lowest concentrations of PCBs were located in the central and southeastern portion of the lagoon while the highest concentrations tended to be on the western and eastern shores of the lagoon. PCB concentrations in the pond are highest in the western portion of the pond and decreased to a non-detectable level on the eastern side of the pond. No pesticides were detected in any of the samples from the lagoon or the pond.

Low concentrations of toluene, xylenes and ethylbenzene were detected in a number of the sludge samples from the lagoon and pond. Toluene concentrations in the lagoon ranged from below detection to 8.1 mg/kg. Concentrations of xylenes ranged from below detection to 130 mg/kg, and ethylbenzene concentrations ranged from below detection to 14 mg/kg. Quantifiable levels of chlorobenzene, acetone, tetrachloroethene and benzene were also present in the lagoon, but these compounds were not as widespread as toluene, xylenes and ethylbenzene and were generally found in lower concentrations. Although toluene, xylenes and ethylbenzene were also detected in the pond, xylene was the only volatile organic present at a quantifiable level. The semi-volatile compounds detected in both the lagoon and pond sludge samples included: phenanthrene, fluorene, and 2-methylnaphthalene. The compounds dibenzofuran, naphthalene, and 1,2-dichlorobenzene were only detected in the lagoon samples.

With the exception of sodium, all metals were detected at quantifiable levels in the lagoon and pond sludges samples. The distribution of metals in the lagoon and pond generally follows the same pattern that was found for PCBs and semi-volatiles. The highest concentrations of aluminum, barium, cadmium, copper, iron, lead, manganese and zinc were found at locations G-6.

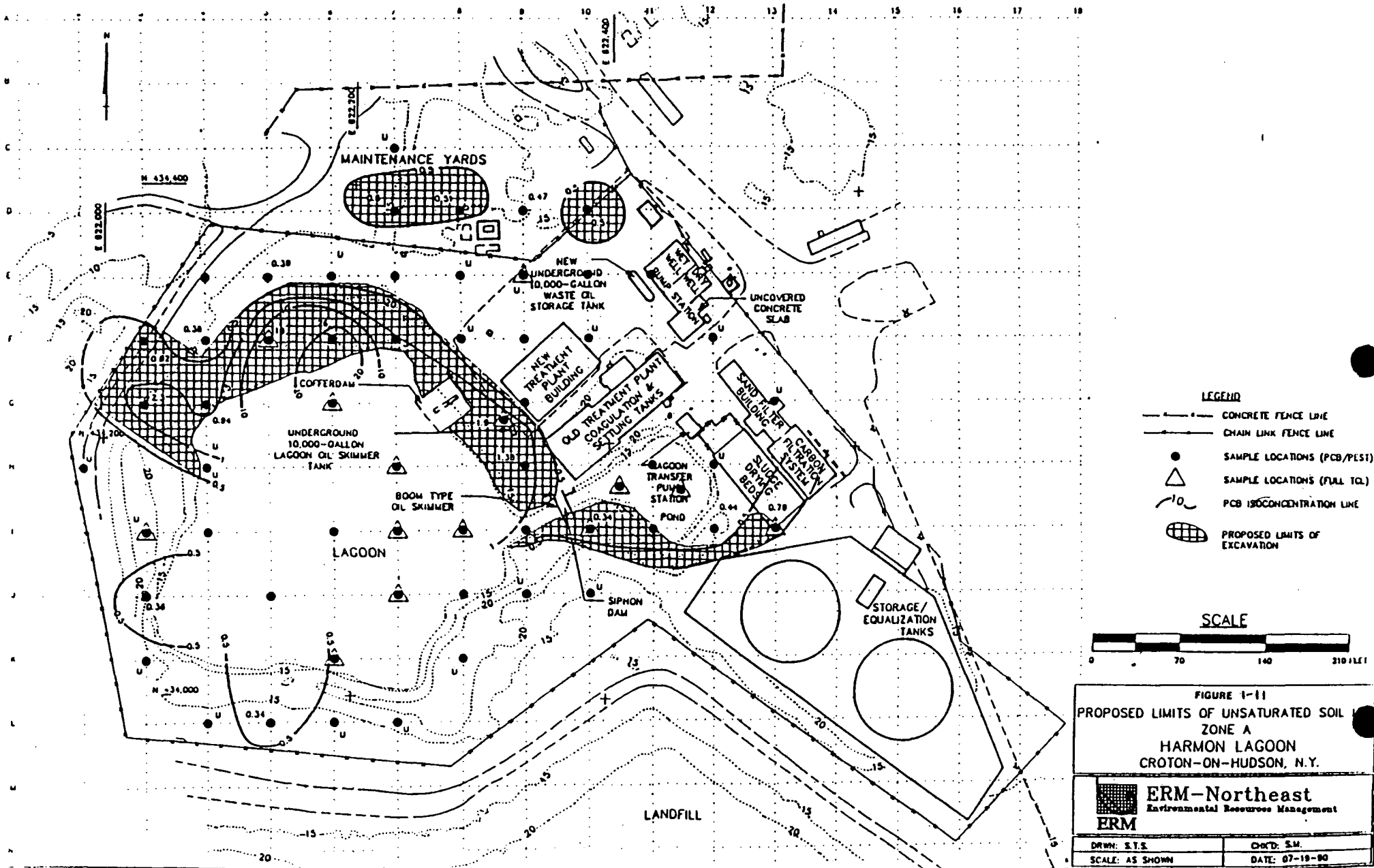
In August 1991, a pre-design investigation was performed to further characterize the sludge and to determine whether the sludge was hazardous. The sludge was analyzed using the toxicity characteristic leaching procedure (TCLP). A total of six samples were taken at various sampling locations. Results of the investigation showed the sludge to be non-hazardous (ie., all TCLP parameters were below detectable concentrations). The sludge was also analyzed for ignitability, reactivity and corrosivity. Test results were negative for these RCRA characteristics. Based on these results, the sludge is not a RCRA characteristic waste.

1.6

SUMMARY OF DATA COLLECTED FROM SITE SOILS

During the RI, a total of 55 soil samples were collected from grid points distributed around the lagoon. Arochlor 1254 was detected in 19 of the 41 surface soil samples and 4 of the 15 shallow subsurface soil samples. The highest levels of PCBs in the surface and subsurface soils were found along the northern shore of the lagoon in the vicinity of an old temporary sludge dewatering area. Isolated detections of PCBs were also found on the southeastern shore of the pond and the southwestern shore of the lagoon. A map showing the distribution of PCBs in the shallow soils around the lagoon is shown in Figure 1-11.

In addition to the surface and shallow subsurface samples analyzed for PCBs, 16 subsurface samples were collected from borings installed around the lagoon. Two samples were collected from each boring, one at the 2 to



The NYSDEC also regulates material containing PCBs in concentrations above 50 mg/kg under the New York State hazardous waste regulations. Since no TSCA-permitted incinerators are located within New York State, this requirement does not apply to the proposed incineration of sludge for the Site. The only TSCA-permitted chemical waste landfills in the state are permitted, by definition, to dispose of New York State hazardous waste containing PCBs in concentrations above 50 mg/kg.

Although most of the water in the lagoon was removed prior to Metro-North stopping use of the lagoon to equalize waste water, some water, mostly from precipitation, still remains in the lagoon. The treatment and disposal methods to handle this waste water will be defined during final design. However, it will probably require on-site treatment and discharge. Similarly, if the design calls for dewatering sludge prior to off-site transportation, the filtrate (water) removed from the sludge during dewatering will be treated prior to discharge. The lagoon water and filtrate from dewatering will be treated and the treated waste water will probably be discharged, pending final design, to the Hudson River. As a result, the treatment and disposal of lagoon water and dewatering filtrate will be subject to the requirements of a State Pollution Discharge Elimination System (SPDES) permit.

The design will define the treatment measures to be used prior to discharge and will describe how the treatment will comply with SPDES permit requirements (e.g., effluent limits, compliance monitoring). An application for a SPDES permit for this discharge will be completed and submitted to the NYSDEC. This SPDES permit application will be completed and submitted when design information needed for the permit application has been developed.

Since this discharge is temporary and consists of the discharge of treated lagoon water and dewatering filtrate only, the feasibility of a temporary

4. Preparedness and Prevention: Testing and maintenance of equipment
Federal regulations: 40 CFR 264.33; Subpart C.
New York State regulations: 6 NYCRR Section 373 - 2.3(d).
5. Closure and Post-closure: Disposal or decontamination of equipment, structures and soils
Federal regulations: 40 CFR 264.114; Subpart G.
New York State regulations: 6 NYCRR Section 373 - 2.7(e).
6. Tank Systems: Containment and detection of releases
Federal regulations: 40 CFR 264.193; Subpart J.
New York State regulations: 6 NYCRR Section 373 - 2.10(d).

The only remaining permits which may be required relate to the transportation of soil and sludge from the Site to the off-site TSCA-permitted incinerator and landfill. The specific permits (e.g., TSCA, RCRA) that may be required for transportation of this material will be determined during design. Transportation methods will comply with U.S. Department of Transportation (U.S. DOT) regulations. The design will evaluate the feasibility of using truck or rail transport of sludge and soil. Only transporters with current operating permits will be considered for use in transporting Site material.

No other permits were identified which might be needed for off-site or on-site remedial actions.

As previously stated, the final determination of the permits which the design of the remedial actions must comply with will be made during the preliminary design. As part of this work, the USEPA, NYSDEC and other relevant regulatory agencies will be contacted to determine if additional permits not identified in this Work Plan are applicable to the proposed

remedy. For permits that are identified, permit applications will be submitted to the appropriate regulatory agency. A summary of the permits applicable to the implementation of the remedy will be provided in the preliminary design report described in Section 4.2.1. In addition, the status of the application process for each permit will be described in the preliminary design report.

3.3

PERMITS WHICH ARE NOT REQUIRED

The ROD identified seven conditions which would typically entail obtaining a permit but which do not apply to the Site. These conditions and the findings reported in the ROD, are as follows:

1. Floodplain The Site is not in a floodplain.
2. Wetland The Site is not within 100 feet of a mapped wetland.
3. Wild, Scenic or Recreational River Based on the New York State Wild, Scenic and Recreational River System Act (March 1985), the Site is not adjacent to a wild, scenic or recreational portion of the Hudson River.
4. Coastal Zone Management The selected remedy is consistent with the policy of the New York State Department of State's Coastal Zone Management Program.
5. Archeological Requirements The proposed remedial work will be conducted in areas which have been disturbed by excavation and construction during at least the past fifty years.

As a result, these potential permits are not applicable to conditions at the Site and it will not be necessary to address these issues in the design.

4.0

REMEDIAL DESIGN

4.1

INTRODUCTION

Within nine months (including NYSDEC review time) after this Remedial Design/Construction Work Plan is approved by NYSDEC, Metro-North will submit to NYSDEC a remedial design (the "Remedial Design") to implement the remedial alternative for the Site selected by NYSDEC in the ROD. A professional engineer licensed in the State of New York will: (1) direct the preparation of the Remedial Design; (2) sign and seal the plans and specifications included in the Remedial Design; and (3) certify that the Remedial Design was prepared in accordance with the ROD and all applicable ARARs and permitting requirements.

The remedy selected in the ROD has been divided into operable units. This Work Plan focuses on the implementation of Operable Unit I (OU-I). The components of OU-I are described in Section 5.2. Operable Unit II (OU-II) includes an investigation into possible impacts of past releases from the Old Wastewater Treatment Plant and the lagoon on the ground water, and surface water, and sediment of the Hudson River. Issues related to OU-II are not addressed in this Work Plan.

4.1.1

Remedial Design Requirements

The Remedial Design will include the following:

1. A detailed description of the remedial objectives and the means by which each essential element of the selected remedial alternative will be implemented to achieve those objectives, but not limited to:
 - a. the construction and operation of any structures;

- b. the collection, destruction, treatment and/or disposal of hazardous wastes and substances and their constituents and degradation products, and of any soil or other materials contaminated thereby;
 - c. the collection, destruction, treatment and/or disposal of contaminated ground water, leachate and air;
 - d. physical security and posting of the Site;
 - e. health and safety of persons living and/or working at or in the vicinity of the Site;
 - f. quality control and quality assurance procedures and protocols to be applied during implementation of the Remedial Design; and
 - g. monitoring which integrates needs which are present on-Site and off-Site during implementation of the NYSDEC selected remedial alternative.
- 2. "Biddable Quality" documents for the Remedial Design including but not limited to, documents and specifications prepared, signed and sealed by a professional engineer. These plans will satisfy all applicable state and federal laws, rules and regulations;
 - 3. A time schedule to implement the Remedial Design;
 - 4. The parameters, conditions, procedures, and protocols to determine the effectiveness of the Remedial Design (Effectiveness Monitoring Plan, section 4.6);

5. A description of operation, maintenance, and monitoring activities to be undertaken after the Department has approved construction of the Remedial Design, including the number of years during which such activities will be performed;
6. A contingency plan to be implemented if any element of the Remedial Design fails to achieve any of its objectives or otherwise fails to protect human health or environment (Contingency Plan, Section 4.7);
7. A health and safety plan for the protection of persons at and in the vicinity of the Site during construction and after completion of construction (Health and Safety Plan, Section 4.5);
8. A community air monitoring program to address the potential for particulates, VOCs, and PCBs that may be released into ambient air during construction. The community air monitoring program will be submitted with the preliminary design (Section 4.2); and
9. A citizen participation plan which incorporates appropriate activities outlined in NYSDEC's publication "New York State Inactive Hazardous Waste Citizen Participation Plan", dated August 30, 1988, and any subsequent revisions thereto (Citizen Participation Plan, Section 4.9).

4.1.2 Remedial Design Submittals

This section discusses the Remedial Design submittals which will be developed to describe in detail the design of the selected remedy to be implemented at the Site. Metro-North proposes to make the following submittals to NYSDEC:

- a preliminary design submittal (at approximately 30% completion of the Remedial Design);
- a pre-final design submittal (at approximately 90% completion of the Remedial Design); and
- a final design submittal (at 100% completion of the Remedial Design).

4.1.3 Selected Remedy

The key components of the selected remedy for the Metro-North Harmon Yard Lagoon Site (the "Work") are summarized below.

1. Incineration of PCB contaminated lagoon sludge at an off-site TSCA-permitted stationary incinerator.
2. Disposal of soils from zones A and B1 that contain more than 50 mg/kg PCBs at an off-site TSCA-permitted chemical waste landfill.
3. Disposal of soils from zones A and B1 that contain more than 10 mg/kg PCBs but less than 50 mg/kg PCBs at an off-site RCRA-permitted landfill.
4. Disposal of soils from Zone B2 that contain greater than 50 mg/kg PCBs at an off-site TSCA-permitted chemical waste landfill.
5. Disposal of soil from Zone B2 that contains PCBs in concentrations exceeding 10 mg/kg but less than 50 mg/kg and other chemicals of interest in concentrations exceeding cleanup levels at an off-site RCRA permitted landfill. Cleanup levels for Zone B2 soil for chemicals of interest other than PCBs are to be determined by the

NYSDEC in conjunction with Metro-North. The determination of cleanup levels for chemicals of interest other than PCBs in Zone B2 soil will be determined based on the results of the Zone B2 soil sampling and analysis (refer to Section 2.0, Pre-Design Test Boring Program). The ROD established a cleanup level for PCBs in Zone B2 soil of 10 ug/kg.

6. Remediation of soil from Zone C that contains PCBs in concentrations exceeding 10 mg/kg and other chemicals of interest in concentrations exceeding cleanup levels to be determined by the NYSDEC in conjunction with Metro-North. Cleanup levels for chemicals of interest other than PCBs in Zone C soil will be determined based on the results of the Zone C soil sampling and analysis (refer to Section 2.0, Pre-Design Test Boring Program). The ROD established a cleanup level for PCBs in Zone C soil of 10 ug/kg. As discussed in Section 5.3.3.4, there is not enough information currently available regarding Zone C soil to be able to select general response actions for Zone C soil. Instead, information from the Pre-Design Test Boring Program (see Section 2.0) will be used by NYSDEC in conjunction with Metro-North to select general response actions for Zone C soil. As a result, remediation of Zone C soil, if needed, may be included in the remedial design activities to be conducted in accordance with this Work Plan or it may be addressed in: (1) a separate OU-I design and construction effort; or (2) the work to be performed as part of OU-II.
7. Placement of clay liner over the remediated lagoon area to ensure at least two feet separation between high groundwater and backfill soil.

8. Excavation, placement and consolidation of low level (i.e., less than 10 mg/kg) PCB contaminated Zone A and Zone B1 soil in the remediated lagoon area.
9. Placement of a clay cover over the low level PCB contaminated Zone A and Zone B1 soil that was placed in the remediated lagoon area.
10. Enhancement of the existing free product recovery system.
11. Decontamination, demolition, and proper disposal of those components of the Old Wastewater Treatment Plant that have been found to be contaminated. (In conjunction with the remainder of the remediation, Metro-North will be decommissioning other components of the Old Wastewater Treatment Plant.)

4.2 PRELIMINARY DESIGN SUBMITTAL

4.2.1 Introduction

The purpose of the preliminary design submittal is to describe how the Work outlined in the ROD is to be implemented in sufficient detail to enable the NYSDEC to perform a comprehensive review. The preliminary design is to be based on the information existing at the time, including the results of all relevant pre-design studies.

The preliminary design submittal will include at a minimum the following:

1. Design criteria;
2. Results of additional field sampling and pre-design work (if available);

3. Project delivery strategy;
4. Preliminary plans, drawings and sketches;
5. Required specifications in outline form;
6. Preliminary construction schedule;
7. Identification of potential TSCA permitted incineration and TSCA and RCRA permitted disposal facilities;
8. Preliminary description of proposed construction sequencing;
9. Final operation and maintenance (O&M) requirements (refer to sections 5.5 and 6.0 for additional information); and
10. Identification of permit (off-site) and substantive permit requirements (on-site) which the remedy must comply with (refer to Section 3.0).
12. A preliminary Community Air Monitoring Program to monitor the potential release of particulates, VOCs, and PCBs into ambient air during construction activities. The data would be used to determine the need, if any, for dust and vapor emission controls or a reduction or temporary halt in construction activities.

The majority of information to be included in the preliminary design submittal will be in the form of a preliminary design report. The preliminary Community Air Monitoring Program will be submitted as a separate deliverable.

All design criteria for the Remedial Design including applicable design factors, assumptions and codes will be identified in the preliminary design submittal. The design criteria will serve as the basis for the analyses and computations to be performed in connection with the design. These analyses will serve as the basis of the design to be included in the drawings and specifications. The proposed design criteria (Remedial Action objectives) for the Remedial Design and Remedial Action are discussed in greater detail in section 5.2.

Results of the Pre-Design Test Boring Program

If available, the preliminary design submittal will also include all data obtained from the Pre-Design Test Boring Program (refer to section 2.0), describe the results of this work and discuss how the results will be implemented into the design.

Project Delivery Strategy

Work will begin with a review of all available data related to the Site, including any land surveys of the Site previously performed by Fred C. Hart Associates and McLaren/Hart Environmental Engineering Corporation. The existing survey data will be updated with data and information obtained during the preparation of the Remedial Design as necessary.

A Site visit by the design team will be scheduled during the preliminary design phase so that the individuals involved may familiarize themselves with all existing Site conditions.

The design of each of the major elements of the selected remedy for the Site will be addressed in the preliminary design submittal. The submittal will represent about 30 percent of the total design effort (i.e. 30 percent completion). This information will be used to develop a preliminary construction schedule.

As part of the preliminary design phase, influent and discharge (SPDES) criteria and performance ability of the Metro-North wastewater treatment plant will be obtained and evaluated to determine potential disposal options for the wastewater generated from dewatering the excavated lagoon sludge and Zone B1, B2, and C soils (if necessary) as well as to identify potential requirements, temporary treatment facilities and other options, if applicable.

The design requirements for the wastewater generated from dewatering the lagoon sludge and other soils, such as discharge location and associated influent and effluent concentration limits, will be included in the preliminary design submittal.

The distribution of grain sizes in the lagoon sludge and other soils will be analyzed during the remedial design. ERM will review grain size data obtained during the RI and during the pre-design studies. This data will provide additional information for the selection and design of the appropriate temporary dewatering, filtration and/or other treatment processes necessary before the wastewater can be discharged to the existing treatment facility, off-site disposal facility and/or water body, as appropriate.

Based on the results of the Pre-Design Test Boring Program (if available), the amount of soils to be excavated from Zone C, if any, will be estimated. As discussed in Section 5.3.3.4, general response actions for Zone C soil, if any, will be determined based on the Zone C soil data. That is,

remediation of Zone C soil, if needed, may be included in the remedial design activities to be conducted in accordance with this Work Plan or it may be addressed in: (1) a separate OU-I design and construction effort; or (2) the work to be performed as part of OU-II.

In addition, the potential amount of wastewater to be generated from dewatering the lagoon sludge and other soils. From this information, a proposed approach for dewatering excavated sludge and soils (if required) will be made and preliminary sizing of any dewatering facilities/equipment required will be performed.

Options for the disposal of the wastewater generated from any required dewatering of the excavated lagoon sludge and other soils will be evaluated as part of the preliminary design. The disposal options to be evaluated (individually or in some combination) include:

- discharge to Metro-North treatment plant;
- on-Site pre-treatment by temporary treatment facility;
- discharge to nearby surface water body; and
- off-Site disposal options.

The evaluation will determine:

- the maximum volume of wastewater from dewatering activities (treated by a temporary treatment system, if required) that can be discharged by the Metro-North Treatment Plant (based on the plant's SPDES requirements);
- optimal discharge location from dewatering activities;

- the concentration limit for chemicals of concern; and
- monitoring requirements, including parameters to be monitored and frequency of monitoring.

