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FINAL REPORT
IMMEDIATE RESPONSE ACTION

RASMUSSEN SITE
LIVINGSTON COUNTY, MICHIGAN

OCTOBER 1990

REF. NO. 2433 (9)

CONESTOGA-ROVERS & ASSOCIATES

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1.0 INTRODUCTION

This report has been prepared to document the Immediate Response Action undertaken at the Rasmussen Site (Site) in Livingston County, Michigan during late 1989 and 1990. Response activities were performed in accordance with the terms and conditions of an Administrative Order by Consent under Section 106(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). This Consent Order, hereafter referred to as 106 Order, was agreed to by United States Environmental Protection Agency (USEPA) and a group of Potentially Responsible Parties (PRPs). The PRP group (Respondents) do not represent the total number of PRPs at this Site, but only those who chose to participate as Respondents to the 106 Order.

Response activities were conducted in accordance with the detailed procedures presented in the "Work Plan, Immediate Response Action, Rasmussen Dump Site, Livingston County, Michigan", dated July 1989, prepared by Conestoga-Rovers & Associates (CRA).

The Work Plan was approved by USEPA in consultation with Michigan Department of Natural Resources (MDNR). Subsequent to the signing of the 106 Order, agency authority for the response action was transferred from USEPA's Remedial Project Manager (RPM) to an on-Scene Coordinator (OSC). The Health and Safety Plan included as an appendix to the Work Plan was subsequently amended in December 1987 at the request of the OSC prior to commencing excavation activities.

All field activities were conducted under USEPA and/or MDNR oversight.

Removal activities were performed from November 1989 through January 1990 and consisted of the excavation, staging and sampling of buried containers at the Site. Samples from the excavated containers were analyzed and the analytical data was reviewed during February, March and April 1990.

The Respondents notified USEPA of proposed disposal facilities for the staged containers on June 18, 1990. All the proposed facilities were approved for use by USEPA on June 19, 1990. Following written confirmation of USEPA approval dated June 21, 1990, the staged and characterized waste materials were transported to the approved disposal facilities during late June and July 1990. All field-related activities pursuant to the 106 Order were completed in August 1990.

The work pursuant to the 106 Order is complete and this report represents the final submittal for the Immediate Response Action. Copies of the general correspondence documenting the response action are provided in Appendix A for ease of reference. Copies of the progress reports submitted to USEPA are not included in this final report but can be found in USEPA's files for this project.

2.0 BACKGROUND

The Rasmussen Site is a former municipal and industrial landfill site located in Green Oak Township, Livingston County, Michigan. As shown on Figures 1.1 and 1.2, the Site is situated west of US Route 23, approximately 10 miles north of Ann Arbor, Michigan, and is located to the south of Spicer Road.

The Site is presently listed on the Federal National Priorities List (NPL) as established under CERCLA and 40 CFR Part 300. An MDNR Contractor completed the Remedial Investigation (RI) for the Site in 1988. The RI findings were presented in the document entitled, "Final Remedial Investigation Report - Spiegelberg and Rasmussen Dump Sites - Green Oak Township - Livingston County, Michigan", prepared by NUS Corporation, dated September 1988.

The RI identified several on-Site areas of buried waste and soils containing site derived constituents. These areas included:

i) Top of Municipal Landfill (TML);

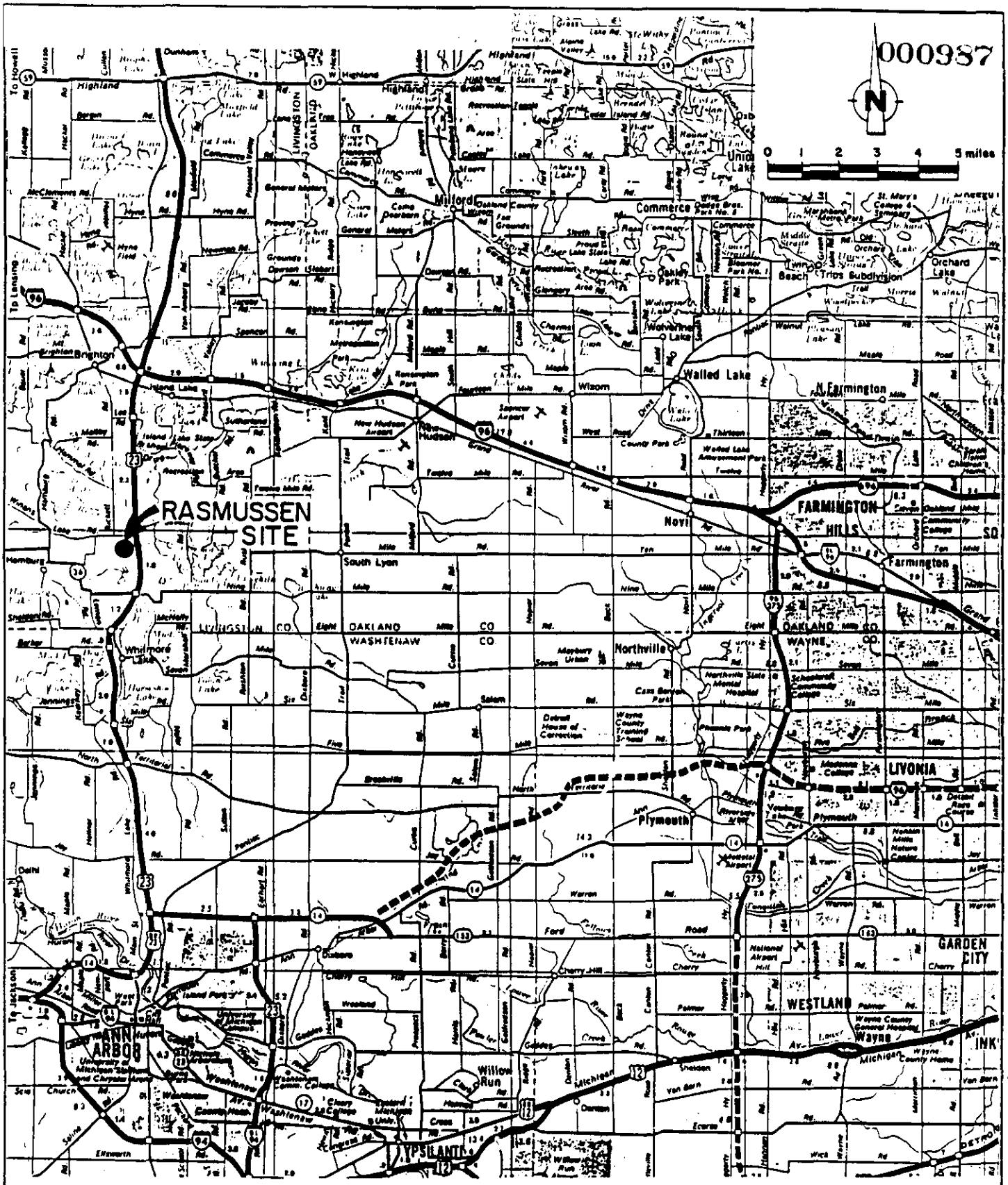
ii) Northeast Buried Drum (NEBD) Area;

iii) Industrial Waste (IW) Area;

iv) Probable Drum Storage/Leakage/Disposal (PDSLD) Area; and

v) West Berm Area.

Figure 1.2 shows the location of these five areas.



SOURCE : RAND McNALLY
MAP OF MICHIGAN
1977 EDITION

figure 1.1

KEY PLAN

RASMUSSEN SITE

Immediate Response Action

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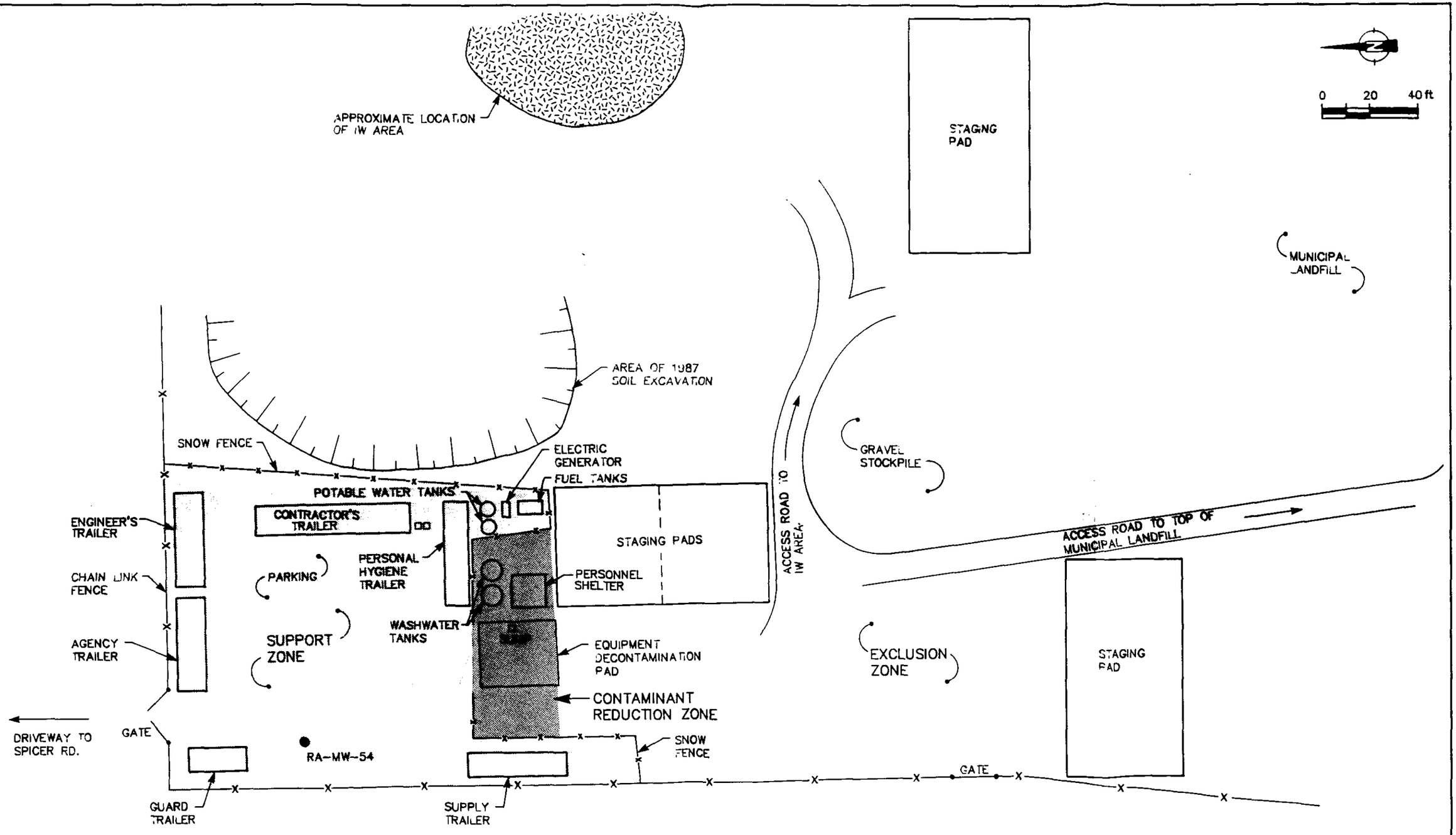

figure 4.4

GENERAL ARRANGEMENT – CONSTRUCTION FACILITIES
RASMUSSEN SITE
Immediate Response Action

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Of these five areas identified by the RI, the Industrial Waste (IW) Area and the Northeast Buried Drum (NEBD) Area were considered by MDNR and USEPA to have current or potential future impact on groundwater due to the presence of buried containerized wastes. These two areas are highlighted on Figure 1.2. Materials within the IW Area were found to contain elevated levels of site-derived constituents associated with buried containerized waste. The groundwater beneath this area had elevated levels of some of the same constituents. Materials within the NEBD Area were also found to contain elevated levels of site-derived constituents associated with buried containerized waste. However, the RI did not identify any groundwater impact resulting from this area.

The 106 Order required that the Respondents remove buried drums and visibly affected soils and debris immediately associated with the drums within the limits of the IW Area and the NEBD Area under an Immediate Response Action.

In addition, the 106 Order required the removal of drums and visibly affected soils and debris immediately associated with the drums within the area shown on Figure 1.2 referred to as the Surface Drum (SD) Area. This area, which was not identified in the RI, is located on the surface of the Top of Municipal Landfill. This area was investigated during the RI by a test pit investigation. Waste materials in this area were found to include containerized materials which were not removed during the USEPA Removal Action conducted in 1984.

An Immediate Response Action Work Plan (Work Plan) was developed by the Respondents to outline tasks associated with the excavation, staging, sampling and disposal of containerized waste material at the Site. The Work Plan was provided as an attachment to the 106 Order and provided the basis for all work performed on Site.

3.0 SCOPE OF IMMEDIATE RESPONSE ACTION

The Immediate Response Action involved the removal of all drums, including "buried drums, wastes contained in drums, wastes associated with those drums, and associated visibly contaminated debris" within the NEBD and the IW Areas shown on Figure 1.2. The scope of work also included the removal of drums from the Surface Drum (SD) Area following excavation of the top two feet of the landfill surface. The SD Area is located immediately adjacent to the NEBD Area as shown on Figure 1.2.

Tasks performed during the response action included:

i) implementation of the Health and Safety Plan;

ii) mobilization of construction facilities, equipment, material and personnel necessary to perform the work;

iii) site preparation activities including construction of access roads, drum staging pads and decontamination pad;

iv) excavation of buried drums and soils/debris immediately associated with the buried drums from the NEBD and IW Areas;

v) excavation of buried drums and soils/debris immediately associated with the buried drums from the SD Area, to a depth of approximately two feet below the landfill surface;

vi) staging of excavated drums and associated affected soil;

vii) site restoration including backfilling and regrading of the three excavation areas;

viii) transportation and disposal of all excavated waste material at USEPA approved disposal facilities; and

ix) project closeout and demobilization from the Site.

A photographic log highlighting removal activities is presented in Appendix B.

4.0 PRECONSTRUCTION AND SITE PREPARATION ACTIVITIES

4.1 PROJECT ORGANIZATION

The Respondents retained Conestoga-Rovers & Associates (CRA) to provide overall project coordination and field oversight services during implementation of the Immediate Response Action. Mr. Bruce Monteith, P. Eng. of CRA was designated by the Respondents as Project Coordinator. CRA also provided Field Engineers (Engineer) to oversee the response activities. The Engineer served as the Project Coordinator's on-Site representative and reported directly to the Project Coordinator.

USEPA designated Ms. Maureen O'Mara as the On-Scene Coordinator (OSC) for the Immediate Response Action at the Site. USEPA contracted field oversight services to Roy F. Weston, Inc. and Versar Inc.

The MDNR designated Ms. Denise Gruben as Project Coordinator for the Immediate Response Action.

Chemical Waste Management Inc., Enrac Division-Midwest (Contractor) was procured by the Respondents to perform the tasks outlined in the Work Plan. The Contractor provided general contracting services for the duration of the project.

4.2 PRECONSTRUCTION SURVEY

Prior to mobilization by the Contractor, a preconstruction topographic survey was completed at each of the three excavation areas. The survey was performed by Darrell Hughes and Associates (Hughes) of Fowlerville, Michigan. Hughes is a licensed and registered surveyor in the State of Michigan. The preconstruction survey also defined the limits of excavation (by staking) at each of the three excavation areas as presented in the Work Plan. Pre-excavation conditions at the NEBD, SD and IW Areas are shown on Figures 4.1, 4.2 and 4.3, respectively.

4.3 SITE PREPARATION

4.3.1 Mobilization

The Contractor mobilized to the Site on November 27, 1989. The Site had previously been secured by a six-foot high chain-link fence installed by MDNR in 1987. Abandoned vehicles located within the proposed fenced support area were removed to areas outside of the fence with the consent of USEPA.

Within the fenced area, the Contractor established: a support area for office trailers and related facilities; a contaminant reduction zone for decontamination activities located between the support zone and the exclusion zone; and an exclusion zone for waste excavation, staging and

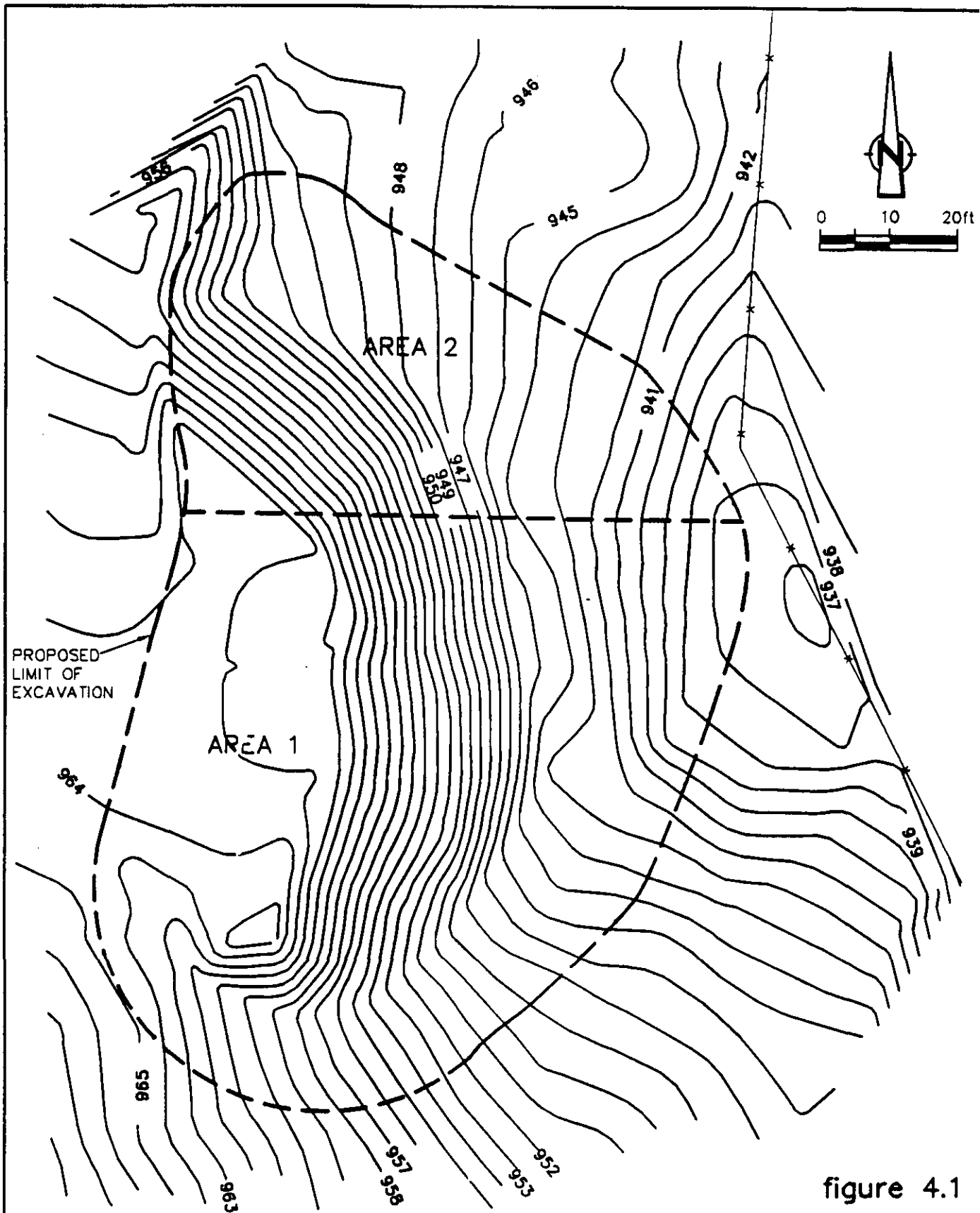

figure 4.1
PRE-EXCAVATION CONDITIONS
NORTHEAST BURIED DRUM AREA
RASMUSSEN SITE
Immediate Response Action

