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Excavation Summary Report

Harriman Site, Harriman, New York



27 March 2001

PREPARED FOR

Maybrook Environmental Trust

ARCADIS GERAGHTY & MILLER

Excavation Summary Report

Harriman Site, Harriman, New
York

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Maybrook Trust

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Date:
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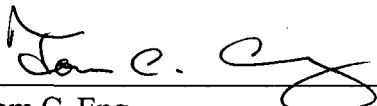
ARCADIS GERAGHTY & MILLER

Excavation Summary
Report,
Harriman Site, Harriman,
New York

Excavation Summary Report

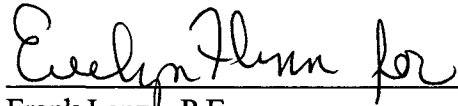
Prepared by ARCADIS Geraghty & Miller, Inc.

Date: March 27, 2001



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DISCLOSURE STATEMENT

The laws of New York State require that corporations which render engineering services in New York be owned by individuals licensed to practice engineering in the state. ARCADIS Geraghty & Miller, Inc. cannot meet that requirement. Therefore, all engineering services rendered to The Maybrook and Harriman Environmental Trust in New York are being performed by GM Consulting Engineers, P.C., a New York professional corporation qualified to render professional engineering services in New York. There is no surcharge or extra expense associated with the rendering of professional services by GM Consulting Engineers, P.C.

ARCADIS Geraghty & Miller is performing all those services which do not constitute professional engineering and is providing administrative and personnel support to GM Consulting Engineers, P.C. All matters relating to the administration of the contract with The Maybrook and Harriman Environmental Trust are being performed by ARCADIS Geraghty & Miller pursuant to its amended and restated services agreement with GM Consulting Engineers, P.C. All communications should be referred to the designated Project Manager at ARCADIS Geraghty & Miller.

1.0 Introduction	1
2.0 Objective	1
3.0 Excavation	1
3.1 Area F	2
3.1.1 Site Preparation	2
3.1.2 Excavation Activities	2
3.1.3 Drum Excavation and Disposal	2
3.1.4 Cylinder Excavation and Disposal	3
3.1.5 Soil Excavation and Disposal	3
3.1.6 Liquid Disposal	3
3.1.7 Debris Disposal	3
3.2 Area K	4
3.2.1 Site Preparation	4
3.2.2 Excavation Activities	4
3.2.3 Sediment Excavation and Disposal	4
3.3 Area 53	4
3.3.1 Site Preparation	5
3.3.2 Excavation Activities	5
3.3.3 Drum Excavation and Disposal	5
3.3.4 Soil Excavation and Disposal	6
3.3.5 Liquid Disposal	6

3.3.6 Debris Disposal	6
3.3.7 Monitoring Well Installation and Sampling	6
3.3.8 Residual Saturated Soil Treatment	7
4.0 Sidewall and Bottom Endpoint Sampling	7
4.1 Area F	7
4.2 Area K	8
4.3 Area 53	8
5.0 Backfill and Restoration	8
5.1 Area F	8
5.2 Area K	8
5.3 Area 53	9

Figures

1. Area F, Harriman Site, Harriman, New York
2. Area K, Harriman Site, Harriman, New York
3. Area 53, Harriman Site, Harriman, New York

Tables

1. Summary of Hazardous Drum Waste Disposal to Ross Incineration Services, Inc., Harriman Site, Harriman, New York.
2. Summary of Gas Cylinder Disposal to Advanced Environmental Technical Services, Harriman Site, Harriman, New York.
3. Summary of Non-Hazardous Soil Disposal to Casie Protank Environmental Services, Harriman Site, Harriman, New York.
4. Summary of Non-Hazardous Liquids Sent to E. I. Dupont De Nemours & Co., Inc., Harriman Site, Harriman, New York.
5. Summary of Non-Hazardous Debris Sent to Waste Management, Inc., Harriman Site, Harriman, New York.

6. Summary of Hazardous Soil Disposal to Casie Protank Environmental Services, Harriman Site, Harriman, New York.
7. Summary of Hazardous Liquid Disposal to E. I. Dupont de Nemours & Co., Inc., Harriman Site, Harriman, New York.
8. Summary of Hazardous Debris Sent to Ross Incineration Services, Inc., Harriman Site, Harriman, New York.
9. Groundwater Analytical Results for MW-53S and MW-53D, Harriman Site, Harriman, New York.
10. Summary of Sidewall and Bottom Samples Collected from Area F, Harriman Site, Harriman, New York.
11. Summary of PCBs Bottom Sample Results from Area F, Harriman Site, Harriman, New York.
12. Summary of Sidewall and Bottom Samples Collected from Area K, Harriman Site, Harriman, New York.
13. Summary of Endpoint Samples Collected from Area 53, Harriman Site, Harriman, New York.

Appendix

A. NYSDEC Correspondence

1.0 Introduction

On behalf of the Maybrook and Harriman Environmental Trust (Trust), ARCADIS Geraghty & Miller, Inc. and its engineering subcontractor, GM Consulting Engineers, P.C. have developed this Excavation Summary Report for the Harriman Site, located in Harriman, New York. This report summarizes the excavation work that was performed in the buried drums area (Area F), the Avon Parcel (Area K), and Area 53. The excavation work was performed in accordance with the approved work plan (Volume I, ARCADIS Geraghty & Miller, February 1999) and as specified in the Record of Decision (ROD) by the New York State Department of Environmental Conservation (NYSDEC) in March 1997.

2.0 Objective

The objectives of the excavation work in the referenced areas were as follows:

- Excavate and remove the estimated 320 buried drums and approximately 300 cubic yards of impacted soils in Area F.
- Excavate and remove the estimated 200 cubic yards (cy) of impacted sediment in Area K.
- Excavate and remove the buried drums and associated impacted soils in Area 53.
- Characterize the drums, liquids, soil and sediment for proper off-site disposal.
- Backfill and restore the excavated areas.

3.0 Excavation

The excavation activities of the three areas, Area F, Area K and Area 53 are summarized in this Section. The off-site disposal of the excavated materials are summarized in Tables 1 through 8.

3.1 Area F

The excavation work at Area F commenced on March 22, 1999. Site preparation activities were performed prior to start of the excavation work. Upon completion of the excavation work, the wastes were disposed of off-site, sidewall and bottom endpoint samples were collected, the area was backfilled and restored.

3.1.1 Site Preparation

The following site preparation work was performed prior to excavation. Construction fencing was installed and signs were posted to restrict access to only trained workers in the excavation area. Silt fencing along with hay bales was installed to control run-off of rainfall and any liquids associated with the excavation work. Twenty thousand (20,000) gallon tanks were brought on site to containerize all liquids. A decontamination pad was constructed for cleaning equipment and drum carcasses. A trailer was installed for the workers to perform decontamination procedures when they exited the excavation area. And finally, the magnetic anomaly locations, identified in the Remedial Investigation, were located and staked out.

3.1.2 Excavation Activities

Overall, eight areas within Area F were identified for the excavation of drums, drum carcasses and associated impacted soils. These areas were identified as magnetic anomalies C-1 through C-7 and test pit-35 (TP-35) as shown on Figure 1. The excavation work began with C-7, C-6 and C-3, the furthest isolated magnetic anomalies. The Excavation work then proceeded to the main area beginning with TP-35 followed by the remaining anomalies. Groundwater was encountered at approximately 4 to 5 feet below land surface (bls) in the main area. The groundwater was pumped, as necessary, into the 20,000-gallon tanks for dewatering purposes during the excavation activities.

3.1.3 Drum Excavation and Disposal

A total of 454 drums and drum carcasses were excavated from Area F. One hundred and seventy three (173) were overpacked and 281 drum carcasses were cleaned.

Samples were collected from the overpacked drums for disposal purposes. The analytical results indicate that the contents failed toxicity characteristic leaching procedure (TCLP) analysis and therefore, the drums were transported to Ross Incineration Services, Inc. of Grafton, Ohio for incineration. Table 1 provides a summary of the drum disposal.

3.1.4 Cylinder Excavation and Disposal

Two compressed gas cylinders were excavated. Analysis of the contents indicated that the cylinders contained chlorodifluoromethane and methyl bromide, respectively. The contents of the cylinders were transferred into new containers, the cylinders and new containers were sent to Advanced Environmental Technical Services located in Flanders, New Jersey for treatment and disposal. Table 2 provides a summary of the cylinder disposal.

3.1.5 Soil Excavation and Disposal

The total quantity of soil excavated from Area F was estimated to be 2,560 cubic yards. Composite samples of the soil piles were collected for TCLP analysis and the results indicated that the soil was non-hazardous. The soil was transported to Casie Protank of Vineland, New Jersey for thermal treatment and disposal. Table 3 provides a summary of the soil disposal.