Preliminary investigations into all applicable permit requirements (refer to Section 3.0) will be initiated during the preliminary design phase of the project. A summary of the progress made with regard to fulfilling permit requirements will be addressed in the preliminary design submittal.

The possibility of constructing a temporary railroad spur to the excavation areas (to allow off-Site transportation of excavated materials via rail car as an alternative to transport by truck) will also be investigated during the preliminary design. A summary of the progress made will also be included in the preliminary design submittal.

Alternatives to the clay liner and clay cap identified in the ROD, which are potentially more cost effective will also be investigated during the preliminary design phase.

4.2.5 *Preliminary Plans, Drawings and Sketches*

The preliminary design submittal will also include preliminary design plans and drawings. These are scale line drawings prepared at contract plan scale (such as 1 inch equals 50 feet for Site plans and 1/2 inch equals one foot for details) and 24 inch by 36 inch blue line sheets to show how the design is to be implemented and how the contract items such as excavation, dewatering, landscaping and other measures are to be used on the project.

Preliminary design drawings will include:

- the location and dimensions of proposed facilities, permanent (e.g., the product recovery system) and temporary (e.g., a dewatering and/or pre-treatment system if necessary, staging areas, contractor support facilities, decontamination areas, etc.);
- the extent of proposed excavation(s) based on results of the Pre-Design Test Boring Program;
- critical grades and elevations;
- survey control; and
- applicable details of proposed facilities.

The drawings will be referenced in the preliminary design submittal. Some of the information identified above may be submitted as sketches on 8-1/2 inch by 11 inch or 11 inch by 17 inch sheets.

4.2.6 *Specifications*

The preliminary design submittal will also contain an outline of the construction specifications to be incorporated in the pre-final and final design submittals. The outline will contain a list of the contract items to be specified, a description of the specification format to be used, the proposed method of payment to be used (e.g., lump sum, unit price, etc.) and a draft of any key specification sections.

4.3

PRE-FINAL DESIGN SUBMITTAL:

4.3.1

Introduction

The pre-final design will be based on the information provided in the preliminary design submittal. The submittal will represent approximately 90 percent of the total design effort (i.e. 90 percent completion). The pre-final design submittal will include, at a minimum, the following documents:

1. Final plans and specifications (refer to section 4.3.2);
2. A Construction Quality Assurance Project Plan (CQAPP) (refer to section 4.3.3);
3. A Field Sampling Plan (refer to section 4.3.4);
4. A proposed time schedule for implementing the Remedial Design (refer to section 4.3.5);
5. A bidding package (refer to section 4.3.6);
6. A Health and Safety Plan (refer to section 4.5);
7. An Effectiveness Monitoring Plan (refer to section 4.6);
8. A Contingency Plan (refer to section 4.7);
9. A Citizen Participation Plan (refer to section 4.9); and
10. A Community Air Monitoring Program (refer to Section 4.2.1).

The main purpose of the pre-final design is to prepare contract drawings (plans) and specifications in such detail and of sufficient clarity that they can be used by Metro-North as the technical and procedural sections of competitive bidding documents for the actual remediation of the Site. The drawings and specifications will serve as contract documents between Metro-North and the construction contractor(s) selected to perform the Work.

The final design drawings (24 inch by 36 inch blue line prints) will be based on the preliminary design drawings and will include:

- a cover sheet with drawing index;
- a plan of the Site showing existing contours and facilities;
- a plan of the Site showing proposed facilities (e.g., contractor's and Owner's temporary facilities, contractor's staging areas, dewatering facilities, (if applicable), etc.);
- drawings showing the horizontal and vertical extent of contaminated sludge and soil to be excavated and disposed of off-Site;
- drawings showing extent of and installation details for the clay liner;
- drawings showing the horizontal and vertical extent of contaminated sludge and soil to be excavated, consolidated/stabilized and placed in remediated lagoon area;
- drawings showing extent of and installation details for the clay cover;

- drawings identifying contaminated portions of the Old Wastewater Treatment Plant to be demolished as part of the remediation;
- mechanical and electrical drawings showing enhancements to be made to existing free product recovery system;
- drawings showing the final Site contours;
- drawings showing details of erosion control measures to be used during remediation and identifying Site revegetation requirements;
- drawings identifying containment measures to prevent dispersion of contaminated sediments during excavation;

The specifications will describe all key elements of the Work and at a minimum will address the following items:

- health and safety (field implementation of HASP);
- emergency equipment and materials to be kept on-Site;
- quality assurance/quality control (QA/QC) measures to be implemented by the contractor during performance of the work;
- procedures to manage spills of excavated sludge and soils or wastewater generated from dewatering of sludges or soils;
- procedures to be followed to minimize generation of and accidental exposure to vapors and airborne dust during sludge and soil excavation and soil consolidation and backfilling activities;

- plans to minimize any potential migration of sludge or soils to be excavated through engineering controls and good work practices;
- codes and permits;
- construction/excavation sequencing;
- temporary facilities;
- Site access and Site security (e.g., additional fencing, lighting);
- requirements for performance of underground utility survey to locate all utilities in areas to be excavated;
- Site preparation;
- clay liner and cover including testing requirements for clay to be used;
- requirements for soil consolidation/stabilization
- testing requirements for soil to be used for back filling excavations and regrading;
- topsoil and vegetation requirements such as plant listings and planting schedules as applicable;
- initial (one year) contractor requirements for maintenance of vegetation;
- decontamination methods to prevent off-Site migration of chemicals of concern;

- dewatering and temporary containment of excavated materials as necessary (the dewatering procedures will address the potential for encountering free product during excavation of lagoon sludge and zone B2 soil and appropriate responses);
- treatment requirements and facilities for pretreatment of wastewater from dewatered sludges and soils (if applicable), including disposal or effluent limits for pretreated wastewater;
- procedures for decontamination of those Old Wastewater Treatment Plant components to be demolished as part of the remediation;
- requirements for contractor submission of "As-Built" (Record Drawings)
- the sampling approach to be used for post-excavation sampling, and instructions as to how additional excavation will proceed, if necessary (refer to section 4.6 and 5.0); and
- special requirements for off-Site disposal of contaminated soils.

It should be noted that some of the information identified above (to be included in the specifications) may be incorporated onto the final design drawings as space permits.

4.3.3 *Construction Quality Assurance Project Plan*

A draft Construction Quality Assurance Project Plan (CQAPP) will be included with the pre-final design submittal. The CQAPP will be for the use of NYSDEC, Metro-North and the consultant overseeing construction of the Remedial Design and will not be included in the Contract Documents to be used for bidding purposes. As noted above, quality

assurance/quality control (QA/QC) measures to be implemented by the contractor during construction of the Remedial Design will be included in the specifications used for bidding purposes.

The CQAPP will outline the quality control and quality assurance procedures and protocols to be applied during the implementation of the Remedial Design both by the contractor constructing the Remedial Design and by the consultant overseeing the construction of the Remedial Design. The CQAPP will specify a quality assurance official ("QA Official"), independent of the contractor who will conduct a quality assurance program during the construction phase of the project. The QA Official will be an employee or subcontractor of Metro-North or the consultant.

4.3.4 *Field Sampling and Analysis Plan*

A Field Sampling and Analysis Plan (FSAP) directed at measuring progress towards meeting the requirements of the selected remedy for this Site will be included in the pre-final design submittal. This Plan will identify:

- the sampling methods and analytical procedures to be used for post-excavation sampling of sludge and soils;
- the methods and analytical procedures to be used for wipe sampling components of the Old Wastewater Treatment Plant to be decontaminated, demolished and disposed of; and
- an air monitoring plan to monitor and evaluate air borne dust generated during all excavation activities and address appropriate action levels and responses.

The FSAP will be similar in format and content to the FSAP included in the Pre-Design Test Boring Program work plan and will be of sufficient detail to address all anticipated post-excavation sampling requirements.

4.3.5 *Construction Schedule*

The pre-final design submittal will also include a construction schedule based on the information compiled and developed during the pre-final design phase of the project.

4.3.6 *Bidding Package*

A draft of the "front end" and "bidding documents" (bid package) to be used for soliciting bids for the construction of the Remedial Design will be included with the pre-final design submittal. The bid package will include but not be limited to the following items:

1. Invitation to Bid
2. Instructions to bidders
3. Bid form
4. Agreement
5. General conditions such as:
 - health and safety requirements;
 - contingency plans;
 - commencement and completion
 - mobilization;

- quantity measurements;
- contract times and schedule;
- adjustments to contract price
- inspection and rejection of work
- dispute resolution
- warranty and guaranty
- contract terms (e.g., methods of payment, insurance, liability, indemnification, etc.).

6. Information required from Contractor regarding:

- qualifications;
- similar experience: and
- contractor's proposed project organization (e.g., project director, project manager(s) and health and safety officer).

Metro-North will condition all contracts entered into upon performance in conformity with the terms of the ROD and other relevant documents provided to the Contractor. Metro-North's contractors will be required to provide written notice of such documents to all subcontractors hired to perform any portion of the Work.

4.3.7 *Project Delivery Strategy*

One of the key criteria of the Remedial Design is to minimize the amount of sludge and soil handling necessary to fulfill the requirements of the ROD. By minimizing sludge and soil handling, both dust emissions and construction costs can be reduced.

The selection of the off-Site TSCA permitted incinerator and TSCA and/or RCRA permitted landfill will be determined by Metro-North following the award of the contract for construction of the Remedial Design. A

summary of the progress made toward identifying the selected incineration and disposal facilities will be included in the pre-final design submittal.

As soon as practicable after award of the above referenced contract and prior to any off-Site shipment of waste material from the Site to an out-of-state waste management facility, written notification will be provided to the appropriate state environmental official in the receiving (disposal) facility's state and to the NYSDEC Project Coordinator of such shipment of waste material.

4.3.8 Access

To the extent that the Site or any other property to which access is required for the remediation of the Lagoon is owned or controlled by persons other than Metro-North, Metro-North will use its best efforts to secure from such persons access for itself and its contractors and subcontractors, as well as for the NYSDEC and its representatives, including but not limited to, their contractors, as necessary to fulfill the requirements of the ROD.

4.4 FINAL DESIGN SUBMITTAL

The final design submittal will be based on the information provided in the pre-final design submittal. The submittal will represent 100 percent of the total design effort (i.e. 100 percent completion). This submittal will include all documents included in the pre-final design submittal and will address any comments which NYSDEC may have had on the pre-final submittal. The plans, specifications and bidding package (refer to Section 4.3.6) will serve as contract documents that can be used by Metro-North in competitive bidding to select a contractor(s) to construct the Remedial Design. A professional engineer licensed in the State of New York will: (1) direct the preparation of the Remedial Design; (2) sign and seal the

plans and specifications included in the Remedial Design; and (3) certify that the Remedial Design was prepared in accordance with the ROD and all applicable ARARs and permitting requirements.

4.5

HEALTH AND SAFETY PLAN

As part of the Remedial Design efforts, a Health and Safety Plan (HASP) will be prepared to ensure the protection of persons at and in the vicinity of the Site during construction of the Remedial Design. This HASP will be modified appropriately for inclusion in the O&M Plan (for post-construction activities only) to be submitted after completion of the construction of the Remedial Design (refer to section 6.0). Both HASPs will be prepared in accordance with 29 CFR 1910 by a certified health and safety professional. At a minimum, the Health and Safety Plan for the construction of the Remedial Design will:

- Evaluate the potential chemical and physical hazards associated with each operation conducted. A scope of work will be included that summarizes the tasks required to perform each operation safely.
- Identify key personnel and alternates responsible for both site safety and remedial response operations.
- Address the levels of protective equipment to be worn by personnel during each Site activity, and identify criteria and decision logic for upgrading or down grading the level of protection.
- Designate work areas (exclusion zone, contamination reduction zone, and support zone), boundaries, size of zones, distance between zones, and access control points into each zone.
- Establish decontamination procedures for personnel and equipment.

- Determine the number of personnel and equipment needed in the work zones during initial entries and subsequent operations.
- Establish Site emergency procedures (e.g., escape routes; signals for evacuating work parties; internal, external, and emergency communications; and procedures for fire and explosions).
Emergency telephone numbers (fire department, police department, hospital ambulance, poison control center and medical consultant) will appear on an emergency reference page.
- Implement a program and make arrangements with the nearest medical facility (and medical life squad unit) for emergency medical care of routine injuries and toxicological problems. A map showing the route from the Site to the medical facility will be included in the Plan.
- Document individual training requirements for the available use of protective gear and field instruments and for the performance of particular tasks.
- Identify known or suspected contaminants on-Site, location and concentrations of contaminants, hazards associated with each contaminant (including toxicity and health effects), and action levels that will require upgrading the level of personal protective equipment.
- Describe the procedures and equipment required to monitor the work area for potentially hazardous materials and detail the necessary records associated with the monitoring program.
- Consider the weather and other conditions that may affect the health and safety of personnel during Site operations.

- Implement control procedures to prevent access to the Site by unauthorized personnel.
- Describe medical surveillance requirements for each operation.
- Provide background information to familiarize the field team with the Site history, current status, physical features, disposal practices, past monitoring data, and community/worker health complaints.
- Identify the individuals working for the consultants who will fill the various health and safety roles required during all remediation work at the Site.

The terms of the Health and Safety Plan are to be followed by consultants and contractors work on the Site as well as all Site visitors. A draft of the Health and Safety Plan will be incorporated in the Specifications to be completed as part of the Remedial Design and will be forwarded to NYSDEC for review and approval with the pre-final design submittal discussed above.

The purpose of the Health and Safety Plan is to protect workers employed by consultants and contractors active at the Site, as well as Site visitors, including Metro-North employees. A separate deliverable, the Community Air Monitoring Plan, will be designed to monitor the level of particulates, VOCs, and PCBs potentially released into ambient air at the perimeter of the Site. The purpose of the Community Air Monitoring Plan is to protect the health and safety of the community, i.e., residents, commuters and Metro-North employees. The Remedial Action HASP, the O&M HASP and the Community Air Monitoring Program will be submitted to the NYSDEC, the New York State Department of Health and the Westchester County Department of Health for review and approval.

A draft effectiveness monitoring plan will be included with the pre-final design submittal. The purpose of the plan will be to describe the program for assessing the effectiveness of the remedy implemented at the Site. The plan will focus on assessing the remedy via post-excavation soil sampling and product thickness measurements at existing product recovery wells. Since the ground water at the Site will be addressed in a separate "Operable Unit", ground water monitoring will not be included in the effectiveness monitoring program. The plan will address, but may not be limited to the following items:

- procedures for collecting post-excavation samples;
- possible locations for post-excavation samples;
- the parameters for which the samples will be analyzed;
- the criteria which will be used to evaluate the post-excavation sample results;
- procedures for verifying that sludge removal has been completed;
- procedures for collecting product thickness measurements;
- the criteria which will be used to evaluate the effectiveness of the product recovery system;
- the frequency of the effectiveness monitoring activities; and
- the duration of the effectiveness monitoring activities.

A draft Contingency Plan will be included in the pre-final design submittal. The contingency plan will be implemented if any element of the Remedial Design fails to achieve any of its objectives or otherwise fails to protect human health or the environment. Since the remedial objectives for OUI address only the excavation of sludge and soils based on established criteria, the possibility that the Remedial Design will fail to meet its objectives is not expected. Remediation of the ground water under the Site and any appropriate ground water monitoring (and contingency plans) will be addressed by the Remedial Design for OU-II. A description of OU-II is provided in Section 4.1.

The Contingency Plan will address, but not be limited to the following items:

- proposed contingency transportation route for hauling excavated soil to final destination;
- responses to natural emergencies (e.g., flooding, severe wind storms and hurricanes);
- the need to find capacity for the sludge and/or soils at alternative incinerator or chemical waste landfills; and
- appropriate responses should excavated soil require stabilization/consolidation and fail to pass a TCLP analysis after stabilization/consolidation.

In the event that Metro-North believes that interim remedial measures (IRMs) for the remediation of the Site are necessary based on occurrences or data collected during the construction of the Remedial Design, an Interim Remedial Measures (IRM) work plan will be developed and submitted to NYSDEC. The IRM work plan will include the following:

- a description of the conditions at the Site which necessitate the implementation of an IRM;
- a chronological description of the anticipated IRM activities and a schedule for performance of those activities;
- the manner and timing of the IRM in relation to the on-going remedy.

Upon approval of the IRM work plan, Metro-North will submit to NYSDEC for review and (as appropriate) approval, in accordance with the schedule contained in the approved work plan, detailed plans and specifications prepared, signed, and sealed by a professional engineer to implement the approved IRM.

The plans and specifications will include a health and safety plan, contingency plan, and (if NYSDEC requires such) a citizen participation plan that incorporates appropriate activities outlined in the Department's publication, "New York State Inactive Hazardous Waste Citizen Participation Plan," dated August 30, 1988, and any subsequent revision thereto.

Metro-North will then carry out the IRM in accordance with the requirements of the approved work plan, detailed plans, and specifications.

Within the schedule contained in the Department approved work plan, Metro North will submit to NYSDEC a final engineering report prepared by a professional engineer licensed in the State of New York that includes a certification by that individual that all activities that comprised the IRM were performed in full accordance with the Department-approved work plan, detailed plans and specifications.

Within the schedule time frame contained in the Department approved work plan, Metro-North will submit to NYSDEC a report or reports documenting the performance of the IRM. Any necessary operation and maintenance programs or effectiveness monitoring programs that may be required in addition to those already incorporated into this work plan will also be submitted. Metro-North will notify NYSDEC of any significant difficulties that may be encountered in implementing the approved work plan, detailed plans or specifications and will not modify any obligation unless first approved by NYSDEC.

4.9

CITIZEN PARTICIPATION PLAN

A draft citizen participation plan (CP plan) will be prepared and submitted with the pre-final design submittal. The plan will be prepared in conformance with the New York State Inactive Hazardous Waste Site Citizen Participation Plan guidance document prepared by NYSDEC. The plan will include the following information:

- background information about the Site, such as a description of the Site and its location, a summary of the conclusions of the RI/FS, and a summary of the Record of Decision;
- a description of the proposed remedial action for the Site and how the remedial design and remedial action will be implemented;

5.0 REMEDIAL ACTION

5.1 INTRODUCTION

After completion and approval of the Remedial Design, construction and operation of the various components of the Remedial Action will commence in accordance with the schedule. The Remedial Action is intended to comply with the requirements of the ROD, this document and the Remedial Design.

This portion of the Remedial Design work plan describes the elements of the Remedial Action which will be implemented at the Site. This section contains a description of the Remedial Action objectives, as set forth in the ROD; followed by a description of the planned remedy which will be implemented at the Site to achieve the Remedial Action objectives. The remainder of this section describes the additional documents that are required as part of the Remedial Action. Those elements pertain to: 1) Contractor Oversight; 2) As-Built Documentation; 3) Certification of Contractor Completion; and, 4) Operation and Maintenance (O&M) Manual Preparation.

5.2 REMEDIAL ACTION OBJECTIVES

The Remedial Action described in this work plan is intended to address OU-I of the Harmon Railroad Yard Wastewater Treatment Area. OU-I is comprised of the approximately 1.3 acre former lagoon and pond system (the "lagoon"), soil surrounding the lagoon and pond system and the components of the Old Waste Water Treatment Plant (WWTP) which the ROD requires be remediated (i.e., the sludge drying beds). In addition, other components of the old WWTP (i.e., the coagulation and settling tanks and the sand and carbon filter systems) are to be decommissioned for operational reasons. Remediation is required for the sludge within the

lagoon and for the soil around the perimeter of and below the lagoon. The soil was divided into four zones: Zone A, Zone B1, Zone B2 and Zone C and remedial action objectives were developed for each zone. The objectives of the Remedial Action are to eliminate the potential for releases of contaminants from the Site to surrounding soil, ground water and the Hudson River. Additionally, the Remedial Action is intended to eliminate potential risks from direct contact and/or ingestion of PCB contaminated soil and sludge by personnel having access to the Site.

The Remedial Action objectives will be achieved through specific remedial actions that will be taken at each of the aforementioned areas. Six specific Remedial Action objectives are defined for the Site, as described below:

1. The lagoon sludge will be removed and transported to an off-site TSCA-approved stationary incinerator.
2. Zone A soil, which is defined as soil containing chemicals in concentrations exceeding the Zone A soil cleanup levels specified in the ROD for PCBs (i.e., 0.5 mg/kg), magnesium and 2-methylnaphthalene will be removed. Excavated Zone A soil which contains PCBs at levels greater than 0.5 mg/kg but less than 10 mg/kg will be placed and consolidated in the remediated lagoon area. A clay liner will be installed in the remediated lagoon area to ensure at least two feet separation between high ground water and any backfilled Zone A soil. Additionally, a clay surface cap will be placed over the remediated lagoon area. Any excavated Zone A soil which contains PCBs at levels greater than 10 mg/kg but less than 50 mg/kg, or other indicator chemical (i.e., magnesium and 2-methylnaphthalene) in excess of its cleanup level, will be disposed of in a RCRA approved landfill. If the PCB concentration in Zone A soil exceeds 50 mg/kg, the soil will be removed to an off-site TSCA approved landfill.

3. Soil from Zone B1 soil and Zone B2 soil will be removed. Zone B1 soil is defined as soil containing chemicals in concentrations exceeding the cleanup levels specified in the ROD for PCBs (i.e., 10 mg/kg), magnesium and 2-methylnaphthalene. Excavated Zone B1 soil containing PCBs at concentrations greater than 10 mg/kg but less than 50 mg/kg will be removed to an off-site approved RCRA landfill. Any excavated Zone B1 soil which contains PCBs at levels greater than 50 mg/kg will be disposed of in an off-site TSCA approved landfill.