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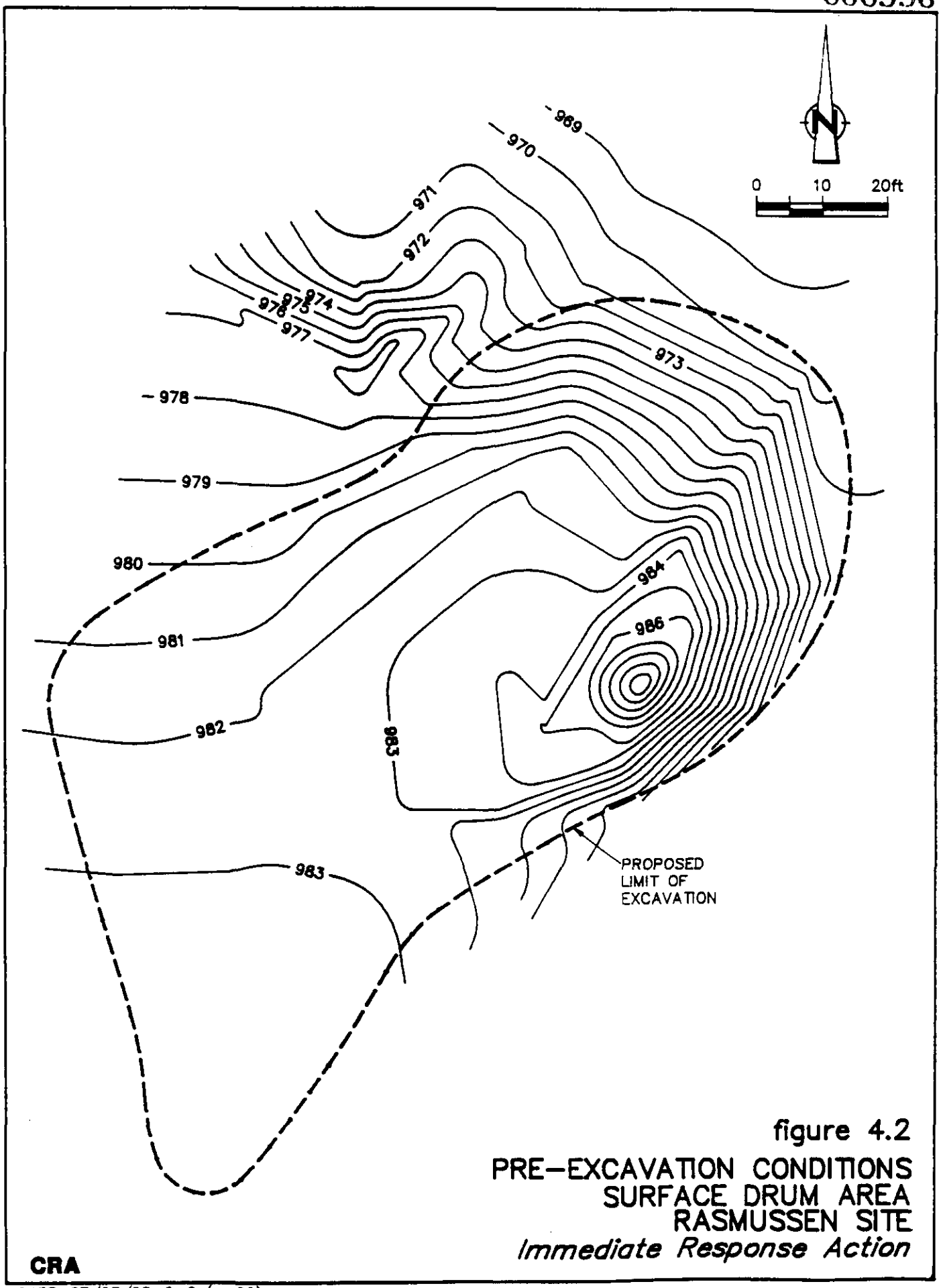

figure 4.2
PRE-EXCAVATION CONDITIONS
SURFACE DRUM AREA
RASMUSSEN SITE
Immediate Response Action

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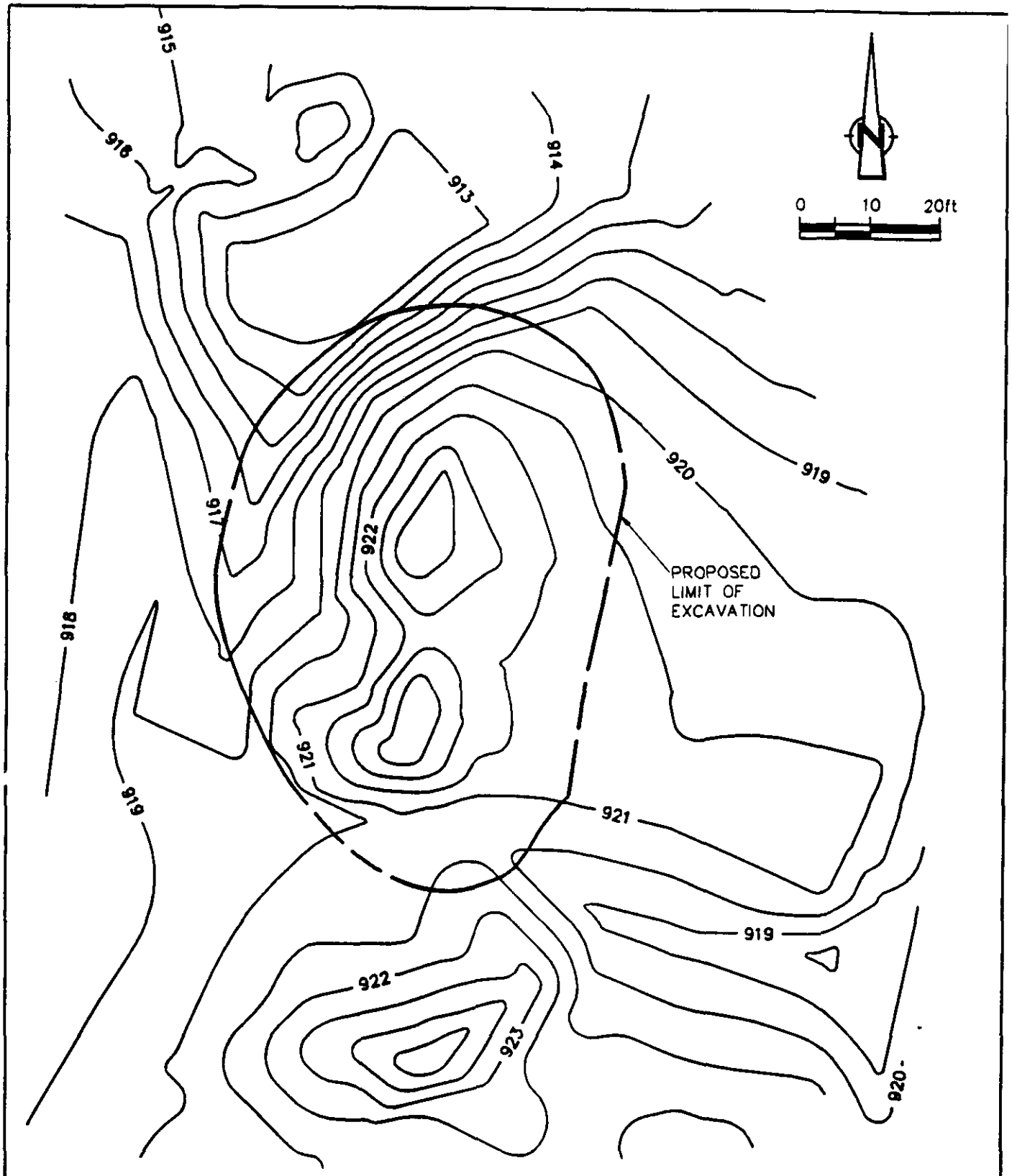

figure 4.3
PRE-EXCAVATION CONDITIONS
INDUSTRIAL WASTE AREA
RASMUSSEN SITE
Immediate Response Action

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2433-27/03/90-9-0 (P-01)

handling. Access to the exclusion zone was limited to personnel with proper training and personal protective equipment. The general arrangement of construction facilities is shown on Figure 4.4.

The existing Site access roads were upgraded during the mobilization phase of the project by placing and compacting stone over the existing access roads. No regrading of the landfill cover was required for this operation. Stone was obtained from the on-Site stockpile located within the fenced portion of the property.

Monitoring wells RA-MW-17, RA-MW-34, and RA-MW-54 were protected from damage during construction activities by the placing concrete pipe sections to surround the monitoring wells.

Unarmed security personnel were present on Site on a 24-hour basis prior to the initiation of excavation activities and provided full time security until backfilling was complete. Site security logs are presented in Appendix C.

4.3.2 Staging Pads

Two lined staging pads were constructed during mobilization to provide a central staging area for excavated drums and other anticipated waste material. Each pad was constructed with approximate

LEGEND:

- APPROXIMATE LIMITS OF DISPOSAL AREAS
- SECURITY FENCE
- IMMEDIATE RESPONSE ACTION AREAS
- AREA OF 1987 SOIL EXCAVATION
- SITE BUILDINGS

N

0 50 100ft

NORTHEAST BURIED DRUM (NEBD) AREA

SURFACE DRUM (SD) AREA

INDUSTRIAL WASTE (IW) AREA

PROBABLE DRUM STORAGE/LEAKAGE/ DISPOSAL (PDSLD) AREA

TOP OF MUNICIPAL LANDFILL

WEST BERM AREA

GATE

GATE

SPICER ROAD

RASMUSSEN HOME

RA-MW-17

RA-MW-34

RA-MW-28

RA-MW-54

SITE SURVEY MONUMENT

SITE SURVEY MONUMENT

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figure 1.2
SITE PLAN
RASMUSSEN SITE
Immediate Response Action

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overall dimensions of 40 feet by 40 feet and equipped with an integral sump for the removal of rainwater from the pads.

The staging pads consisted of a 30 mil PVC liner overlying a sand base and perimeter berms . The liner was protected by a nominal six-inch layer of sand placed onto the liner. Sand ramps were also constructed over the berms to permit rubber-tired equipment to access the pads.

During excavation of the NEBD Area in December 1989, it became apparent that the two constructed staging pads would not have sufficient capacity for the staging of all excavated drums. An additional staging pad with approximate overall dimensions of 40 feet by 90 feet and similar in construction to the two original pads was constructed on January 2, 1990. The location of this pad is shown on Figure 4.4.

An additional lined drum storage pad was constructed adjacent to the IW Area in late January 1990 to accommodate drums excavated from that area. The location of this pad is also shown on Figure 4.4.

4.3.3 Decontamination Facilities

An equipment decontamination pad similar in construction to the staging pads was constructed within the contaminant reduction zone as shown on Figure 4.4. Trucks, equipment and personnel leaving the exclusion zone were decontaminated on the pad with a high

pressure steam cleaner. The pad was sloped to a sump where washwater was collected and transferred directly into one of two 6,000-gallon washwater storage tanks. Water collected in the sumps of the staging pads was also pumped to the 6,000 gallon on-Site washwater storage tanks. Two 2,000-gallon potable water tanks provided water for showers, washing and decontamination activities.

A decontamination (personal hygiene) trailer was located adjacent to the decontamination pad and was equipped with showers, washing and change facilities for Site personnel. Water from showers and washing was also transferred to the on-Site washwater storage tanks. A personnel shelter was constructed beside the decontamination pad for personnel to doff personal protective equipment prior to entering the hygiene trailer.

5.0 EXCAVATION AND BACKFILLING

5.1 NEBD AREA

5.1.1 Excavation of NEBD Area

Excavation of buried containers commenced at the NEBD Area on December 13, 1989, following implementation of the Site Specific Health and Safety Plan and completion of all Site preparation activities.

The soil cover and municipal landfill materials intermixed with the buried containers were excavated from the NEBD Area and placed on two layers of polyethylene sheeting adjacent to the excavation. A straw bale dike was installed along the east fence line adjacent to the NEBD Area to prevent sediment leaving the excavation area.

Excavation activities commenced at the northwest corner of AREA 1 of the NEBD Area shown on Figure 4.1. The plateau on the western limit of AREA 1 was excavated to reduce the height of the west-east embankment in this area.

Excavation of AREA 1 at the NEBD Area proceeded in an easterly direction by developing steps or benches at four locations within the excavation area. The benches were oriented in a north-south direction and were constructed to provide a level working surface for the equipment and to

provide stable excavation faces. The benches varied in overall height from five to twelve feet.

The excavation continued into municipal landfill materials until no containers were encountered over a depth interval of two to three feet. Due to the severe topography in the area and the use of the bench excavation method, a consistent excavation depth below existing grade could not be maintained. However, the vertical limit of excavation was generally 10 to 15 feet deep and extended deep into the municipal landfill materials.

Following a Site inspection on January 10, 1990 by the Engineer, USEPA OSC, and MDNR Project Coordinator, it was agreed that the vertical limit of excavation in NEBD AREA 1 need not extend to native soil, as presented in the Work Plan, and excavation was deemed to be complete. The basis for this decision was as follows:

i) the depth to native soil was significantly greater than anticipated based on an exposed landfill face in excess of 30 feet;

ii) the relative number and locations of containers encountered substantiated findings indicated by the RI magnetic gradient contours that the containers would be located within the established excavation limits; and

iii) the majority of containers encountered were found in the fill material overlying the municipal landfill wastes thereby substating the theory that the containers were deposited onto the landfill surface after the landfill operations ceased.

This decision was documented in writing on January 11, 1990 (letter from Monteith to O'Mara).

Hughes surveyed AREA 1 of the NEBD Area on January 11, 1990, prior to backfilling. Results of the topographic survey are shown on Figure 5.1. A cross-section through the excavation area showing pre-excavation grades and elevations upon completion of excavation is shown on Figure 5.2.

5.1.2 Drum Removal - NEBD Area

The majority of containers excavated from the NEBD Area were present in the approximate six foot thick soil cover and immediate underlying landfill material in the western portion of NEBD AREA 1. Upon removal from the excavation, all containers were numbered, logged and screened with either an HNu or Foxboro OVA organic vapor analyzer. Containers were transferred directly to the staging pads following removal from the excavation and were staged in sequential order on the pads with aisleways left open for sampling access.

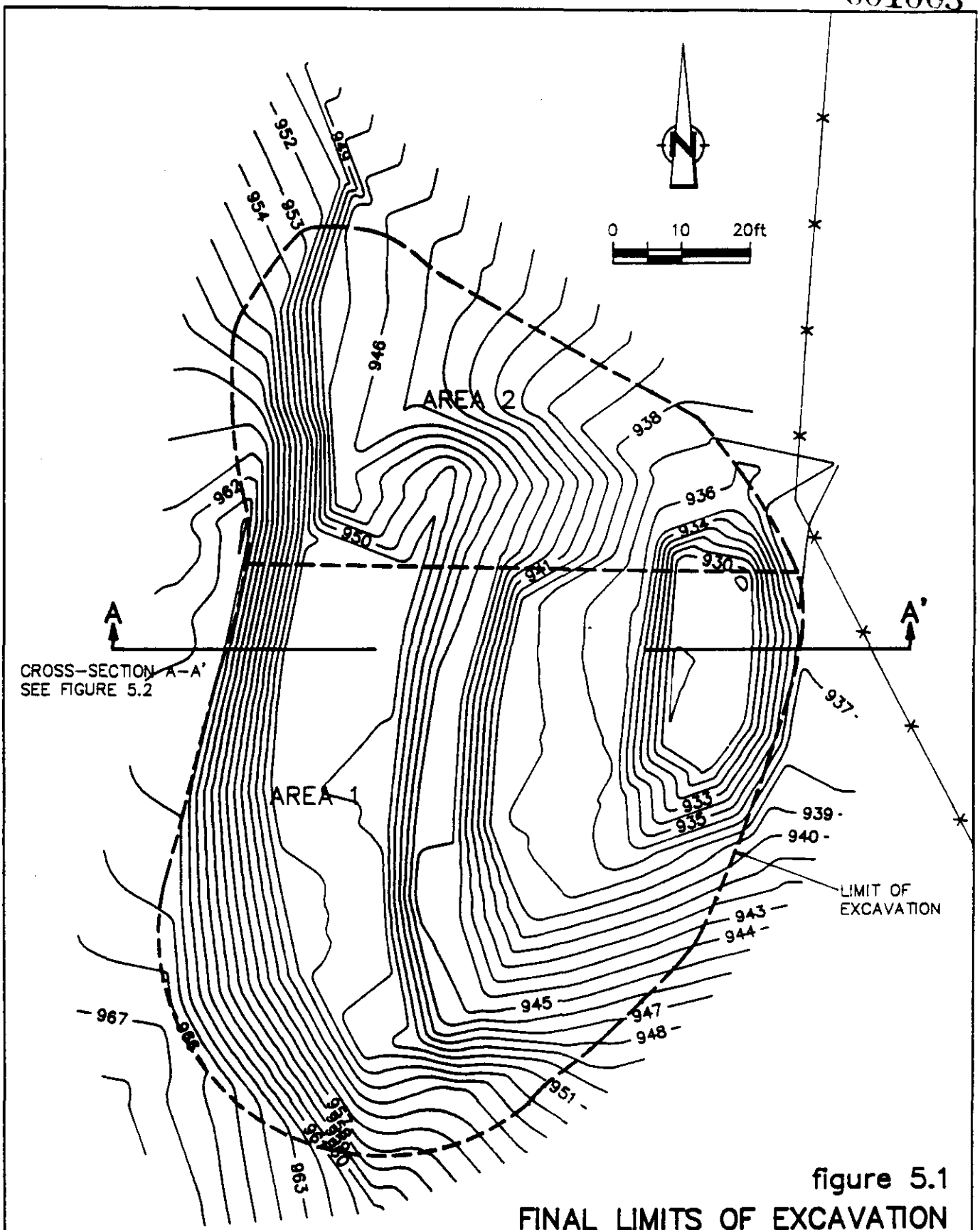

figure 5.1

FINAL LIMITS OF EXCAVATION
NORTHEAST BURIED DRUM AREA
RASMUSSEN SITE
Immediate Response Action