3.1.6 Liquid Disposal

The quantity of liquids, mainly groundwater, collected and containerized during the dewatering of the excavation areas was approximately 67,000 gallons. The results of the laboratory analysis indicated that the liquid was non-hazardous. The liquid was transferred into tanker trucks and transported to the Dupont facility in Deepwater, New Jersey for treatment and disposal. Table 4 provides a summary of the liquid disposal.

3.1.7 Debris Disposal

The cleaned drum carcasses were transported to Weinert Recycling Company, Inc. in Middletown, New York. The drum carcasses that could not be cleaned satisfactorily and the debris collected during the excavation activities including worn personal

protective equipment, hay bales and fence material were all collected and placed into roll-off containers for non-hazardous disposal at the Waste Management, Inc. facility located in Model City, New York (see Table 5).

3.2 Area K

The excavation work at Area K commenced on July 15, 1999. Site preparation activities were performed prior to beginning the actual excavation work. Upon completion of the excavation work, the wastes were disposed of off-site, sidewall and bottom endpoint samples were collected, the area was backfilled and restored.

3.2.1 Site Preparation

Site preparation work performed in Area K consisted of the removal of a section of site security fence and minor trimming of tree branches for access purposes and staking out the excavation area based on pre-excavation sampling results to determine the boundary of the excavation.

3.2.2 Excavation Activities

Area K consisted of excavating 200 cubic yards of sediment as shown on Figure 2. The excavation area was 55 feet wide, 50 long and 1 foot deep. The excavation work was performed and completed in one day.

3.2.3 Sediment Excavation and Disposal

The total quantity of sediment excavated from Area K was approximately 200 cubic yards. Pre-excavation sampling results indicated that the soil was non-hazardous. The soil was transported to Casie Protank of Vineland, New Jersey for thermal treatment and disposal. Table 3 provides a summary of the soil disposal.

3.3 Area 53

The excavation work at Area 53 began on June 3, 1999. Site preparation activities were performed prior to the actual excavation work. Upon completion of the

excavation work, two monitoring wells (MW-53S and MW-53D) were installed and sampled. Thereafter, oxygen release compound (ORC) was added to treat the residual saturated soil impacts, the wastes were disposed of off-site, sidewall and bottom samples were collected, the area was backfilled and restored.

3.3.1 Site Preparation

The following site preparation work was performed prior to excavation. Construction fencing was installed and signs were posted to restrict access to only trained workers in the excavation area. Liquid tanker trucks were brought on site and stationed in secondary containment area to containerize all liquids. An odor control foam trailer was also brought on site to control odors during excavation. The decontamination pad and decontamination trailer, used for Area F, was also used for Area 53 to clean equipment, clean drum carcasses and personnel decontamination.

3.3.2 Excavation Activities

The excavation work began at the location between A53-10 and A53-7 with the final limits of the excavated area shown on Figure 3. Groundwater was encountered at approximately 5 feet below land surface (bls) and had risen to approximately 3 feet bls when the work was completed. The groundwater was pumped into the liquid tanker trucks, staged in a secondary containment area, for dewatering purposes during the excavation activities. Odor control foam was used during excavation activities due to concerns for odors. In total, three separate excavation efforts were performed in this area. The last effort was focused in the area of A53-13, A53-12, A53-10, A53-9 and A53-6 (see Figure 3). Saturated soil samples were collected by driving 4-inch diameter casing into four pre-determined locations to further delineate the residual impacts. Based on these results, additional dewatering and excavation was performed in an effort to remove as much of the impacted saturated soil as physically possible.

3.3.3 Drum Excavation and Disposal

A total of 103 drums and drum carcasses were excavated from Area 53. Fourteen drums were overpacked and 89 drum carcasses were cleaned. Samples were collected from the overpacked drums for disposal purposes. The analytical results indicate that the contents failed toxicity characteristic leaching procedure (TCLP) analysis and

therefore, the drums were transported to Ross Incineration of Grafton, Ohio for incineration. Table 1 provides a summary of the drum disposal.

3.3.4 Soil Excavation and Disposal

The total quantity of soil excavated from Area 53 was approximately 450 cubic yards. A mobile lab was used to analyze the composite soil samples prior to transportation and disposal off-site. The results indicated that the soil contained concentrations of VOCs, primarily benzene, that was considered hazardous. The soil was transported to Casie Protank of Vineland, New Jersey for thermal treatment and disposal. Table 6 provides a summary of the soil disposal.

3.3.5 Liquid Disposal

The quantity of liquids collected and containerized during the dewatering of the excavation area was approximately 31,000 gallons. The two initial tank truck loads (approximately 7,200 gallons) were tested and the results indicated that the liquid contained benzene at hazardous concentrations. The test results of the subsequent truck loads indicated that the liquid was non-hazardous. All liquid was transported to the Dupont facility in Deepwater, New Jersey for treatment and disposal. Table 4 and 7 provides a summary of the liquid disposal.

3.3.6 Debris Disposal

The cleaned drum carcasses were transported to Weinert Recycling Company, Inc. in Middletown, New York. Debris including plastic sheeting, hay bales and other materials were transported as hazardous debris for incineration to Ross Incineration Services, Inc., in Grafton, Ohio (See Table 8).

3.3.7 Monitoring Well Installation and Sampling

At the direction of NYSDEC, a pair of monitoring wells (MW-53S and MW-53D) was installed directly downgradient from the excavation area to monitor the potential migration of the residual saturated soil impacts. The residual saturated soil impacts

could not be completely removed due to the Aquitard Unit, consisting of layers of mixed sand, silt and clay, which serve as a semi-confining layer. This semi-confining layer prevents the migration of the contaminants and therefore, it was agreed upon with NYSDEC, that it would not be breached.

Groundwater sampling of MW-53S and MW-53D was first performed on November 15, 1999. The results indicate that MW-53S, which is screen at an interval of 4 to 9 feet bls (same depth as the bottom of the excavation), had non-detectable concentrations. MW-53D, which is screened in the overburden aquifer also showed no direct impacts from the residuals of the excavation. The constituents and concentrations detected in MW-53D were more indicative of the historic groundwater plume at the site.

3.3.8 Residual Saturated Soil Treatment

After evaluating several engineering solutions (SVE, biosparging and SVE, pump and treat), it was agreed with NYSDEC that the residual impacted saturated soil would be best treated in-situ using oxygen release compound (ORC). The increased oxygen levels in the subsurface would enhance the natural biodegradation of the remaining VOCs and SVOCs. Monitoring Well MW-53S was sampled again in November 2000. The results indicated that the concentrations of VOCs and SVOCs remained at non-detectable concentrations. Table 9 provides a summary of the groundwater monitoring results.

4.0 Sidewall and Bottom Endpoint Sampling

4.1 Area F

Upon the completion of the excavation work, sidewall and bottom endpoint samples were collected. The samples were analyzed for the Site constituents of concern (COCs). Volatile organic compounds consist of benzene, toluene, ethylbenzene and toluene (BTEX). Semi-volatile organic compounds consist of Alpha-picoline and 2-Amino-pyridine. Metals consist of copper and mercury. Table 10 summarizes the analytical results of the sidewall and bottom endpoint sampling. At the request of NYSDEC, additional bottom samples were collected and analyzed for PCBs. Table 11 summarizes the analytical results for PCBs. Figure 1 provides the locations of the samples collected from Area F.

4.2 Area K

Prior to the start of excavation activities, pre-excavation sidewall samples were collected and analyzed for PCBs to determine the boundary of the excavation. Upon the completion of the excavation, bottom samples were collected and analyzed for PCBs. Table 12 summarizes the analytical results for SVOCs, metals, and PCBs. Figure 2 provides the locations of the samples collected from Area K.

4.3 Area 53

Upon the completion of the first excavation effort, bottom samples were collected and analyzed for the Site COCs. Following the second excavation, bottom samples were again collected for on-site analysis, by a certified mobile lab, for BTEX compounds. A split sample was sent to a laboratory for confirmation of the BTEX compounds and 5 samples were sent for analysis of SVOCs and metals. Table 13 summarizes the analytical results. Figure 3 provides the locations of the samples collected from Area 53.

5.0 Backfill and Restoration

Upon the completion of the excavation activities and with NYSDEC approval, backfilling and restoration of each area was performed.

5.1 Area F

With NYSDEC approval on September 29, 1999 (see Appendix A), Area F was backfilled with approximately 3,500 cubic yards of certified clean fill. In areas where the groundwater table had risen, gravel was used to ensure that compaction of the fill could be achieved. The section of the asphalt road that was removed during the excavation activities was replaced. For the final closure of this area, the Trust and the NYSDEC are working on the details of applying ORC to address the residual impacts in the saturated soil.

5.2 Area K

At the request of NYSDEC, the 1 foot deep excavation of Area K was not backfilled. This was determined to be the best method for the natural vegetation to re-grow. The

section of the site's security fence that was removed during the excavation activities was reinstalled. Final closure of this area was provided in a conference call with NYSDEC in 1999 as the PCBs sampling results were all below the SCG.