Zone B2 soil is defined as soil containing chemicals in concentrations exceeding the Zone B2 soil cleanup levels. A PCB cleanup level of 10 mg/kg was specified in the ROD for Zone B2 soil. Cleanup levels for other chemicals of interest in Zone B2 soil are to be determined by the NYSDEC in conjunction with Metro-North. The determination of cleanup levels for chemicals of interest other than PCBs in Zone B2 soil will be determined based on the results of the Zone B2 sampling and analysis (refer to Section 2.0, Pre-Design Test Boring Program).

Disposal of Zone B2 soil removed from the Site based on the concentrations of PCBs and other chemicals of interest will be based on the concentration of PCBs. Excavated Zone B2 soil containing PCBs in concentrations greater than 10 mg/kg but less than 50 mg/kg will be disposed of in a RCRA approved landfill. Excavated Zone B2 soil containing PCBs in concentrations greater than 50 mg/kg will be disposed of in a TSCA approved landfill.

4. Zone C soil is defined as soil located below the seasonal high water table containing PCBs in concentrations exceeding 10 mg/kg and other chemicals of interest in concentrations exceeding the cleanup levels to be determined by NYSDEC in conjunction with Metro-

North. The determination of cleanup levels for chemicals of interest other than PCBs in Zone C soil will be determined based on the results of the Zone C soil sampling and analysis (refer to Section 2.0, Pre-Design Test Boring Program). As discussed in Section 5.3.3.4, there is not enough information currently available regarding Zone C soil to be able to select general response actions for Zone C soil. Instead, information from the Pre-Design Test Boring Program (see Section 2.0) will be used by NYSDEC in conjunction with Metro-North to select general response actions for Zone C soil. As a result, remediation of Zone C soil, if needed, may be included in the remedial design activities to be conducted in accordance with this Work Plan or it may be addressed in: (1) a separate OU-I design and construction effort; or (2) the work to be performed as part of OU-II.

5. The sludge drying beds will be decontaminated, demolished and properly disposed of. Cleanup levels for the soil beneath the sludge drying beds will be determined by the NYSDEC in conjunction with Metro-North. Additionally, the coagulation and settling tanks and the sand and carbon filter systems will be tested, decontaminated, if necessary, demolished and properly disposed of. These structures will be sampled using standard wipe test procedures and decontaminated, before demolition and disposal, if PCB concentrations in the wipe samples exceed the 10 ug/100 cm² PCB cleanup level established in the ROD.
6. The existing Non Aqueous Phase Liquid (NAPL) recovery system will be expanded or upgraded, as necessary, based upon the information obtained during the implementation of the Remedial Action at the lagoon.

This section describes the specific remedial approaches which will be employed at the Site to address the 1.3 acre lagoon and pond system and contaminated plant appurtenances (i.e. coagulation and settling tanks, sand and carbon filter systems and sludge drying beds). These remedial actions will involve excavation of sludge and soil from the lagoon and pond area and decommissioning or demolition of the contaminated Old Treatment Plant and appurtenances.

5.3.1***Liquid Treatment***

During the performance of remedial activities, a temporary wastewater treatment system may be located at the Site. This treatment system will be used to treat liquids generated by the following activities:

- removal of standing water from the lagoon and pond
- treatment of leachate generated from sludge dewatering operations
- treatment of leachate generated from soil dewatering operations and
- treatment of stormwater runoff from potentially contaminated process areas during the execution of field remediation activities.

The final discharge point from this system will be identified during the remedial design activities. Discharge points to be considered are identified in this document in Section 4.2.4, Project Delivery Strategy.

The relatively dry weather and high temperatures have caused water levels in the lagoon to decrease substantially in recent months. As a result, collection, transportation and off-site treatment and disposal of the water

remaining in the lagoon and the water generated by dewatering operations will be evaluated during design as an alternative to on-site treatment and discharge. The applicability, if any, of the TSCA disposal regulations to off-site treatment and disposal will be evaluated during design.

5.3.2 *Sludge Removal*

The entire volume of sludge in the lagoon and pond system of the Site, currently estimated to be 4,040 cubic yards (cy) will be removed for off-site incineration. Figures 1-3 and 1-4 indicate, in cross-section, the approximate thickness of sludge in the lagoon and pond.

Sludge removal will begin following the removal of surface water from the lagoon and pond, depending on the mechanism of sludge removal. The surface water currently in the lagoon and pond and wastewater generated and/or uncovered by sludge removal operations will be pumped through the temporary wastewater treatment system identified in Section 5.3.1 or removed for off-site treatment and disposal.

During Remedial Design activities different procedures for removing the sludge from the lagoon and pond and transporting this material to a TSCA-approved stationary incinerator will be evaluated. Sludge removal options to be considered may include:

- dredging
- excavation
- pumping
- vacuuming

During the Remedial Design, when potential TSCA-approved stationary incinerators are being evaluated, consideration will also be given to those facilities that can receive sludge that has not been dewatered. This type of

facility would allow the sludge handling at the Site to be minimized thus reducing the potential for air borne particles to be generated.

Dewatering operations may be conducted at the Site to reduce the moisture content of the sludge prior to it being transported off-site for incineration should the receiving facility require this. The filtrate which is generated as part of the dewatering operation will be conveyed to the temporary wastewater treatment system identified above.

The sludge in the lagoon and pond may be removed to containers or vessels that are temporarily stored at the Site. This temporary storage will serve to equalize the throughput to sludge de-watering operations (should dewatering be required) or serve as a holding tank prior to transferring this material to transportation vehicles.

5.3.3 *Soil Removal*

The soil at the Site which will be subject to remediation is contained in four distinct soil zones. These have been defined as Zone A, Zone B1, Zone B2 and Zone C soils. These zones are defined in Section 1.0. Separate remedial action objectives have been (Zone A and Zone B1) or will be (Zone B2 and Zone C) established for each zone (see section 5.2). Based on the definition of these soil zones and their respective remedial action objectives, various remedial approaches will be employed for each soil zone. These approaches are outlined in the following sections.

5.3.3.1 *Zone A Soil*

Zone A soils are those soils within the top two feet of surface around the perimeter of the lagoon and pond which contain chemical concentrations in excess of established remedial action levels. The area occupied by Zone A soils is shown in Figure 1-11.

There is an estimated 2,500 cy of Zone A soil which exceeds established remedial action levels. This soil will be sampled, in place, and tested for the Zone A soil chemical indicators and subjected to the Toxicity Characteristics Leaching Procedure (TCLP) test. Based on the results of these tests, Zone A soil will be relocated to remediated lagoon area if the soils do not exceed the established remedial action levels for PCBs. If off-site disposal is not required, Zone A soil will undergo stabilization/fixation, prior to being relocated to the remediated lagoon, if it fails the TCLP tests for inorganics or if magnesium and 2-methylnaphthalene are present above established remedial action levels. If Zone A soils pass the TCLP tests for the aforementioned compounds then it will be consolidated and placed in the remediated lagoon.

5.3.3.2 *Zone B1 Soil*

Zone B1 soils are those unsaturated soils immediately underlying Zone A and extending down to the seasonal high ground water table. Therefore, Zone B1 soils occupy the same area as occupied by Zone A and shown in Figure 1-11. The approximate vertical extent of Zone B1 soil is shown in the previously referenced Figures 1-3 and 1-4.

After removal of Zone A soils, delineation samples from the Zone B1 horizon will be obtained to identify the vertical and horizontal extent of contamination in this zone. These samples will be analyzed for the established remedial action levels for Zone B1 soils. If sample results indicate that Zone B1 soils do not, on average, exceed established remedial action levels for this horizon, there will be no further soil removal. If the post-delineation samples indicate that, on average, Zone B1 soils exceed established remedial action levels, a layer of Zone B1 soil will be removed and further post-excavation samples will be obtained. Subsequent removal and testing of Zone B1 soil will continue until it is determined that, on

average, the chemical concentrations in Zone B1 soil are below the remedial action levels established in the ROD.

Zone B1 soil will be analyzed via the TCLP test and for PCBs prior to its removal. Based on the results of the testing, if Zone B1 soils do not exceed the established remedial action levels for PCBs which require off-site disposal, Zone B1 soil will be relocated to the remediated lagoon area. Zone B1 soil will undergo stabilization/fixation, prior to being relocated to the remediated lagoon, if it fails the TCLP test for inorganics or if magnesium and 2-methylnaphthalene are present above the established remedial action levels.

5.3.3.3 *Zone B2 Soil*

Zone B2 soils are those unsaturated soils immediately underlying the sludge in the lagoon and pond extending down to the seasonal high ground water table. The approximate vertical extent of Zone B2 soils is shown in the previously referenced Figures 1-3 and 1-4. The Feasibility Study assumed that 1.5 feet of Zone B2 soil would be removed during the remediation. This represents a volume of approximately 3,400 cy. Prior to Remedial Design, the results of the planned Pre-Design Test Boring Program will permit a more precise estimate of the volume of Zone B2 soil requiring removal to be made.

As previously stated, the results of the Pre-Design Test Boring Program will be used to determine cleanup levels for chemicals of interest (other than PCBs) in Zone B2 soil. The ROD has established a cleanup level of 10 ug/kg for PCBs in Zone B2 soil. Zone B2 soil cleanup levels will be determined by the NYSDEC in conjunction with Metro-North. The results of the Pre-Design Test Boring Program will also be used to define the limit of Zone B2 soil to be remediated.

The concentration of chemicals of interest in Zone B2 soil as determined through the Pre-Design Test Boring Program will then be compared to the Zone B2 soil cleanup levels. This comparison will be used to define the limits of Zone B2 soil to be removed for off-site disposal. Once this initial quantity of Zone B2 soil has been removed, post-excavation samples of Zone B2 soil will be obtained. Subsequent removal and testing of Zone B2 soil will continue until it is determined that, on average, the concentration of chemicals of interest in Zone B2 soil is below the cleanup levels to be established for this soil zone.

The Zone B2 soil to be disposed of off-site will be tested for the purpose of obtaining disposal approval. The test parameters will be based on the results of the Zone B2 soil samples collected during the Pre-Design Test Boring Program and the requirements of the disposal facility. After testing, this material will be removed and transported to an approved off-site landfill. Soil from Zone B2 that contains PCBs in concentrations exceeding 10 mg/kg but less than 50 mg/kg and other chemicals of interest in concentrations exceeding cleanup levels will be disposed at an off-site RCRA permitted landfill. Soils from Zone B2 that contain greater than 50 mg/kg PCBs will be disposed of at an off-site TSCA-permitted chemical waste landfill.

5.3.3.4 *Zone C Soil*

Zone C soils are the saturated soils immediately underlying Zone B2 soils or the sludge in the lagoon and pond. The upper boundary of Zone C soils is the top of the seasonal high ground water table. A vertical profile of Zone C soils is shown in the previously referenced Figures 1-3 and 1-4.

There is no current estimate of the volume of Zone C soils which will be removed, if any, during the Remedial Action at OU-1. As previously mentioned, a pre-design test boring program will be implemented to

characterize Zone B2 and Zone C soil. This information will be used by NYSDEC in conjunction with Metro-North to determine cleanup levels for chemicals of interest other than PCBs, if any, in Zone C soil. The ROD specified a cleanup level for PCBs in Zone C soil of 10 mg/kg. These cleanup levels and the analytical data (chemical concentrations) for Zone C soil will be evaluated by NYSDEC in conjunction with Metro-North to select general response actions for Zone C soil. The Zone C remedial actions to be considered include: (1) excavation and off-site disposal; (2) in-situ treatment; and (3) no action.

If excavation and off-site disposal of Zone C soil is selected as the general response action to remediate Zone C soil, this work would be included with the remedial actions described in this Work Plan for OU-I. Consequently, the design and construction work associated with excavation and off-site disposal would be performed in accordance with this OU-I RD/RA Work Plan.

If an in-situ treatment method is selected as the general response action to remediate Zone C soil, this work may be performed in accordance with this OU-I RD/RA Work Plan or it may be: (1) addressed in a separate RD/RA work plan for OU-I; or (2) included in OU-II. The decision will be based on the type of in-situ treatment selected. For example, most of the in-situ treatment technologies applicable to Zone C soil (e.g., bioremediation, air sparging) require specific contractor expertise. Consequently, it will be difficult to select a contractor adept at the soil and sludge removal components of OU-I and also possess the specific expertise needed for in-situ treatment. In this case, a separate OU-I project for Zone C soil or addressing Zone C soil as part of OU-II would be more appropriate.

The discussions of lagoon and pond closure within this section refer to the closure of the area defined by the limits of the sludge. This area will have both a clay liner and a cap as required by the ROD.

At the conclusion of excavation activities within the limits defined by the boundary of the sludge, a clay liner will be placed at the base of the excavation to ensure at least two feet of separation between the seasonal high ground water table and any relocated soils from Zone A, Zone B1, Zone B2 or Zone C. Once the liner is in place, eligible Zone A, Zone B1, Zone B2 or Zone C soils will be placed in the base of the excavation. Clean fill will be placed in any excess space in the excavation above relocated Zone A, Zone B1, Zone B2 and Zone C soils. Then, a surface clay cover will be placed over the area formally occupied by the lagoon and pond.

A soil, asphalt or concrete cover will be placed over the clay cover. If a soil cover is used the surface will be graded, fertilized and seeded to promote growth of self-sustaining vegetation. If Metro-North decides to use the area for yard maintenance activities, the surface cover will be constructed of either asphalt or concrete.

The remaining Site facilities will also be decommissioned and demolished during the lagoon and pond remediation activities. These Site facilities are comprised of the Old Treatment Plant and its appurtenances. Specifically, they are:

- concrete coagulation and settling tanks;
- sand and carbon filter systems;

- transfer pump station; and
- sludge drying beds.

The following sections describe the remedial approach for each of these areas.

5.3.5.1 *Concrete Coagulation and Settling Tanks*

These tanks are comprised of concrete and wood. Since there is currently no solid material in these tanks, they will be wipe tested for PCBs. Should this testing indicate that PCBs are present in concentrations exceeding the remedial action level for PCBs of 10 ug/cm² established in the ROD, the concrete tanks will be steam cleaned and subject to additional wipe testing for PCBs. Steam cleaning will continue in an effort to obtain wipe samples which indicate that the 10 ug/cm² PCB remedial action level established in the ROD is met. If the PCB remedial action level is not met, the tanks will then be demolished and the debris will either be disposed of on-site (in the excavation of the former lagoon) or off-site at an approved landfill. However, if the established PCB remedial action level is met, the wooden portions of these tanks will be removed and disposed of in an approved off-site landfill and the concrete tanks will be filled in place and used for drying sludge from the new treatment plant.

5.3.5.2 *Sand and Carbon Filter Systems*

The carbon and sand filter media has already been removed from the Site. The vessels which contained this filter media remain at the Site.

The vessel(s), which contained the filter media, will be wipe tested for PCBs. Should these tests identify PCB contamination, the vessels will be steam cleaned and subject to additional wipe testing for PCBs. Steam cleaning will continue until wipe samples indicate the 10 ug/cm² PCB

remedial action level established in the ROD is met. The vessel(s) will then be removed from the Site.

5.3.5.3 *Transfer Pump Station*

This pump station was used to transfer wastewater from the pond to the old treatment plant. After remediation of the lagoon and pond, residual wastewater in the pump station will be pumped to the temporary wastewater treatment system identified in Section 5.3.2. Then, the components of the pump station (i.e. pumps, controls, superstructure and piping) will be wipe tested for PCBs. Should the wipe tests identify PCB contamination above the 10 ug/cm² PCB cleanup level established in the ROD, the pump station and its appurtenances will be steam cleaned and subject to additional wipe testing for PCBs. Steam cleaning will continue until wipe samples indicate that the established PCB remedial action level is met. The pump station will then be demolished and the debris will either be disposed of on-site (in the excavation of the former lagoon) or off-site at an approved landfill.

5.3.5.4 *Sludge Drying Beds*

The outside sludge drying beds were used to dry sludge from the Old Treatment Plant. This sludge has already been removed from the Site. Hence, decommissioning of these sludge drying beds will proceed by sampling of surface soil and analyzing for Zone B2 soil parameters. If the concentrations of the Zone B2 parameters exceed the remedial action levels to be established for Zone B2 soil (refer to Sections 1.3 and 4.1.3), a volume of soil will be scraped and handled in accordance with the procedures set forth for Zone B2 soils in Section 5.3.3.3. Post-excavation samples will be collected and analyzed. If sample results indicate that the remaining soils do not, on average, exceed the remedial action levels to be established for Zone B2, there will be no further soil removal. If the post-

excavation samples indicate that, on average, the remaining soils exceed the remedial action levels to be established for Zone B2 soil, additional soil will be removed and further post-excavation samples will be obtained. Removal and testing of this soil will continue until it is determined that, on average, the chemical concentrations are below the remedial action levels to be established for Zone B2 soil.

After the outside sludge drying beds are decommissioned, any remaining excavation will be filled with clean fill. Then, a final surface cover will be placed over the area of the former sludge drying beds. This cover will be constructed of asphalt or soil.

5.4 CONSTRUCTION OVERSIGHT

The implementation of the Remedial Action at the Site will require the selection of contractor(s) to construct the Remedial Design as well as consultant(s) to oversee the construction and perform inspection and certification services. The consultant selected to oversee the construction will be required to ensure that all provisions of the Remedial Design Contract Documents (the "contract" or the "work") are enforced. The consultant will approve the contractor's progress payment invoices and will certify and document that all work items to be performed by the contractor(s) under the contract have been completed in accordance with the Remedial Design. The consultant will have no authority to order additional work to be performed or to alter any term or condition of the contract, including technical provisions, and will have no authority to waive or lessen any requirement of the contract.

The consultant will be required to staff the project with:

- a resident engineer with overall responsibility for overseeing daily construction activities;

- a health and safety officer with responsibility for ensuring that all work at the Site is performed in accordance with the HASP; and
- construction inspectors, technicians, and clerks as needed.

Specific responsibilities of the resident engineer, health and safety officer and field team members are outlined in Section 7.3.3.1 of the work plan.

5.4.1 *Documentation and Record Keeping*

This section identifies the information describing construction activities which will be collected and maintained by the consultant selected to oversee the construction of the selected remedy. The information will describe essential work elements such as methods of construction, daily activities and the quality of the materials and of the work performed. The specific types of records which Metro-North will require the consultant to maintain are described below. The exact format of the record keeping system will be selected by the consultant. The information will be available for review by Metro-North and NYSDEC at any time during construction.

5.4.1.1 *Daily Logs*

The resident engineer, assisted by members of the field support team will maintain a Daily Log which will include the following information:

- summary of work performed by contractor(s) each day;
- conditions at the Site;
- instructions given to the contractor(s);

- field problems encountered and resolution;
- all personnel on Site including employees of contractor(s), subcontractor(s) and consultant;
- all equipment on Site and equipment used that day;
- visitors to the Site;
- all materials or equipment delivered to the Site
- quantities of pay items placed (e.g., volume of fill or area of liner or cap installed);
- field tests performed and results;
- quality of the work including identification of any materials or work which does not conform to requirements of Contract Documents;
- references to surveys made that day, if any;
- unusual occurrences, accidents and other events that have an impact on the performance of the work;
- contractor's compliance with the HASP;
- the daily activities of each of the consultant's own forces in terms of locations where the contractor's work was inspected, items of work inspected results of such inspections and similar data;
- results of follow-up inspections of previously reported deficiencies;
and

- any other project-related events not identified above.

The health and safety officer will also maintain a separate Daily Log.

The Daily Logs will be kept in the field office. They will be bound and no entries will be deleted. The resident engineer and health and safety officer will keep their Daily Logs current and will sign and date each day's entry. At the completion of the construction phase of the Work, the logs will be included in the contract file.

5.4.1.2 *Daily Reports*

The resident engineer will also prepare a Daily Report summarizing and documenting the items noted above. The Daily Report will be signed and dated by the resident engineer. Copies of each Daily Report will be forwarded to Metro-North and will be available for review by NYSDEC upon request.

5.4.1.3 *Material Delivery Records*

The contractor(s) will be required to submit copies of Material Delivery Records to the consultant for all materials delivered to the Site. The consultant will maintain a file of these records and, if the specifications require that the material to be used on the project be certified by an outside testing laboratory prior to delivery, the contractor will be required to submit the Material Certification to the consultant before the material is delivered to the Site. The consultant will keep this information on file at the Site.

5.4.1.4 *Material Shipment Documents*

Copies of all documents required for shipment of excavated sludge and soils off-site to be incinerated or disposed of will be maintained on file at the Site. These documents will include shipment manifests and "Land Disposal Notification and Certification Forms" (LDR Forms) as applicable. The consultant will compare the quantity of materials shipped off-site to the quantities identified in the contractor's applications for payment. Copies of each manifest and LDR form will be forwarded to Metro-North and will be available for review by NYSDEC upon request.

5.4.1.5 *Surveys*

Surveys are necessary to ensure that the contractor(s) has constructed all work items according to the limits established in the Contract Documents. Surveys are also necessary to determine the quantity of work performed by the contractor(s). This information will be used for payment purposes and preparation of "as-built" drawings. The consultant will maintain records of all surveys conducted during the project. The contractor(s) will be required to show all applicable survey information on the "as-built" drawings to be submitted at the end of the project.