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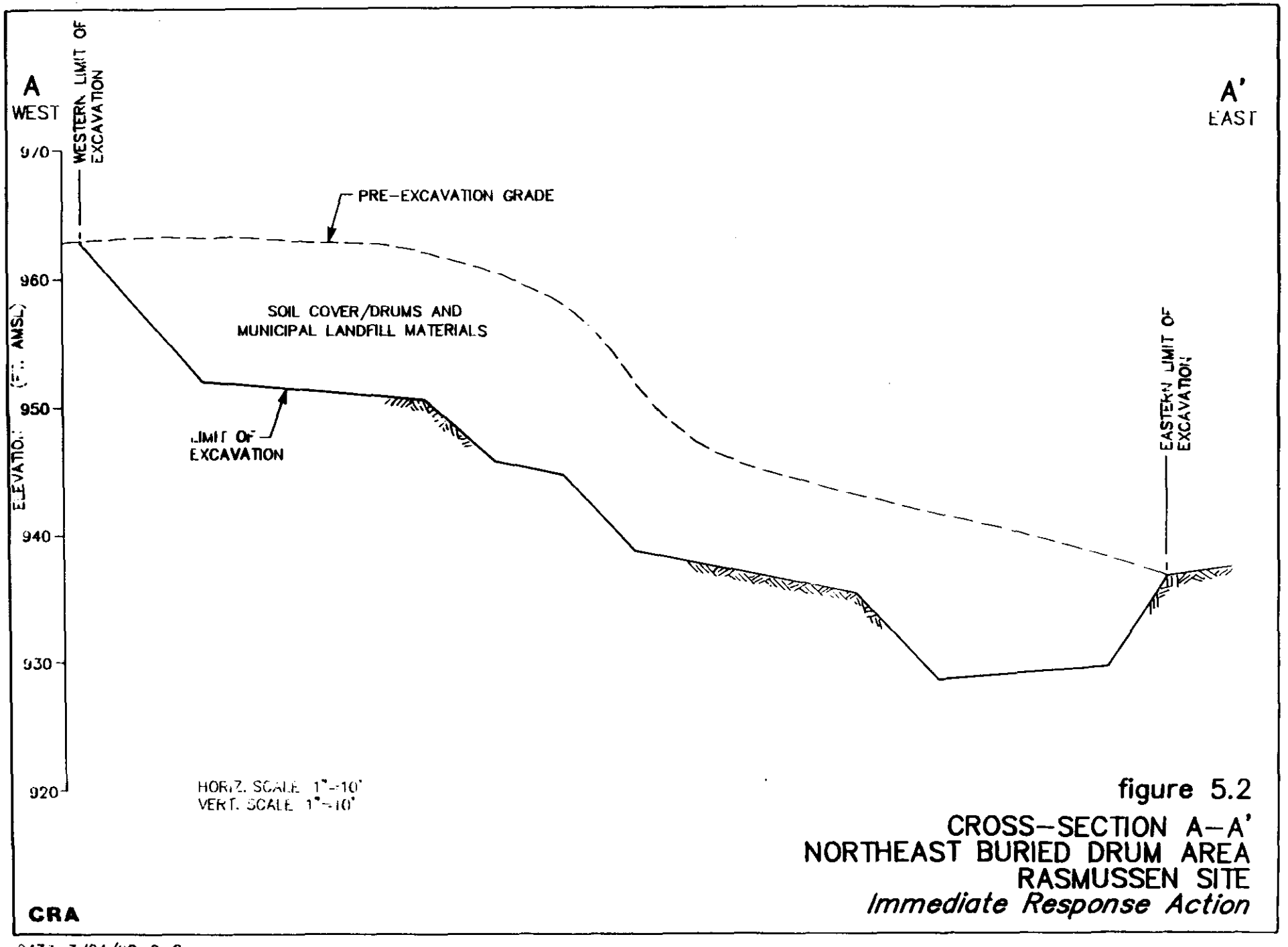

figure 5.2
CROSS-SECTION A-A'
NORTHEAST BURIED DRUM AREA
RASMUSSEN SITE
Immediate Response Action

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Drums were overpacked at the excavation as required based on the condition of the excavated drum. Drum hooks or similar attachments to the excavating equipment were utilized to remove drums from the excavation and place drums in either the overpack drums or transport equipment.

A total of 300 containers were excavated from the NEBD Area. Thirty-nine of the containers were 5-gallon cans; two of the containers were 30-gallon drums; and the remainder were 55-gallon drums. A complete drum log summary of all containers excavated from the NEBD is presented on Table 1 in Appendix D.

As shown on Appendix D, Table 1, thirty-six drums were overpacked into new, 85-gallon overpack drums. Three of the overpacked drums were in very poor condition resulting in spillage of drum contents while overpacking. All spills were immediately excavated and visually affected soils from the spills were placed in a second overpack drum. In such a situation, the overpacked drum was designated "A" whereas the spill area soil in the second overpack drum was given the designation "B" (e.g, RAS 90A, RAS 90B).

Seventy-three of the 300 containers excavated were determined to be RCRA empty (less than two inches of residue). In general, the containers were in very poor condition, crushed, and without lids. Only six of the 300 containers excavated from the NEBD Area contained any quantity of liquids.

All personnel in the area of active excavation were equipped with USEPA Level C personnel protective equipment as described in Section 8.0. Full facepiece respiratory protection with dual organic vapor and particulate cartridges was required for all personnel. Personnel handling drums were equipped with a supplied air respiratory system (USEPA Level B).

5.2 SURFACE DRUM AREA

5.2.1 Excavation of SD Area

Excavation and drum removal activities at the SD Area commenced on January 17, 1990. Initially, the knoll at the southern limit of the SD Area, as shown on Figure 4.2, was excavated. Few drums were present in the sandy knoll material. Following removal of the knoll, the entire SD Area was excavated to an average depth of four feet. In general, the excavation consisted of the removal of two feet of sand cover over the municipal landfill, and an additional two foot excavation into the landfill material. All drums were present in the cover material only.

Excavated soil cover and landfill materials were stockpiled on two layers of polyethylene sheeting on top of the municipal landfill.

Excavation of the SD Area was completed on January 23, 1990. The USEPA OSC's on-Site representative and MDNR Project

Coordinator jointly inspected the excavation with the Engineer and approved all work as complete in the SD Area. Hughes surveyed the completed excavation on January 24, 1990. The horizontal limit and base of excavation contours for the SD Area are shown on Figure 5.3.

5.2.2 Drum Removal - SD Area

A total of 158 containers were excavated from the SD Area. Seven containers were 5-gallon paint cans, thirty-nine containers were 30-gallon drums and the remainder were 55-gallon drums. Twenty-seven of the drums were empty. A complete summary of all drums excavated from the SD Area is presented on Table 1 in Appendix D.

Similar to the NEBD Area, drums excavated from the SD Area were generally crushed and in very poor condition. Only two drums contained any liquids. All excavated containers were transferred to the drum staging pads.

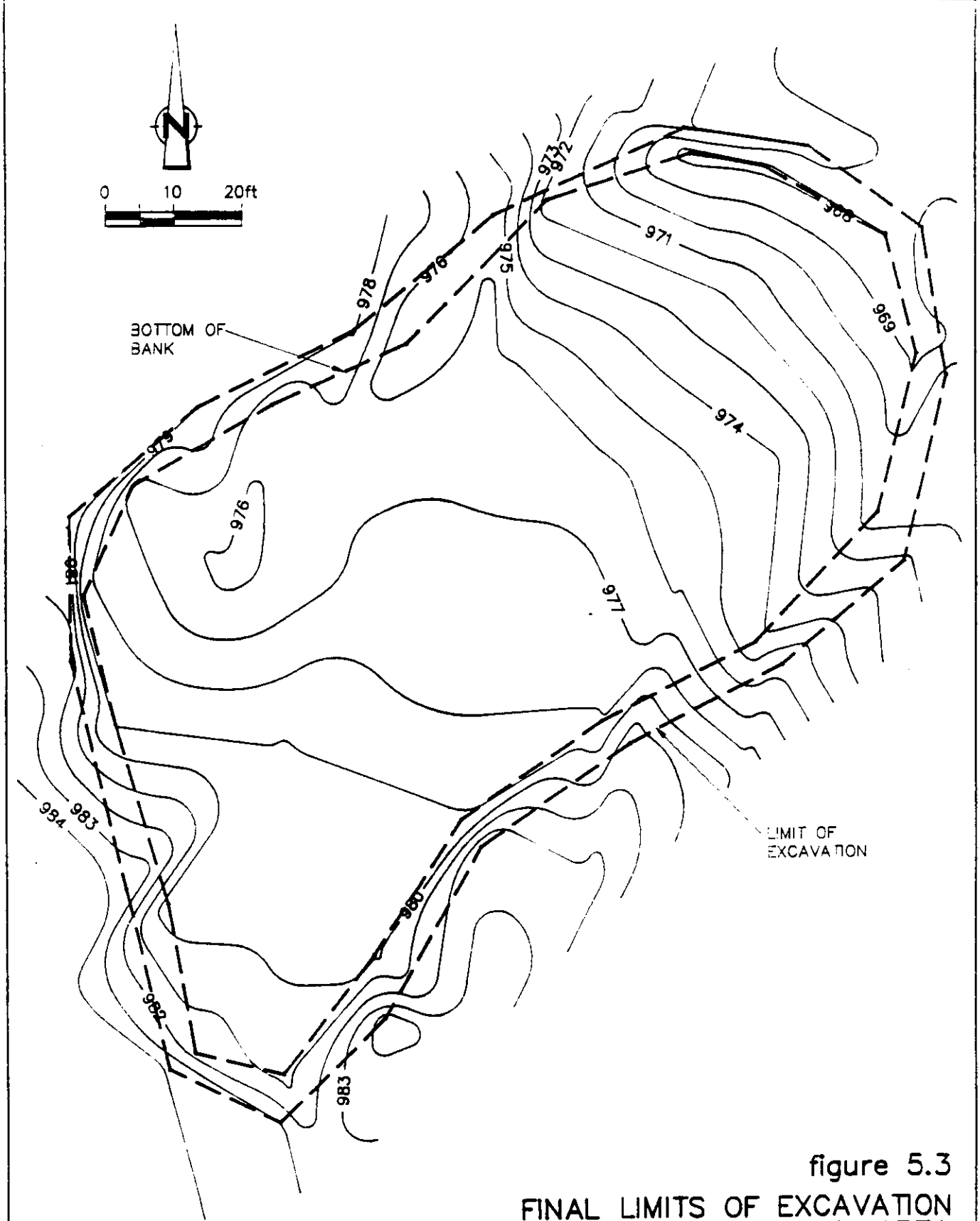

figure 5.3

FINAL LIMITS OF EXCAVATION
SURFACE DRUM AREA
RASMUSSEN SITE
Immediate Response Action

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5.3 INDUSTRIAL WASTE AREA

5.3.1 Excavation and Drum Removal - IW Area

Excavation of the IW Area commenced on January 23, 1990 in the area of highest magnetic anomaly as determined by the RI. Pre-excavation conditions at the IW Area are shown on Figure 4.3.

The IW Area consisted of a sandy knoll in an area remote from the municipal landfill. No municipal landfill or other debris was encountered during the excavation. The excavation continued within the limits of excavation to a depth where no additional containers were encountered and native sand was present.

The USEPA OSC's on-Site representative approved the limits of the completed excavation on January 25, 1990. Hughes surveyed the IW excavation on January 26, 1990. The limit of excavation and base of excavation contours are shown on Figure 5.4.

All excavation work stipulated by the 106 Order was completed by January 25, 1990.

A total of 186 containers were excavated from the IW Area. One 5-gallon paint can and one hundred eighty-five 55-gallon drums were excavated from the IW Area. As for the other areas, most containers were crushed and in poor condition. The drums contained solids only. A

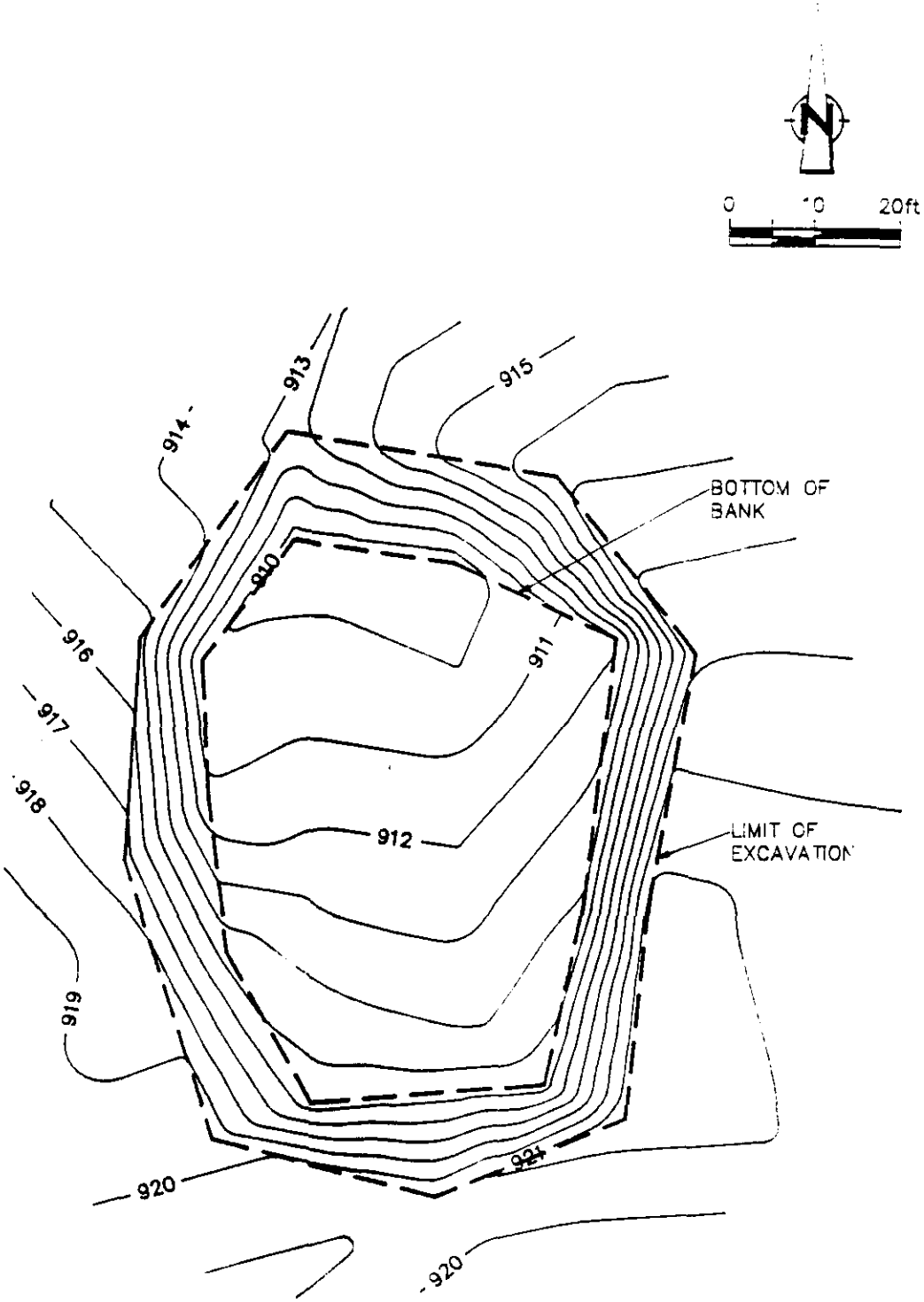


figure 5.4

FINAL LIMITS OF EXCAVATION
INDUSTRIAL WASTE AREA
RASMUSSEN SITE
Immediate Response Action

CRA

2433-27/03/90-9-0 (P-04)

complete drum log summary for all drums excavated from the IW Area is presented on Table 1 in Appendix D.

5.3.2 Additional Excavation in IW Area

On January 23, 1990, during a Site inspection by the MDNR, the Engineer was requested by the MDNR Project Coordinator to excavate an area located to the south and outside the limits of the IW Area. The MDNR's request was based on their belief that buried containers were present below a portion of a mounded soil area to the south of the IW Area due to the presence of metallic debris on the ground surface. The MDNR also indicated that they believed buried containers may be present between the mound and the southern limit of the excavation area.

A review of the data contained within the RI indicated that the magnetometer survey encompassing this area provided no basis for suspecting buried containers.

Although the Respondents did not agree with the basis for the MDNR request, they undertook the excavation of this additional area in order to resolve the matter in the most expedient manner possible. The Respondents presented their comments and intentions to the USEPA OSC by letter on January 26, 1990 (Monteith to O'Mara).

The excavation of the knoll adjacent to the IW commenced and was completed on January 26, 1990. No containers were found and the knoll was found to consist of sand only. USEPA's on Site representative witnessed the excavation. Photographs of the excavation are provided in Appendix B.

5.4 ADDITIONAL VOLUNTARY EXCAVATION

Following completion of all excavation activities stipulated in the Work Plan, the Respondents notified the USEPA OSC on January 26, 1990 of their desire to voluntarily undertake additional excavation in an area west of and contiguous to the NEBD Area.

The Respondents believed that buried containers may have been present in this area. This assumption was based on the following:

i) Although the MDNR's magnetometer survey failed to encompass the suspect area, the consistency of the field findings compared to the magnetometer surveys indicated that had the magnetometer survey extended into this area, the resulting magnetic gradient contours would have indicated the potential presence of buried containers.

ii) Buried containers were present in the west face of the cut slope during the excavation of the NEBD Area. These containers were visible in the fill material overlying the landfill wastes and appeared to be located in

the approximate vicinity of the highest magnetic gradient contour values along the west excavation limit.

The proposed excavation was to be conducted in the fill material overlying the municipal landfill materials.

The USEPA OSC and the Engineer witnessed the excavation of the area on January 29, 1990. Seven drums and numerous drum lids were excavated from this additional voluntary excavation area.