5.3 Area 53

With approval from NYSDEC, Area 53 was backfilled with approximately 600 cubic yards of certified clean fill. The excavation was dewatered so that compaction of the fill could be achieved. All fencing and debris was removed from the area. The residual saturated soil impacts were treated with ORC and final closure was provided by NYSDEC in July 2000 (Appendix A).

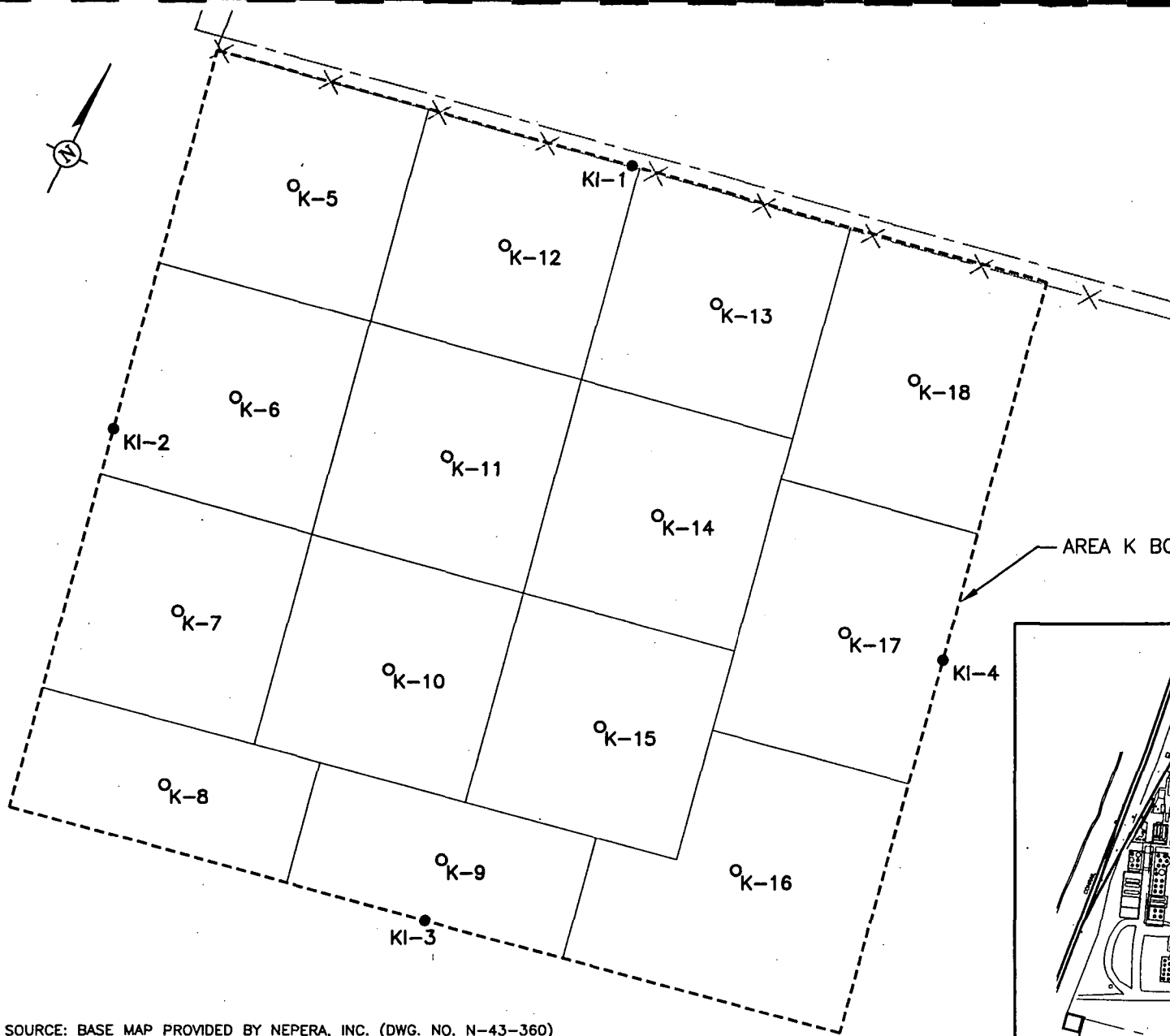


FIGURES

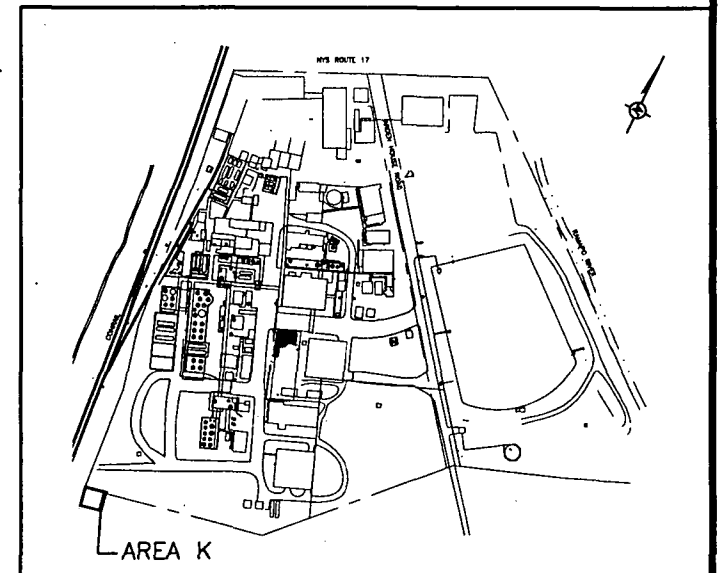


LEGEND

- PROPERTY LINE
- ××× FENCE LINE
- UTILITY LINES
- EXISTING STRUCTURE
- APPROXIMATED LIMITS OF EXCAVATION
- BOTTOM SAMPLE
- SIDEWALL SAMPLE

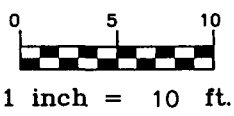


AREA K BOUNDARY



SOURCE: BASE MAP PROVIDED BY NEPERA, INC. (DWG. NO. N-43-360)
 LOCATION OF BURIAL TRENCHES AND MAGNETIC ANOMALIES ARE BASED ON
 LOCATIONS GIVEN IN THE RI AND THE MAGNETOMETER SURVEY (CRA 1995).

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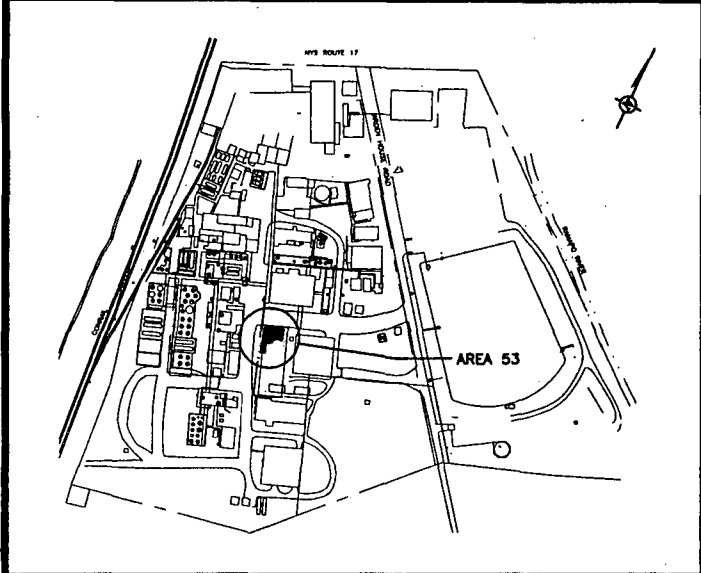
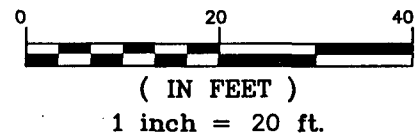
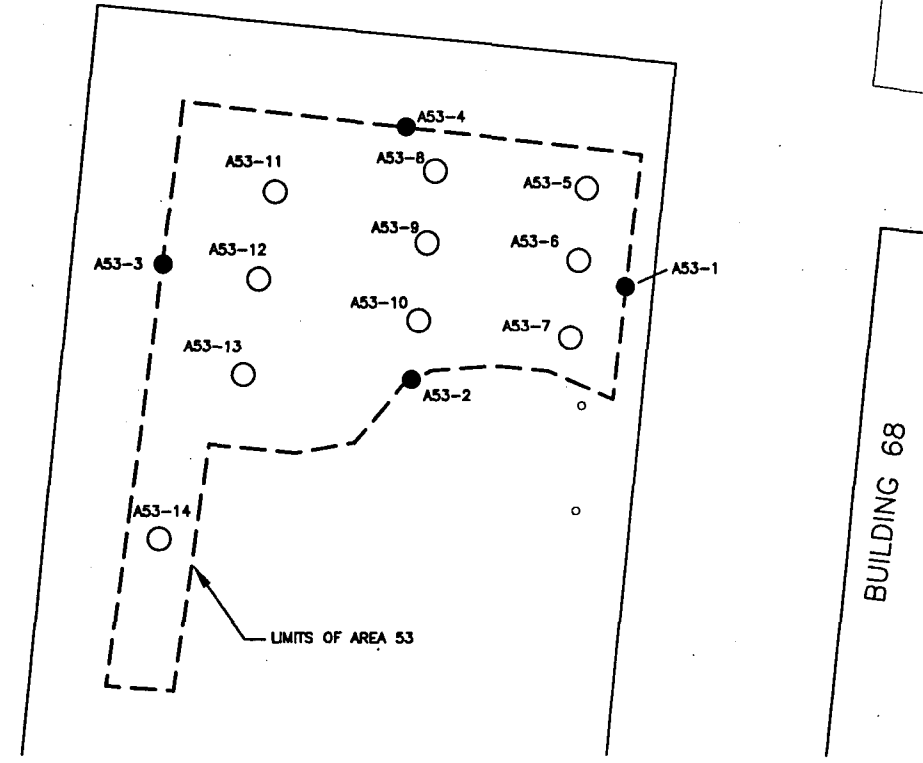