5.4.1.6 *Punch List*

A punch list will be used to identify all deficiencies in work items which must be corrected or work items which must be completed before the project is complete and the final payment can be made. The Contract Documents will require that a certain percentage of the payment for key items be withheld until all items on the punch list have been completed and approved by the consultant, Metro-North and NYSDEC.

When approximately 95 percent of the work has been completed, the consultant will develop a punch list of deficient and outstanding work items and submit it to the contractor(s). The contractor(s) will be given a specific length of time to complete or correct the items. At the end of this period, the consultant will inspect the Work in general and the punch list items in particular. If all items are approved, the consultant will issue a Certificate of Contractor Completion (see section 5.3.2). If there are still items that are deficient or outstanding, an updated punch list will be generated by the consultant and the process repeated until all work items are completed in accordance with the Contract Documents.

Copies of each punch list will be forwarded to Metro-North and will be available for review by NYSDEC upon request.

5.4.1.7 *Change Orders*

A change order is a document recommended by the consultant, that is signed by the contractor and Metro-North which authorizes an addition deletion or revision in the Remedial Design Contract Documents, or an adjustment in the contract price or times. Change order management will be the responsibility of the consultant. Each change order requested or proposed by the contractor will be reviewed to determine if it is additional work, not included in the scope of work of the Contract Documents. A change order will only be issued if the results from one of the following criteria:

- differing Site condition;
- error or omission in plans or specification;
- change instituted by regulatory agency;

- design change or improvement;
- overrun/underrun in quantities specifically identified in Contract Documents;
- factors affecting time of completion not under control of contractor
- field emergency; and
- additional work authorized by Metro-North.

The consultant will provide recommendations on Change Order requests by the contractor(s) to Metro-North. Copies of each Change Order will be forwarded to Metro-North and will be available for review by NYSDEC upon request.

5.4.1.8 Accident Reports

These reports will be generated by the consultant as soon as possible and no later than one week after an incident resulting in injury to humans or release of contamination has occurred. These reports will only be generated during the design and construction period. Problems encountered during the post-closure period (i.e., after construction of the remedy is completed) will be reported in the periodic Inspection Reports (see section 6.0 of this work plan). Accidents reports will contain a description of the injury or release, the current status of the situation and the steps taken or planned to be taken in response to the accident.

Copies of each accident report will be forwarded to Metro-North and will be available for review by NYSDEC upon request.

5.4.1.9

Miscellaneous Documents

Copies of meeting minutes, shop drawings, submittals, applications for payment and other construction correspondence will be maintained in orderly files on-site.

5.4.1.10

Certificate of Contractor Completion

If all work items related to the construction phase of the work are approved by the consultant, the consultant, on behalf of Metro-North, will develop and sign a Certificate of Contractor Completion stating that the construction phase of the work was completed in accordance with the requirements of the Contract Documents. Copies of the Certificate of Contractor Completion will be forwarded to Metro-North and NYSDEC.

5.5

AS-BUILT DOCUMENTATION

Within 60 days after completion of the construction activities identified in the Remedial Design, Metro-North will submit to NYSDEC the following:

- "As-built" drawings and a final engineering report (each including all changes made to the Remedial Design during construction); and
- a certification by a professional engineer licensed in the State of New York that the Remedial Design was implemented and all construction activities were completed in accordance with the NYSDEC approved Remedial Design.

The "as-built" drawings and certification will be prepared, signed and sealed by a professional engineer licensed in the State of New York.

5.6.1***Preparation***

Within two months after completion of the construction activities identified in the Remedial Design, Metro-North will submit to NYSDEC a detailed post-remedial operation and maintenance plan ("O&M Plan")

The O&M Plan will describe:

1. how the enhanced free product recovery system is to be operated and maintained;
2. maintenance requirements for the cover over the remediated lagoon area; and
3. required monitoring and evaluation of the remedial program.

A preliminary draft of the O&M manual will be completed by the time construction of the Remedial Design is completed to provide a basis for operation and maintenance of the constructed remedy until such time as the "final" manual is completed and approved by NYSDEC.

The O&M Plan will be prepared, signed and sealed by a professional engineer licensed in the State of New York.

5.6.2***Implementation***

Upon NYSDEC's approval of the O&M Plan, Metro-North will implement the O&M Plan in accordance with the requirements of the NYSDEC approved O&M Plan.

INTRODUCTION

Within 60 days after completion of the construction activities identified in the Remedial Design, Metro-North will submit to NYSDEC a detailed post-remedial operation and maintenance plan ("O&M Plan"). The O&M Plan will include a description of operation and maintenance activities to be undertaken after the NYSDEC has approved construction of the Remedial Design, including the number of years during which such activities will be performed.

Proper implementation of the O&M Plan will ensure that requirements for maintenance of the remediated Site are minimized. A description of the information to be included in the O&M Plan is included in this section. This information will include requirements for post remediation care activities such as:

- measures to ensure restricted Site access;
- site inspections and maintenance activities; and
- operation and maintenance of the enhanced free product recovery system.

The O&M Plan will include a Health and Safety Plan specifically tailored to the inspection, operating and maintenance activities to be performed at the remediated Site.

The requirements for reporting and documentation such as the Periodic Inspection Report are described in Section 6.2 and will be discussed in greater detail in the O&M Plan.

Metro-North will be responsible for ensuring that all inspections, operation and maintenance are performed as required by the ROD and in accordance with the NYSDEC approved O&M Plan.

6.2

INSPECTION AND MAINTENANCE

Inspections of the remediated Site (excluding the enhanced free product recovery system) will be performed every three months for the first two years of O&M, every six months for the next three years and annually thereafter. The Site will also be inspected after periods of significant rainfall.

Specific items and areas of the Site to be inspected will include:

- access barriers and security control devices;
- the final cover; and
- landscaping and erosion control measures.

Inspection procedures for each of these items are described in more detail below.

Inspections of the enhanced free product recovery system will be performed weekly.

Each individual inspection interval will begin at the end of the construction of each component to the remedy. Upon completion of installation of all of the components, inspections will be coordinated to occur simultaneously.

6.2.1

Site Security

The entire Harmon Railroad Yard Facility has measures implemented for overall site security. Requirements for security of the OU-I Site will be determined after options are evaluated and discussed with Metro-North and NYSDEC during the design phase. Appropriate inspection and maintenance requirements for the selected security measures will be included in the final O&M Plan.

6.2.2

Final Cover

The selection of the final cover material for the Site will not be determined until the Remedial Design phase of the project. The options to be evaluated will include topsoil (seeded), gravel or crushed stone, and asphalt. Appropriate inspection and maintenance procedures for the selected alternative will be addressed in the final O&M Plan.

The final cover will be inspected for (as applicable):

- the condition of vegetation;
- signs of erosion; and
- subsidence.

The protection provided by the vegetative cover (if installed) should be complete with no visible bare spots. The inspector will look for erosion rivulets on slopes and any signs of accumulated liquids. In addition, any sign of settling and unevenness will be noted. Large seedlings which may eventually impact the integrity of the cover and holes from burrowing animals will also be noted.

Should inspection reveal final cover integrity has been compromised, appropriate mitigative actions will be implemented. Repairs to bare spots will include reseeding, fertilizer application and soil conditioning, if applicable. Erosion may be reduced by improving vegetation (if appropriate) and altering contours to prevent storm water run-off from reaching scour velocities. Sections of the cover which have subsided will be backfilled, regraded and reseeded as necessary. Plant growth which may affect the integrity of the cover will be removed.

6.2.3 *Landscaping*

Landscaping will be checked for integrity and that plant growth requirements are being met.

Landscaping will be repaired and replaced as necessary to perform as intended. Vegetation will be fertilized and watered as necessary to keep growth healthy.

6.2.4 *Erosion Control*

Storm water run-off may be controlled by a series of diversion ditches and berms. The berms will be inspected for cracks. Cracks will be marked and their location and size recorded. The berms will also be checked for additional surface deterioration. Damaged areas will be repaired or replaced as appropriate.

Diversion ditches and culverts will be inspected and maintained to ensure that silt, weeds, small seedling or debris do not accumulate and interrupt flow. Ditches will be inspected for erosion and undermining.

A sample inspection form is shown as Figure 6-1. Completed inspection forms will be kept on file by Metro-North and a copy forwarded to NYSDEC.

If the inspection reveals that repair or replacement of parts of the remediated Site are required, a work order will be issued and a contractor hired to perform the work or Metro-North may elect to perform the required work utilizing its own labor forces. The repair will be inspected during the work and after it is completed. A follow-up Inspection Form will be filled out and kept on file by Metro-North and a copy forwarded to NYSDEC.

6.3***OPERATION AND MAINTENANCE OF ENHANCED FREE PRODUCT RECOVERY SYSTEM***

The free product recovery system as enhanced during construction of the selected remedy will be properly operated and maintained by Metro-North until free product is no longer being removed by the recovery system. Operation of the system will include monitoring and sampling recovered free product as required and arranging for its appropriate disposal. Operation and maintenance of the system may be accomplished through an operator employed by Metro-North, or a contract operations service or consultant hired by Metro-North. The enhanced system will be designed to operated without continuous supervision. Alarms, monitoring devices, telemetry and automatic shut-off controls may be used to provide continuous twenty-four hour operation.

The equipment used in the enhanced free product recovery system will be maintained in accordance with the manufacturer's printed operations and maintenance instructions.

Figure 6-1

Inspection Form

	<u>Acceptable</u>	<u>Unacceptable</u>
<u>General Site</u>		
Access Barriers	_____	_____
Security Control Devices	_____	_____
<u>Cover</u>		
Adequate Vegetation	_____	_____
Integrity with respect to erosion	_____	_____
Subsidence	_____	_____
<u>Stormwater Control System</u>		
Integrity of berms	_____	_____
Accumulation of debris	_____	_____
Erosion and undermining	_____	_____
<u>Free Product Recovery System</u>		
Build-up within casing	_____	_____
Mechanical	_____	_____
Electrical and controls	_____	_____
General appearance	_____	_____

Notes: _____

By: _____, _____
 (Authorized Representative) (Company)

Date: _____

FOLLOW-UP ON UNACCEPTABLE ITEMS:

How
 Resolved: _____

(add additional sheets as necessary)

By: _____, _____
 (Authorized Representative) (Company)

Date: _____

Although periodic reviews are generally conducted at five year intervals at completion of the remedy, it may not be necessary to conduct periodic reviews specifically for the OU-I remedy. To the extent periodic reviews are required, they will be performed for the lifetime of the cap.

INTRODUCTION

Complete and effective project management is essential to the proper execution of a project of this magnitude. In addition, the preparation and construction of the Remedial Design will involve many groups, organizations, agencies, consultants, contractors, and subcontractors. It is important to establish their individual roles at the beginning of the project.

NYSDEC is the lead regulatory agency and will be represented by the Remedial Project Manager (RPM).

Metro-North will select a Project Coordinator to represent it and provide primary contact with NYSDEC. The Project Coordinator will also oversee the consultant(s) and contractor(s) employed to prepare and construct the Remedial Design. Metro-North will also be the lead organization in disseminating information to the public in accordance with its Citizen Participation Plan (refer to section 4.9).

The following sections describe the proposed consultant and contractor project organization for the preparation and construction of the Remedial Design.

PREPARATION OF REMEDIAL DESIGN

Metro-North has selected ERM-Northeast (ERM) as its consultant to prepare the Remedial Design for the Harmon Railroad Yard Wastewater Treatment Area. The proposed project team organization and responsibilities of key personnel are described in this section.

7.2.1

Project Team Personnel

The names and project titles of ERM personnel selected for the project team are identified below. A proposed organization chart which includes NYSDEC, Metro-North and key ERM personnel is shown in Figure 7-1. Resumes of these individuals are also included in this section.

<u>Name</u>	<u>Project Title</u>
Andris Ledins	Project Director
Jim Perazzo	Technical Review (Pre-Design Study Project Director)
John Iannone	Technical Review/Citizen Participation Plan Assistance
Laura Truettner	Technical Review
Scott Ranger	Project Manager
Jim Testo	Corporate Health and Safety Director
Rob Rivera	Project Engineer

7.2.2

Subcontractors

ERM will require minimal subcontractor assistance to prepare the Remedial Design. It will be necessary to utilize the services of a surveyor for assistance in establishing initial contract limits (e.g., extent of lagoon, Zone A, etc) to be excavated or remediated in accordance with the ROD and Contract Documents. These limits will be "surveyed" in with respect to on-Site bench marks and staked in the field before any construction activities are initiated.

ERM will employ a surveyor who has previously worked at the Site for Metro-North.

4.2.2

Design Criteria

All design criteria for the Remedial Design including applicable design factors, assumptions and codes will be identified in the preliminary design submittal. The design criteria will serve as the basis for the analyses and computations to be performed in connection with the design. These analyses will serve as the basis of the design to be included in the drawings and specifications. The proposed design criteria (Remedial Action objectives) for the Remedial Design and Remedial Action are discussed in greater detail in section 5.2.

4.2.3

Results of the Pre-Design Test Boring Program

If available, the preliminary design submittal will also include all data obtained from the Pre-Design Test Boring Program (refer to section 2.0), describe the results of this work and discuss how the results will be implemented into the design.

4.2.4

Project Delivery Strategy

Work will begin with a review of all available data related to the Site, including any land surveys of the Site previously performed by Fred C. Hart Associates and McLaren/Hart Environmental Engineering Corporation. The existing survey data will be updated with data and information obtained during the preparation of the Remedial Design as necessary.

A Site visit by the design team will be scheduled during the preliminary design phase so that the individuals involved may familiarize themselves with all existing Site conditions.

The design of each of the major elements of the selected remedy for the Site will be addressed in the preliminary design submittal. The submittal will represent about 30 percent of the total design effort (i.e. 30 percent completion). This information will be used to develop a preliminary construction schedule.

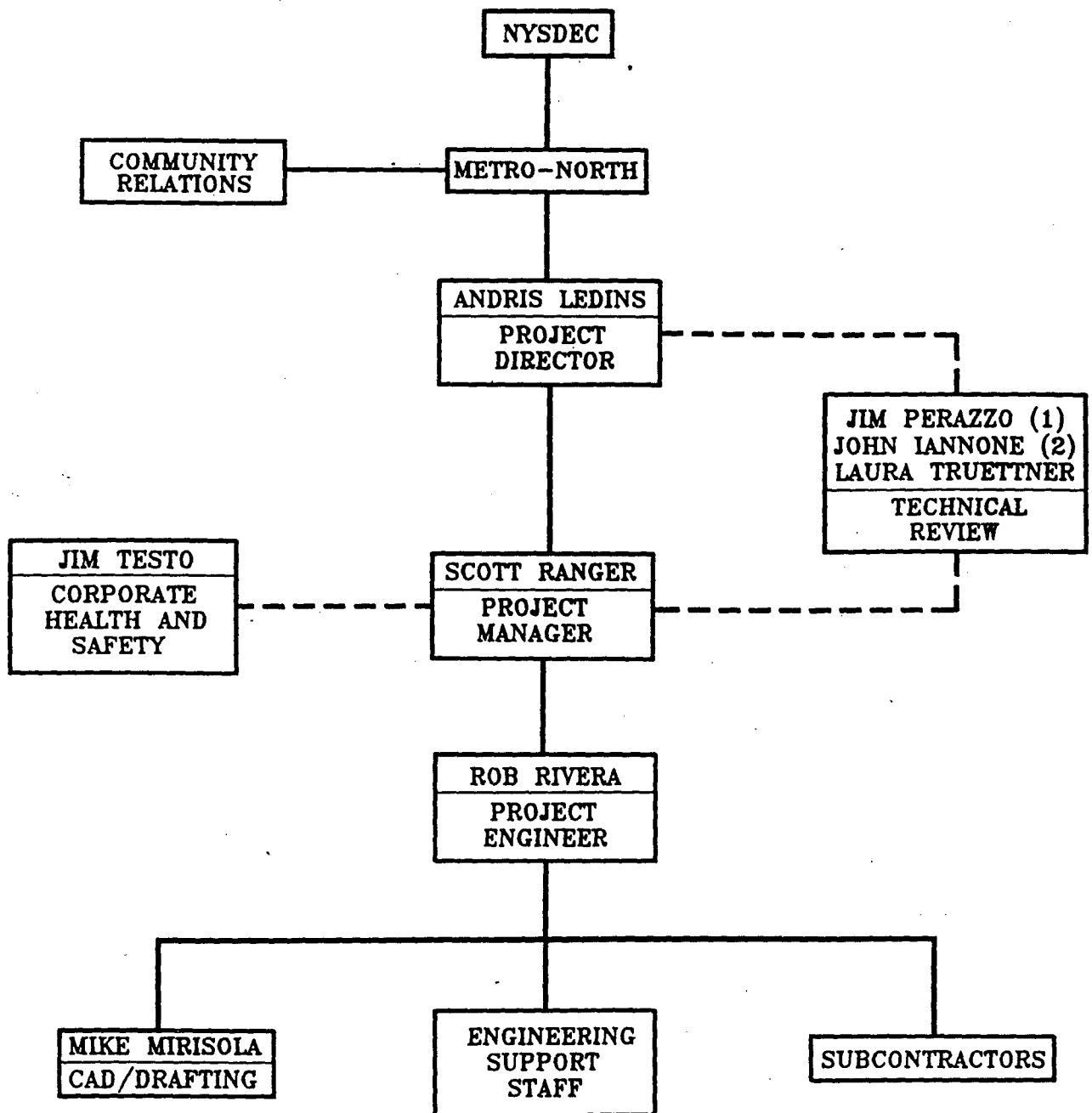
As part of the preliminary design phase, influent and discharge (SPDES) criteria and performance ability of the Metro-North wastewater treatment plant will be obtained and evaluated to determine potential disposal options for the wastewater generated from dewatering the excavated lagoon sludge and Zone B1, B2, and C soils (if necessary) as well as to identify potential requirements, temporary treatment facilities and other options, if applicable.

The design requirements for the wastewater generated from dewatering the lagoon sludge and other soils, such as discharge location and associated influent and effluent concentration limits, will be included in the preliminary design submittal.

The distribution of grain sizes in the lagoon sludge and other soils will be analyzed during the remedial design. ERM will review grain size data obtained during the RI and during the pre-design studies. This data will provide additional information for the selection and design of the appropriate temporary dewatering, filtration and/or other treatment processes necessary before the wastewater can be discharged to the existing treatment facility, off-site disposal facility and/or water body, as appropriate.

Based on the results of the Pre-Design Test Boring Program (if available), the amount of soils to be excavated from Zone C, if any, will be estimated. As discussed in Section 5.3.3.4, general response actions for Zone C soil, if any, will be determined based on the Zone C soil data. That is,

FIGURE 7-1
PROJECT ORGANIZATIONAL CHART
REMEDIAL DESIGN



NOTES:

1. PRE-DESIGN STUDY PROJECT DIRECTOR
2. SUPPORT TO METRO-NORTH FOR CITIZEN PARTICIPATION PLAN

———— DIRECT SUPERVISION
----- LINE OF COMMUNICATION



ERM-Northeast
Environmental Resources Management

If mechanical, electrical or control modifications are necessary to enhance the existing free-product recovery system, ERM may also require the services of electrical and control subcontractors to perform the required design work.

NYSDEC and Metro-North approval of any proposed subcontractor(s) will be obtained before any subcontractors are hired by ERM to perform work associated with the preparation of the Remedial Design.

7.2.3 *Responsibilities of Project Personnel*

The specific responsibilities of key personnel involved with the preparation of the Remedial Design are discussed below.

Project Director. The project director is responsible for the overall planning, direction and preparation of the project. The responsibilities of the project director generally include administrative review and client and regulatory agency interactions.

The project director is also responsible for overseeing the pre-design and the Remedial Design activities, providing technical guidance and resolution of technical issues, schedule and budget maintenance, reports to regulatory agencies, and review of the project deliverables.

The project director will serve as ERM's principal contact with Metro-North and NYSDEC and will ensure that the Remedial Design is prepared in compliance with all applicable approved documents. The project director will interface closely with Metro-North's project Coordinator, and the project manager.

Citizen Participation Plan Coordinator. The citizen participation plan coordinator will be responsible for assisting Metro-North with the

implementation and oversight of the citizen participation plan outlined in Section 4.9. It should be noted that John Iannone's expertise in, and experience with the development of the ROD for the Site will provide essential continuity in the preparation of the Remedial Design and associated submittals.

Corporate Health and Safety Director. The corporate health and safety director is responsible for:

- Administering and tracking ERM's health monitoring program and other mandated OSHA record keeping (OSHA 200 and 101 Forms);
- Review and approval of the Health and Safety Plan (HASP) prepared as part of the Remedial Design;
- Providing industrial hygiene/OSHA/safety guidelines for all appropriate consultant activities (e.g., selection, maintenance, use of protective gear; use of dangerous equipment, etc.)
- Developing procedures that facilitate project planning and implementation;
- Conducting all required training programs; and
- Conducting IH/OSHA/Safety reviews of consultant's procedures and practices.

Project Manager. The project manager will be responsible for the planning and preparation of the Remedial Design. The responsibilities of the project manager include:

- Preparation of Preliminary Design documents as described in section 4.3;
- Preparation of Pre-final Design documents (Contract Drawings and Specifications) as described in Section 4.4;
- Review of all drawings, specifications, calculations and cost estimates that are prepared as part of the Remedial Design;
- Coordination of disposal approvals and any necessary permit applications.
- Assisting in review and preparation of contract agreement forms, general conditions and supplementary conditions, bid forms, invitations to bid and instructions to bidders.
- Assisting in advertising for and obtaining or negotiation bids and proposals from contractors to perform the work; and
- Issuance of addenda to Contract Documents as necessary and assisting Metro-North in evaluating bids and proposals and assembling and awarding contract(s).