One drum contained solids whereas the other six drums were empty. A description of the drums is presented on Table 1 in Appendix D.

This excavation was also backfilled on January 29, 1990 following agreement by the Engineer and the USEPA OSC that all containers had likely been removed from the area.

5.5 BACKFILLING OF EXCAVATED AREAS

Backfilling of the combined NEBD Area commenced on January 12, 1990 and was completed on January 16, 1990. Two rubber-tired loaders transferred soil and landfill material, previously excavated from the NEBD Area, from stockpiles adjacent to the excavation and from the top of the municipal landfill. Due to spatial constraints adjacent to the excavation

area, a second stockpile area had been established on top of the municipal landfill. The backfilled surface of the NEBD Area was graded to promote drainage and minimize the potential for erosion. The straw bale dike installed at the base of the excavation was left in place to contain sediments during spring runoff.

Soil and landfill materials, excavated from the SD Area and stockpiled on top of the municipal landfill, were used for backfill material. Two rubber-tired loaders replaced and compacted the excavated soil and landfill material to approximate pre-excavation conditions in the area. However, the former knoll at the southern limit of the SD Area was not reconstructed. The backfilled surface was graded and crowned to minimize ponding and to promote surface water drainage. All backfill operations at the SD Area were completed on January 25 and January 27, 1990.

Sand excavated from the IW Area and stockpiled adjacent to the excavation was backfilled on January 27 and 28, 1990. The additional excavation at the IW Area requested by MDNR was also backfilled at this time. The voluntary excavation of the area contiguous to the NEBD Area was backfilled following excavation on January 29, 1990.

6.0 SAMPLING AND WASTE CHARACTERIZATION

6.1 DRUM SAMPLING

6.1.1 General

All drums from the three excavation areas were staged in sequential order on the on-Site staging pads prior to sampling. In order to expedite receipt of analytical data and the generation of wastestream profile information for disposal purposes, drum sampling was conducted on three occasions. Sampling was conducted as sufficient numbers of drums were staged to warrant mobilization of sampling personnel and equipment.

The initial sampling phase was completed on January 6, 1990. Sampling of all drums excavated from the NEBD Area (Drums designated RAS 001-300) was completed on January 12, 1990. All remaining drums were sampled between January 26 and January 29, 1990 following completion of all excavation activities.

A total of 651 containers were excavated from the NEBD, SD and IW Areas. Forty-seven of the containers were 5-gallon cans whereas forty-one of the containers were 30-gallon drums. The remainder of the excavated containers were 55-gallon drums. During secondary inspection of the containers on the staging pads prior to sampling, one hundred and fifty (150) of the containers were determined to be empty as defined by RCRA (less than 2 inches of residue).

Four drums which were overpacked each required an additional overpack drum to contain soil and waste material spilled from the original damaged drums at the excavation. Drums RAS 090A, 220A, 224A and 392A were overpacked. Drums RAS 090B, 220B, 224B and 392B were new overpack drums containing only soil and waste material recovered from the excavation area directly associated with the original drum. A complete drum log summary is presented on Table 1 of Appendix D.

6.1.2 Sample Collection and Handling

Most drums excavated from the NEBD, SD and IW Areas were crushed or ripped and generally in very poor condition. The majority of drums were open top type with no lids. Representative samples were obtained from these drums with no requirement to physically cut open or otherwise remotely access the drums. For drums where access to solid contents was limited, a pneumatic chisel was used to cut away a section of the steel drum to expose the drum contents.

Sampling personnel were equipped with USEPA Level C PPE, as presented in Section 8.0, during all sampling activities. All drums had previously been screened with an organic vapor analyzer at the excavation. Cold weather and windy conditions minimized the potential for elevated TVOC concentrations in the breathing zone during sample collection. The Site Safety Officer monitored air quality and the general progress of sampling

to ensure activities were in accordance with the Site Specific Health and Safety Plan presented in Section 8.0.

Samples were collected using a new disposable stainless steel laboratory scoopula for each sample. Drum contents were placed directly in prelabeled 500-ml glass sample jars with teflon lined lids. Sampling personnel wore a new pair of latex gloves for each sample collected.

A total of 504 samples were collected during the January sampling events. Four hundred and ninety-nine (499) of the samples collected contained solids. Upon arrival at the analytical laboratory, three of the samples had separated into a solid and liquid phase. Each phase of the biphase samples were analyzed as discrete samples. Five of the samples collected were liquids. Liquid samples were obtained by grab sampling.

Sample jars were packed in coolers with vermiculite packing material and ice to maintain a transport temperature below 4°C. Samples were generally in a frozen state prior to shipment. Samples were shipped by courier to the analytical laboratory (Wadsworth-Alert) using standard chain-of-custody protocols. All coolers had security seals placed on the lids to ensure that coolers had not been tampered with during transport. A copy of all completed chain-of-custody forms is included in Appendix E.

A list of all containers sampled and submitted for waste characterization analyses is presented on Table 2 in Appendix F.

6.2 ANALYTICAL RESULTS

6.2.1 Waste Compatibility Analytical Results

All analytical services for waste compatibility testing was performed by Wadsworth-Alert Laboratories (laboratory) of Canton, Ohio under the supervision of the Contractor. Each sample submitted to the laboratory was initially screened using the following waste compatibility tests:

i) Radioactivity screen;
ii) pH;
iii) Oxidizer/Peroxide screen;
iv) Water mix screen;
v) Cyanide screen;
vi) Phenol screen; and
vii) Flammability screen.

The laboratory also recorded the color and physical description of each sample. A complete description of the drum contents is presented on Table 1 in Appendix D. Complete waste compatibility results are presented on Table 2 in Appendix F.

Compatibility testing revealed that no radioactive, cyanide, oxidizer, peroxide, sulfide or phenol wastes were present in the drums. All drum contents had pH in the range of 6 to 8 except for three

drums (RAS 221, 228, 277) which had a pH of 12 or greater. No strong acids (pH<4) were present in any of the drums. Preliminary flammability screens indicated that approximately half of the drums may have flammable contents. However, a positive result for the flammability screen does not indicate that the drum contents are ignitable at a given temperature. The flammability screen involved placing the flame from a Bunsen burner in contact with the waste material. A positive flammability screen was recorded if ignition occurred following this screening procedure.

6.2.2 PCB Analytical Results

Following completion of waste compatibility analyses, samples were grouped into 5-sample composites and the resulting composite sample was analyzed for total PCB. Composite samples (identified as RASCØØ) were developed by combining five compatible samples, as determined from waste compatibility results. All compositing was performed by the laboratory.

A list of samples composited and corresponding sample composite numbers are presented on Table 3 in Appendix G. The PCB composite sample number relevant to each drum has also been identified on Table 2 in Appendix F. PCB concentrations reported for each drum, as shown on Appendix F, Table 2, represent the concentration of PCB in the corresponding PCB composite sample and are not an indication of PCB concentration in each individual drum.

Twenty-eight of the 101 PCB composite samples contain PCB at concentrations of less than 8 ppm. Based on a five drum composite, 8 ppm would indicate that no individual drum for that composite exceeds 40 ppm PCB thus maintaining a 10 ppm buffer below the 50 ppm TSCA regulated concentration for PCB.

The complete PCB analytical reports from the laboratory are presented in Appendix G.

6.2.3 *Wastestream Development*

Following review of the waste compatibility and PCB analytical results, four wastestreams for the drummed wastes were developed as follows:

Wastestream 1: Basic solids/PCB (Drums RAS 221, 228, 277)

Wastestream 2: Flammable liquids/PCB (Drums RAS 105, 171, 219, 224A, 241, 349 and 430)

Wastestream 3: Paint solids/PCB (357 drums as noted on Table 2 in Appendix F.)

Wastestream 4: Inert solids/empty crushed drums/PCB (140 drums as noted on Table 2 in Appendix F.)

A composite sample for each wastestream was prepared by the laboratory and shipped to the Chemical Waste Management Technical Center Analytical Laboratories in Riverdale, Illinois (CWM Technical Center).

The CWM Technical Center performed a detailed analysis of each wastestream as required by the proposed disposal facilities. Copies of the waste profile sheets for each wastestream, as prepared by the Contractor, and detailed analytical results as reported by the CWM Technical Center are included in Appendix H.

6.3 DISPOSAL DECISIONS

Final disposal decisions were not reached until June 21, 1990 due to difficulties associated with the approval of combined RCRA/TSCA wastestreams by the disposal facilities. As previously discussed, written notification of the proposed disposal facilities was provided to USEPA by the Respondents. Approval was given by USEPA on June 19, 1990 for all proposed facilities. The disposal facilities utilized include:

- Kettleman Hills Treatment Center (CWM)
  Kettleman City, California
  CAT000646117
  (Landfill for: Wastestream 1 - Waste Solids
  Wastestream 3 - Paint Solids
  Wastestream 4 - Inert Solids and RCRA Empty Drums)

- CWM - Chemical Services Inc.
  Chicago, Illinois
  ILD000672121
  (Incinerator for: Wastestream 2 - Flammable Liquids)

- CyanoKEM, Inc.
  Detroit, Michigan
  MID098011992
  (Treatment for: Decontamination Washwater)

7.0 TRANSPORTATION AND DISPOSAL

7.1 GENERAL

Following USEPA approval of the proposed disposal facilities, work related to the transportation and disposal of staged material commenced on June 27, 1990. Appropriate provisions of the Health and Safety Plan were maintained during the transportation and disposal phase of the program.

In addition to the packaging, transportation and disposal of all containers excavated from the three areas, all drums left in the vicinity of the support zone which were generated during previous investigations by MDNR, were all appropriately disposed. Drums containing used PPE were disposed with the bulk solids. Monitoring well purge water was disposed with the decontamination washwater. Liquids other than well purge water were incinerated. Empty drums were crushed flat and disposed with the bulk solids. Details of the disposal of the decontamination washwater is presented in Section 10 - Project Closeout.

7.2 PACKAGING

The three drums comprising Wastestream 1 - Waste Solids (Drums 221, 228 and 277) were segregated from the remaining drums, placed in 85-gallon overpack drums and labeled as a corrosive waste. The

receiving disposal facility for this wastestream (Kettleman Hills) required this material to be disposed in drums.

Drums containing flammable liquids (Wastestream 2) were also segregated. Liquids were pumped from the drums into 16-gallon polyethylene incinerable drums. Liquids were stabilized in the 16-gallon containers with shredded corn cob prior to shipment. These containers were labeled as flammable liquids.

All remaining drummed material (Wastestreams 3 and 4) were physically removed from the original containers into one of three roll-off boxes brought to the Site specifically for this purpose. In many cases, the steel drum had to be cut away from the drum contents with a pneumatic chisel. Following removal of the drum contents, all drums were crushed flat. All polyethylene sheeting and used PPE was included in this wastestream. Bulked material was staged in the roll-off boxes prior to loading of the transport vehicles.

7.3 TRANSPORTATION AND DISPOSAL

The three overpacked drums comprising Wastestream 1 - Waste Solids, were transported to Kettleman Hills on July 19, 1990 by Chemical Waste Management Transportation Services. The total weight of the drums was estimated to be 975 pounds. The three drums were received

and accepted by the disposal facility on July 29, 1990. A copy of the completed hazardous waste manifest is provided in Appendix I.

Flammable liquids (Wastestream 2) were packaged into thirty-seven 16-gallon incinerable drums and transported to the CWM Chicago Incinerator on August 3, 1990 by CWM Transportation Services. The total volume was estimated to be 592 gallons. The 37 drums were received and accepted by the disposal facility on August 6, 1990. A copy of the completed hazardous waste manifest is provided in Appendix I.

The bulk solid wastes (Wastestreams 3 and 4) were transported to the Kettleman Hills landfill in by Jack Gray Transport. A total of 128 tons of material was shipped in six dump trailers . Five loads were shipped on July 24, 1990 and the sixth load was shipped on July 27, 1990. The shipments were received and accepted by the disposal facility on July 28 and July 31, 1990. Copies of the six completed hazardous waste manifests are provided in Appendix I.

8.0 HEALTH AND SAFETY

8.1 GENERAL

A Site-Specific Health and Safety Plan for the Immediate Response Action at the Rasmussen Site was developed by the Contractor which addressed the basic requirements stipulated within the Work Plan for the Site. The Site-Specific Health and Safety Plan, contained in Appendix J, provided for a safe and minimal risk working environment for all on-Site personnel. The plan also provided for emergency response procedures and corrective procedures based on the results of Site perimeter air monitoring. The Contractor provided a Site Safety Officer who was responsible for the implementation of the health and safety plan. Details of the perimeter air monitoring programs are presented in Section 9.0. The Contractor's Final Health and Safety Report for the program is presented in Appendix K. Daily health and safety reports including real-time air monitoring data are provided in Appendix L.

8.2 CONTINGENCY PLANNING

Prior to commencing work involving the excavation or handling of drums, the Contractor developed an off-Site emergency contingency plan. The plan provided guidance for immediate response to a serious Site occurrence such as explosion, fire or migration of significant

quantities of toxic or hazardous material from the Site into adjacent public areas.

A coordination meeting was held at the Site on December 8, 1989 with representatives from local fire, police and emergency response personnel. Topics covered at the meeting included:

i) evacuation of adjacent areas,
ii) fire fighting procedures,
iii) transport of injured personnel to medical facilities,
iv) priority transportation routes, and
v) coordination and/or modification of highway operations.

A list of emergency phone numbers was provided at each telephone with a map indicating the shortest route to emergency medical facilities.

No emergencies arose at the Site during the course of the project which required the implementation of the off-Site contingency plan.

Fire fighting equipment (extinguishers) were maintained in strategic locations at the Site to combat localized fires. The locations were marked by an appropriate and highly visible sign. The Contractor ensured that designated personnel were available whom were trained in fire fighting procedures and were equipped with self contained breathing apparatus for fighting fires involving chemical substances if required.

In the event of significant release of toxic or hazardous vapors from any container or excavation, the source of such vapors would have been immediately backfilled or covered with fill. Equipment operators were to utilize self contained breathing apparatus during such operations.

No fires or significant releases of toxic vapors occurred during removal activities.

8.3 ON-SITE TRAINING

The Contractor's Certified Industrial Hygienist and Site Safety Officer conducted a training program on Site for all Site personnel prior to commencing work within the Exclusion Zone. This training program addressed the following topics:

a) Potential hazards,
b) Biology, chemistry and physics of hazardous materials,
c) Rights and responsibilities of workers under OSHA and additional legislation of the State of Michigan,
d) Standard safety operating procedures,
e) Types of monitoring equipment to be used.
f) Site Specific Health and Safety Plan,
g) Internal and External Communications,
h) Medical surveillance program,

i) Personal protective clothing and equipment,

j) Respiratory equipment including training and qualitative fit-testing for full facepiece respirators and use of self contained breathing apparatus,

k) Air monitoring program,

l) Decontamination procedures,

m) Evacuation, first aid and emergency procedures dealing with fire and medical situations,

n) Work zones established at the Site,

o) Safe work practices associated with employee's work assignment, including dust control measures, hazardous materials recognition, and use of buddy system,

p) Basic operational safety, emphasizing hazards expected on Site, and

q) Prohibitions while working inside Exclusion and Contaminant Reduction Zones, including:

   i) Glasses or facial hair, such as beards and long sideburns, which interfere with respirator fit,

   ii) Contact lenses,

   iii) Eating, drinking, smoking, chewing in the Exclusion or Contaminant Reduction Zone,

   iv) Personal articles, e.g. watches, rings, etc., and

   v) Working when ill.

All personnel assigned to the Site received safety and health training, and upon completion of training completed a Training Acknowledgement Log. The Training Acknowledgement Logs included the following information:

a) Employee or visitor's name.

b) Verification of topics covered, including:

i) Materials used,

ii) Equipment demonstration,

iii) Hands-on equipment practice for each employee,

iv) Prohibitions covered,

v) Buddy-System Explanation, and

vi) Standard Operating Procedures.

c) Date and Signature.

There were daily safety training sessions conducted by the Site Safety Officer. The purpose of this training was to reinforce the proper procedures, to correct any deficiencies noted in the safety and health program, and to prepare the workers for any change in the health and safety program due to changes in the operations or unanticipated problems.

All visitors who entered the Contaminant Reduction Zone or Exclusion Zone were also required to undergo a training program conducted by the Site Safety Officer. The training consisted of:

1) Hazards present at the Site.

2) Effects of these hazards.

3) Progress of work and the relationship of the present work in regard to the type of hazards that may be encountered.

4) Emergency signals and procedures.

5) Type and limitations of personal protective equipment in use.

6) Proper use of protective equipment.

7) General safety rules and policies in effect at the Site.

8) Completion of a Training Acknowledgement Log.

In addition to the on-Site training provided, all workers and visitors were required to have completed a 40-hour health and safety training course in accordance with 29 CFR 1910.120.

8.4 PERSONAL PROTECTIVE EQUIPMENT

All personnel on Site were required to wear the following protective clothing for all Site work during mobilization/demobilization and outside the designated exclusion zone:

a) hard hats;

b) steel toe and shank workboots;

c) eye protection (if applicable);

d) hearing protection (if applicable); and

e) protective outer clothing.

Within the exclusion zone, all personnel were required to wear the following USEPA Level C PPE in addition to the protective clothing identified above:

a) disposable polycoated tyvek coveralls;

b) rubber overboots;

c) inner latex gloves;

d) outer nitrile gloves (cotton gloves for operators); and

e) full facepiece respirator with dual organic vapor and particulate cartridges.

Gloves and boots were secured to the disposable coveralls with duct tape.

Personnel involved in drum handling operations at the point of excavation were equipped with USEPA Level B PPE including a supplied air respiratory system.

9.0 PERIMETER AIR MONITORING PROGRAM

9.1 GENERAL

Perimeter air quality was monitored at the Rasmussen Site by conducting two independent air monitoring programs. The Contractor's Site Safety Officer completed real-time air monitoring at the exclusion zone perimeter for explosive gases, oxygen levels and total volatile organic compounds (TVOC). CRA conducted a compound-specific air monitoring program at the Site perimeter. Details and results of each program are provided in the following sections.

9.2 REAL TIME AIR MONITORING PROGRAM

Real-time air monitoring was conducted at six stations distributed around the exclusion zone perimeter at the Site. Locations of the exclusion zone perimeter air monitoring stations are shown on Figure 9.1.