DRAWN NW	DATE 3/21/01	PROJECT MANAGER T. ENG	DEPARTMENT MANAGER T. ENG
AREA K SIDEWALL AND BOTTOM SOIL SAMPLING LOCATIONS HARRIMAN SITE HARRIMAN, NEW YORK		LEAD DESIGN PROF. F. LENZO	CHECKED T. ENG
		PROJECT NUMBER NJ000389.003	FIGURE NUMBER 2

NO.	DATE	REVISION DESCRIPTION	BY	CHKD

LEGEND

- SIDEWALL SAMPLE
- BOTTOM SAMPLE



SOURCE: BASE MAP PROVIDED BY NEPERA, INC. (DWG. NO. N-43-360)

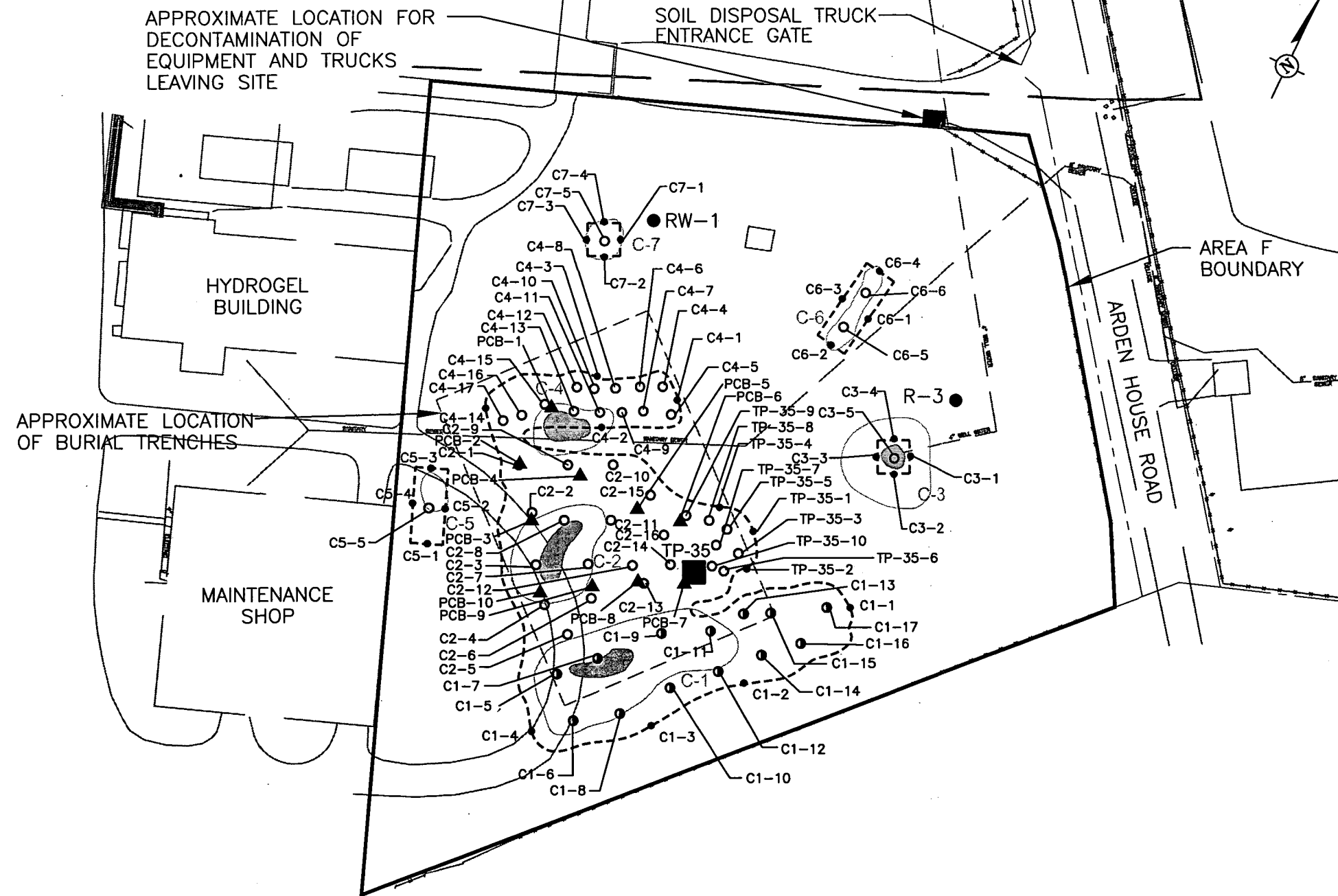
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DRAWN AG	DATE 3/1/01	PROJECT MANAGER T. ENG	DEPARTMENT MANAGER T. ENG
SIDEWALL AND BOTTOM SAMPLING LOCATIONS (AREA 53) HARRIMAN SITE HARRIMAN, NEW YORK		LEAD DESIGN PROF. F. LENZO	CHECKED
		PROJECT NUMBER NJ000389.003	FIGURE NUMBER 3

NO.	DATE	REVISION DESCRIPTION	BY	CHKD



APPROXIMATE LOCATION FOR DECONTAMINATION OF EQUIPMENT AND TRUCKS LEAVING SITE

SOIL DISPOSAL TRUCK ENTRANCE GATE

HYDROGEL BUILDING

APPROXIMATE LOCATION OF BURIAL TRENCHES

MAINTENANCE SHOP

AREA F BOUNDARY

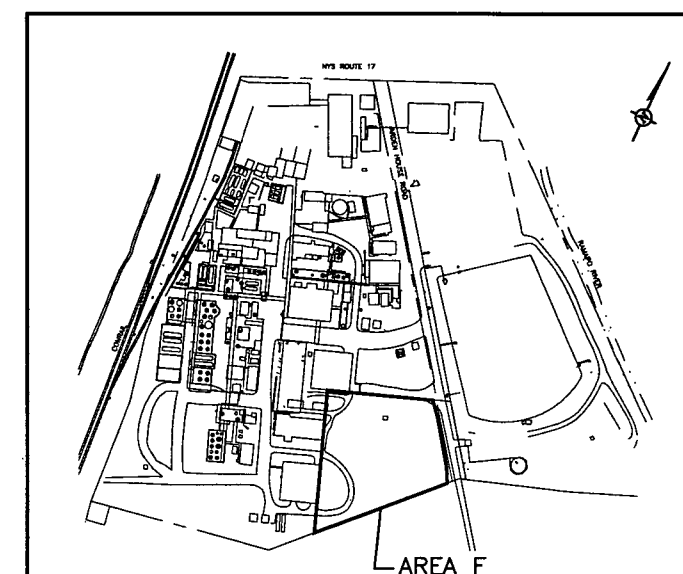
ARDEN HOUSE ROAD

LEGEND

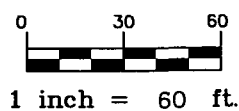
- PROPERTY LINE
- FENCE LINE
- UTILITY LINES
- EXISTING IRM WELLS WITH ASSOCIATED UNDERGROUND PIPING AND ELECTRICAL CONDUIT
- EXISTING STRUCTURE
- APPROXIMATED LIMITS OF EXCAVATION
- BOTTOM SAMPLE
- SIDEWALL SAMPLE
- BOTTOM AND COMPOSITE SAMPLE COLLECTED USING A GEOPROBE
- ▲ PCBs BOTTOM SAMPLE
- C-1 CONCENTRATIONS OF FERROUS TARGETS
- APPROXIMATE LIMITS OF MAGNETIC ANOMALY

NOTE:

SIDEWALL SAMPLES WERE COLLECTED APPROXIMATELY 3- FEET BELOW LAND SURFACE IN ALL LOCATIONS.