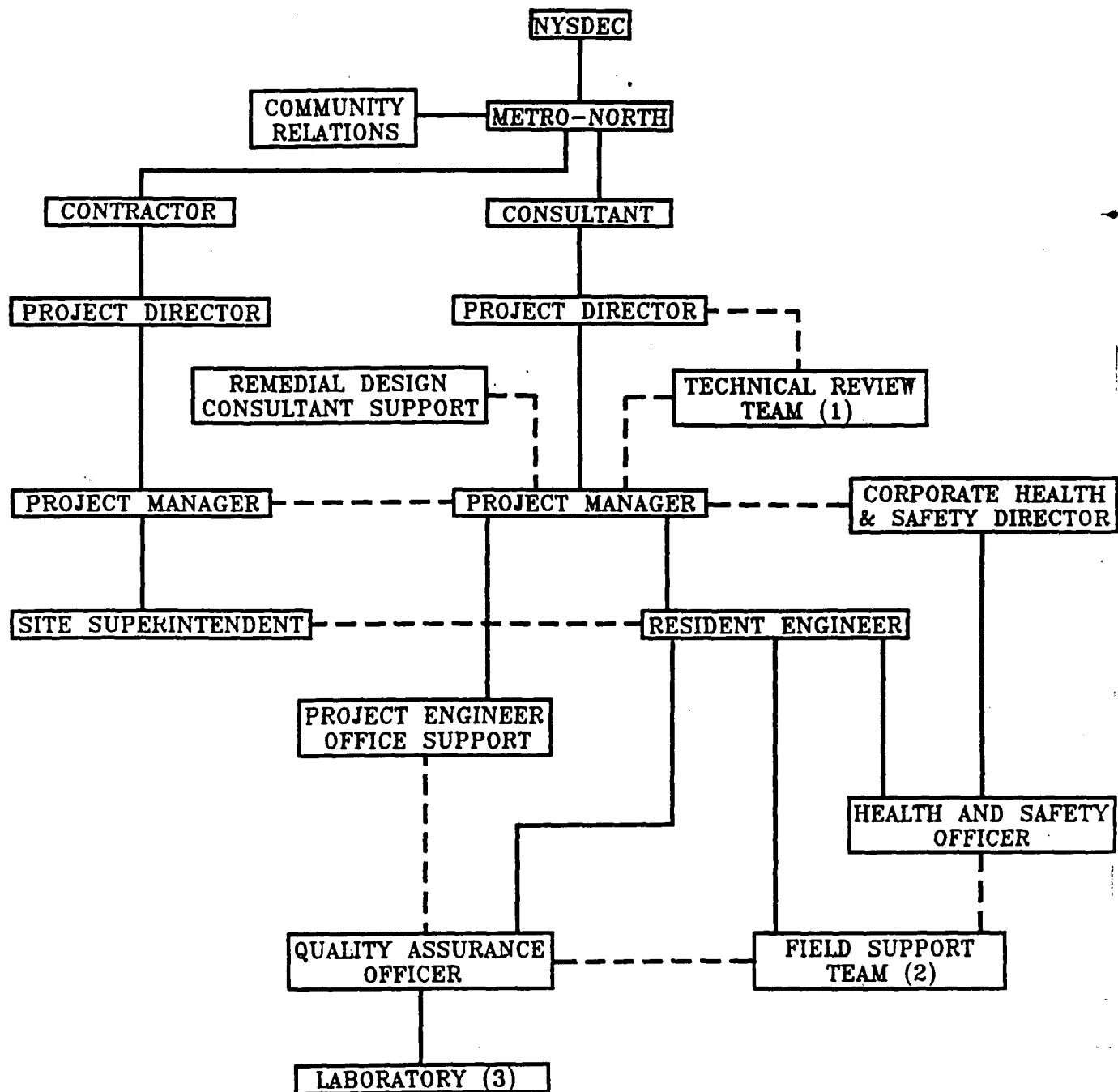
The project manager will interface closely with the pre-design study project director, the project director and the project engineer.

7.3

CONSTRUCTION OF REMEDIAL DESIGN

As of the writing of this Remedial Design/Construction Work Plan, Metro-North has not selected a consultant to perform the construction oversight activities described in Section 5.2 or a contractor(s) to construct the Remedial Design. The proposed project team organization and

FIGURE 7-2
PROJECT ORGANIZATIONAL CHART
REMEDIAL ACTION



NOTES:

1. SUPPORT TO METRO-NORTH FOR CITIZEN PARTICIPATION PLAN
2. INCLUDES POST-EXCAVATION FIELD TEAM LEADER AND SUPPORT STAFF, INSPECTORS, AND FIELD ASSISTANTS/TECHNICIANS/CLERKS AS REQUIRED.
3. METRO-NORTH WILL SUBCONTRACT SERVICES OF LABORATORY DIRECTLY. CONSULTANT WILL OVERSEE LABORATORY.

———— DIRECT SUPERVISION
----- LINE OF COMMUNICATION



ERM-Northeast
Environmental Resources Management

Contractor Project Title:

- Project Director
- Project Manager
- Site Superintendent

7.3.2 Subcontractors

Metro-North will subcontract the services of a laboratory to perform the required analytical work for the post excavation sampling identified to be performed in section 4.0 and 5.0. The laboratory will be a NYSDOH ELAP certified laboratory. The consultant will perform all post-excavation sampling and will oversee and direct the laboratory employed by Metro-North.

Depending on the resources of the consultant selected to perform the oversight of the construction of the Remedial Design, it is not anticipated that the hiring of other subcontractors by the consultant would be required.

NYSDEC and Metro-North approval of any proposed subcontractor(s) would be obtained before any subcontractors are hired by the consultant to perform work associated with the oversight of the construction of the Remedial Design.

7.3.3 Responsibilities of Project Personnel

The specific responsibilities associated with the anticipated key project titles involved with the construction of the Remedial Design are discussed below.

7.3.3.1 *Consultant*

Project Director. The project director is responsible for the overall planning, direction and preparation of the project. The responsibilities of the project director generally include administrative review and client and regulatory agency interactions.

The project director is also responsible for overseeing the construction oversight activities, providing technical guidance and resolution of technical issues, schedule and budget maintenance, reports to regulatory agencies, and review of the project deliverables.

The project director will serve as the consultant's principal contact with Metro-North and NYSDEC and will ensure that the selected remedy is constructed in accordance with the Remedial Design. The project director will interface closely with Metro-North's project Coordinator, and the project manager.

Citizen Participation Plan Coordinator. The citizen participation plan coordinator will be responsible for implementation and oversight of the citizen participation plan outlined in Section 4.9.

Corporate Health and Safety Director. The corporate health and safety director is responsible for:

- Administering and tracking the employee health monitoring program and other mandated OSHA record keeping (OSHA 200 and 101 Forms);
- Enforcement of the Health and Safety Plan (HASP) prepared for the Remedial Design to be used during construction of the Remedial Design;

- Providing industrial hygiene/OSHA/safety guidelines for all appropriate consultant activities (e.g., selection, maintenance, use of protective gear; use of dangerous equipment, etc.)
- Developing procedures that facilitate project planning and implementation;
- Conducting all required training programs; and
- Conducting IH/OSHA/Safety reviews of consultant's procedures and practices.

Project Manager. The project manager will be responsible for general administration of the contract to construct Remedial Design (in accordance with the consultant's contract with Metro-North). The responsibilities of the project manager include:

- Make visits to the Site to observe progress and quality of the contractor's(s') work;
- Supervision of field and office support staff including resident engineer;
- Ensure that all requirements of Site Health and Safety Plan are being followed in the field;
- Oversee coordination off-site transportation of excavated sludges and soils
- Ensure that the completed work of contractor(s) conforms to the requirements of the Remedial Design Contract Documents (Contract Documents);

- Disapprove of or reject work of contractor(s) which does conform to the requirements of the Contract Documents;
- Issue interpretations and clarifications of the Contract Documents and change orders as necessary;
- Review and approve shop drawings submitted by contractor(s) and evaluate and determine acceptability of substitute materials proposed by contractor(s)
- Require special inspections or testing and review all certificates of inspections or testing required by the Contract Documents or other rules or laws;
- Act as initial interpreter of Contract Documents;
- Review contractor's(s') applications for payment and recommend payments to contractor(s); and
- Review contractor's(s') final completion documents and perform final inspection to determine if contractor's(s') work is complete and in accordance with the Contract Documents.

The project manager will interface closely with the Remedial Design project manager, the project director, the resident engineer and the project engineer.

Resident Engineer. The resident engineer will be the consultant's representative at the Site and will act as directed by and under the supervision of the project manager. The resident engineer will be the main contact between consultant and contractor(s) regarding all on-Site work and will keep Metro-North advised as necessary regarding progress of the

Work. The resident engineer will be on-Site at all times when construction activities associated with the Remedial Design are being performed. The duties and responsibilities of the resident engineer will include:

- Supervision of consultant's field support staff;
- Supervision of the contractor's(s') work to determine if the work is proceeding in accordance with the requirements of the Contract Documents;
- Disapproval or rejection of work of contractor(s) which does conform to the requirements of the Contract Documents;
- Coordination off-site transportation of excavated sludges and soils
- Forwarding interpretations and clarifications of the Contract Documents from consultant to contractor(s);
- Maintaining orderly files of Contract Documents, meeting minutes, submittals and other construction correspondence;
- Maintaining Daily Log and completing daily reports as described in Section 5.2;
- Running weekly Site construction progress meetings and prepare minutes;
- Evaluating samples furnished at the Site by contractor(s)
- Advising consultant if special inspections or testing is required and reviewing all certificates of inspections or testing required by the Contract Documents or other rules or laws;

- Reviewing contractor's(s') applications for payment with contractor(s) before forwarding to project manager; and
- Performing final inspection to determine if contractor's(s') work is complete and in accordance with the contract documents.
- Assisting project manager in executing his responsibilities as outlined above.

The resident engineer will interface closely with the project manager, project engineer, site safety officer and corporate health and safety officer, and field team leader.

Health and Safety Officer (HSO). The HSO will monitor activities so that the work at the Site is conducted in accordance with the HASP. The HSO will have authority to stop work if conditions exceed allowable limits and, as appropriate, will assume certain sampling responsibilities. The HSO will coordinate with the consultant's corporate health and safety director and resident engineer in the event problems arise.

Quality Assurance (QA) Officer. The QA officer will be responsible for overseeing the enforcement of the quality assurance project plan and for maintaining quality control on all aspects of the project from sampling to report preparation as required by Metro-North and NYSDEC. The QA officer will also oversee a data validator who will be responsible for auditing and validating all analytical data generated during the field investigation.

FIELD SUPPORT TEAM:

The field support team will consist of construction inspector's, clerks, a field team leader for post-excavation sampling and technicians as required by the resident engineer.

Field Team Leader (FTL). If the consultant performs the post-excavation sampling identified to be performed in Section 4.0, A field team leader may be required. The FTL is responsible for all day-to-day aspects of the field work. The responsibilities of the FTL include:

- Assuring that all field team members are familiar with the field sampling and analysis plan (FSAP) and the health and safety plan (HASP).
- Assuring that all field team members have completed health and safety training.
- Reporting to the resident engineer on a regular basis regarding the status of all field work and any problems encountered.
- Overseeing sampling activities and ensuring that approved sampling methods are followed, that pertinent sampling information is obtained, and for the day-to-day inspection of any boring activities, including the appropriate logging and documentation of these activities.
- Sampling operations, sampling quality control and documentation and maintenance of site logbook.
- Overseeing the proper collection, preservation, packaging, documentation and chain of custody of samples until released to another party for storage or transport to the analytical laboratory.

Laboratory Subcontractor. The laboratory subcontractor is responsible for supplying properly cleaned glassware and for analysis of all soil samples collected during the construction of the Remedial Design and for completion of chain of custody forms for all samples. The laboratory is also responsible for following analytical and quality control procedures outlined in the quality assurance project plan and for interfacing with the QA officer to ensure data meets the data quality objectives.

7.3.3.2

Contractor

Project Director.

The project director is responsible for the overall direction of the construction of the Remedial Design. The responsibilities of the project director generally include administrative review and interaction with Metro-North's project coordinator and consultant's project director. The project director is also responsible for overseeing the construction activities, schedule and budget maintenance.

Project Manager.

The project manager is responsible for general administration of the contract to construct the Remedial Design. The project manager will supervise and direct the construction of the Remedial Design competently and efficiently devoting such attention thereto and applying such skills and expertise as may be necessary to perform the construction in accordance with the Contract Documents. The project manager will be responsible for the means, methods, techniques, sequences and procedures of construction except as otherwise specified in the Contract Documents and is responsible for ensuring that the finished work complies accurately and completely with the Contract Documents.

James A. Perazzo

Fields of Competence

CERCLA RI/FS and removal actions
RCRA (RFA, RFI CMS and CMI)
UST assessment and hydrocarbon remediation
Indirect/direct investigative techniques
Soil and ground water investigations
Hydrogeological assessments
Regulatory negotiation and strategic guidance
Expert witness

Experience Summary

Twelve years of experience in the environmental field in hazardous waste site investigation, data analysis and remediation. Managed and directed hydrogeologic efforts for RI/FS and RCRA-related projects. Completed investigations and assessments at over 60 National Priority List (NPL) sites. Responsible for integrating various technical personnel into projects to ensure the investigative and remedial design elements are incorporated into site evaluations. Developed strategic guidance and conducted negotiations relating to investigations and remediations. Established performance criteria to determine appropriate stages of termination of a remedy. Additional responsibilities include QA/QC, staffing and utilization.

Credentials

B.S., Geology, SUNY at Stony Brook, 1978
M.S., Earth Science, Adelphi University, 1981

Publications

"Technical Overview of State Superfund Program," New York Hazardous Regulations Course, Executive Enterprises, Inc., November 16-17, 1990.
"Remedial Investigation and Feasibility Study Process," New York Hazardous Regulation Course, Executive Enterprises, Inc., November 16-17, 1990.
"Groundwater Remediation; Performance Goals," Haztech International, Cleveland, Ohio, September 20-22, 1988.
"Remedial Design Needs to Consider in Planning Hazardous Waste Site Investigations," with J. Iannone and J. Mack; Haztech International, St. Louis, Missouri, August 26-27, 1987.

Key Projects

Project Director for a high profile NPL site containing lead. Project responsibilities included work plan preparation; RI implementation; and technical coordination of human health risk and ecological assessments and feasibility study. Coordinated negotiations and strategic support through all phases of the project. Also served as expert witness in third party litigation.

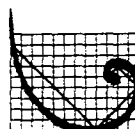
Project Manager for a multi-transaction industrial property transfer subject to New Jersey ECRA. Negotiated financial assurance bond in the ACO to permit transaction while cleanup occurred.

Developed a tank management program for 36 locations in New York and Connecticut. Planned site assessment and remedial programs. Formulated monitoring programs for early warning of potential environmental problems.

Project Director for two removal actions pursuant to an ACO under 106 provisions. Coordinated removal of an anhydrous ammonia tank, laboratory chemicals, drums, PCB oils and transformers. Characterized contents in over 200 unknown tanks. Coordinated a radiological survey with a health physicist to locate and remove materials exhibiting anomalous levels of radiation.

Developed technical approach to ongoing cases for the New York State Environmental Protection Bureau of the Attorney General's office. Prepared scientific reports and represented the Attorney General in adversarial discussions, public meetings and court hearings.

As part of a multi-disciplined technical team, developed a comprehensive remedial program at the dioxin contaminated Hyde Park landfill in western New York. The program involved collection and treatment of dissolved and non-aqueous phase liquids (NAPLs) in overburden and bedrock.



ERM

Laura E. Truettner

Fields of Competence

Federal and State RI/FS projects
 Technical support to PRP Committees
 Regulatory Agency negotiations
 Design and implementation of soil and groundwater investigations

Experience Summary

Eight years of varied geologic and hydrogeologic field investigation experience, including design and installation of monitoring well networks, implementation of sampling programs, soil vapor sampling, and geophysical surveys. Also extensive expertise in the preparation of site operation plans, quality assurance project plans, health and safety plans, and RI/FS reports for federal and state Superfund sites as well as technical documents for PRP use.

Credentials

B.A., Geology, Smith College, 1980
 M.S., Geology, University of Massachusetts, 1984
 EPA Hazardous Materials Incident
 Response Operations Course

Professional Affiliation

Sigma XI
 NWWA - Association of Groundwater Scientists and Engineers
 Association of Women Geoscientists

Publications

Truettner, L.E., 1983. Mineral Weathering and Sources of Alkalinity: Woods and Panther Lake Watersheds, proceedings of the Second New York State Symposium on Atmospheric Deposition, Albany, NY.

April, R., Newton, R., and Truettner, L., 1986. Chemical Weathering in Two Adirondack Watersheds: Past and Present Day Rates. GSA Bulletin, v. 97, p. 1232-1238.

Key Projects

Project manager for a 120-acre landfill Superfund project in Grand Rapids, MI. Project work included negotiations with EPA Region V on investigative scope of work, preparation of RI/FS reports and management of a \$750,000 PCB-contaminated soil removal action.

Task manager on a NYSDEC Superfund site involving investigation and remediation of a PCB-contaminated lagoon at an active rail yard. Work involved preparation of a Site Operation Plan, RI/FS reports, and negotiations with NYSDEC.

Project manager on Superfund site in Binghamton, NY, which involved preparation of critique of RI/FS documents prepared by EPA Region II subcontractor; and preparation of Remedial Action Plan and Field Operation Plan for implementation by PRP.

Project manager on Superfund site where work involved preparation of technical documents for PRP Committee for potential litigation. Project also included review and critique of documents prepared by a state subcontractor, preparation of a Remedial Action Plan, and negotiations with state and federal agencies on site remediation.

Project manager on Superfund site in Tampa, FL, where work included negotiations with Florida Dept. of Environmental Resources and USEPA Region IV, preparation of Field Operations Plans and RI and EA reports.

Project manager on three ECRA cases, one of which required preparation of GIS and SES forms for a large manufacturing facility owned by Fortune 100 Company; one of which required the implementation of a two phased sampling program, preparation of reports and cleanup plans and negotiation with NJDEP and the last which involved preparation of a cleanup plan.



PROFESSIONAL PROFILE

Scott W. Ranger**Registration**

Engineer in Training New York State

Fields of Competence

Concept, preliminary and final design of wastewater, ground water and leachate collection, treatment and disposal facilities. Concept and preliminary design of water conveying and treatment facilities. Concept, preliminary and final design of material and waste storage, conveying, handling and processing systems. Construction, operation and maintenance cost estimating, concept and preliminary report and operation and maintenance manual writing, specification development, regulatory agency interfacing, construction management, and shop drawing review. Hazardous waste soils removal, transportation and disposal procedures.

Experience Summary

Over nine years of planning, design and construction service experience on major civil and environmental projects. Responsible for supervision of support staff, client contact, and construction oversight.

Credentials

B.S., Civil Engineering, Massachusetts Institute of Technology, 1981

Professional Affiliation

American Society of Civil Engineers

Key Projects

Project Engineer/Site Coordinator for construction of \$3 million contaminated ground water extraction and treatment facility. Worked in field with resident engineer. Responsible for tracking and review of all submittals, resolution of construction problems, interfacing with contractors and client, construction oversight and preparation of plant operation and maintenance manual.

Project manager, responsible for engineering construction services for leachate treatment facility described below. Supervised project team of five engineers and drafters. Responsible for shop drawing review, resolution of construction problems, interfacing between client and contractor, budget and schedule maintenance and preparation of operation and maintenance manual for plant.

Project Engineer responsible for preparation of final design contract documents for a municipal waste/incinerator ash landfill leachate treatment facility in Pennsylvania. Also prepared NPDES Permit Application and researched data on composition of leachate from landfills. Treatment processes for this plant include pumping and flow equalization facilities, physical-chemical treatment, ammonia removal, activated sludge-extended aeration, secondary clarification, sludge digestion and dewatering, effluent filtration and chlorination.

Project Engineer responsible for preparation of preliminary and final design documents for a TCE contaminated groundwater recovery, treatment and recharge system. The treatment system incorporated an air stripper with both air and water phase carbon filter units.



John J. Iannone, P.E.

Registration

Registered Professional Engineer in the states of New York and Connecticut

Fields of Competence

Hazardous waste site remediation
CERCLA Feasibility Studies
Remedial Action Plans
Ground water treatment and remediation
Industrial and municipal wastewater treatment
Environmental impact assessment

Experience Summary

Twelve years of environmental consulting experience in hazardous waste site assessment and remediation, concept design of ground water and wastewater treatment systems, environmental impact assessments, sewer system evaluation surveys, and industrial pretreatment studies. Two years experience in construction management. Responsible for providing: technical direction of projects, technical support to industrial clients during property transfer negotiations, negotiations with regulatory agencies, and project cost and schedule control.

Credentials

B.E., Civil Engineering, Manhattan College, 1971
M.S., Civil Engineering, Polytechnic Institute of New York, 1980

Publications

"Remedial Design Needs to Consider in Planning Hazardous Waste Site Investigations"; J. Iannone, J. Mack, and J. Perazzo; Haztech International, St. Louis, MO; August 26-27, 1987.

"Organic Priority Pollutants in New York City Wastewater"; J. Iannone and M. Pai; Industrial Waste Symposium, 57th WPCF Conference; October 1984.

"Environmental Aspects of Solid Waste Management in Synthetic Fuel From Coal Facilities"; W. Chesner, J. Iannone and M. Pai; 54th WPCF Conference; October, 1981.