Initially, TVOC concentrations were monitored and recorded at each of the six exclusion zone perimeter monitoring locations on an hourly basis during periods of active excavation or backfilling. Following completion of excavation activities at the NEBD Area, TVOC air monitoring data generated from December 13, 1989 to January 10, 1990 was reviewed by CRA and USEPA/MDNR. The maximum TVOC concentration recorded at the exclusion zone perimeter during this period was 0.8 ppm at monitoring

LEGEND:

- APPROXIMATE LIMITS OF DISPOSAL AREAS
- SECURITY FENCE
- IMMEDIATE RESPONSE ACTION AREAS
- AREA OF 1987 SOIL EXCAVATION
- OFF SITE TRANSPORT ROUTES
- ACCESS ROADS TO WORKING AREAS
- SITE CONTROL FENCING
- ON SITE TRANSPORT ROUTES
- EXCLUSION ZONE BOUNDARY FOR PERIMETER AIR MONITORING
- EZ-3 EXCLUSION ZONE PERIMETER REAL-TIME AIR MONITORING STATION

0 50 100ft

EZ-6
NORTHEAST BURIED DRUM AREA
GATE
EZ-1
EZ-5
SURFACE DRUM AREA
TIRE DECONTAMINATION STATION
INDUSTRIAL WASTE AREA
RA-MW-17
RA-MW-34
RA-MW-28
PROBABLE DRUM STORAGE/LEAKAGE/ DISPOSAL AREA
TOP OF MUNICIPAL LANDFILL
SPICER
RASMUSSEN HOME
EZ-2
EZ-4
RA-MW-54
TE
EZ-3
WEST BERM AREA
SITE SURVEY MONUMENT
SITE SURVEY MONUMENT

CRA

2433-3/04/90-9-0

figure 9.1
EXCLUSION ZONE PERIMETER AIR MONITORING STATIONS RASMUSSEN SITE
Immediate Response Action

station EZ-6 on December 21, 1989. In general, TVOC concentrations at the exclusion zone perimeter were 0 ppm.

In response to a request from CRA on January 11, 1990, USEPA agreed that the monitoring frequency at the exclusion zone perimeter could be reduced to two monitoring rounds per day. A confirming letter on this modification to the Work Plan was sent by CRA to USEPA (Monteith to O'Mara) on January 12, 1990.

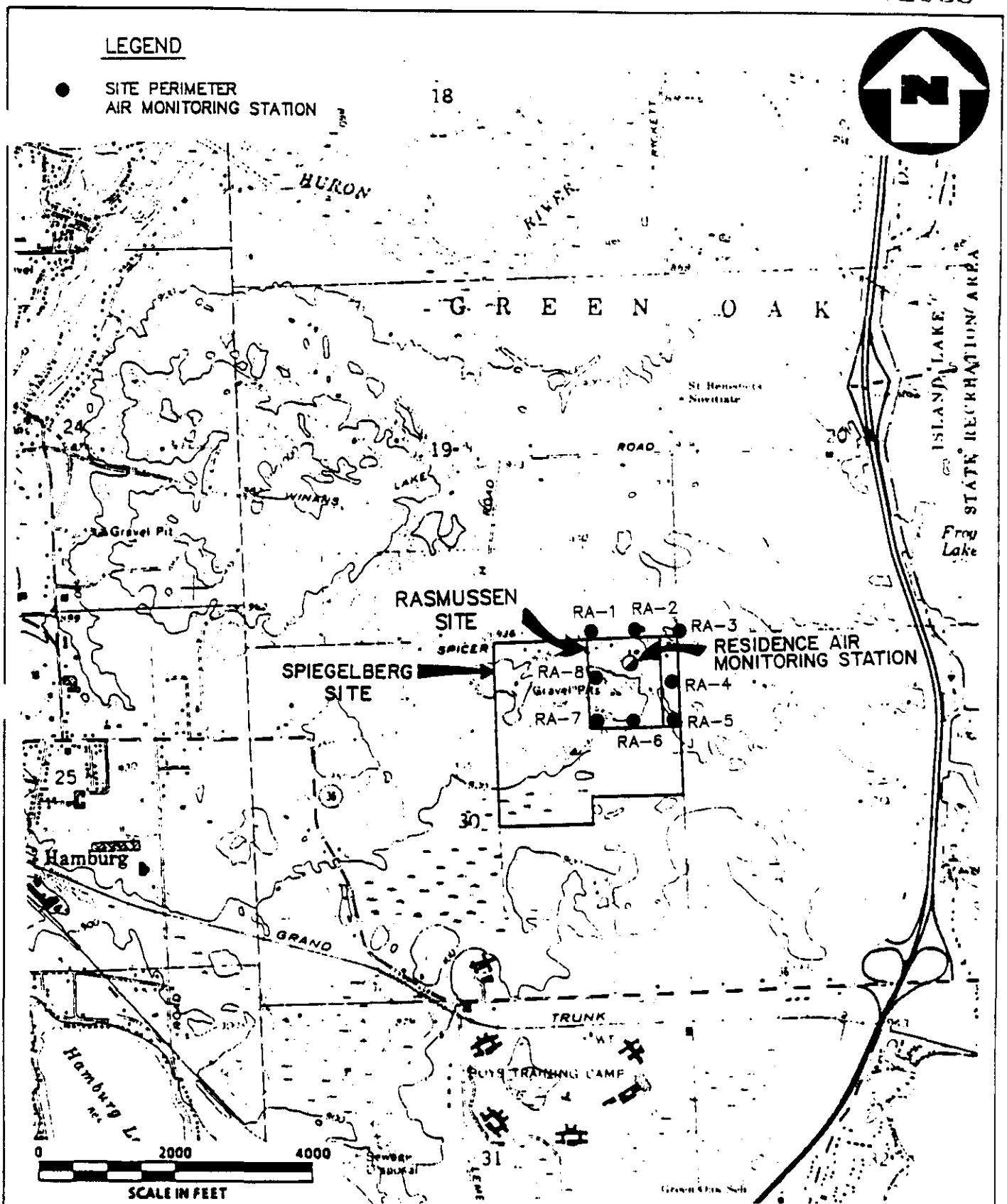
Twice daily monitoring continued at the exclusion zone perimeter from January 11, 1990 to January 22, 1990. On January 22, 1990, the compound specific air monitoring program, as discussed in Section 9.3, was placed on "standby". A letter confirming this modification to the Work Plan was sent by CRA to USEPA (Monteith to O'Mara) on January 24, 1990. The MDNR requested that, as a condition for reduction of the compound specific program, the real-time perimeter air monitoring be increased from two to four rounds daily. To comply with the MDNR request, real-time exclusion zone perimeter air monitoring was increased from two to four rounds per day until the conclusion of excavation and backfill activities.

In addition to TVOC readings, the Contractor monitored and recorded oxygen content and % LEL at each station on a regular basis. All readings for oxygen content and explosive gases were at background levels throughout the program. Complete results of the real time air monitoring program are presented in Appendix L.

9.3 COMPOUND SPECIFIC AIR MONITORING PROGRAMS

In addition to the real time air monitoring program described in the previous section, compound specific air sampling was conducted using the TO-1 and TO-10 methods as described in the Health and Safety Plan. Sampling stations were established on the perimeter of the Site, with an additional station established adjacent to the Site residence. Stations were located with the concurrence of USEPA OSC (see Figure 9.2). Air sampling standard operating procedures, protocols, chain-of-custody forms, and analytical results are presented in Appendix M.

Compound-specific air samples were collected daily at three locations: one upwind Site perimeter station, one at the residence station, and one downwind Site perimeter station. DuPont Alpha-1 sampling pumps were calibrated before and after each sampling event against a primary standard using a flow rate specified for the individual sampling methodology employed (11 cc/min for TO-1, 50 cc/min for TO-10). Flow rates were specified in the approved Health and Safety Plan. TO-1 methodology involved collection of samples on two Tenax filled sorbent cartridges connected in series (primary and backup). TO-10 methodology involved collection of samples on polyurethane foam (PUF) cartridges with a glass fiber particulate prefilter installed ahead of the PUF cartridge. After sample collection, samples were sent under chain-of-custody to the Illinois Institute of Technology Research Institute (IITRI) for analysis. Analytes analyzed for by TO-1 methodology were: benzene, chloroform, methylene chloride,



BASE MAP IS A PORTION OF THE U.S.G.S. HAMBURG, MI QUADRANGLE (7.5 MINUTE SERIES, PHOTOREVISED 1975). CONTOUR INTERVAL 10'.

SOURCE: NUS CORPORATION

figure 9.2

SITE PERIMETER AIR MONITORING STATIONS
RASMUSSEN SITE
Immediate Response Action

CRA

2433-3/04/90-9-0

tetrachloroethene and trichloroethene. TO-10 methodology was used to analyze for the presence of polychlorinated biphenyls (PCBs); vapor phase PCB to be collected on the PUF cartridge, particulate bound PCB to be entrapped by the glass fiber filter. The following subsections summarize the individual phases of the compound-specific air sampling program.

Documentation of modifications to the compound-specific air sampling program, as approved by USEPA, are provided in Appendix A.

9.3.1 Background (Baseline) Air Sampling

Background sampling to establish baseline air quality was conducted for three days prior to the initiation of active excavation work (December 10-12, 1989) for both Method TO-1 and TO-10. Samples were obtained for a minimum of eight hours on each day. During this time, either no work took place, or work consisted of site-preparation activities conducted in clean areas only.

With the exception of trace amounts of benzene detected at the upwind sampling station (7.93 µg/m on 12/11/89 and 9.06 µg/m on 12/12/89), all other results obtained by TO-1 sampling were below detection limits. Both of these positive detections may be attributed to vehicular activity; the upwind sampling station employed on these dates is immediately adjacent to Spicer Road. Results obtained by TO-10 ranged from

a low of 307 µg/m on 12/10/89 to a high of 1,521 µg/m on 12/12/89. However, these results are deemed to be false positives and may be attributable to phthalate contamination of the sampling media (memo of January 10, 1990 Dempsey to Eng, and letter dated January 19, 1990 Monteith to O'Mara). Results from all baseline air sampling appear in Table 2 for Method TO-1 and Table 3 for Method TO-10 in Appendix M.

9.3.2 Initial (Active Excavation) Air Sampling

Excavation activities commenced on December 13, 1989 in the NEBD Area. Sampling was conducted from this date to January 19, 1990, when the compound specific program was placed on a "standby" status. On each day that active excavation took place, sampling was conducted to cover those hours that work was performed. The results of this sampling are presented in Table 2 for TO-1, and Table 3 for TO-10 in Appendix M.

Based on the analytical data from the compound-specific air sampling program, there was no significant degradation of the air quality at the Site perimeter or at the residence. Based on this fact, the Respondents formally requested to USEPA that the compound-specific air sampling program be terminated after the sampling event of January 19, 1990 (letter dated January 19, 1990, Monteith to O'Mara). Prior discussions with USEPA/MDNR led to the agreement that the TO-10 program would be terminated, but the TO-1 program would be placed on a "standby" status; to be reactivated should real-time air monitoring results indicate that a mutually

agreed upon "trigger" level had been exceeded. Subsequent real-time monitoring identified that the "trigger" level was never attained.

10.0 PROJECT CLOSEOUT

Demobilization activities commenced following the removal of staged material from the Site and included:

i) Decontamination of all tools, roll-off boxes and heavy equipment;
ii) Removal of all temporary facilities;
iii) General Site cleanup; and
iv) Transportation and disposal of decontamination washwater.

A sample of decontamination washwater was collected and submitted to Wadsworth-Alert Laboratories of Canton, Ohio for the following analyses:

i) Volatile organic compounds,
ii) Semi-Volatile organic compounds,
iii) Metals,
iv) PCB; and
v) pH.

The analytical report for the washwater is presented in Appendix N. PCB was not detected in the washwater and only low level VOCs were detected. CyanoKEM Inc. of Detroit, Michigan was approved by USEPA as a disposal facility for the washwater. A total of three shipments of washwater were transported to CyanoKEM by Metropolitan Environmental (INT190010397). Two shipments were made on July 5, 1990 (5,000 and

4,000 gallons) with the final 1,000 gallons made on August 20, 1990. Copies of the manifests for the washwater are presented in Appendix N.

All demobilization activities were completed on August 20, 1990. The Site was secured by the existing fence following demobilization.

All of Which is Respectfully Submitted,

CONESTOGA-ROVERS & ASSOCIATES

James W. Archibald, P. Eng.

Clifford Eng, P. Eng.

Bruce Monteith, P. Eng.

APPENDIX A

GENERAL CORRESPONDENCE

5HS-11/EERB

NOV 16 1989

Bruce Monteith, P. Eng.
Conestoga-Rovers & Associates Limited
651 Colby Drive
Waterloo, Ontario, Canada N2V 1C2

RE: Rasmussen Dump Removal Action, Green Oak Township, MI
Work Plan Amendments

Dear Mr. Monteith:

I am writing to memorialize what we discussed during our November 6, 1989 meeting regarding the Rasmussen Dump work plan. At that time, we discussed several changes that would be made to the work plan. These changes were confirmed during our telephone conversation on November 9, 1989 and are listed below.

Maureen O'Mara will be the U.S. EPA Project Coordinator during the Rasmussen removal activities. All documents shall be sent to :

Maureen O'Mara (5HS-11)
On-Scene Coordinator
U.S. EPA, Region V
230 S. Dearborn Street
Chicago, IL 60604
(312) 886-1960

As discussed, the real-time air monitoring must be increased in frequency during the excavation. The area to be monitored should be concentrated around the excavation area since real-time results will be used to establish the level of respiratory protection to be worn on site.

Due to the variety of organic compounds previously detected and the limitations of the HNU, the action levels specified in the work plan may not provide an adequate level of protection. The U.S. EPA currently uses a set of action levels outlined in Standard Operating Safety Guides which are more stringent than those listed on page 30 of the work plan. These action levels are listed below and are to be followed on the Rasmussen site in accordance with U.S. EPA safety standards.

Total Organic Vapor Concentration Above Background (ppm)	Level of Respiratory Protection Required
0-5	Full face air purifying respirator (Level C)
5-500	Supplied air system (Level B)

On page 45 of the plan, Level B requirements have been excluded in the listing of safety equipment and should be added. We also request that a table be prepared which specifies the anticipated level of protection for each activity to be performed. The OSC and Site Safety Officer will evaluate any changes in the specified levels of protection once site activities have commenced.

Results from the compound specific air monitoring will be reported within 48 to 72 hours of the sampling period to the U.S. EPA OSC and MDNR Project Coordinator. Due to lack of daylight during the winter months, the compound specific air samples will be collected during working hours instead of the full 24 hour period specified in the work plan.

A schedule of work should be prepared with a tentative completion date as soon as possible. The meeting to discuss the contingency plan with local authorities shall include the On-Scene Coordinator and the Livingston County Emergency Planning Committee Chairperson:

Ted Westmyer
204 Hylander
Howell, MI 48843
(517) 546-3520

If you have any questions, please feel free to contact me.

Sincerely,

Maureen O'Mara

Maureen O'Mara
On-Scene Coordinator

CC: Denise Gruben
Steve Nadeau
Clifford Eng

30 NOV 1989

5HS-11

Mr. Bruce Monteith
Conestoga-Rovers & Associates Limited
651 Colby Drive
Waterloo, Ontario, Canada N2V 1C2

Re: Rasmussen Dump Removal Action, Green Oak Township, MI
Work Plan Amendments

Dear Mr. Monteith:

I am writing to memorialize the action levels which were established during a telephone conversation November 21, 1989 with Clifford Eng. These actions levels supercede those established in the previous letter to you. The action levels listed below are based on the knowledge of contaminants at the site, the Threshold Limit Values for the contaminants, the protection factor for full-face respirators, and the danger of physical hazards on-site.

Total Organic Vapor Concentration Above Background (ppm)	Level of Respiratory Protection Required
0-5	No respiratory protection (Level D)
5 50	Full face air purifying respirator (Level C)
>50	Supplied air system (Level B)

An OVA will be used in conjunction with an HNU for air monitoring. Level B will be used during any drum handling activities, including excavation, overpacking, and sampling.

As requested by Clifford Eng, separate pumps will not be necessary for collection of particulate and gaseous PCBs. A glass fiber per-filter, used to collect particulate PCBs, will be mounted in front of the polyurethane foam sorbent, used to collect gaseous PCBs. This method requires that only one pump is utilized at each sampling point for the collection or gaseous and particulate PCBs.

If you have any questions, please feel free to contact me.

Sincerely yours,

Maureen O'Mara
On-Scene Coordinator

cc: Denise Gruben
Steve Nadeau
Clifford Eng

CRA
Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive,
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510

December 5, 1989 Reference No. 2433

Ms. Maureen O'Mara
On-Scene Coordinator, Rasmussen Site
United States Environmental Protection Agency
Region V, (5HS-11)
230 S. Dearborn Street
Chicago, Illinois
60604

Dear Ms. O'Mara:

Re: Amendments To Work Plan
Immediate Response Action
Rasmussen Site, Livingston County, MI

We acknowledge receipt of your letters dated November 16 and November 30, 1989 regarding amendments to the Work Plan. Enclosed please find an amended Health and Safety Plan (HASP).

The Work Plan, with the exception of the HASP, has not been materially affected by the amendments. It is acknowledged that in all instances where "USEPA Remedial Project Manager" has been used in this document, the text shall read as "USEPA On-Scene Coordinator" as if written in full.

The amended HASP addresses all of the amendments requested by USEPA's letters. Changes to the document have been identified by underlining for ease of reference (additions only). Specific amendments include the following:

i) Table 8.1 - clarification of respiratory criteria for benzene

ii) Section 8.0 - change level at which APRs will be donned from 10 ppm to 5 ppm total organic vapor above background readings
- reference to use of an OVA for real-time air monitoring
- clarification of frequency of real-time air monitoring at excavation areas
- clarification of respiratory protection when handling drums/containers

iii) Section 13.0 - addition of summary table for personal protective equipment (PPE) usage (Table 13.1)

iv) Section 13.2 - clarification of general exclusion zone activities
- definition of Level B PPE

CONESTOGA-ROVERS & ASSOCIATES LIMITED
Consulting Engineers

December 5, 1989 Reference No. 2433

v) Section 13.3 - clarification of respiratory protection for drum/container handling

vi) Section 18.2 - differentiation between real-time work zone and exclusion zone perimeter air monitoring

vii) Section 18.3 - clarification of perimeter and "nearest residence" compound-specific air monitoring stations
- modification of particulate PCB sampling procedures from filter cassettes to glass fiber prefilters for PUFs
- modify sampling period to encompass working hours only
- deletion of NIOSH 0600
- modify reporting period for results from "48 hours" to "48 to 72 hours"

We will be forwarding the amended HASP to the remedial contractor (CWM) for them to amend their Site specific HASP accordingly. In light of the upcoming Contingency Planning Meeting and HASP briefing scheduled for this Friday, December 8, 1989, we request that you call us with any questions or comments at your earliest convenience.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Bruce A. Monteith, P. Eng.