SOURCE: BASE MAP PROVIDED BY NEPERA, INC. (DWG. NO. N-43-360)
 LOCATION OF BURIAL TRENCHES AND MAGNETIC ANOMALIES ARE BASED ON LOCATIONS GIVEN IN THE RI AND THE MAGNETOMETER SURVEY (CRA 1995).



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HARRIMAN SITE
 HARRIMAN, NEW YORK

DRAWN AG	DATE 3/1/01	PROJECT MANAGER T. ENG	DEPARTMENT MANAGER
AREA F SIDEWALL AND BOTTOM SOIL SAMPLING LOCATIONS		LEAD DESIGN PROF. F. LENZO	CHECKED
		PROJECT NUMBER NJ000389.003	DRAWING NUMBER 1

NO.	DATE	REVISION DESCRIPTION	BY	CKD



TABLES



Table 1. Summary of Hazardous Drum Waste Disposal to Ross Incineration Services, Inc.
Harriman Site, Harriman, New York.

Shipping Date	Manifest Number (NYB)	Number of Drums	Waste Code
7/22/99	5587065	54	D004
7/22/99	5587065	17	D004
7/23/99	5513886	4	D004
7/23/99	5513886	64	D004
8/11/99	5587083	11	D004
8/11/99	5587083	1	D002
8/11/99	5587083	3	D004
8/11/99	5587083	2	D001
8/11/99	5587101	31	D001
		187	

Table 2. Summary of Gas Cylinder Disposal to Advanced Environmental Technical Services, Harriman Site, Harriman, New York.

Shipping Date	Manifest Number (NJ)	Cylinders	EPA Code
7/9/99	2575703	1	X905
7/9/99	2575703	1	U029
		2	

Table 3. Summary of Non-Hazardous Soil Disposal to Casie Protank Environmental Services, Harriman Site, Harriman, New York.

Shipping Date	Manifest Number (NHZ020)	Load (1) (cubic yards)
7/7/99	35527	20
7/7/99	35528	20
7/7/99	35529	20
7/7/99	35530	20
7/7/99	35531	20
7/7/99	35532	20
7/7/99	35533	20
7/7/99	35534	20
7/7/99	35535	20
7/7/99	35536	20
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7/8/99	35554	20
7/8/99	35555	20
7/8/99	35556	20
7/8/99	35557	20
7/8/99	35558	20
7/8/99	35560	20
7/8/99	35561	20
7/8/99	35562	20
7/9/99	35563	20
7/9/99	35564	20

See footnotes on last page.

Table 3. Summary of Non-Hazardous Soil Disposal to Casie Protank Environmental Services, Harriman Site, Harriman, New York.

Shipping Date	Manifest Number (NHZ020)	Load (1) (cubic yards)
7/9/99	35565	20
7/9/99	35566	20
7/9/99	35567	20
7/9/99	35568	20
7/9/99	35569	20
7/9/99	35570	20
7/9/99	35571	20
7/9/99	35572	20
7/9/99	35573	20
7/9/99	35574	20
7/9/99	35575	20
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7/12/99	35587	20
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7/12/99	35593	20
7/12/99	35594	20
7/12/99	35596	20
7/12/99	35605	20
7/12/99	35606	20
7/13/99	35597	20
7/13/99	35598	20
7/13/99	35599	20
7/13/99	35600	20

See footnotes on last page.

Table 3. Summary of Non-Hazardous Soil Disposal to Casie Protank Environmental Services, Harriman Site, Harriman, New York.

Shipping Date	Manifest Number (NHZ020)	Load (1) (cubic yards)
7/13/99	35601	20
7/13/99	35602	20
7/13/99	35603	20
7/13/99	35604	20
7/13/99	35607	20
7/13/99	35608	20
7/13/99	35610	20
7/13/99	35611	20
7/13/99	35612	20
7/13/99	35613	20
7/13/99	35614	20
7/13/99	35615	20
7/13/99	35616	20
7/13/99	35617	20
7/13/99	35618	20
7/13/99	35619	20
7/13/99	35620	20
7/13/99	35621	20
7/13/99	35622	20
7/13/99	35623	20
7/13/99	35624	20
7/13/99	35625	20
7/13/99	35626	20
7/13/99	35833	20
7/14/99	35830	20
7/14/99	35831	20
7/14/99	35832	20
7/14/99	35834	20
7/15/99	35835	20
7/15/99	35836	20
7/15/99	35837	20
7/15/99	35838	20
7/15/99	35839	20
7/15/99	35840	20
7/15/99	35841	20
7/15/99	35842	20
7/15/99	35843	20

See Footnotes on last page.

Table 3. Summary of Non-Hazardous Soil Disposal to Casie Protank Environmental Services, Harriman Site, Harriman, New York.

Shipping Date	Manifest Number (NHZ020)	Load (1) (cubic yards)
7/15/99	35844	20
7/15/99	35847	20
7/15/99	35848	20
7/15/99	35850	20
7/27/99	35849	20
7/27/99	35851	20
11/8/99	40279	<u>20</u>
		2,760

(1) Load in cubic yards is estimated based on size.

Table 4. Summary of Non-Hazardous Liquids Sent to E. I. Dupont De Nemours & Co., Inc.,
Harriman Site, Harriman, New York.

<u>Date</u>	<u>Waste Code</u>	<u>Quantity (Gallons)</u>
4/26/99	ID72	5,000
4/26/99	ID72	5,000
4/26/99	ID72	5,100
4/26/99	ID72	5,005
4/27/99	ID72	4,486
6/18/99	ID72	3,700
6/18/99	ID72	2,800
8/26/99	ID72	5,148
8/26/99	ID72	5,500
11/5/99	ID72	4,870
11/8/99	ID72	5,000
11/10/99	ID72	5,024
11/10/99	ID72	5,016
11/15/99	ID72	5,075
7/24/00	ID72	5,002
7/24/00	ID72	5,005
7/24/00	ID72	5,002
7/25/00	ID72	5,000
7/26/00	ID72	5,003
7/28/00	ID72	5,050
7/28/00	ID72	<u>1,049</u>
		97,835

Table 5. Summary of Non-Hazardous Debris Sent to Waste Management, Inc., Harriman Site, Harriman, New York.

<u>Date</u>	<u>Ticket #</u>	<u>Roll-Off</u>	<u>Load (Cubic Yards)</u>
4/15/99	2759	1	30
6/24/99	7921	1	30
8/2/99	FR514449	1	30
12/15/99	303550	1	<u>30</u>
			120

Table 6. Summary of Hazardous Soil Disposal to Casie Protank Environmental Services, Harriman Site, Harriman, New York.

Shipping Date	Manifest Number (NJ)	Load (1) (cubic yards)
7/16/99	3034175	30
7/16/99	3034176	30
7/21/99	3034177	30
7/21/99	3034178	30
7/22/99	3034179	35
7/23/99	3034180	30
7/23/99	3034181	35
7/26/99	3034182	30
7/26/99	3034186	30
7/27/99	3034187	30
7/27/99	3034188	30
7/28/99	3034189	30
7/28/99	3034190	35
11/10/99	3035261	20
11/10/99	3035263	20
7/25/00	3113454	1
		446

(1) Load in cubic yards is estimated based on size.

Table 7. Summary of Hazardous Liquid Disposal to E. I. Dupont de Nemours & Co. Inc.,
Harriman Site, Harriman, New York.

Shipping Date	Manifest Number (NJ)	Gallons	EPA Code
7/9/99	2273966	3629	D001
7/9/99	2273968	<u>3565</u>	D001
		7,194	

Table 8. Summary of Hazardous Debris Sent to Ross Incineration Services, Inc.,
Harriman Site, Harriman, New York.

<u>Date</u>	<u>Manifest #</u> <u>NYB</u>	<u>Waste Code</u>	<u>Load</u> (Cubic Yards)
11/9/99	5588109	D004	<u>20</u>
			20

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Table 9. Groundwater Analytical Results for MW-53S and MW-53D, Harriman Site, Harriman, New York.

CONSTITUENT: Units in ug/L	Method Detection Limit (ug/L)	SCG (ug/L)	SAMPLE ID: DATE:	MW-53S 11/15/99	MW-53D 11/15/99	MW-53S 11/9/00	MW-53D 11/9/00
<u>VOCs</u>							
Benzene	10	5		U	140	U	500
Toluene	10	5		U	0.3 J	U	2 J
Chlorobenzene	10	5		U	U	U	U
Ethylbenzene	10	5		U	U	U	U
Xylene (total)	10	5		U	U	U	U
<u>SVOCs</u>							
Pyridine	25	50		U	U	U	U
2-Amino pyridine	25	50		U	U	U	U
Alpha-picoline	25	50		1 J	9 J	U	13 J
<u>Metals</u>							
Mercury	0.2	2		1.0	0.10 U	--	--

ug/L Microgram per liter.
 U Analyzed but not detected.
 J Estimated Value.
 SCG NYSDEC Standards, Criteria and Guidance Values.
 -- Not Sampled.