Key Projects

Hazardous waste site remediation projects for Ford, AT&T, Upjohn, Cooper Industries, General Motors, and the United Technologies Corporation.

Preparation of CERCLA Feasibility Studies for the Rose Township Site (MI); Barceloneta Tank Farm Incident (PR); LDI Site (MI); and the C&D Recycling Site (PA). Preparation of feasibility studies and remedial action plans for industrial clients at state lead sites.

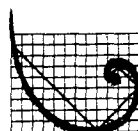
Concept design of an approved soil flushing and ground water remediation system for the removal of TCE at the McGraw-Edison Facility, Albion, MI.

Technical support, work plans, and Feasibility Study preparation leading to the successful delisting of the M&T DeLisa Landfill Superfund Site, Asbury Park, NJ from the National Priorities List.

Evaluation of remedial design measures, including landfill cover alternatives, gas venting, and surface water treatment, and design of cost reduction alternatives for the PRP Committee at the 60-acre GEMS Landfill Site, Gloucester, NJ.

Final design of closure measures for removal of soil and sludge containing chromium from wastewater treatment surface impoundments, Ford Kentucky Truck Plant, Louisville, KY.

Management of Environmental Cleanup Responsibility Act (ECRA) projects at four sites in New Jersey for major industrial client. Projects included comprehensive site investigations, sewer system evaluation surveys and design of remedial measures for soil, sediment and overburden, and bedrock aquifer ground water.



ERM

James M. Testo, CIH, CSP

Field of Competence

Development of Occupational and Environmental Programs
 Industrial Hygiene Management
 Interpretation of Occupational Law (OSHA), EPA public health aspects such as asbestos, and NYS Radiation (Code Rule 38)
 Occupational and Environmental Health for Hospitals
 Management, Supervisor, and on-line employee training in occupational and environmental health
 Asbestos risk evaluation, management, and control
 Chemical risk evaluation and reproductive health hazards
 Sensor technology and it's applications for exposure evaluation and disaster prevention

Experience Summary

More than twelve years of experience in the practice and management of safety, industrial hygiene and occupational health. Developed and implemented working documents that achieved the protection of employees along with assurance of responsible legal requirements. Three years federal and industrial experience developing and implementing safety and health programs. Four years experience managing industrial hygiene and environmental health projects for GE Silicones. Presentations and training on occupational health, OSHA regulations, reproductive hazards in the work place, asbestos management, radon, lead, laboratory safety, etc.

Credentials

Certified in the Comprehensive Practice of Industrial Hygiene by the American Board of Industrial Hygiene
 American Board Certified Safety Professional in Management Aspect
 Approved NYS Radiation Safety Officer
 Certified Hazardous Materials Trainer (Haz-mat training under EPA)
 Certified EPA Asbestos Abatement and Management Planner
 Licensed NYS Asbestos Handler
 Past President of the American Industrial Hygiene Association Local
 Past Chairman of the Silicone Health Counsel Occupational Health Committee in Washington, D.C.

Key Projects

Developed OSHA safety and health compliance for the Veteran's Administration Hospital, including hazardous waste, chemical exposure, laboratory design, and fire protection.

Asbestos risk evaluation and management of remediation for GE Silicones, and asbestos risk presentations for the General Electric Co.

Developed an industrial respiratory protection program for over 900 employees at GE Silicones.

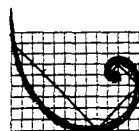
Wrote training documents for Hazard Communication, Respirators, Confined Space, Asbestos, Hearing Conservation, Chemical Hygiene for laboratories.

Developed and implemented a complete industrial hygiene department for a large chemical manufacturer, starting with no personnel and resulting with four professionals and a fully equipped laboratory.

Designed an on-line monitoring system for detecting explosive limits for an industrial propane refrigeration system.

Developed and implemented a chemical hygiene plan for over 150 laboratories at GE Silicones.

Designed and established an employee monitoring computerized system for the Federal V.A. hospital and GE Silicones.



ERM

PROFESSIONAL PROFILE

Robert J. Rivera**Registration**

Registered Engineer-in-Training, Pennsylvania

Fields of Competence

Design of: soil vapor extraction systems, hazardous waste treatment systems, wastewater treatment systems, ground water collection, treatment, and disposal facilities

Development of technical specifications and contract documents

Hazardous Waste Classification and disposal procedures

Hazardous Waste Site Remediation Planning & Implementation

Hazardous waste soil removal and transportation procedures

Health and Safety Planning

State Regulatory Agency Interfacing

Experience Summary

Five years of planning, design, and construction oversight on major civil and environmental projects. Responsible for coordination of designs between design staff, support staff, and design subcontractors.

Credentials

B.S., Civil Engineering, Carnegie Mellon University, 1988

Professional Affiliation

American Society of Civil Engineers

Key Projects

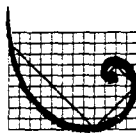
Project Engineer responsible for the design of a landfill closure project at a New York State Consent Order site. The remedial design included a slurry wall, impermeable cap, ground water recovery system, and soil vapor recovery and treatment system. Responsible also for preparation of specifications and contract documents.

Project Engineer responsible for the design of a tank closure and a soil vapor extraction system, at a New Jersey Consent Order site which contained numerous leaking underground chemical storage tanks.

Project Engineer responsible for designs of soil vapor extraction systems for two major oil companies, at several petroleum service stations.

Project engineer responsible for the preparation of a remedial action plan, and for directing the implementation of site remedial work, at a New York State Superfund site where PCB contamination was present in the soil and the manufacturing facility buildings.

Directed the implementation of remedial action plans and building decontamination plans at a major manufacturing facility, under the New Jersey Environmental Cleanup Responsibility Act (ECRA). The site contained buried asbestos, and PCB, metals, and solvent contamination. Co-authored the ECRA final decontamination report, and obtained closure approval by NJDEP.

**ERM**

INTRODUCTION

The work to be performed by Metro-North for the Harmon Railroad Yard Wastewater Treatment Area will be performed in accordance with the schedules agreed to by Metro-North and NYSDEC and outlined in this section of the Remedial Design/Remedial Action Work Plan. The RD/RA schedule described in paragraph 8.2 will commence with NYSDEC's notification to Metro-North of approval of the work plan.

This work plan establishes the steps for the preparation of the design and performance of the construction necessary to implement the selected remedy set forth in the ROD.

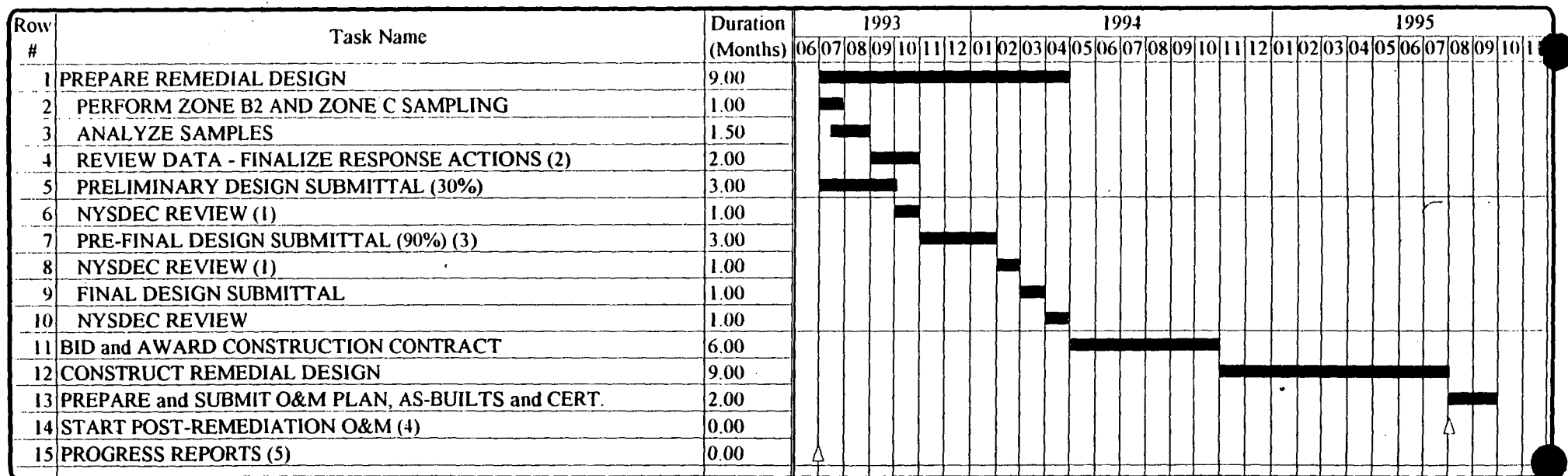
Upon approval of the work plan by NYSDEC, Metro-North will begin implementation of the work plan. Metro-North will submit to NYSDEC all plans, submittals and other deliverables required under the approved work plan in accordance with the approved schedule defined in this section, for review and approval. Unless otherwise directed by NYSDEC, Metro-North will not commence further remedial design activities associated with the Site prior to approval of the work plan.

PROJECT SCHEDULE

A proposed schedule for the components of the RD/RA activities as defined in this work plan is presented in Figure 8-1. The schedule is divided into Remedial Design, Remedial Design Construction, and Remedial Design O&M efforts and identifies the major work elements in each phase of the project. The schedule provides time for Metro-North and NYSDEC to review key project deliverables, such as the preliminary,

FIGURE 8-1

REMEDIAL DESIGN / REMEDIAL ACTION SCHEDULE
METRO-NORTH COMMUTER RAILROAD HARMON YARD LAGOON PROJECT
SAMPLING APPROACH NO. 3: CHARACTERIZE SOIL DURING SUMMER 1993 PRIOR TO REMEDIAL ACTION



Revised: 06/02/93

NOTES:

1. The start date of any task to begin after NYSDEC review will be adjusted to reflect the actual date that written approval from NYSDEC is received by Metro-North Commuter Railroad.
 2. This work is to be performed in consultation with the NYSDEC. Work will consist of:
 - (1) determining volume of Zone B2 soil to be removed; and
 - (2) selecting general response action (s) for Zone C soil.
 3. Assumes that general response actions selected for Zone C soil would only include:
 - (1) removing prescribed volume of Zone C soil, to be defined in remedial design and remedial action of OU-1; or
 - (2) deferring remedial design and remedial action for Zone C soil to OU-2.
 4. The extent, if any, of post-remediation O&M work to be performed as part of OUI is to be determined based on remedial design and remedial action.
 5. Progress reports are to be submitted monthly.
- △ Indicates beginning and end dates of remedial design and remedial action efforts.

pre-final and final design submittals. The periods labeled as "NYSDEC Review" include four weeks for NYSDEC to review each deliverable and to provide comments to Metro-North. Metro-North will address NYSDEC's comments in subsequent deliverables (e.g., NYSDEC's comments on the Preliminary Design deliverable will be addressed in the Pre-Final Design deliverable). It is anticipated that NYSDEC will provide only limited comments on the last deliverable (i.e., the Final Design deliverable), since this deliverable will differ only slightly from the previous deliverable, the Pre-Final Design. (Note: The Pre-Final Design represents approximately 90 percent completion of the final design).

The intervals indicated in the schedule are subject to the timely review of all submitted notifications and/or permit applications by NYSDEC, as well as the timely issuance of approvals to meet the applicable permit and substantive regulatory requirements referred to in Section 3.0.

8.2.1 *Pre-Design Study*

A pre-design study is currently in progress at the Site. The scope of this investigation, referred to as the Pre-Design Test Boring Program, is outlined in a separate work plan which has been previously submitted to NYSDEC by Metro-North and subsequently approved. The results of the pre-design study will provide essential information necessary for the completion of the Remedial Design. The primary purpose of the pre-design study is to characterize Zone B2 and Zone C soil. It is anticipated that the pre-design study, including sampling analysis, data review and response action determinations, will be completed approximately four months after initiation.

It should be noted that the completion date of the pre-design study is subject to change in the event inclement weather, such as excessive precipitation, prevents or delays the implementation of the proposed field activities.

Within nine months (including NYSDEC review time) after the work plan is approved by NYSDEC, Metro-North will submit to NYSDEC a Remedial Design to implement the remedial alternative for the Site selected by the NYSDEC in the ROD. The schedule for the preparation and submittal for the proposed deliverables which will comprise the Remedial Design is discussed below.

8.2.2.1

Preliminary Design

Upon approval of the work plan by NYSDEC, work to prepare the preliminary design submittal will be initiated. It is desirable that the results of the pre-design study will be available for use and incorporation into the preliminary design before the scheduled submittal date of the preliminary design to NYSDEC. However, as shown on the schedule, response actions for Zone B2 and, in particular, for Zone C soil, may not have been selected prior to the completion of the preliminary design. The time required to characterize Zone B2 and Zone C soil, evaluate the data, and select response actions will depend on the number and concentration of chemicals of concern detected in soil in these zones and the need, if any, to analyze archived sample extracts. If this information is not available and decisions regarding Zone B2 and Zone C soil response actions are not final before the preliminary design is complete, the methods to remediate these soil zones will be addressed in the pre-final design submittal.

The preliminary design submittal will include all information identified in Section 4.2 of the work plan. All work required to complete the preliminary design submittal will be conducted in accordance with schedules set forth in the work plan and will utilize contractors and subcontractors identified in the work plan or others that may be approved by NYSDEC.

It is anticipated that the time required for completion of the preliminary design will be approximately three months. Upon completion, the preliminary design submittal will be forwarded to NYSDEC for review and comment.

8.2.2.2 *Pre-Final Design*

Upon approval of the preliminary design submittal by NYSDEC, work to prepare the pre-final design submittal will be initiated. The pre-final design submittal will include all information identified in Section 4.3 of the work plan. The work required to complete the pre-final design submittal will be conducted in accordance with schedules set forth in the work plan and will utilize contractors and subcontractors identified in the work plan or others that may be approved by NYSDEC.

It is expected that the time required for completion of the pre-final design will be approximately three months. Upon completion, the pre-final design submittal will be forwarded to NYSDEC for review and comment.

8.2.2.3 *Final Design*

Upon approval of the pre-final design submittal by NYSDEC, work to prepare the final design submittal will be initiated. The final design submittal will include all information identified in Section 4.4 of the work plan. All work required to complete the final design submittal will be conducted in accordance with schedules set forth in the work plan and will utilize contractors and subcontractors identified in the work plan or others that may be approved by NYSDEC.

It is expected that the time required for completion of the final design will be approximately one month. Upon completion, the final design submittal will be forwarded to NYSDEC for review and comment.

Within six months after the Final Design is approved by NYSDEC, Metro-North will commence construction of the Remedial Design. In this six month period, Metro-North will solicit bids from qualified contractor(s) approved by NYSDEC, review and evaluate all bids and award a contract(s) for the construction of the Remedial Design based on the Remedial Design Contract Documents. The remedial alternative selected in the ROD will be constructed in accordance with the NYSDEC approved Remedial Design.

Metro-North will notify NYSDEC at least 10 working days in advance of any field activities.

It is estimated that the time required to execute the construction of the Remedial Design will be approximately nine months. A more definitive time schedule for implementing the Remedial Design will be forwarded to NYSDEC with the final design submittal previously discussed. The actual time required to complete the construction of the Remedial Design will be weather dependant.

Within two months after completion of the construction activities identified in the Remedial Design, Metro-North will submit to NYSDEC the following:

- A detailed post-remedial operation and maintenance plan ("O&M Plan");
- "As-built" drawings and a final engineering report (each including all changes made to the Remedial Design during construction); and

- describe all actions, including, but not limited to, data collection and implementation of work planned, which are scheduled for the next month as well as a summary of the construction progress to date;
- include information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the RD/RA and a description of efforts made to mitigate those delays or anticipated delays;
- include any modification to the work plans or to the schedules that Metro-North may have proposed to NYSDEC or that have been approved by NYSDEC; and
- describe all activities undertaken in support of the Citizen Participation Plan during the previous month and those to be undertaken in the next month.

These progress reports will be submitted to NYSDEC by the tenth day of every month.

NYSDEC will be notified of any change in the schedule described in the monthly progress report for the performance of any activity, including, but not limited to, data collection and implementation of work plans, no later than seven days prior to the performance of the activity.



STATE OF NEW YORK
DEPARTMENT OF HEALTH

Center for Environmental Health

2 University Place

Albany, New York 12203-3399

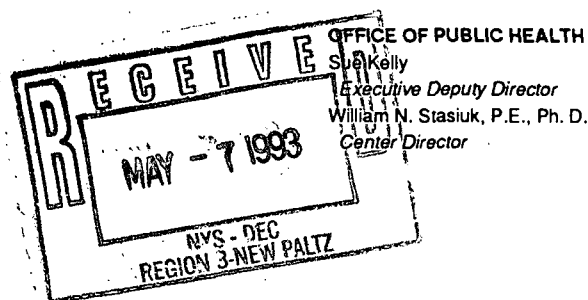
Mark R. Chassin, M.D., M.P.P., M.P.H.

Commissioner

Paula Wilson

Executive Deputy Commissioner

May 4, 1993



Dr. Chittibabu Vasudevan, P.E.
Bureau of Eastern Remedial Action
Division of Hazardous Waste Remediation
NYS Dept. of Environmental Conservation
50 Wolf Road
Albany, NY 12233

RE: Draft RD/RA Work Plan
Harmon Railroad Yard Wastewater Area
Site # 360010
Croton-on-Hudson, Westchester County

Dear Dr. Vasudevan:

Enclosed are my comments on the April 15, 1993 draft Remedial Design/Remedial Action Work Plan for the Harmon Railroad Yard Wastewater Treatment Area.

1. Page 1-21, Section 1.5.2, Summary of Analytical Data:

For your information, the January 1993 Pre-design Test Boring Work Plan as well as the Health and Safety Plan stated that the highest concentration of PCB Aroclor 1254 detected in lagoon sludge was 9050 mg/kg. Apparently the "9050" represented a typographical error as this current document correctly uses the figure "950" mg/kg.

2. Page 3-6, Section 3.3, Permits Not Required:

Once again I find it difficult to believe that this site, immediately adjacent to the Hudson River, "is not in a flood plain" and "is not adjacent to a....recreational portion of the Hudson River." The river at this location is used heavily by recreational boaters. It may be worthwhile to expand the explanations in the text.

3. Page 4-16, Section 4.3.4, Field Sampling and Analysis Plan:

In addition to monitoring for airborne dust generated during all excavation activities, air monitoring must be performed for volatile organic compounds (VOCs) AND PCB vapors. The work plan should state this.

4. Page 4-20, Section 4.5, Health and Safety Plan (HASP):

The first bullet states that the HASP will "evaluate the risks associated with each operation conducted." Is that referring to potential chemical and physical hazards associated with each exposure pathway? Could this bullet be made a little clearer?

5. Page 4-21, Section 4.5, HASP:

The air monitoring program must include a provision for a community air monitoring plan to address the potential generation of particulates, VOCs, and PCB vapors. As an example only, attached are air monitoring requirements utilized for community protection at the Schreck's Scrapyard inactive hazardous waste site (#932099). The purpose of a community air monitoring plan is to provide a measure of protection for the

downwind community from potential airborne contaminant releases as a direct result of work activities. The action levels therein require work shutdown, increased monitoring, corrective actions to abate emissions, and/or emergency notifications. The plan also helps to set the negative record (i.e., that work activities did not spread contamination off-site through the air onto neighboring populations or properties).

Particulates should be continuously monitored downwind of the exclusion zone with a portable particulate monitor that would have an alarm set at 150 ug/m^3 . If downwind particulate levels, integrated over a period of 15 minutes, exceed 100 ug/m^3 greater than the upwind particulate level, then drilling/excavation activities must be stopped and corrective action taken to prevent the off-site release of particulates. All readings must be recorded and be available for State (DEC & DOH) personnel to review. (Particulate monitoring should follow the NYSDEC Technical and Administrative Guidance TAGM 4031, Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites).

For VOCs, if the ambient air concentration of total organic vapors exceeds 5 ppm above background at the downwind perimeter of the site, all operations must be halted and monitoring continued. All readings must be recorded and be available for State (DEC & DOH) personnel to review.

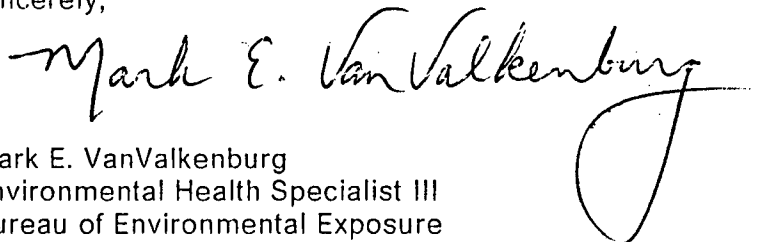
For PCB vapors, the concentrations of airborne PCB vapors potentially present at the upwind and downwind perimeter of the Site must be monitored during field activities at the Site. A DuPont ALPHA-1 or equivalent sampling pump utilizing a Florisil sorbent tube or equivalent can be used to collect cumulative air samples. Using NIOSH Method 5503, the samples should, at a minimum, be analyzed for Aroclor 1254 (the only PCB previously identified in the concentrated lagoon sludge) on a daily frequency. The levels of PCB vapors realized during the monitoring are used to guide the implementation of dust/vapor suppression techniques the following day, if necessary. Dust/vapor suppression techniques must be implemented when total PCB levels exceed the action level of one $(1) \text{ ug/m}^3$.

6. Page 4-26, Section 4.9, Citizen Participation Plan:

Under the fourth bullet, include the NYSDOH toll-free number (1-800-458-1158, extension 402).

Should you have any questions regarding these comments, please contact me at (518) 458-6305.