BAM/gp/3
Encl.

cc: Denise Gruben (MDNR)
Steve Nadeau (Dickinson, Wright)
Linda Parker (Dickinson, Wright)
PRC Distribution List
CRA Distribution List

CRA
Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive,
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510

January 11, 1990

Reference No. 2433

Ms. Maureen O'Mara
On-Scene Coordinator, Rasmussen Site
United States Environmental Protection Agency
Region V, (5HS-11)
230 S. Dearborn Street
Chicago, Illinois
60604

Dear Ms. O'Mara:

Re: Vertical Limit of Excavation - NEBD Area
Rasmussen Immediate Response Action

This letter is to confirm discussions held on January 10, 1990 between yourself and Mr. Jim Archibald of CRA regarding the vertical limit of excavation in the NEBD Area. It is our understanding that the vertical limit of excavation in the south sector of the NEBD Area, referred to as "Area 1" in the Work Plan, need not extend to native soil and is deemed to be complete. The basis for this decision include the following:

i) the depth to native soil is significantly greater than anticipated based on an exposed landfill excavation face in excess of 30 feet;

ii) the relative numbers and locations of containers encountered to date have substantiated the findings that were indicated by the magnetic gradient contour map from the RI; and

iii) the majority of containers encountered to date have been found in the fill material overlying the landfill wastes thereby substantiating the theory that the containers were deposited onto the landfill surface after the landfill operations ceased.

Based on discussions between Mr. Jim Archibald and Ms. Denise Gruben of the MDNR on January 10, 1990, the MDNR also agrees with the above decision.

CONESTOGA-ROVERS & ASSOCIATES LIMITED
Consulting Engineers

January 11, 1990 Reference No. 2433

Should you have any questions, please do not hesitate to contact us.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Bruce A. Monteith, P. Eng.

BAM/gp/5

cc: Denise Gruben (MDNR)
Clifford Eng (CRA)
Jim Archibald (CRA)
PRC Distribution List

CRA
Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive,
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510

January 12, 1990

Reference No. 2433

Ms. Maureen O'Mara
On-Scene Coordinator, Rasmussen Site
United States Environmental Protection Agency
Region V, (5HS-11)
230 S. Dearborn Street
Chicago, Illinois
60604

Dear Ms. O'Mara:

Re: Real-Time Perimeter Air Monitoring
Rasmussen Immediate Response Action

This letter is to confirm discussions held yesterday (January 11, 1990), between yourself and Mssr. Jim Archibald and Clifford Eng of CRA regarding the real-time perimeter air monitoring.

As agreed, this monitoring can be reduced from the hourly monitoring frequency to two monitoring rounds per day. These two monitoring rounds will be selected at the Site Safety Officer's discretion and it is anticipated that one round will be conducted in the morning and one round in the afternoon. The monitoring rounds will coincide with periods of active work at the excavation areas. Real-time air monitoring at the excavation will remain unchanged.

USEPA has discussed the reduction with Robert Teoh of MDNR and MDNR agrees to the above.

Should you have any questions, please do not hesitate to contact us.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Bruce A. Monteith, P. Eng.

BAM/gp/6

cc: Denise Gruben (MDNR)
Clifford Eng (CRA)
Jim Archibald (CRA)
PRC Distribution List
Todd Teets (CWM-Enrac)

001056

CRA
Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive,
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510

January 19, 1990 Reference No. 2433

Ms. Maureen O'Mara
On-Scene Coordinator, Rasmussen Site
United States Environmental Protection Agency
Region V, (5HS-11)
230 S. Dearborn Street
Chicago, Illinois
U.S.A. 60604

Dear Ms. O'Mara:

Re: Reductions In Compound Specific Air Monitoring Program
Rasmussen Immediate Response Action

This letter is to confirm discussions held during the last week between yourself and Mr. Clifford Eng of CRA regarding proposed reductions in the compound specific air monitoring program.

As discussed with CRA, the Rasmussen Participating Respondents Committee (PRC) requests that the compound specific air monitoring program be terminated following the sampling event this Friday, January 19, 1990. We offer our evaluation of the compound specific air monitoring program conducted to-date to substantiate our position. This evaluation is presented below.

1. TO-1 Analytical Results

All preliminary TO-1 results available as of today are attached as Table 1 and Table 2. Table 1 contains the reported analyte mass for each of the specified volatile compounds including benzene, chloroform, methylene chloride, tetrachloroethene, and trichloroethene. Table 2 reports the results as a mass concentration per sample volume basis.

Review of Table 1 shows that the only positive detections to date have been for benzene and methylene chloride.

Elevated methylene chloride levels were reported on January 9, January 16 and January 17. Estimated positive detections were reported on December 10 through 12 and again on December 16, 1989. These estimated methylene chloride levels were below the calculated method detection limits and are thus not significant. The fact that methylene chloride was identified in all samples

on January 9 clearly indicates that the source is likely laboratory-introduced contamination.

Based on the reported values for January 9, it is our belief that all reported positive detections of methylene chloride are laboratory artifacts and not site-activity related. It has been CRA's contention from the day that the MDNR proposed methylene chloride as an emission indicator chemical, that methylene chloride was not of concern and that any reported values could not be assigned any significance due to the prevalent use of this chemical in the laboratory environment. Clearly, the results show that such is the case.

Benzene was reported on December 11 and 12 during background sampling, on December 13, 19, and 20 during excavation of the NEBD Area, on January 3 during general construction activities, and on January 8 and 9 after resuming excavation of the NEBD Area. It is our belief that the results for December 11 and 12 and for January 3 are clearly attributable to other sources due to the Site activities conducted on these days. Based on the results for these days, background sources could result in benzene levels from 24 ng to 55 ng. Based on the result reported on January 9 for a duplicate sample, for which the result could not be confirmed by the duplicate station sample, it is our belief that benzene from other sources such as the laboratory could be upwards of 111 ng.

Considering the above, a review of Tables 1 and 2 indicates that the only days where there was a potential for benzene emissions from waste handling activities are December 13 and January 8.

On December 13, excavation of the NEBD Area was initiated late in the afternoon and only three hours of excavation were performed. The main activity that day involved intense machine activity in clearing the NEBD Area of brush and trees. In addition, vehicles were run along the Site road adjacent to the residence air monitoring station. It is our belief that the reported benzene detections were due to increased vehicular and machine activity.

The benzene detections reported for January 8 appear to be Site activity related. However, it should be noted that the levels are well within the range of levels believed attributable to vehicular activity. Consequently, these benzene detections are not significant.

Based on the above evaluation, we do not believe that volatile emissions are of sufficient concern to warrant maintaining the TO-1 compound specific air monitoring program. Of the 17 days of waste excavation, handling, or backfilling operations in the NEBD Area for which complete or partial TO-1 results are available, only one day of monitoring indicates a potential for noticeable emissions away from the active excavation area. Even then, this potential emission is not significant.

It is our understanding that the MDNR is reluctant to terminate the TO-1 program based on their assumption that the potential for volatile emissions may be greater during activities in the Surface Drum and Industrial Waste (IW) Areas than in the NEBD Area. To evaluate this concern, we reexamined the information presented in Appendix N of the RI (Test Pit Memorandum) to determine if there was any valid basis for this concern. Our review of the available information indicates that the findings can be summarized as follows:

Area	Test Pit ID	Location of Readings	HNu Readings
NEBD Area	TP-10/TP-11	In Drums	200 - 400 ppm
		In Test Pit	--
		Breathing Zone	--
		Ambient Air	5 - 15 ppm
	TP-12	In Drums	300 - 500 ppm
		In Test Pit	200 - 400 ppm
		Breathing Zone	--
		Ambient Air	5 - 50 ppm
	TP-13	In Drums	100 - 200 ppm
		In Test Pit	20 - 100 ppm
		Breathing Zone	--
		Ambient Air	--

January 19, 1990 Reference No. 2433

Area	Test Pit ID	Location of Readings	HNu Readings
Surface Drum Area	TP-9	In Drums	20 - 300 ppm
		In Test Pit	0 - 20 ppm
		Breathing Zone	0 ppm
		Ambient Air	--
Industrial Wastes Area	TP-4	In Drums	15 - 50 ppm
		In Test Pit	0 - 20 ppm
		Breathing Zone	--
		Ambient Air	--

The above summary clearly indicates that the potential for volatile emissions from the Surface Drum and IW Areas are significantly reduced from that posed by the NEBD Area.

Based on the real-time monitoring data for the 17 days of active work in the NEBD Area and the two days of active work in the Surface Drum Area, it is our belief that the test pit findings are representative of the relative potential for emissions. Based on recorded hourly readings with an HNu/OVA at the active work zone to date, the highest readings for two consecutive hourly monitoring events at the NEBD Area has been a level of 6 ppm. The highest recorded single measurement at the work zone during the NEBD Area work was 10 ppm. By comparison, the readings at the active work zone during work in the Surface Drum Area for the last two days have been at background levels. It should be noted that excavation of the Surface Drum Area is now approximately two-thirds complete based on the work conducted during the last two days.

Given all of the above, we strongly believe that there is more than sufficient cause to terminate the TO-1 compound specific program.

2. TO-10 Analytical Results

All preliminary TO-10 results available as of today are attached as Table 3. Table 3 contains both the reported analyte mass and the equivalent concentration in the sampled air volumes.

Review of Table 3 shows that there is no consistent trend between reported values for either PUFs or filters based on upwind and downwind results.

As discussed between USEPA and CRA, the positive detections were of concern despite the lack of reproducibility of the data. In order to confirm or dispute the presence of PCBs, several sample extracts were selected for confirmatory analysis by GC/MS instead of GC/ECD as specified by the TO-10 method.

All of the sample extracts selected for confirmatory analyses were reported as positive detections by GC/ECD. The selected extracts included an upwind sample from December 10, a downwind sample from December 11, a downwind sample from December 15 representative of some of the highest reported positive detections to date, and a method blank which exhibited the greatest activity to date.

The raw data as received from the laboratory (previously submitted) and our evaluation of the GC/MS results are presented in Attachment 1.

Based on our review, the only sample extract that could be determined to potentially contain PCBs was from the sample collected on December 15. The quantity of potential PCBs determined by GC/MS was reported as 4 ng. It should be noted that the corresponding duplicate sample collected at the same sampling station that day did not exhibit the same level of activity by GC/ECD. This finding leads us to believe that the reported potential PCB is not attributable to the Site activities. It should also be noted that the 4 ng reported by GC/MS is several orders of magnitude below the detection limit achievable by GC/ECD; thus the result is not significant.

Based on our review of the GC/MS results, we believe that there have been no potential emissions of PCBs to date and that based on our foregoing discussion of potential emissions from the Surface Drum and IW Areas, and based on the winter conditions which precludes the volatilization of PCBs, we do not anticipate any potential for PCB emissions during the remaining work.

Given the above, we can find no justification for continuing the TO-10 compound specific program.

3. Proposed Program Reductions

Clearly, based on the foregoing discussions it is CRA's and the PRC'sposition that the compound specific air monitoring program should be terminated. It is our understanding that this is not mutually agreeable to the USEPA/MDNR but that a "standby" program may be approved. As discussed, this program would only apply to the TO-1 program; the TO-10 program would be terminated. The TO-1 "standby" program would require that CRA have Tenax sampling media available on Site to restart the TC-1 program on a reduced frequency basis if determined necessary by the Agencies. The criteria for restarting the program would be based upon an exceedance of a mutually agreed-upon real-time air monitoring reading in the active work zone.

Although we contend that complete termination of the compound specific air monitoring program is appropriate, CRA will implement this "standby" program if approval to terminate the program is not forthcoming.

Further to our discussions, we will assume that CRA may proceed with the "standby" program following January 19, unless notified otherwise. However, we still maintain that termination of the compound specific program is more appropriate.

001062

CONESTOGA-ROVERS & ASSOCIATES LIMITED
Consulting Engineers

January 19, 1990 Reference No. 2433

Should you have any questions regarding any of the above, please contact us at your convenience.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

for Bruce Monteith, P. Eng.

BM/dvs/7

cc: Denise Gruben (MDNR)
Clifford Eng (CRA)
PRC Distribution List

CRA
Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive,
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510

January 24, 1989 Reference No. 2433

Ms. Maureen O'Mara
On-Scene Coordinator, Rasmussen Site
United States Environmental Protection Agency
Region V, (5HS-11)
230 S. Dearborn Street
Chicago, Illinois
60604

Dear Ms. O'Mara:

Re: Perimeter Air Monitoring Program
Rasmussen Immediate Response Action

This letter is to confirm discussions held on January 22, 1990 between yourself and Mr. Clifford Eng of CRA regarding the perimeter air monitoring program.

As discussed with CRA, the "standby" compound specific air monitoring program presented in our letter dated January 19, 1990 is agreeable to both the USEPA and MDNR and is approved for implementation. It is our understanding the MDNR has requested that in conjunction with the "standby" compound specific program that the frequency of the real-time perimeter air monitoring program be increased to four rounds on a daily basis. As discussed, this is agreeable to us and will be implemented promptly.

Should you have any questions, please do not hesitate to contact us.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Bruce A. Monteith, P. Eng.

BAM/ec/9

c.c. Denise Gruben (MDNR)
Clifford Eng (CRA)
Jim Archibald (CRA)
PRC Distribution List

001064

CRA
Consulting Engineers

CONESTOGA-ROVERS & ASSOCIATES LIMITED
651 Colby Drive,
Waterloo, Ontario, Canada N2V 1C2
(519) 884-0510

June 21, 1990 Reference No. 2433

Ms. Maureen O'Mara
On-Scene Coordinator, Rasmussen Site
United States Environmental Protection Agency
Region V, (5HS-11)
230 S. Dearborn Street
Chicago, Illinois 60604

Dear Ms. O'Mara:

Re: Disposal of Staged Materials
Rasmussen Immediate Response Action

This letter is to confirm discussions held on June 18 and June 19 between yourself and Mr. Clifford Eng of CRA regarding the proposed disposal of staged materials from the Rasmussen Site.

As discussed, facilities which have been identified include:

- Chemical Waste Management, Inc.
  Emelle, Alabama
  ALD000622464
  (Landfill for Wastestream 4 - Insert Solids and RCRA Empty Drums)

- Kettleman Hills Treatment Center (Chem Waste)
  Kettleman City, California
  CAT000646117
  (Landfill for Wastestream 1 - Waste Solids, Wastestream 3 - Paint Solids, Wastestream 4 - Inert Solids and RCRA Empty Drums)

- US Ecology Inc.
  Beatty, Nevada
  NVT330010000
  (Landfill for Wastestreams 1, 3, 4)

- Envirosafe Services of Idaho, Inc.
  Mountain Home, Idaho
  IDD073114654
  (Landfill for Wastestream 1, 3, 4)

- CWM - Chemical Services Inc.
  Chicago, Illinois
  ILD000672121
  (Incinerator for Wastestream 2 - Flammable Liquids)

CONESTOGA-ROVERS & ASSOCIATES LIMITED
Consulting Engineers

June 21, 1990

Reference No. 2433

- CyanoKEM, Inc.
  Detroit, Michigan
  MID098011992
  (Wastewater)

We wish to confirm our conversation of June 19 during which you advised us that USEPA has checked the compliance status of these facilities and determined that materials staged at the Rasmussen Site may be transported and disposed of at these TSDFs.

We also wish to confirm that Site work for transport and disposal is scheduled to commence next week (week of June 25, 1990). Drummed solids will be consolidated on Site into appropriate wastestreams and transported in bulk loads. The Rasmussen PRC will make a final decision next week regarding which landfill(s) will be selected and notify USEPA prior to commencing off-Site transport. The real-time air monitoring program will be reinstated during bulking and loading operations.

As requested, we will notify your oversight contractor, Versar, of the on-Site startup date once it is finalized.

Should you have any questions concerning the above, please contact us at your convenience.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Bruce A. Monteith, P. Eng.
CE/ec/13

c.c. Denise Gruben (MDNR)
Steven Nadeau (Dickinson, Wright)
Linda Parker (Dickinson, Wright)
PRC Distribution List
Clifford Eng (CRA)
Jim Archibald (CRA)

APPENDIX B

PHOTOGRAPHIC LOG

(1) PVC LINER FOR BERMED STAGING PADS. POTABLE AND WASHWATER STORAGE TANKS IN BACKGROUND – DECEMBER 5, 1989

(2) REMOVAL OF DRUM # RAS 009 (NEBD AREA) – DECEMBER 14, 1989

CRA

PHOTOGRAPHIC LOG
Rasmussen Site

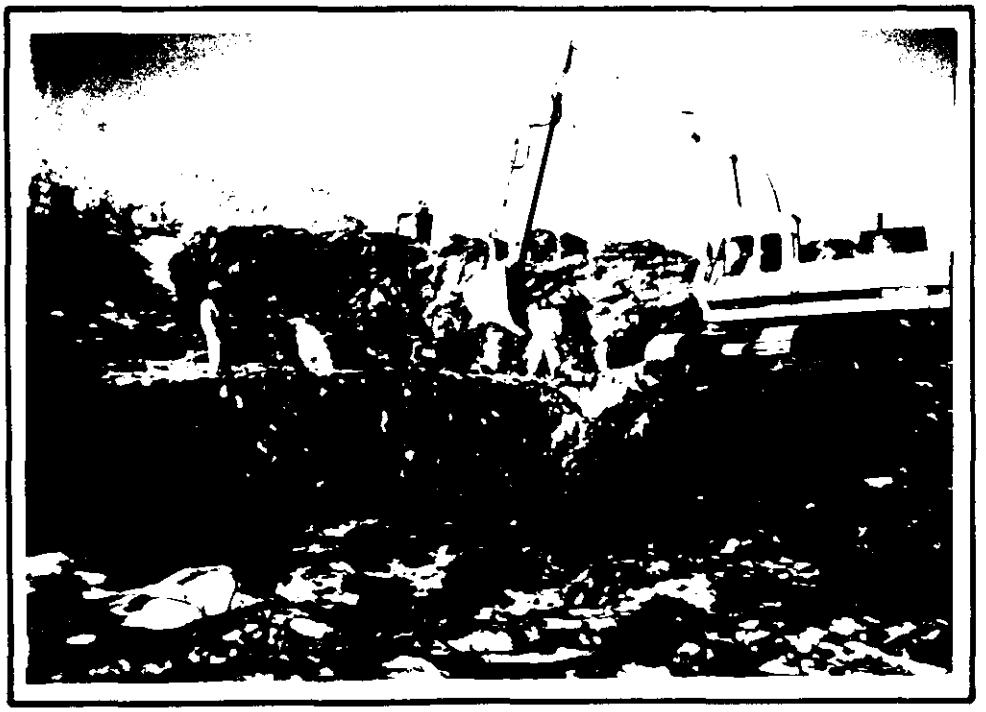
(3) REMOVAL OF DRUM # RAS 014 (NEBD AREA) – DECEMBER 14, 1989