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Table 10. Summary of Sidewall and Bottom Samples Collected from Area F, Harriman Site, Harriman, New York.

Sample ID	Description	Constituent Concentration							
		SCGs (1) Background Conc. (2)	Benzene 60 (ug/kg)	Toluene 1500 (ug/kg)	Ethylbenzene 1200 (ug/kg)	Xylene 1200 (ug/kg)	Alpha-Picoline 575 (ug/kg)	2-Amino-Pyridine 400 (ug/kg)	Copper 25 (mg/kg) <1-700 (mg/kg)
C1-1	C-1 Sidewall	U	U	U	5 J	U	U	41.1	7.9 *
C1-2	C-1 Sidewall	U	U	U	U	U	U	25.2	0.046 B*
C1-3	C-1 Sidewall	U	U	U	U	U	U	21.8	0.036 U*
C1-4	C-1 Sidewall	U	U	U	U	U	U	18.7	0.039 U*
C1-5B	C-1 Bottom	79	200	64	840 E	U	U	28.4	1.7 *
C1-5C	C-1 Composite	3 J	U	4 J	58	U	U	31.4	0.44 *
C1-6B	C-1 Bottom	U	U	U	U	U	U	19.7	0.62 *
C1-6C	C-1 Composite	U	U	U	U	U	U	29.4	0.64 *
C1-7B	C-1 Bottom	34	72	23	300 E	U	U	29.0	0.26*
C1-7C	C-1 Composite	25	9 J	130	1300 E	210 J	390	30.4	1.1*
C1-8B	C-1 Bottom	4 J	4 J	U	6 J	2300	1300	20.6	0.12 U *
C1-8C	C-1 Composite	600 E	1000 E	63	500 E	580	150 J	19.0	0.85
C1-9B	C-1 Bottom	670 E	1400 E	530 E	2300 E	U	220 J	23.3	1.0*
C1-9C	C-1 Composite	10	28	42	500 E	U	U	26.6	3.5 *
C1-10B	C-1 Bottom	440 E	630 E	360 E	1500 E	1200	U	20.7	0.11 U *
C1-10C	C-1 Composite	150	820 E	260 E	1100 E	220 J	U	24.4	0.83
C1-11B	C-1 Bottom	140	8 J	5 J	66	160 J	880	15.6	0.12 *
C1-11C	C-1 Composite	520 E	740 E	660 E	2400 E	U	150 J	25.1	0.56 *
C1-12B	C-1 Bottom	5 J	U	29	870 E	690	540	18.8	0.12 U *
C1-12C	C-1 Composite	700 E	790 E	570 E	2200 E	1100	U	27.6	0.89 *
C1-13B	C-1 Bottom	23	200	19	270	180 J	3700	10.1	0.15 U*
C1-14B	C-1 Bottom	4 J	2 J	270 E	1100 E	120 J	U	18.4	0.12 U *
C1-13/14C	C-1 Composite	420 E	410 E	510 E	1600 E	110 J	150 J	32.6	2.9 *
C1-15B	C-1 Bottom	U	3 J	U	U	U	U	22.5	0.12 U *
C1-16B	C-1 Bottom	U	U	U	3 J	1900	1300	19.0	0.12 U *
C1-15/16C	C-1 Composite	U	U	3 J	24	U	U	25.5	0.51 *
C1-17B	C-1 Bottom	U	U	U	1 J	U	180 J	23.2	0.14 *
C2-1	C-2 Bottom	1J	2J	58	350	48 J	150 J	38.5	2.5
C2-2	C-2 Bottom	U	U	U	U	9 J	70 J	23.3	0.78
C2-3	C-2 Bottom	U	1J	1J	9 JB	50 J	120 J	26.7	0.87
C2-4	C-2 Bottom	U	U	U	U	6 J	21 J	28.8	0.20
C2-5	C-2 Bottom	.3 J	3 J	U	U	27 J	110 J	29.8	0.40
C2-6	C-2 Bottom	U	U	U	.5 J	110 J	200 J	33.0	0.22
C2-7	C-2 Bottom	49	220	2 J	13 J	420 J	5,700	29.8	0.093
C2-8	C-2 Bottom	73	100	9 J	63	270 J	540	26.9	0.18
C2-9	C-2 Bottom	6,500	26,000	3,600	25,000	6,400	4,900	37.4	1.5
C2-10	C-2 Bottom	6,400	7,000	570 J	1,500	1,500	3,000	19.4	0.29
C2-11	C-2 Bottom	5 J	5 J	1 J	3 J	11,000	1,300 J	21.9	0.044U

See footnotes on last page

Table 10. Summary of Sidewall and Bottom Samples Collected from Area F, Harriman Site, Harriman, New York.

Sample ID	Description	Constituent Concentration								
		SCGs (1) Background Conc. (2)	Benzene 60 (ug/kg)	Toluene 1500 (ug/kg)	Ethylbenzene 1200 (ug/kg)	Xylene 1200 (ug/kg)	Alpha-Picoline 575 (ug/kg)	2-Amino-Pyridine 400 (ug/kg)	Copper 25 (mg/kg) <1-700 (mg/kg)	Mercury .1 (mg/kg) 0.01-3.4 (mg/kg)
C2-12	C-2 Bottom		1 J	10 J	6 J	50	260 J	200 J	24.9	1.4
C2-13	C-2 Bottom		U	.6 J	27	50	63 J	990	33.6	2.6
C2-14	C-2 Bottom		4 J	5 J	8 J	90	210 J	U	25.9	0.24
C2-15	C-2 Bottom		210 J	2,400	330 J	450 J	3,900	4,700	23.7	0.084
C2-16	C-2 Bottom		1 J	3 J	1 J	2 J	740	160 J	17.0	0.030 B
C3-1	C-3 Sidewall		U	U	U	U	U	U	56.6	35.6
C3-2	C-3 Sidewall		U	U	U	U	U	U	85.6	32.7
C3-3	C-3 Sidewall		U	1 J	U	U	230 J	2,000	118	499
C3-4	C-3 Sidewall		U	U	U	U	15 J	190 J	88.6	129
C3-5	C-3 Bottom		U	U	U	U	8 J	18 J	75.3	63.9
C4-1	C-4 Sidewall		U	0.6 J	U	U	89 J	370 J	209 E	22.4 *
C4-2	C-4 Sidewall		U	U	U	U	62 J	U	19.8 E	0.018 *
C4-3	C-4 Sidewall		U	0.8 J	U	0.9 J	U	480 J	24.4 E	0.29 *
C4-4	C-4 Bottom		U	1 J	0.5 J	4 J	240 J	1,800	24 E	0.84 *
C4-5	C-4 Bottom		0.5 J	0.6 J	U	U	67 J	180 J	16.3 E	0.056 *
C4-6	C-4 Bottom		U	U	U	U	690 J	2,300	26.5 E	0.23 *
C4-7	C-4 Bottom		U	U	U	U	26 J	210 J	23 E	0.042 B*
C4-8	C-4 Bottom		3 J	67	23	180	1,200	2,400	30.7 E	1.2 *
C4-9	C-4 Bottom		U	2 J	1 J	7 J	460 J	1,200	25.1 E	0.71 *
C4-10	C-4 Bottom		2 J	21	7 J	53	1,800	3,200	29.5 E	2 *
C4-11	C-4 Bottom		U	U	U	U	68 J	86 J	22.2 E	0.034 B*
C4-12	C-4 Bottom		2 J	16	50	380	910 J	13,000	19.7 E	0.56 *
C4-13	C-4 Bottom		51 J	890	830	5,000	10,000 J	48,000	22.2 E	0.85 *
C4-14	C-4 Sidewall		.6 J	2 J	U	U	U	U	26.4	0.15 *
C4-15	C-4 Bottom		U	U	2 J	6 JB	6 J	17 J	23.1	0.46
C4-16	C-4 Bottom		U	U	U	U	6 J	6 J	28.2	1.6
C4-17	C-4 Bottom		U	.3 J	.2 J	1 J	62 J	540	37.8	24.0
C5-1	C-5 Sidewall		U	U	U	U	U	U	11.0	0.029 U*
C5-2	C-5 Sidewall		U	U	U	1 J	U	U	13.6	0.23 *
C5-3	C-5 Sidewall		2 J	9 J	2 J	25	70 J	U	22.7	3.3 *
C5-4	C-5 Sidewall		U	.6 J	.4 J	4 J	U	U	11.4	0.033 U*
C5-5	C-5 Bottom		8 J	1 J	3 J	43	150 J	U	27.7	0.12 U *
C6-1	C-6 Sidewall		U	U	U	U	U	U	33	6.2
C6-2	C-6 Sidewall		U	U	U	U	U	U	73.3	21.9
C6-3	C-6 Sidewall		U	U	U	U	9 J	U	56.3	7.7

See footnotes on last page.

Table 10. Summary of Sidewall and Bottom Samples Collected from Area F, Harriman Site, Harriman, New York.