Sincerely,



Mark E. VanValkenburg
Environmental Health Specialist III
Bureau of Environmental Exposure
Investigation

Imw/93118PRO0704

Attachment

cc: Dr. A. Carlson/Mr. S. Bates
Ms. E. Hendrick - WCDOH
Mr. S. Ervolina/Mr. J. McCullough - DEC
Mr. R. Pergadia - DEC Region 3



STATE OF NEW YORK
DEPARTMENT OF HEALTH

Center for Environmental Health

2 University Place

Albany, New York 12203-3399

Mark R. Chassin, M.D., M.P.P., M.P.H.

Commissioner

Paula Wilson

Executive Deputy Commissioner

March 23, 1993

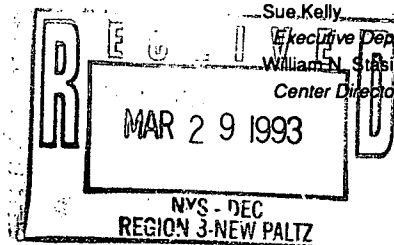
OFFICE OF PUBLIC HEALTH

Sue Kelly

Executive Deputy Director

William N. Stasiuk, P.E., Ph. D.

Center Director



Dr. Chittibabu Vasudevan
Div. of Hazardous Waste Remediation
NYS Dept. of Environmental Conservation
50 Wolf Rd.
Albany, NY 12233

RE: Test Boring Work Plan
Harmon Railway Lagoon
Site ID #360010
Croton-on-Hudson, Westchester County

Dear Dr. Vasudevan:

I have reviewed the March 10, 1993 final Pre-Design Test Boring Work Plan and associated Health and Safety Plan developed in connection with the remediation of the Harmon Lagoon. I find both documents acceptable as my verbal comments relayed to you on February 1, 1993 have been satisfactorily addressed.

Sincerely,

Mark E. VanValkenburg
Program Research Specialist III
Bureau of Environmental Exposure
Investigation

jlh/93082PRO0917

cc: Dr. A. Carlson/Mr. S. Bates
Ms. E. Hendrick - Westchester County Health Dept.
Mr. S. Ervolina/Mr. J. McCullough - DEC - Central Office
Mr. R. Pergadia - DEC - Region 3



STATE OF NEW YORK DEPARTMENT OF HEALTH

Corning Tower

The Governor Nelson A. Rockefeller Empire State Plaza

Albany, New York 12237

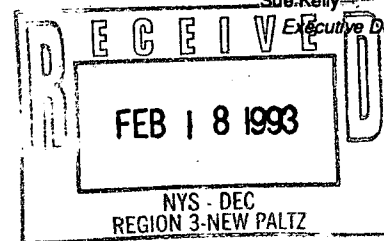
Mark R. Chassin, M.D., M.P.P., M.P.H.
Commissioner

Paula Wilson
Executive Deputy Commissioner

OFFICE OF PUBLIC HEALTH

Sue Kelly
Executive Deputy Director

February 4, 1993



Mr. Jeffrey B. McCullough
Bureau of Eastern Remedial Action
Division of Hazardous Waste Remediation
NYS Dept. of Environmental Conservation
50 Wolf Road
Albany, New York 12233

RE: Pre-design Test Boring Plans
Harmon Yard Lagoon
Site ID #360010
Croton-on-Hudson, Westchester Co.

Dear Mr. McCullough:

Enclosed are my comments on the January 25, 1993 draft Work Plan and the draft Health and Safety Plan. I verbally provided these comments to Mr. Chittibabu Vasudevan on February 1, 1993. I find both plans generally acceptable, but I do have several specific comments on the Health and Safety Plan.

1. Section 4.3, Site Monitoring:

Due to the limited duration and scope of this test boring program as well as the anticipated frigid temperatures in late February and the low volatility of PCBs, I can understand why air monitoring for PCBs is not planned. However, the eventual excavation of lagoon sludges (highest detected PCB concentration of 9050 ppm) will necessitate ambient air monitoring for the presence of PCBs on a daily frequency with sampling pumps and sorbent tubes or an equivalent method.

2. Section 4.5, Personal Protective Equipment:

The sentence"Conditions during drilling may warrant backing off from the drilling location and allowing vapors to vent," should be followed by a phrase or sentence discussing how vapors would be expected to dissipate rapidly, likely falling below detectable levels a short distance from the boring location.

3. Section 6.1, Site Access:

Wastewater Treatment Plant personnel who are routinely within the site gates should be physically restricted from approaching closer than 20 feet by taping off a thoroughfare or pedestrian corridor.

4. Section 7.1, Notification of Site Emergencies:

Prior to the commencement of field activities, it is recommended that you notify the Halfmoon Bay Condominiums Association President, Mr. David Cohen, due to the site's proximity, visibility, and notoriety.

5. Table 7-1, Emergency Contacts:

Handwritten notes: Hain / 7 Y P, 2/18

Please correct the spelling of my name and telephone number.

6. Section 8.4, Biological Hazards:

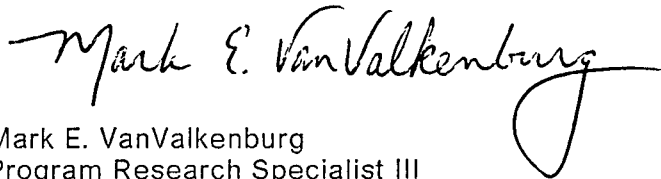
Delete the first half of the sentence....."Since this site is located in a sparsely populated area." In comparison to the location of the consultant's office in the heart of New York City, one might consider the immediate site location as sparsely populated. However, as vocal residents have made quite clear, the general area is heavily populated, especially during the summer months.

7. Section 9.0, Procedures for Protecting Third Parties:

It is refreshing to read that the consultant recognizes the need to perform perimeter air monitoring, if warranted, to "evaluate and affect appropriate corrective measures as necessary to reduce the risk of chemical hazards to off-site persons." Continuous air monitoring at the downwind perimeter will be mandatory during the eventual removal of contaminated sludges and soils.

Should you wish to discuss these issues further, I may be reached at (518) 458-6305.

Sincerely,



Mark E. VanValkenburg
Program Research Specialist III
Bureau of Environmental Exposure
Investigation

Ik/93033PRO0438

Enclosure

cc: Dr. G.A. Carlson/Mr. S. Bates
Ms. N. Knapp
Ms. E. Hendrick - WCDOH
Mr. S. Ervolina/Mr. C. Vasudevan - DEC
Mr. R. Pergadia/Ms. E. O'Dell - DEC Reg. 3

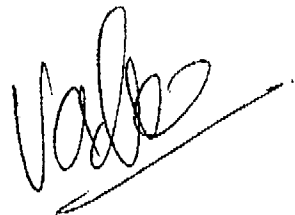
15 (1/2, 75)

3 800/0

New York State Department of Environmental Conservation

MEMORANDUM

TO:
 FROM: Ram Pergadia, Region 3, New Paltz
 SUBJECT: Chittibabu Vasudevan, Bureau of Eastern Remedial Action, DHWR
 PRAP
 DATE: FEB 4 1993



The following is a list of suggested sections for the PRAP.

- I. Objective
- II. Site Location and Description
- III. Site History
- IV. Current Site Status
- V. Goals for Remediation
 - A. Initial Screening of Alternatives
 - B. Description of Alternatives Retained from Screening
 - C. Final Screening of Alternatives
 - D. Selection of the Preferred Alternative
 - E. Comparative Assessment of the Preferred Alternative

If you have any questions on this, please do not hesitate to contact me.

cc: S. Ervolina

Post-It™ brand fax transmittal memo 7671		# of pages *
To	Ram Pergadia	From
Co.	NYSDEC	Co.
Dept.	Reg. 3	Phone #
Fax #	914-255-3042	Fax #
		518 457 1708
		518 457 1088

Post-It™ and fax transmittal memo 7671 # of pages 2	
To Ram Pergadia	From C. Vandevan
Co. NYSDEC	Co. NYSDEC
Dept. Bq. 3	Phone # 518 457 1708
Fax # 914-255-3042	Fax # 518 457 1088

ervation

Sal
Copies
MC
501
CD

TO: Bureau
 FROM: Michael J. O'Toole, Jr.
 SUBJECT: PRAP'S

DATE: JUN -4 1992

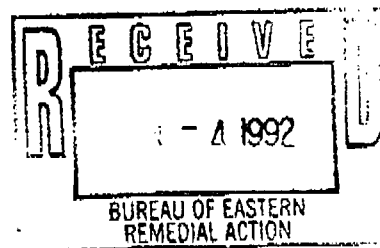
McToole

There are several elements that I find critical in the review of PRAP's. Please be sure to include a filled out "PRAP Summary Sheet" when sending PRAP's over for my review and approval.

Attachment

cc: w/att. - C. Goddard

K/KO
P. fax this to
Rams
Thanks
Vach
2/3/93



I H W S

PRAP - Summary Sheet

Site Number:
Name of Site:
Town and County:

Prepared By:
(Company; State; EPA)

Description of Problem:
(Include media contaminant, soil, groundwater, solid waste, public health;
include chemicals and then concentration: low--avg--high)

Description of Remedy:

Costs:
(Capital, O&M and present worth)

Issues:
(e.g., Public/Political Acceptance)

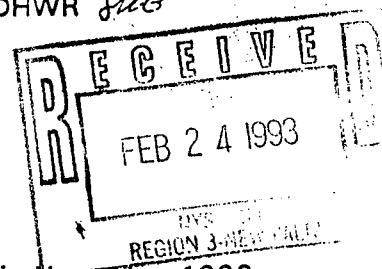


New York State Department of Environmental Conservation

MEMORANDUM

TO: Michael J. O'Toole, Jr., Director, Div. of Hazardous Waste Remediation
 FROM: Salvatore Ervolina, Director, Bureau of Eastern Remedial Action, DHWR
 SUBJECT: Harmon Yard Lagoon Remediation - Site I.D. 360010

DATE: February 3, 1993



The ROD for the site was signed in September 1992, and in November 1992 a determination was made that Metro-North is eligible for State Assistance under Title 3. The Harmon Yard facility is also subject to a Multi-Media/Pollution Prevention enforcement order which includes the Lagoon site. In order to proceed with the Lagoon remediation expeditiously, it was decided to have two separate orders, one for the Lagoon remediation and a Multi-Media order for the remainder of the site.

Since November 1992, DEC technical and legal staff have been meeting with Metro-North staff and their consultant, ERM-Northeast, to discuss the work plan and consent order. It was mutually agreed that the extent of contamination adjacent to and beneath the Lagoon needs to be further characterized prior to remediation. ERM-Northeast prepared a work plan and a Health and Safety Plan (HASP). After a couple of revisions, the work plan and HASP are acceptable to DEC and DOH. Metro-North would like to take advantage of the cold weather so that it will be logistically easier to mobilize drilling equipment to sample beneath the lagoon. ERM would like to start the field activities in late February, 1993 and is awaiting for DEC's Notice to Proceed to begin field activities. ERM is also preparing an overall work plan for the RD/RA of the Lagoon. It is expected that the draft RD/RA Work Plan would be submitted to DEC at the end of this month.

and order
 Metro-North and DEC have modified their positions with respect to the consent order and now both agencies would prefer to perform this work under a "Stipulation Agreement" instead of under a consent order. However, the "Stipulation Agreement" will require involvement by the Attorney General's Office. Under this "Stipulation Agreement", Metro-North will drop its Article 78 law suit against DEC. Due to the complexity of the "Stipulation Agreement" and involvement by the Attorney General's Office, it is not known when the "Stipulation Agreement" will be signed by all parties and is certainly not expected to be signed before March 31, 1993.

Metro-North continues to proceed with the project and the following issues need to be resolved assuming that the "Stipulation Agreement" is not in place:

1. Will Metro-North be eligible for reimbursement of the expenses incurred by Metro-North prior to signing the "Stipulation Agreement"?

J. K.
 al Klauer
 R-3

no longer

not necessary
 April is likely

2. Can a Notice to Proceed be given to Metro-North to characterize the Lagoon contamination without a "Stipulation Agreement"?
3. Can DHWR staff oversee the field activities?
4. Can DHWR staff approve the RD/RA Work Plan?
5. Metro-North plans to meet with the local Advisory Committee on March 11, 1993 (this is not a public meeting) to appraise the Committee of the progress on the Lagoon remediation. Metro-North and ERM staff have already met with this committee in January, 1993. Metro-North has invited DHWR staff to the March 11th meeting, and we believe we should attend this meeting with the Advisory Committee.

I am available to further discuss this with you. If you have any questions, please contact me or Chittibabu Vasudevan.

cc: C. Goddard
C. Vasudevan
R. Davies
J. Kowalchuk ✓

Date?

Harmon Lagoon - Site ID # 360010

The Scope of the Remedial Response

The RI/FS is confined to the fenced area (Sketch 1).
The focus in this phase of the study is on the recovery of
PCB contaminated free product and the remedy of sludge and
soil in and around the lagoon.

The Extent of the Problem

DRAFT

- Free products

Well WB-2 -- 0.44' thick. PCB conc. 3.3 ppm.
Well WB-4 -- 0.36' thick PCB conc. ?
Well WB-5 -- 2.42' thick. PCB conc. 104.0 ppm.

- Sludge in Lagoon

PCB concentration greater than 500 ppm = 230 yd³
500 to 50 ppm = 1,240
less than 50 ppm = 2,570
Total = 4,040 yd³
=====

Other contaminants:

Volatiles - BTX, Chlorobenzene, Acetone, PCE
Semi-Volatiles - 2-Methylnapthalene,
Dibenzofuran, Fluorene,
Phenanthrene, Napthalene, &
1,2-Dichlorobenzene.
Metal - Lead (max. 1,040 ppm)

- Soil surrounding the Lagoon (Sketch 2)

Zone A (top 2' around lagoon) to be
cleaned to less than .5 ppm of PCB - 2,500 yd³

Zone B1 (below zone A tested for
leaching criteria) ?

Zone B2 (below sludge in lagoon
tested for leaching criteria) - 3,400
Total (Approx.) - 5,900
=====

Other contaminants in surficial soil:

Metals - Lead (upto 64.8 ppm)
Arsenic (upto 10.9 ppm)

=====X=====

TABLE 1

10/29/90

**SUMMARY OF INACTIVE SITE
CONSENT ORDERS OBTAINED IN
FY 90-91**

	NAME	REMEDIAL ACTION	EFFECTIVE DATE	SITE CODE
1	Waste Management of New York, Inc.	PHASE II/FI	04/16/90	859006
2	XEROX Corporation	RI/FS & IRM	04/16/90	344021
3	* NYC/Penn. Ave Landfill	RI/FS & DESIGN & CONSTRUCTION	04/17/90	224002
4	* NYC/Fountain Ave Landfill	RI/FS & DESIGN & CONSTRUCTION	04/17/90	224003
5	* NYC/Brookfield Ave Landfill	RI/FS & DESIGN & CONSTRUCTION	04/17/90	243008
6	* NYC/Pelham Bay Landfill	RI/FS & DESIGN & CONSTRUCTION	04/17/90	203001
7	S.O.S. Septic Service	RI/FS	04/23/90	633028
8	Miller Container	RI/FS	04/23/90	738029
9	Levco Metals Property	PHASE II/FI	04/26/90	241009
10	Waste Stream Management	IRM	04/30/90	645
11	Duva Property	IRM	05/04/90	734051
12	Clark Property	IRM & Design & Construction	05/25/90	734048
13	Bell's Farm & Home Center(Paul Bell)	IRM	05/25/90	851015
14	US Dept. Of the Air Force/Grieffiss Air Base	RI/FS & DESIGN & CONSTRUCTION	06/04/90	633006
15	McKesson Corporation/Safety-Kleen EnviroSystems	RI/FS & IRM	06/20/90	734020
16	Niagara Mohawk (Harbor Point)	IRM	07/03/90	633021
17	Genesee Sand & Gravel	PHASE II/FI	07/05/90	835005
18	Duva Property	IRM (soil)	07/06/90	734051
19	Uniondale Realty Associates(Plander Lanes)	RI/FS	07/13/90	130
20	Delavan Industries Inc.	RI/FS	07/23/90	915138
21	FMC Corp.	PHASE II/FI	07/30/90	932014
22	Cosco Industries Inc.	SUPP RI	08/07/90	3-44-018
23	Wilmore, Inc.	RI/FS	08/07/90	3-60-020
24	Allied-Signal Inc.(Willis Ave)	RI/FS	08/12/90	7-34026
25	Aluminum Co. of America(West Marsh Site)	IRM	08/16/90	6-45-017
26	Aluminum Co. of America(Landfill & Annex)	IRM	08/16/90	645005
27	General Electric Company (Vatrano Rd.)	RI/FS	08/30/90	401036
28	Town of Clarkstown	AMENDED ORDER	08/30/90	3-44-001
29	Genesee Scrap & Tin Baling Co., Inc.	IRM	09/10/90	828081
30	Bausch & Lomb Incorporated	RI/FS	09/10/90	828061
31	Sulzer Turbosystems Int'l(Sulzer Bingham Pumps)	PHASE II/FI	09/19/90	401038
32	ITT Commercial Finance Corp	IRM	09/10/90	7-34-052
33	* Town of Dewitt	RI/FS & DESIGN & CONSTRUCTION	09/24/90	734012
34	Town of Whitestown	AMENDED ORDER	10/10/90	633013
35	Alcan Aluminum (Jarl Ext.)	RI/FS	10/10/90	828005
36	Rawlings/Adirondack	IRM	10/15/90	622-
37	ITT Fluid Technology Corp.	PHASE II/FI	10/23/90	808004
38	Grumman Aerospace Corp.	RI/FS	10/25/90	130003
39	Sorrentino Property	PHASE II/FI	10/25/90	152111
40				
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Technologies Considered

Free-Product

Foxboro Automatic Bailer, 300 gal. Storage Tank, Sample and Dispose.

Sludge and Soil

- Sludge Thickening and Dewatering (Sludge only)
- Supercritical Oxidation
- Soil Vacuum Extraction (Soil only)
- Incineration
- Thermal Volatilization
- Chemical Extraction
- Dechlorination
- Bioremediation
- Stabilization/ Fixation
- On-site Disposal with cover
- Off-site Disposal

DRAFT

Remedial Alternatives Considered

	<u>Cost (\$ M)</u>
- On-site Incineration, Stabilization, and On-site Disposal	----- 8.2
- On-site Incineration, Stabilization, and Off-site Disposal	----- 10.0
- Bioremediation, Stabilization, and On-site Disposal	----- 5.5
- Bioremediation, and Off-site Disposal	----- 8.3
- Off-site Disposal	----- 8.4
- Mobile Thermal Volatilization System (MTVS), Stabilization, and Off-site Disposal	----- 7.1

Metro-North's Preferred Alternative

MTVS, Stabilization, and Off-site Disposal

Additional Alternatives Suggested by DEC

- On-site disposal and in-situ bioremediation
- On-site disposal and in situ soil washing
- On-site disposal and alternation of soil washing and bioremediation

Disposal to be in Part 360 type landfill with liner and cover.

=====X=====

DIVISION OF HAZARDOUS WASTE REMEDIATION
TRACKING REPORT

November 13, 1990

PROJECT COMPLETIONS FOR FY 90/91

Apr-Jun				Jul-Sep			Oct-Dec			Jan-Mar			Total			
WORK				WORK			WORK			WORK			WORK			REMEDIAL
PLAN	ACT	TRK		PLAN	ACT	TRK	PLAN	ACT	TRK	PLAN	ACT	TRK	PLAN	ACT	TRK	PLAN
RI/FS																
FED	5	1	0	2	6	0	2	0	0	3	0	4	12	7	4	
PRP	8	1	0	11	7	0	11	1	8	12	0	20	42	9	28	
STATE	3	2	0	2	2	0	7	0	6	2	0	0	14	4	6	
TITLE 3	0	0	0	0	0	0	0	0	0	2	0	1	2	0	1	
													70	20	39	50
DESIGN																
FED	1	1	0	2	0	0	1	0	1	4	0	0	8	1	1	
PRP	5	0	0	5	6	0	2	0	3	2	0	4	14	6	7	
STATE	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	
TITLE 3	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	
													25	7	9	20
CONST																
FED	1	1	0	1	0	0	1	0	1	0	0	1	3	1	2	
PRP	5	2	0	4	0	0	4	4	2	1	0	4	14	6	6	
STATE	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	
TITLE 3	0	0	0	0	0	0	1	0	1	1	0	0	2	0	1	
													20	8	9	15
IRM (DESIGN)																
FED	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
PRP	2	1	0	2	1	0	1	0	5	0	0	2	5	2	7	
STATE	3	0	0	2	1	0	0	0	5	0	0	0	5	1	5	
TITLE 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
													10	3	13	NA
IRM (CONST)																
FED	0	0	0	1	1	0	0	0	2	0	0	1	1	1	3	
PRP	6	2	0	5	5	0	17	2	14	0	0	3	28	9	17	
STATE	3	4	0	0	1	0	6	0	6	0	0	1	9	5	7	
TITLE 3	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	
													39	16	27	30
RCRA LEAD																

RIFS		0	0		1	0		0	3		0	2		1	5	
DESIGN		0	0		0	0		0	1		0	1		0	2	
CONST		0	0		0	0		0	0		0	0		0	0	
IRM (DSGN)		0	0		0	0		0	0		0	0		0	0	
IRM (CONST)		1	0		0	0		0	1		0	0		1	1	
													2	8	NA	

WKPLN = COMPLETIONS PROJECTED IN BUREAU'S WORK PLANS
TRK = COMPLETIONS CURRENTLY PROJECTED IN THE TRACKING SYSTEM

A:\DC9011.WK1

NA

Indicator Parameters

Zone B1

2-Methyl naphthalene, Arochlor 1254, DDE, DDD, DDT.