(4) STEPPED EXCAVATION AT NEBD AREA – DECEMBER 19, 1989

CRA

PHOTOGRAPHIC LOG
Rasmussen Site

(5) NEBD AREA EXCAVATION OVERVIEW (LOOKING SOUTH) – DECEMBER 19, 1989



(6) NEBD AREA EXCAVATION (LOOKING WEST) – JANUARY 5, 1990

CRA

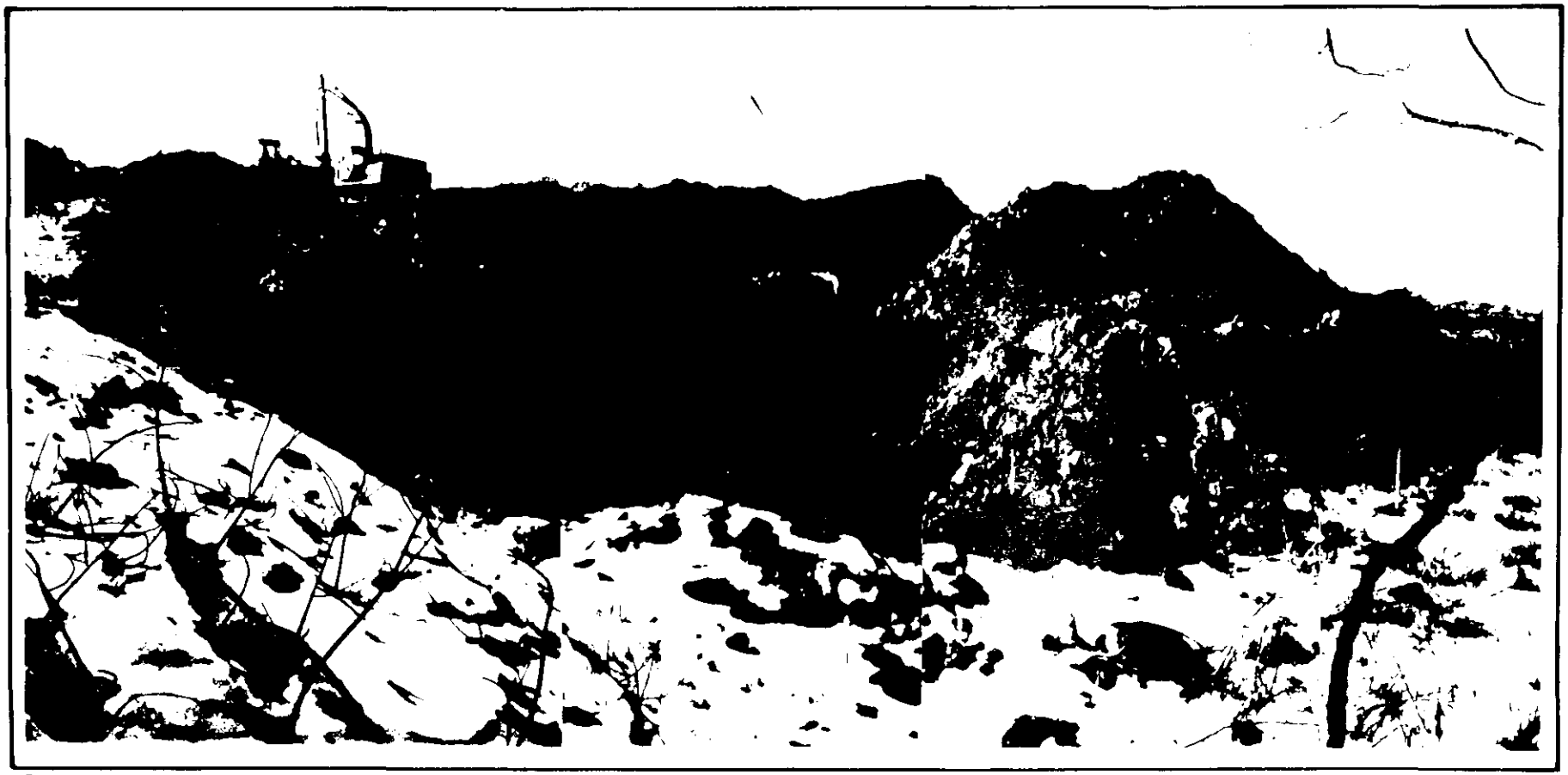
PHOTOGRAPHIC LOG
Rasmussen Site

(7) OVERPACKING DRUM # RAS 233 FROM NEBD AREA – JANUARY 5, 1990

(8) SAMPLING DRUMS FROM NEBD AREA ON STAGING PAD – JANUARY 6, 1990

CRA

PHOTOGRAPHIC LOG
Rasmussen Site



(9) COMPLETED NEBD AREA EXCAVATION (LOOKING WEST) JANUARY 10, 1990

CRA

PHOTOGRAPHIC LOG
Rasmussen Site

2433-04/04/90 9 0

(10) COMPLETED NEBD AREA EXCAVATION (LOOKING NORTHWEST) – JANUARY 10, 1990

(11) COMPLETED NEBD AREA EXCAVATION (LOOKING WEST) – JANUARY 10, 1990

CRA

PHOTOGRAPHIC LOG
Rasmussen Site

(12) STEPPED EXCAVATION AT NEBD AREA (LOOKING WEST) – JANUARY 10, 1990

(13) NEBD AREA EXCAVATION OVERVIEW (LOOKING NORTHEAST) – JANUARY 11, 1990

CRA

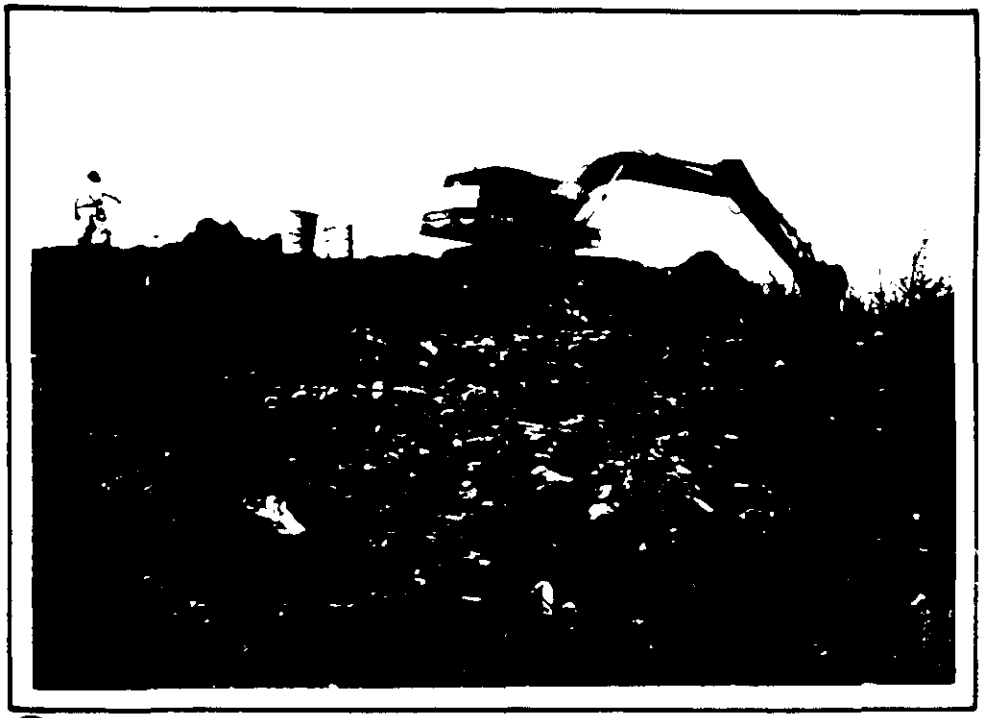
PHOTOGRAPHIC LOG
Rasmussen Site

(14) PRE-EXCAVATION CONDITIONS AT SURFACE DRUM (SD) AREA (LOOKING WEST) - JANUARY 17, 1990

(15) EXCAVATION OF KNOLL AT SD AREA (LOOKING NORTH) - JANUARY 17, 1990

CRA

PHOTOGRAPHIC LOG
Rasmussen Site



(16) EXCAVATION OF TWO FOOT THICKNESS OF LANDFILL MATERIAL AT SD AREA (LOOKING WEST) – JANUARY 19, 1990

(17) COMPLETED EXCAVATION OF WESTERN FACE OF SD AREA – JANUARY 23, 1990

CRA

PHOTOGRAPHIC LOG
Rasmussen Site

(18) COMPLETED SD AREA EXCAVATION (LOOKING WEST) – JANUARY 23, 1990

(19) DRUMS FROM SD AREA STAGED ON LINED PAD – JANUARY 23, 1990

CRA

PHOTOGRAPHIC LOG
Rasmussen Site

(20) DRUMS FROM SD AREA STAGED ON LINED PAD – JANUARY 23, 1990

(21) PRE-EXCAVATION CONDITIONS AT INDUSTRIAL WASTE (IW) AREA (LOOKING EAST) – JANUARY 23, 1990

PHOTOGRAPHIC LOG
Rasmussen Site

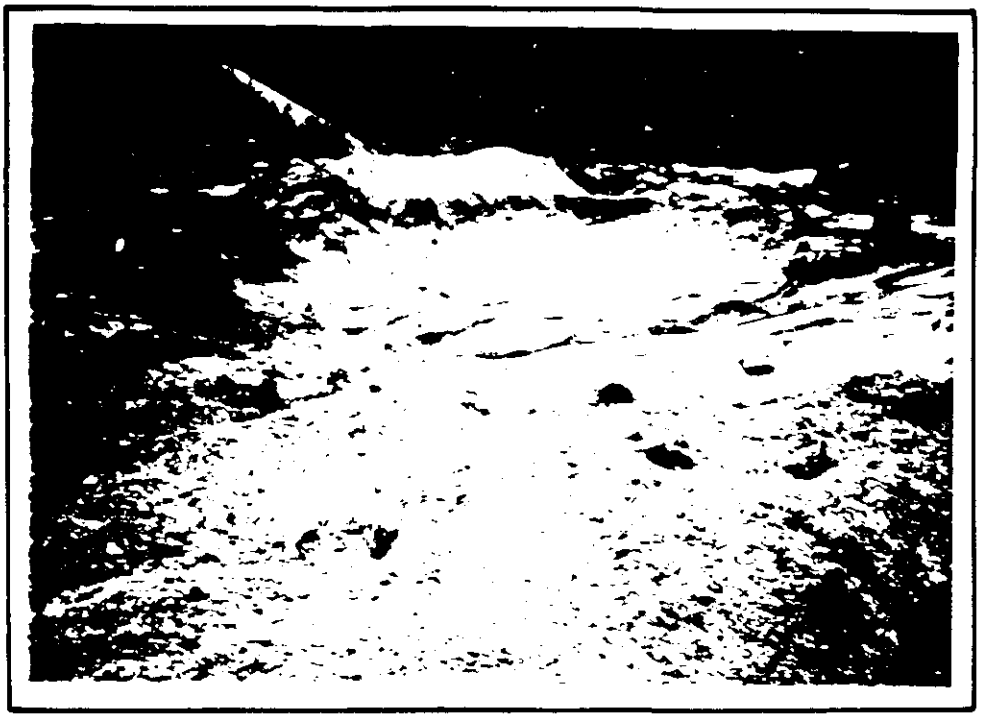
CRA

(22) COMPLETED IW AREA EXCAVATION (LOOKING EAST) – JANUARY 25, 1990

(23) NATIVE MATERIAL ENCOUNTERED
AT LIMIT OF IW AREA EXCAVATION – JANUARY 25, 1990

PHOTOGRAPHIC LOG
Rasmussen Site

CRA



(24) COMPLETED IW AREA EXCAVATION (LOOKING SOUTH) – JANUARY 25, 1990

(25) DRUM EXCAVATED FROM IW AREA – JANUARY 25, 1990

CRA

PHOTOGRAPHIC LOG
Rasmussen Site

(26) DRUM # RAS 356 FOLLOWING SAMPLE COLLECTION (EXCAVATED FROM SD AREA) – JANUARY 26, 1990

(27) DRUM # RAS 415 EXCAVATED FROM SD AREA (NOTE PLASTIC DRUM) – JANUARY 26, 1990

PHOTOGRAPHIC LOG
Rasmussen Site

CRA

(28) PRE-EXCAVATION CONDITIONS AT SUPPLEMENTAL IW AREA (LOOKING EAST) - JANUARY 26, 1990

(29) COMPLETED EXCAVATION AT SUPPLEMENTAL IW AREA (LOOKING WEST ; NO DRUMS ENCOUNTERED) - JANUARY 26, 1990

CRA

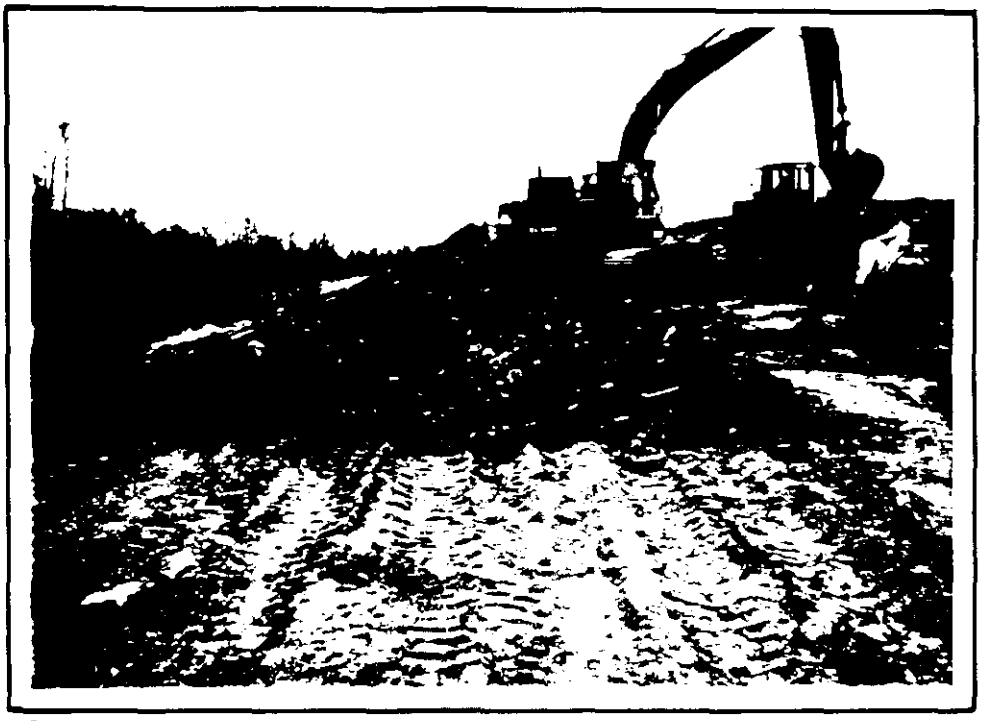
PHOTOGRAPHIC LOG
Rasmussen Site

(30) DRUM REMOVAL AT SUPPLEMENTAL NEBD AREA – JANUARY 29, 1990

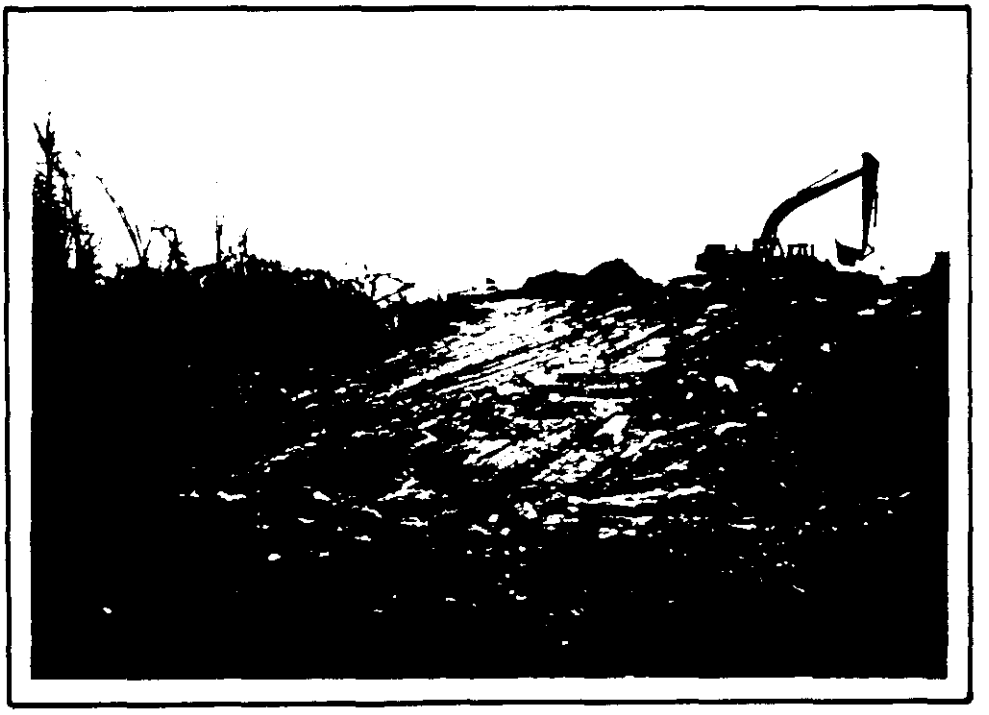
(31) DRUM HANDLING (RAS # 645) – JANUARY 29, 1990

CRA

PHOTOGRAPHIC LOG
Rasmussen Site



(32) COMPLETED EXCAVATION AT NEBD AREA (LOOKING SOUTH) – JANUARY 29, 1990



(33) BACKFILLED AND GRADED NEBD AREA (LOOKING SOUTH) – JANUARY 29, 1990

PHOTOGRAPHIC LOG
Rasmussen Site

CRA

(34) OVERVIEW OF SUPPORT ZONE, CONTAMINANT REDUCTION ZONE AND DRUM STAGING PADS FROM TOP OF MUNICIPAL LANDFILL - JANUARY 29, 1990