Sample ID	Description	Constituent Concentration								
		SCGs (1) Background Conc. (2)	Benzene 60 (ug/kg)	Toluene 1500 (ug/kg)	Ethylbenzene 1200 (ug/kg)	Xylene 1200 (ug/kg)	Alpha-Picoline 575 (ug/kg)	2-Amino-Pyridine 400 (ug/kg)	Copper 25 (mg/kg) <1-700 (mg/kg)	Mercury .1 (mg/kg) 0.01-3.4 (mg/kg)
C6-4	C-6 Sidewall		U	U	U	U	9 J	U	32	1.6
C6-5	C-6 Bottom		U	U	U	U	5 J	U	56.4	40.3
C6-6	C-6 Bottom		U	U	U	U	35 J	78 J	53.4	34.7
C7-1	C-7 Sidewall		1 J	U	U	U	12 J	U	30.4	12.6
C7-2	C-7 Sidewall		U	U	U	U	U	U	21.6	6.1
C7-3	C-7 Sidewall		5 J	2 J	U	U	5 J	U	39.3	15.9
C7-4	C-7 Sidewall		12	2 J	U	U	5 J	U	32.9	10.3
C7-5	C-7 Bottom		6 J	2 J	U	U	U	U	23.3	11.7
TP35-1	TP-35 Sidewall		U	U	U	U	28 J	U	22.8	0.082
TP35-2	TP-35 Sidewall		U	U	U	U	U	U	92.1	0.18
TP35-3	TP-35 Bottom		2 J	0.4 J	U	U	U	U	28 E	0.23 *
TP35-4	TP-35 Sidewall		4 J	U	U	U	32 J	U	19.6 E	0.14 *
TP35-4	TP-35 re		1 J	2 J	U	U				
TP35-5	TP-35 Bottom		180	1400	33 J	200	660 J	530 J	30.4 E	0.95 *
TP35-6	TP-35 Bottom		1,500	160	14 J	60 J	550 J	170 J	24.2 E	0.39 *
TP35-7	TP-35 Bottom		730	120	6 J	40 J	730 J	2,200	29.5 E	1.3 *
TP35-8	TP-35 Bottom		58	120	13	70	860 J	2,600	26.3 E	0.051 *
TP35-9	TP-35 Bottom		89	21	3 J	17	3,300 J	17,000	21.7 E	0.019 B*
TP35-10	TP-35 Bottom		U	U	U	U	10 J	9 J	19	0.041 B

1 SCGs - Standards, Criteria, and Guidance values

2 Literature References Eastern U.S. Observed Ranges (Element Concentrations in Soils and Other Surface Materials of the Conterminous United States, RI, CRA, 1995)

J Indicates that the compound was analyzed for and determined to be present in the sample.

* Duplicate analysis not within control limit, therefore the result is considered a J value.

E Reported value is estimated because of the presence of interference.

B Analyte found in the blank.

U Undetected

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Table 11. Summary of PCBs Bottom Sample Results from Area F, Harriman Site, Harriman, New York.

Sample ID:	SCGs (ppm)	PCB-1016 (ppm)	PCB-1221 (ppm)	PCB-1232 (ppm)	PCB-1242 (ppm)	PCB-1248 (ppm)	PCB-1254 (ppm)	PCB-1260 (ppm)
PCB-1	10	U	U	U	U	U	0.330	U
PCB-2	10	U	U	U	U	U	.013 J	U
PCB-3	10	U	U	U	U	U	U	U
PCB-4	10	U	U	U	U	U	0.054	U
PCB-5	10	U	U	U	U	U	0.220	U
PCB-6	10	U	U	U	U	U	U	U
PCB-7	10	U	U	U	U	U	0.830	U
PCB-8	10	U	U	U	U	U	.016 J	U
PCB-9	10	U	U	U	U	U	U	U
PCB-10	10	U	U	U	U	U	.034 J	U

SCGs Standards, criteria, and guidance values
 ppm mg/kg
 J less than specified minimum detection.
 U not detected.

Table 12. Summary of Sidewall and Bottom Samples Collected from Area K, Harriman Site, Harriman, New York.

Sample ID	Description	Constituent Concentration					
		SCGs (1) Background Conc. (2)	Alpha-Picoline 575 (ug/kg)	2-Amino-Pyridine 400 (ug/kg)	Copper 25 (mg/kg) <1-700 (mg/kg)	Mercury .1 (mg/kg) 0.01-3.4 (mg/kg)	PCBs 400 (ug/kg)
End Point							
K1-1	Area K Sidewall		U	U	17.7	0.44	61
K1-2	Area K Sidewall		U	U	30.6	0.2	90
K1-3	Area K Sidewall		U	U	15.9	0.3	24
K1-4	Area K Sidewall		U	U	54.4	0.3	30
K-5	Area K Bottom		U	U	16.3	0.05	U
K-6	Area K Bottom		U	U	13.3	0.09	5.3 J
K-7	Area K Bottom		U	16 J	24	0.15	17 J
K-8	Area K Bottom		U	U	20	0.09	4 J
K-9	Area K Bottom		U	U	17.7	0.04	3.5 J
K-10	Area K Bottom		U	U	16.2	0.05	8.8 J
K-11	Area K Bottom		U	U	16	0.04	70
K-12	Area K Bottom		U	U	15.9	0.65	58
K-13	Area K Bottom		U	U	12.3	0.08	11 J
K-14	Area K Bottom		U	U	13.5	0.04	U
K-15	Area K Bottom		U	U	48.6	0.23	36
K-16	Area K Bottom		U	U	12.3	0.03	U
K-17	Area K Bottom		U	U	10.3	-	22 J
K-18	Area K Bottom		U	U	17.2	-	17 J

See footnotes on last page.

1 SCGs - Standards, Criteria, and Guidance values

2 Literature References Eastern U.S. Observed Ranges (Element Concentrations in Soils and Other Surface Materials of the Conterminous United States, RI, CRA, 1995)

J Indicates that the compound was analyzed for and determined to be present in the sample.

* Duplicate analysis not within control limit, therefore the result is considered a J value.

E Reported value is estimated because of the presence of interference.

B Analyte found in the blank.

-- Not sampled

U Undetected

Table 13. Summary of Endpoint Samples Collected from Area 53, Harriman Site, Harriman, New York.

Sample ID	Description	SCGs (1) Background Conc. (2)	Constituent Concentration							Copper 25 (mg/kg) <1-700 (mg/kg)	Mercury .1 (mg/kg) 0.01-3.4 (mg/kg)
			Benzene 60 (ug/kg)	Toluene 1500 (ug/kg)	Ethylbenzene 1200 (ug/kg)	Xylene 1200 (ug/kg)	Alpha-Picoline 575 (ug/kg)	2-Amino-Pyridine 400 (ug/kg)			
End Point											
A53-1	A-53 Bottom	U	U	U	U	54 J	U	36.0	13.3*		
A53-2	A-53 Bottom	U	U	U	2 J	68 J	60J	16.1	0.11*		
A53-3	A-53 Bottom	.3 J	U	14	120	56 J	U	90.5	4.4*		
A53-4	A-53 Bottom	8 J	U	1J	5 J	30 J	U	23.8	5.7*		
A53-5	A-53 Bottom	7 J	.2 J	1 J	4 J	44 J	64 J	18.1	4.2*		
A53-6	A-53 Bottom	4,700 J	U	250,000	1,600,000	420	240 J	16.9	0.51*		
A53-7	A-53 Bottom	21	.9 J	41	390	380 J	600	22.0	0.60*		
A53-8	A-53 Bottom	120	17J	610	3400	1,500	U	26.5	9.5*		
A53-9	A-53 Bottom	1,300,000	13,000 J	240,000	1,000,000	120,000	U	21.6	11.4*		
A53-10	A-53 Bottom	720,000	67,000 J	2,100,000	9,000,000	26,000	410 J	36.0	5.5B*		
A53-11	A-53 Bottom	1,200	14 J	270	1,700	2,400	U	26.6	1.7*		
A53-12	A-53 Bottom	25,000 J	5,200 J	200,000	920,000	22,000	U	28.6	0.29*		
A53-13	A-53 Bottom	2J	U	24	76	29,000	U	27.8	1.4*		
A53-14	A-53 Bottom	44	1 J	6 J	19	35 J	U	28.4	3.0*		
Following Additional Excavation, On-Site Mobile Lab											
A53-06	A-53 Bottom	728	99 J	1,900	15,500						
A53-09A	A-53 Dewatered	300,000	23,000 J	600,000	4,500,000						
	No Excavation										
A53-09B	A-53 Bottom	150,000	15,000 J	360,000	2,980,000						
A53-10	A-53 Bottom	250,000	36,000J	1,300,000	10,500,000						
A53-12	A-53 Bottom	39,000	370 J	2,400	18,600						
A53-13	A-53 Bottom	130,000	21,000 U	27,000	200,000						
Following Additional Excavation, Laboratory Confirmation											
A53-06	A-53 Bottom					U	U	17.4	0.11 U*		
A53-09	A-53 Bottom	68,000E	3,200	58,000	200,000E	830	U	16.0	0.35 *		
A53-10	A-53 Bottom					2,400 J	6,400	14.1	0.11 U*		
A53-12	A-53 Bottom					2,000	950	15.0	0.37 *		
A53-13	A-53 Bottom					1,200	1,300	17.5	0.11 U*		

See footnotes on last Page.