Zone B2

Volatiles - BTX, Chlorobenzene, Acetone, PCE
Semi-Volatiles - 2-Methylnapthalene, Dibenzofuran,
Fluorene, Phenanthrene, Napthalene, &
1,2-Dichlorobenzene.
Metal - Lead

Cleanup Levels by SESOIL Model

<u>VOCs</u>	<u>Cleanup Level (ug/g)</u>
Ethylbenzene	36
Benzene	21 (using 5 ppb DRAFT std.)
Toluene	30
Xylenes	26
TCE	22
Chorobenzene	23
1,2-DCE	24
Chloroform	163
Acetone	119
PCE	45
<u>SVOCs</u>	
Napthalenen	410
1,2 Dichlorobenzene	507
Fluorene	1640
Phenanthrene	3056
Fluoranthene	8200

PCBs 1,000 ppm(proposed cleanup 25 ppm)

=====X=====

MISSION OF HAZARDOUS WASTE REMEDIATION TRACKING REPORT

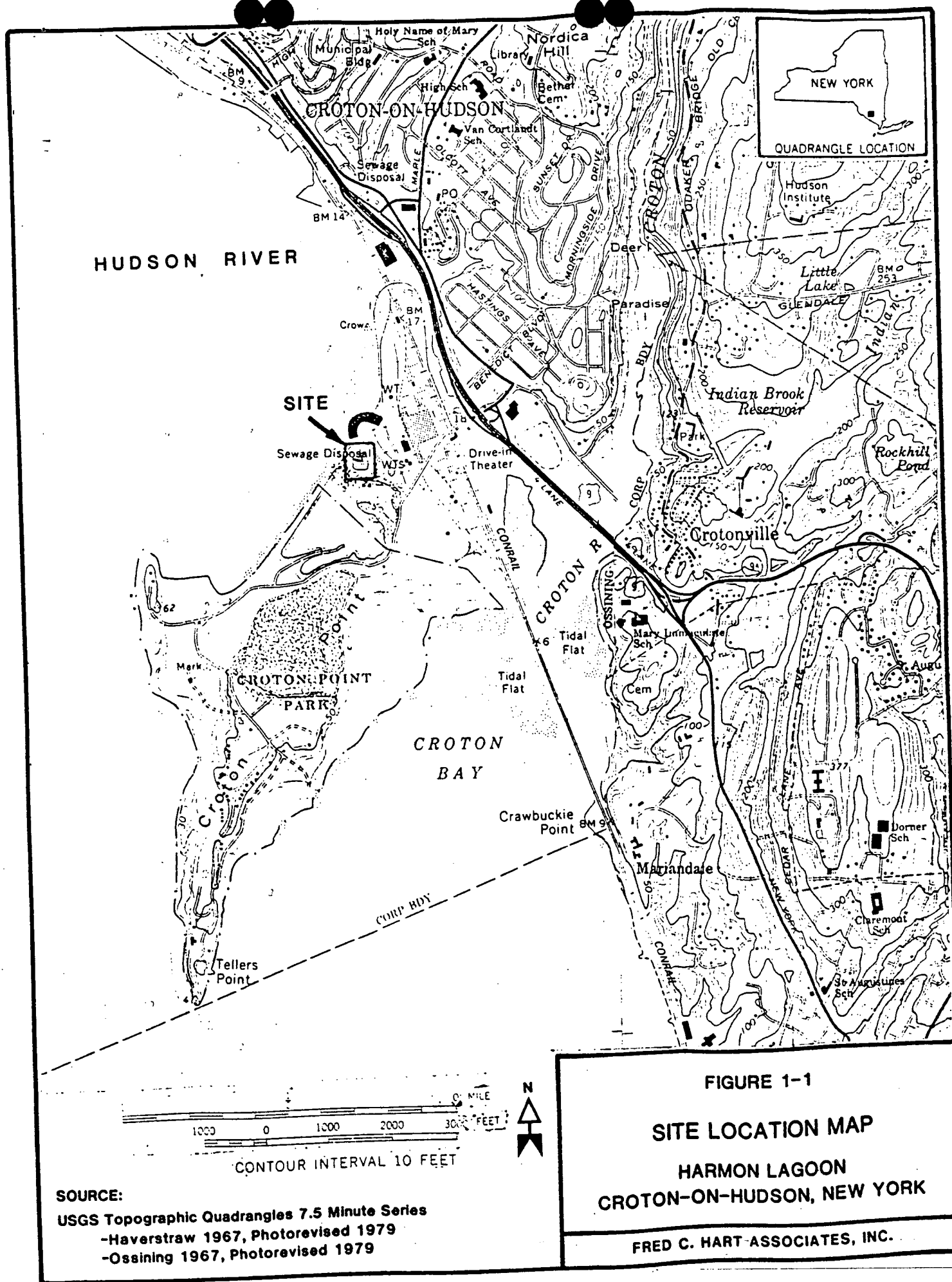
November 13, 1990

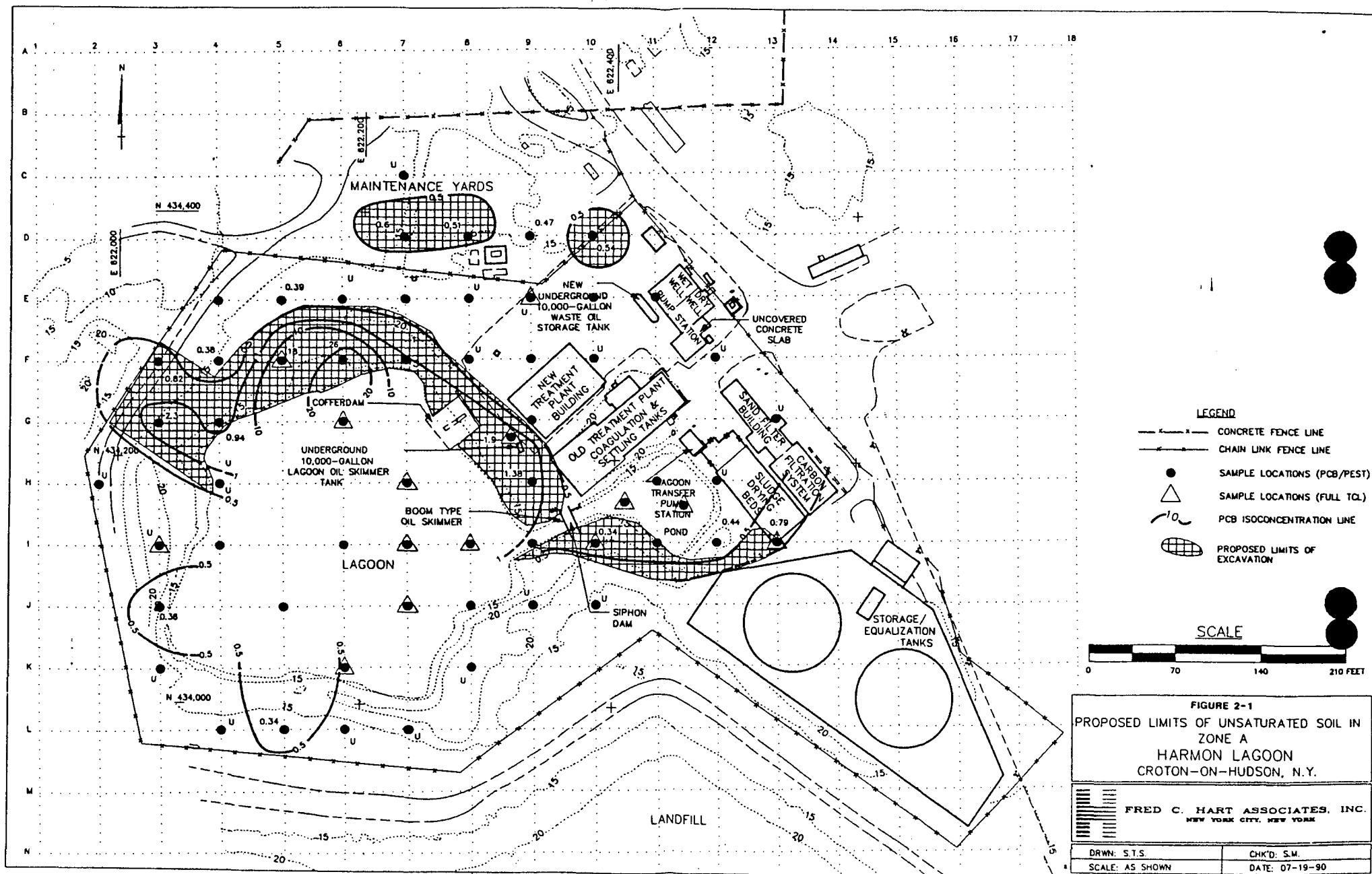
PROJECT STARTS FOR FY 90/91

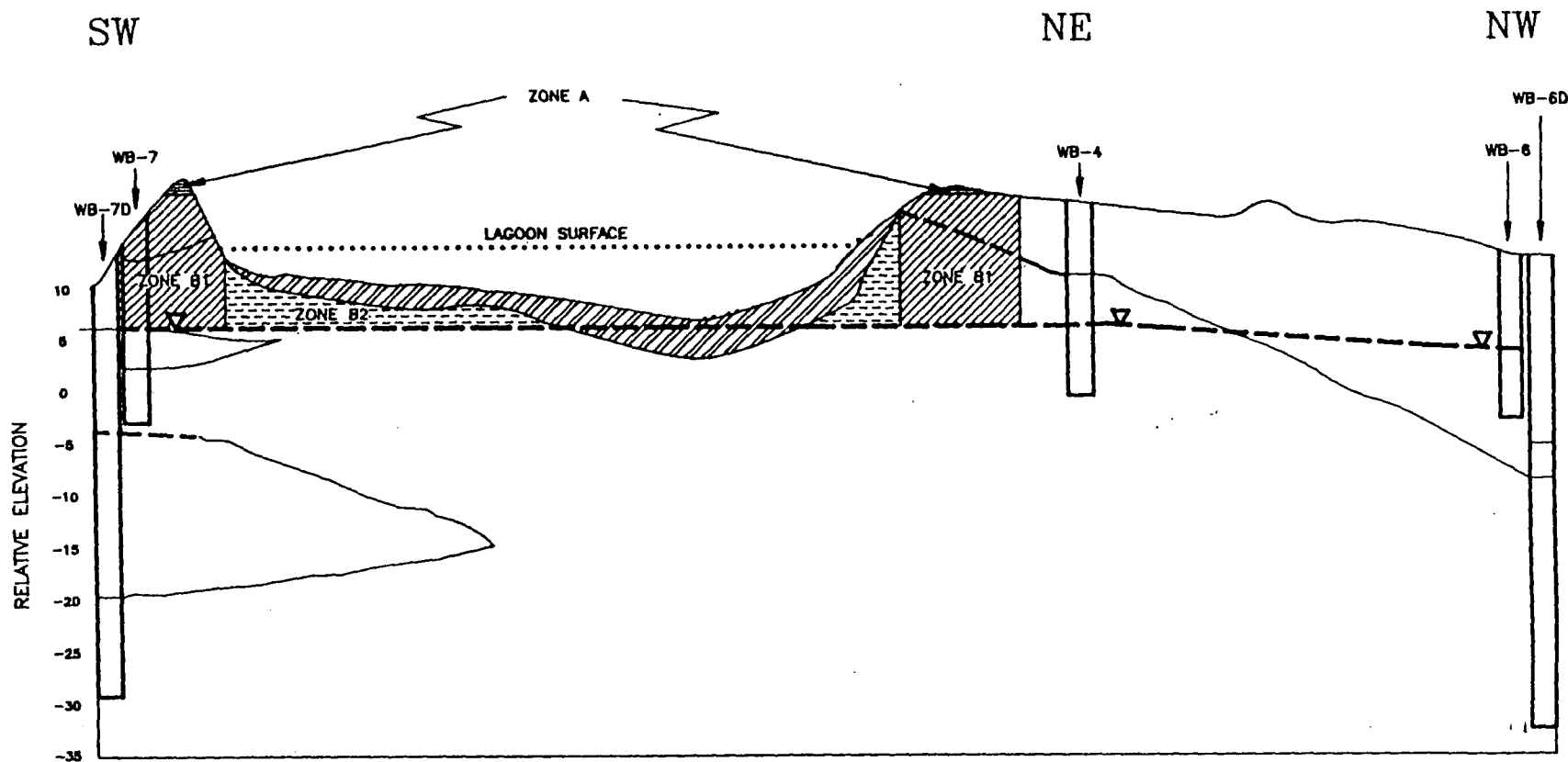
	Apr-Jun			Jul-Sep			Oct-Dec			Jan-Mar			Total			REMEDIAL PLAN
	WORK PLAN	ACT	TRK	WORK PLAN	ACT	TRK	WORK PLAN	ACT	TRK	WORK PLAN	ACT	TRK	WORK PLAN	ACT	TRK	
RI/FS																
FED	0	0	0	0	3	0	1	0	0	0	0	1	1	3	1	
PRP	17	4	0	18	8	0	15	3	24	4	0	11	54	15	35	
STATE	2	0	0	4	1	0	2	1	2	0	0	4	8	2	6	
TITLE 3	2	1	0	5	0	0	2	0	1	0	0	4	9	1	5	
DESIGN													72	21	47	40
FED	2	2	0	5	3	0	0	0	1	1	0	2	8	5	3	
PRP	2	0	0	2	4	0	10	0	4	4	0	5	18	4	9	
STATE	3	1	0	2	3	0	4	0	1	1	0	2	10	4	3	
TITLE 3	0	0	0	1	0	0	0	1	1	0	0	0	1	1	1	
CONST													37	14	16	30
FED	1	0	0	0	0	0	0	0	1	0	0	2	1	0	3	
PRP	5	4	0	4	3	0	1	0	3	1	0	1	11	7	4	
STATE	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	
TITLE 3	1	0	0	0	0	0	0	1	0	0	0	0	1	1	0	
IRM (DESIGN)													14	9	7	14
FED	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	
PRP	2	4	0	0	4	0	0	0	1	0	0	0	2	8	1	
STATE	1	1	0	0	1	0	0	0	0	0	0	0	1	2	0	
TITLE 3	0	0	0	0	1	0	2	0	0	0	0	0	2	1	0	
IRM (CONST)													5	12	1	NA
FED	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PRP	15	6	0	8	10	0	3	3	8	0	0	2	26	19	10	
STATE	1	1	0	5	3	0	1	0	2	0	0	2	7	4	4	
TITLE 3	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	
RCRA LEAD													33	24	14	30
	ACT	PLN		ACT	PLN		ACT	PLN		ACT	PLN		ACT	PLN		
RI/FS	0	0		0	0		0	0		0	0		0	0		
DSGN	0	0		0	0		0	0		0	0		0	0		
CONST	0	0		0	0		0	0		0	0		0	0		
IRM DSGN	0	0		0	0		0	0		0	0		0	0		
IRM CONST	1	0		0	0		0	0		0	0		1	0		
													1	0		NA

WKFPLN = STARTS PROJECTED IN BUREAU'S WORKPLANS
TRK = CURRENTLY PROJECTED IN THE TRACKING SYSTEM





A:\DS9011.WK1






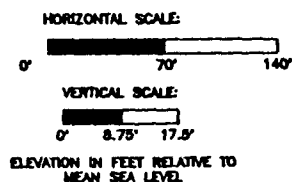


LEGEND

-  LAGOON SLUDGE
-  ZONE A 0-2' INTERVAL
-  ZONE B1 UNSATURATED SOIL SURROUNDING LAGOON
-  ZONE B2 UNSATURATED SOIL BELOW LAGOON

 WATER TABLE

 INFERRED CONTACT



LOCATION OF CROSS SECTION

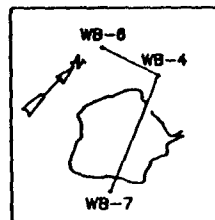


FIGURE 2-2

N-S PROPOSED LIMITS OF UNSATURATED
SOIL IN ZONES B1 AND B2

HARMON LAGOON
CROTON-ON-HUDSON, NEW YORK



FRED C. HART ASSOCIATES, INC.

TABLE 5-2

COMPARISON OF ALTERNATIVES

<u>Alternative No.</u>	<u>Description</u>	<u>Disadvantages</u>	<u>Advantages</u>	<u>Cost</u>
I	On-Site Incineration, Stabilization and On-Site Disposal	<ol style="list-style-type: none"> 1. Potential delays due to air permit requirements. 2. Potential resistance by public due to perceived risk. 3. Cost. 	<ol style="list-style-type: none"> 1. Maximum reduction of toxicity, mobility and volume of chemicals in sludge and Zone B2 soil. 2. Proven performance. 	\$8,189,380
II	On-Site Incineration, Stabilization and Off-Site Disposal	<ol style="list-style-type: none"> 1. Potential delays due to air permit requirements. 2. Potential resistance by public due to perceived risk. 3. Cost. 	<ol style="list-style-type: none"> 1. Maximum reduction of toxicity, mobility and volume of chemicals in sludge and Zone B2 soil. 2. Proven performance. 	\$9,927,990
III	Bioremediation, Stabilization and On-Site Disposal	<ol style="list-style-type: none"> 1. Extensive pre-design tests required. 2. Performance not established for Site. 3. Time required (4 years) is extensive. 	<ol style="list-style-type: none"> 1. Cost. 2. Significant reduction of toxicity, mobility and volume of organic compounds in sludge and Zone B2 soil. 	\$5,499,330
IV	Bioremediation and Off-Site Disposal	<ol style="list-style-type: none"> 1. Extensive pre-design tests required. 2. Performance not established for Site. 3. Time required (4 years) is extensive. 4. Cost. 	<ol style="list-style-type: none"> 1. Significant reduction of toxicity, mobility and volume of organic compounds in sludge and Zone B2 soil. 	\$8,347,180
V	Off-Site Disposal	<ol style="list-style-type: none"> 1. Does not satisfy preference for overall permanent remedy. 2. Cost. 3. Limited reduction of toxicity and mobility (not volume) of Site chemicals. 	<ol style="list-style-type: none"> 1. Least time to complete (2 years). 	\$8,369,360
VI	MTVS, Stabilization and Off-Site Disposal	<ol style="list-style-type: none"> 1. Does not satisfy preference for permanent remedy for 31 percent of sludge and Zone B2 soil. 	<ol style="list-style-type: none"> 1. Satisfies preference for permanent remedy for 69 percent of sludge and Zone B2 soil. 2. Short duration (2.5 years) time to complete. 3. Significant reduction of toxicity, mobility and volume of Site chemicals in most sludge and Zone B2 soil. 	\$7,126,170

TABLE 2-4

ARARs SUMMARY**DRAFT**POTENTIAL FEDERAL ARARs

TSCA; 40 CFR 761	PCB Spill Cleanup Policy; PCB treatment criteria for liquids and non-liquids; PCB container requirements; and PCB waste disposal methods.
RCRA; 40 CFR 261	Determination of whether a waste is hazardous.
RCRA; 40 CFR 262	Formal/administrative requirements of generators intending to treat, store, transport or dispose of hazardous waste.
RCRA; 40 CFR 263	Formal/administrative requirements of transporters of hazardous waste.
RCRA; 40 CFR 264	Standards pertaining to hazardous waste TSDFs - including, but not limited to, requirements for incineration and treatment.
RCRA; 40 CFR 265	Interim standards pertaining to TSDFs including, but not limited to requirements for incinerators, thermal treatment and physical/chemical/biological treatment.
RCRA; 40 CFR 268	Specifications and standards pertaining to land disposal restrictions.
CERCLA; 40 CFR 370	Provisions pertaining to community-right- to-know.
OSHA; 29 CFR 1910	Guidelines and requirements for workers at hazardous waste sites (subpart 120) and standards for air contaminants (subpart 1).

NYS STATUTORY REQUIREMENTS AND SCGs

6 NYCRR PART 360	Regulations pertaining to NYS requirements for solid waste management facilities including, but not limited to, construction/demolition debris disposal.
6 NYCRR PART 371	Regulations pertaining to NYS requirements for identification and listing of hazardous waste, including but not limited to, wastes containing PCBs.
6 NYCRR PART 372	Formal/administrative NYS requirements pertaining to hazardous waste manifests and related standards for generators, transporters and disposal facilities.
6 NYCRR PART 373	Regulations pertaining to NYS permitting for hazardous waste TSDFs (subpart 373.1) and interim status standards for owners and operators of hazardous waste facilities (subpart 373.3).
6 NYCRR PART 200	General provisions of NYS Air Pollution Control Regulations.
6 NYCRR PART 212	NYS Air Pollution Control Regulations pertaining to process, exhaust systems, and including but not limited to, new sources.
6 NYCRR PART 219	Substantive Incinerator Requirements
NYS PDES Limits	Existing Site NYS PDES discharge limitations as applied to the treatment of waste water drawn from the lagoon.
PCB in Surface Soil	Site specific NYSDEC designated PCB concentration of 0.5 mg/kg in surface soil to a depth of two feet.
PCB in subsurface soils	Designated PCB concentration of 25 mg/kg in soils which are not available for direct contact, ingestion or inhalation.
Inorganic constituents in soils	Proposed cleanup levels for Zone A, B1 and B2 soils based on reference values in literature and continued industrial operations at the Site (see Table 2-3).
Organic Chemicals in Soils	Proposed cleanup levels for Zone A, B1 and B2 soils based on SESOIL model results and designated area of groundwater compliance (see Table 2-3).