Table 13. Summary of Endpoint Samples Collected from Area 53, Harriman Site, Harriman, New York.

Sample ID	Description	Constituent Concentration								
		SCGs (1) Background Conc. (2)	Benzene 60 (ug/kg)	Toluene 1500 (ug/kg)	Ethylbenzene 1200 (ug/kg)	Xylene 1200 (ug/kg)	Alpha-Picoline 575 (ug/kg)	2-Amino-Pyridine 400 (ug/kg)	Copper 25 (mg/kg) <1-700 (mg/kg)	Mercury .1 (mg/kg) 0.01-3.4 (mg/kg)
Soil Boring Program										
A53-6-9	A-53 Bottom		68,000 E	3,200	58,000	200,000 E	830	U	16.0	0.35 *
A53-6-9 (0-1')	A-53 at Depth		130,000	12,000	310,000	1,400,000	920 J	6,600		
A53-6-9 (1-2')	A-53 at Depth		44,000	1,000	7,500	32,000	2,800 J	U		
A53-6-9 (2-3')	A-53 at Depth		32,000	600	3,000	13,000	2,700 J	U		
A53-10	A-53 Bottom						2,400 J	6,400	14.1	0.11 U*
A-10 (0-1')	A-53 at Depth		U	0.2 JB	U	U	U	U		
A-10 (1-2')	A-53 at Depth		3 J	0.4 JB	3 J	11 J	U	U		
A53-12	A-53 Bottom						2,000	950	15.0	0.37 *
A-12 (0-1')	A-53 at Depth		2,800	70	3,100	12,000	89 J	U		
A-12 (1-2')	A-53 at Depth		1,500	58	2,300	9,100	U	U		
A53-13	A-53 Bottom						1,200	1,300	17.5	0.11 U*
A-13 (0-1')	A-53 at Depth		U	U	U	U	U	U		
A-13 (1-2')	A-53 at Depth		U	0.3 JB	U	U	U	U		

See footnotes on last page.

- 1 SCGs - Standards, Criteria, and Guidance values
- 2 Literature References Eastern U.S. Observed Ranges (Element Concentrations in Soils and Other Surface Materials of the Conterminous United States, RI, CRA, 1995)
- J Indicates that the compound was analyzed for and determined to be present in the sample.
- * Duplicate analysis not within control limit, therefore the result is considered a J value.
- E Reported value is estimated because of the presence of interference.
- B Analyte found in the blank.
- U Undetected



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

New York State Department of Environmental Conservation

Division of Environmental Remediation
Bureau of Eastern Remedial Action, Room 242
50 Wolf Road, Albany, New York 12233-7010
Phone: (518) 457-3395 FAX: (518) 457-4198



John P. Cahill
Commissioner

September 29, 1999

Mr. Frank Lenzo, P.E.
Mr. Tom Eng
Arcadis Geraghty & Miller, Inc.
1200 MacArthur Boulevard
Mahwah, NJ 07430

Dear Mr. Lenzo and Mr. Eng:

RE: Nepera, Inc. - Harriman Inactive Hazardous Waste Disposal Site #336006

We are in receipt of ARCADIS Geraghty & Miller's (AG&M) letter dated September 2, 1999 on behalf of the Maybrook and Harriman Environmental Trust (Trust) concerning the remediation of Area F and Area 53. As you are aware, the letter was in response to a previous comment letter from this office dated August 13, 1999. The New York State Department of Environmental Conservation's (NYSDEC) response to AG&M's most recent letter will address Area F and Area 53 separately. The NYSDEC, and certainly the Trust, would like the remediation of these areas to be completed as soon as possible and the excavations closed.

Area F - Drum Removal Area

Given that the ten additional bottom samples indicated no levels of PCBs above the 10 ppm cleanup objective for subsurface soils and that the Trust is committed to installing a soil vapor extraction (SVE) system to address the residual contamination in Area F, it is acceptable to backfill the excavation at this time. This approval to backfill the excavation is contingent on the submittal within 30 days of a SVE remedial design that addresses the remaining contaminated soils in Area F satisfactorily. This design had previously been requested in our August 13, 1999 letter. Although the NYSDEC does not agree this is the optimum method of construction, the SVE piping can be installed after backfilling by re-excavation as you have requested.

As you are aware, SVE is a widely used and proven technology to remediate subsurface, unsaturated soils contaminated with site related COCs. Area F is an open area where the SVE technology can be readily implemented and where a pilot test to determine the optimum method to install this system is not necessary. The need for a SVE pilot test in Areas A, G, H and I specified in the Record of Decision (ROD) was to determine the proper design methods with consideration to the numerous buildings, structures and tanks in this active manufacturing area of the plant. This is not the case in Area F and therefore this remedial design can proceed independently of the SVE design in Area A, G, H and I.

Area 53

The location for the replacement monitoring well couplet is approved. Please install and sample this well couplet within 30 days. Please provide this office with five working days notice of the installation and sampling dates. The NYSDEC would like to collect split samples from these wells.

With respect to the proposed remedial system in Area 53 to address the hazardous in-place contaminated soils, we did not agree that the original focus was to remediate just the free phase and dissolved impacts in Area 53. As proposed by AG&M, we agreed to an engineered solution to address the remaining contaminant source area at the base of the Area 53 excavation rather than excavating further into the apparent clay/sand overburden aquitard unit. The

Mr. Frank Lenzo, P.E./Mr. Tom Eng
Arcadis Geraghty & Miller, Inc.
September 29, 1999

purpose of the engineered solution, as would be the continued excavation, was to remediate the hazardous in-place contaminated soils, not just address the free phase and dissolved impacts. As explained and stated in the August 13, 1999 letter from the NYSDEC, the proposed engineering design would not remediate the contaminated in-place soils effectively and was not approved. The proposed modifications to the SVE system (no modified or revised design documents were submitted) would also not address these hazardous in-place contaminated soils effectively without continuous dewatering (as requested in the July 27, 1999 NYSDEC comment letter) and are not approved. Therefore, and as requested in the August 13, 1999 letter, please excavate the remaining hazardous in-place contaminated soils at Area 53 until site specific cleanup levels specified in the Record of Decision are reached. The appropriateness of continued excavation is supported by the information you have provided which indicates that the aquitard unit is approximately thirty feet thick. The thickness of the aquitard unit should be sufficient to allow reasonable and sufficient excavation without penetrating this unit.

If the Trust and AG&M would like to confer informally to discuss this disapproval of the revised submittal, please feel free to contact me. Please be aware that if after thirty days this dispute can not be resolved, the matter shall be resolved in accordance with the dispute resolution procedures provided in Section IX of the Consent Decree.

If you have any questions on the above, please feel free call me at (518) 457-3395.

Sincerely,

Mike Komoroske

Michael J. Komoroske, P.E.
Bureau of Eastern Remedial Action
Div. of Environmental Remediation

- c: Ms. Elizabeth Pfeiffer, Nepera, Inc.
- Mr. Charles Carey, Warner-Lambert Company
- Mr. Seth Levine, Cambrex Corporation
- Mr. Terry Gordon, Monroe Woodbury CAP
- Mr. John Ohm, NYSDOH
- Mr. Eugene Martin-Leff, NYSDOL

New York State Department of Environmental Conservation
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JUL 20 2000

Mr. Charles E. Carey
Senior Director, Environmental Compliance
Warner-Lambert Company
182 Tabor Road
Morris Plains, New Jersey 07950

Ms. Elizabeth Pfeiffer
Director, Environmental Health and Safety
Nepera, Inc.
Route 17
Harriman, New York 10926

Dear Mr. Carey and Ms. Pfeiffer:

Re: Nepera, Inc. - Harriman Inactive Hazardous
Waste Disposal site #3-36-006

This letter is a written confirmation of our phone conversations of June 30, 2000 and July 14, 2000 concerning Area 53. Please proceed with the work as outlined in your July 14, 2000 letter. After completion of this work, no further remediation of the soil in Area 53 will be required.

The two groundwater sampling rounds for the mercury should proceed and pending review of the data, additional rounds may be required.

If you have any questions, please call me at (518) 457-9280.

Sincerely,

A handwritten signature in cursive script that reads 'Michael A. Mason'.

Michael A. Mason, P.E.
Project Manager
Eastern Field Services Section
Bureau of Construction Services
Division of Environmental Remediation

cc: S. Levine, Cambrex Corp.
R. Koeppicus - NYSDEC, DFW
T. Eng - AG&M ✓
E. Martin-Leff, NYSDEC