(35) BACKFILLED AND GRADED SD AREA - JANUARY 29,1990

PHOTOGRAPHIC LOG
Rasmussen Site

CRA

(36) DRUM HANDLING ACTIVITIES - JULY 3, 1990

(37) ACCESSING DRUM WITH PNEUMATIC CHISEL - JULY 3, 1990

PHOTOGRAPHIC LOG
Rasmussen Site

CRA

2433-04/10/90-9-0

(38) LOADING TRANSPORT VEHICLES WITH BULKED SOLIDS – JULY 24, 1990

(39) DECONTAMINATING ROLL-OFF BOX – JULY 25, 1990

PHOTOGRAPHIC LOG
Rasmussen Site

CRA

2433-04/10/90-9-0

(40) STABILIZED FLAMMABLE LIQUIDS PACKAGED IN 16 - GALLON (BLUE) POLYETHYLENE DRUMS - JULY 27, 1990

NOTE: ALL DRUM REMOVED FROM STAGING PADS

PHOTOGRAPHIC LOG
Rasmussen Site

CRA

APPENDIX C

SITE SECURITY LOGS

REGISTER

001089

DATE	NAME	OTHER	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
12/4	Mike Malec		CWM			700 AM	530	
12/4	ED J SMITH		CWM			7 [illegible]	5 [illegible]	
"	ANTHONY H KOVESKI		"			700	5:30	
"	Bill McIntyre		"			700	5:30	
"	Jim Archibald		CRA			7:00 am	4:30	
"	Kerry M. Hanlon		Weston-THT			7:00	5:00	
"	SCOTT LOLLAR		CWM			7:00	3:30	
"	THOMAS E CAIN JR		CWM			7:00	5:00	
"	Todd D. Tuttle		CWM			7:00	5:00	
"	DAVE CUSHMAN		CRA			10:00	5:00	
"	HAROLD CLAY		BFI			11:10	11:20	
"	JEFF BORSEN		BFI			11:10	11:20	
12/5	CLINT WOOD		SACRIC SOLUTIONS			12:00 PM	7:00 AM	
12/5	Michael Malec		CWM			700 AM	515 PM	
12/5	ANTHONY H KOVESKI		CWM			700	500 PM	
12/5	B.S. LOLLAR		CWM			701	500 PM	
12/5	Bill McIntyre		CWM			701	[illegible] PM	
12/5	TODD TUTTLE		CWM			7:01	5:01 PM	
"	THOMAS E CAIN JR		CWM			7:00	515 PM	
12-5-09	GARY R RUSCHHAUPT		CWM			7:00	500 PM	
"	Jim Archibald		CRA			7:00	515 PM	
"	Kerry M. Hanlon		Weston-THT			7:00	4:45 PM	
	E J Smith		CWM			1000 am	500 PM	
"	Robert Teeh		FGD-DNR			1:00	2:00	

001090

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
12/6	Thomas E Cain Jr		CWM			6:45	5:30	MIKE MALE
12/6	Anthony Hkowski		CWM			6:45	530	"
12/6	Mike Malec		CWM			6:58	530	
12/6	Scott Lollar		CWM			7:00	5:28	
12/6	Todd D. Teets		CWM			7:00	5:30	
12/6	Jim Archbald		CRA			7:05	5:10	
12/6	Kerry M. Hanlon		WESTON-TAT			7:00	5:00	
12/6	Bill McIntyre		CWM			7:00	530	
12-6-89	GARY R ANSCHUETZ		CWM			7:00	530	
12/6	Monty Beaune Bob Allmendinger Dan Cook		DHA			10:00	2:30PM	
12/6/89	Art Bleam [illegible]		Mich Bell			8:30AM	2:30	
12/6/89	Ken [illegible]		CWM-			1:30PM	5:30 PM	
12/7/89	Mike Malec		CWM			7:00AM	5:30PM	
12/7/89	Jim Archbald		CRA			7:00am	4:30pm	
12/7/89	Todd D. Teets		CWM			7:00am	5:30pm	
12-7-89	GARY R ANSCHUETZ		CWM			7:00	5:30	
12-7-89	Kerry M. Hanlon		WESTON-TAT			7:15	5:10	
12-7-89	Anthony Hkowski		CWM			7:15	5:15	
12/7/89	B.S. Lollar		CWM			7:03	5:15	
12-7-89	Bill McIntyre		CWM			7:03	5:15	
12-7-89	ED Smith [illegible]		CWM			7:03	5:00 pm	
12/7/89	D. Cook B. Allmendinger		D. Hughes & Ass			11:22 AM	5:24 PM	
12/7/89	KARL ROSENBERGER		Kelly			12:00 NOON	5:25 PM	

REGISTER

001091

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
12/8	ANTHONY H KOVESKI	Y	CWM			6:50	1245	MIKE MAL-
"	THOMAS E CAIN JR	Y	CWM	15340 HOLLY CT OAKFOREST IL		6:50	1245	MIKE MALEC
"	ED J Smith SR	Y	CWM			6:50	1:40	" "
12/8	KARL G. ROSENBERGER	Y	KELLY			7:00 AM	1:00 PM	
12/8	Scott Lollen		CWM			7:00	1:00	
12/8	Bill McIntire		CWM			7:00	1:00	
12/8/89	TODD D. TEETS		CWM			7:00	1:40	
12-8-89	Kerry M. Harlan		Western-TAT			7:00	12:20	
12-8-89	GARY R ANSCHUETZ		CWM			7:00	1:30	
12-8-89	Michael Malec		CWM			7:00	1:40	
12-8-89	Jim Archibald		CRA			7:30	1:00 pm	
12-8-89	CLIFF [illegible]		CRA			7:30	5:30	[illegible]
12/8/89	Brian Walters	Y	CWM-[illegible]			8:50	11:30	
12/8/89	Daniel R Hanel	Y	NUS			8:55	3:30 pm	
12/8/89	Dennis Graben		MDNR			8:55	4:05	
12/8/89	Myron Herzog		Green Oak Fire Dept			9:00	11:15 AM	
12/8/89	DAN YAROHNICZA		Livingston Co Health Dept.			9:10 am	12:00	
12/8/89	DAVE CUSHMAN		CRA				4:30	
12/8/89	ROBERT TAIEL		Airco			10:45	11:05	AIR BOTL
12-8	CONLEY, ROY		NUS			10:50	3:30 pm	
12-8	Al Whiteside		ABLIN			12:10	1:46	
12-8	Ray Milgrzak		MDNR			13:30	16:00	
12-8	[illegible] Herman		FLBIN			1:30	2:40	

001092

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
DEC 05/89	CLIFFORD ELG		CRA			0850	5:50	
"	T.W EISBECK		CRA			↓	5:50	
"	D. CUSHMAN		CRA			10:00	4:00	
DEC 10/84	T.W EISBECK		CRA			0845	2030	
12/11	A. Koveski		CWM			6:30	6:15	McKenney
12/11	T CAIN		CWM			6:30	6:15	"
12/11	D. CUSHMAN		CRA			6:50	6:45	
12/11	TODD TREES		CWM			7:00 AM	5:20	
12/11	Scott LeHAR		CWM			7:00 AM	6:00	
12/11	Bill McKenney		CWM			7:00	~~5:15~~ 6:15	
12/11	J.m Ackland		CRA			7:00	5:10	
12-11	Kerry M Hanlon		Weston-TAT			7:00	5:45	
12-11-89	GARY R MARTINEZ		CWM			7:00	5:30	
12-11-89	Michael R Malec		CWM			7:00	6:15	
12-11-89	KARL G. ROSENBERGER	Y	Kelly Services			7:15	5:00	
12-19-89	Dark Durant		CWM			7:00	5:30	
12/1/89	Ken Tolosky		Pioneer			5:00	3:00	
12-12-89	Mike Malec		CWM			7:00 AM	6:00 PM	
12/12/89	TODD TREES		CWM			7:00 AM	6:00 PM	
12/12/89	Dark Durant		CWM			7:00	5:30 PM	
12-12-89	GARY R MARTINEZ		CWM			7:00	5:30	
12/12/89	T. CAIN JR.		CWM			7:00	6:00 PM	
12-12-89	ANTHONY HOVESKI		CWM			7:00	6:00 PM	
12-12-89	Bill McKenney		CWM			7:00	6:00 PM	

REGISTER

001093

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
12/12	Scott Lollar		CWM			7:05	6:00 PM	
12/12	Kerry M. Hanlon		Weston-TAT			7:00	6:00 P.M.	
12/12	Jim Archibald		CRA			7:20	5:20	
12/12	Dave Cushman		CRA			6:50	5:15	
12/12	Karl Rosenberger	Y	Kelly Services			7:45	3:45	
12/13	Thomas E Cain Jr		CWM			6:45	6:30	
12/13	Tony Kovesky		CWM			6:45	6:00	
12/13	Todd Terry		CWM			7:[illegible]	6:30	
12/13	Jim Archibald		CRA			7:10	6:10	
12/13	Ron Benda		Weston-TAT			5:10 AM	6:15	
12/13	Kerry M Hanlon		Weston-TAT			7:00	5:30	
12/13	Scott Lollar		CWM			7:00	5:40	
12/13	Michael Malec		CWM			7:00	6:30	
12/13	Bill McDonough		CWM			7:00	5:40	
12.13.89	Gary R Hasselhoff		CWM			7:00	5:30	
12/13/89	Darl Durrhout		CWM			7:00	5:30	
12/13/89	Malik Hadeel		CWM			7:00	6:00	
12/13	Glen Anderson		CWM			7:00	6:00	
12/13	Tim Timbrell		CWM			7:00	6:00	
12/13	Dave Cushman		CRA			7:35	6:10	
12/13	Alfred Ens		CRA			8:15	6:10	
12/13	Karl Rosenberger	U	Kelly			7:15	3:30	
12/13	[illegible]		[illegible]			[illegible]	3:10	

001094 REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
12/13	Ray Milejczak		MDNR			0915	1510	
12/14	Mike Mulec		CWM			700	6:10	
12/14	Jim Adkins		CRA			7:05	5:55 PM	
12/14	Kerry M. Hunter		WESTON-TAT			700	1700	
12-14-89	GARY R ARSCHULTZ		CWM			7:00	5:30	
12-14-89	ANTHONY H KOVESKI		CWM			7:00	5:30	
12-14-89	THOMAS E CAIN JR		CWM			7:00	6:00	
12/14/89	DAVE DUMONT		CWM			700	5:00 PM	
12/14/89	[illegible]		WESTON-TAT			700	1700	
12/14/89	BILL MCINTYRE		CWM			700	5:30	
12/14/89	MIKE HOOPER		CWM			7:00	5:30	
12-14	C. Anderson		CWM			7:00	5:30	
12/14/89	[illegible]		CRA			7:30	5:55 PM	
12/14	KARL G. ROSENBERGER	USA	KELLY SERVICES			8:15	5:00	
12/14	D. CUSHMAN		CRA			7:20	6:45 PM	
12/14	R. Milejczak		MDNR			9:45	1650	
12/14	R. Conley		NUS			1011	1730	
12/14	D. HANEL		NUS			1011	1730	
12/14	K Ruhlman		STEARNS			10:11	1730	
12-14	G Geerligs		Stearns			1011	1730	
12-14	D Gruben		MDNR			9:30	5:00	
12-14	[illegible]		CWM			700	5:30	
12-14	[illegible]		CWM			7:00	6:00	

REGISTER

001095

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
12/15	DAVE CUSHMAN		CRA			7:00	1:55	
12/15	Kerry M. Hanlon		WESTON-TAT			7:00	1130	
12/15	ANN BENDA		WESTON-TAT			0700	1200	
12-15	T. CAIN JR		CWM			7:00	100	
12/15	TODD TEETS		CWM			7:00	100	
12/15	[illegible]		CWM			7:00	100	
12-15-89	GARY R RASCHULTZ		CWM			7:00	100	
12/15	Jim Archibald		CRA			7:05	100	
12/15	Chris Anderson		CWM			7:00	100	
12/15	ANTHONY H KOVESKI		CWM			7:00	100	
12/15	Bill McIntyre		CWM			7:00	100	
12/15	MARK HOLDER		CWM			7:00	100	
12/15	Mike Malec		CWM			700	100	
12/15	R. Conley		NUS			0742	1405	
12/15	D.R. HAMEL		NUS			0742	1405	
12-15	G. Geerlig's		Stearns			755	1405	
12/15	[illegible] Ruhlman		STEARNS			755	1405	
12/15 1989	CLIFFORD FONG		CRA			7:20	1:35	
12/15	KARL ROSENBERGER		KELLY			8:30		
12/15	Ray Milyczak		MDNR			8:30	12:35	
12/15	Denise Gruben		MDNR			8:15	12:40	
12/16	DAVE CUSHMAN		CRA			11:30	12:10	
12/18	DAVE CUSHMAN		CRA			7:00	11:45	

001096

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
12/18/89	T CAIN JR	Y	CWM-ENRAC			7:00	6:00	
12/18	C. Anderson	Y	cwm - Enrac			7:00		
12-18-89	CARL P ARSCHEID	Y	CWM			7:00	5:30	
12-19-89	Todd Reitz	Y	CWM			7:00	6:00	
12/18/89	T. Thalacker	Y	CWM			7:00		
12/18/89	Darl Durrant	X	CWM			7:00	5:30	
12/18/89	Scott Collier		CWM			7:01	5:40	
12/18/89	Ann Benda		WESTON-TAT			7:10	5:50	
12/18/89	Bill McIntyre		CWM			7:00	5:40	
12/18	Anthony Hlavacek	Y	CWM			7:05	5:40	
12/18	Michael Malec		CWM			7:00	6:00	
12/18	Jim Archbold		CRA			7:00	6:20	
12/18	KARL G ROSENBERGER	VSA	KELLY			8:00	4:45	
12/18 1989	CLIFFORD ENG		CRA			9:05 AM	7:00 PM	
12.18 89	Conley Roy		NUS			0830	1725	
12/18 89	HANKEL DAN		NUS			0830	1725	
12-18	Gary Geeting		Stearns			945	1725	
12-18	Kelly Rohlman		" "			9.45	1725	
12-18	Denise Gruber		MDNR			8:55	5:30	
12-18	Robert L. Hunt		NUS			1240	1355	
12.18	Mike McAdam		Michigan Tractor			3:52		
12-19	Todd Reitz	Y	CWM			7:00	6:00	
12-19	Darl Durrant	Y	CWM			7:00	5:30	
12-19	Ann Benda		Weston/TAT			7:04	1800	

REGISTER

001097

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
12-19	Anthony H Kowski	Y	CWM			7:00	5:30	
12-19	Michael Malec		"			7:00	6:30	
12/19	Bill McIntyre		CWM			7:00	5:30	
12-19-89	Gary Anselberger		CWM			7:00	5:30	
12/19/89	Scott Lollar		CWM			7:05	5:41	
12/19/89	Jim Archbold		CRA			7:20	6:08	
12/19/89	T. Cain, Jr.		CWM			7:00	6:30	
12/19 1989	Clifford [illegible]		CRA			7:35	6:05	
12/19 1989	David Cushman		CRA			7:45	6:05	
12/19/89	Dan Hamel		NUS			752	1740	
12/19/89	Conley, Roy	Y	NUS Corp.			0752	1740	
12-19	Gary Griffiths		Stearns			805	1740	
12-19	Kelly Ruhlman		" "			8:05	1740	
12/19	Kirk Roscizewski	Yes	Kelly			8:15	4:45	
12/19	Kevin McGrath		CWM			10:30	1:00	
12/19	Denise Gruben		MDNR			8:00	5:15	
12/19	Ray Mikljczak		MDNR			8:00	5:30	
12/19	Dave Cushman		CRA			7:40	6:00	
12/19	Velmont Brawley		EDI			2:29	2:30	
12/19	[illegible]		CWM			7:00 Am	6:15 Pm	
12/20	M. Malec		CWM			7:00	5:45	
12/20	Todd D. [illegible]		CWM			7:00	5:45	A MISSION
12/20	T. Cain, Jr.		CWM			7:00	5:30	

001098

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
12/20	Daryl Durrant	Y	CWM			7:00	5:30	
12/20	Bill McIntyre		CWM			7:00	5:45	
12/20	Anthony H Kovecski	Y	CWM			7:00	5:30	
12/20	Gary Hunter		CWM			7:00	5:30	
12/20	Jim Archibald		CRA			7:10	6:10	
12/20	Ann Bruda		Weston TRT			0710	5:30	
12/20	Clifford Fox		CRA			7:25 AM	5:30 PM	
12-20 89	Gruben, Denise		MDNR			0800	5:15	
1220 89	Conley, Ray		NWS			0800	530	
12-20 89	Homer, Dan		NWS			0800	530	
12-20 89	Geerlichs, Gary		Stearns			0800	530	
12-20 89	Rehlman, Kelly		Stearns			0800	530	
12/21	Scott Lollar		CWM			8:00	5:45	
12/20	Ken Polkinhorn		CWM			8:00	5:45	
12/20	Karl Rosenbarger	USA	Kelly Services			8:00	4:45	
12/20	Tim Thiebaud		CWM			8:10 AM	5:45	
12/20	Ray Nulejah		MDNR			0835	1438	
12/20	[illegible]							
12/20	Bill Kestel					700	500	
12/20	[illegible]							
12/20	DAVE CUSHMAN		CRA			7:30	6:15	
12/21	Todd Tesky		CWM			7:00	530	
12/21	Mike Mulee		CWM			700	530	
12/21	Daryl Durrant		CWM			700	5:30	

REGISTER

001099

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
12-21-89	Gary R Auschuetz		CWM			7:00	5:30	
12/21/89	[illegible]		CWM			7:10	4:00	
12/21/89	Bill McIntyre		CWM			7:00	5:30	
12/21/89	Ken Polkinghorn		CWM			7:00	5:45	
12/21/89	Ann Benda		Weston-TAT			0715	1445	
12/21/89	[illegible] O'Hara		EPA			0715	12:00	
12/21/89	Steve Bunsen		Versar TES	-		0715	1730	
12/21	Jim Archibold		CRA			7:20	5:30	
12/21	Karl Rosenberger		Kelly Services			7:20	4:30	
12/21 1989	Clifford [illegible]		CRA			7:40 AM	5:25 PM	
12/21 89	Conley, Roy		NUS			0800	1715	
12/21 89	Hamel Dan		NUS			0800	1715	
12/21 89	Geerlichs, Gary		Stearns			0800	1715	
12/21 89	Ruhlman, Kelly		Stearns			0800	1715	
12/21	Denise Gruben		MDNR			0800	4:15	
12/21	Ray [illegible]		MDNR			0815	1535	
12/21	DAVE CUSHMAN		CRA			7:15	5:30	
12/21	GLENN MAYNARD		WMI Services			11:50	12:20	
12/21	Tim A [illegible]		CWM			7:00	5:30	
12-22-89	Gary R Auschuetz		CWM			7:00	1:00	
12/22/89	Steve Bunsen		Versar			7:00	11:30	
12/22/89	Dave Durant		CWM			7:00	1:00	
12/22	JW Archibold		CRA			7:00	12:30	
12/22/89	Ken Polkinghorn		CWM			7:00	1:30	

001100

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
12/22	M. Myles		CWM			700	1 30	
12/22	Tim H. Strickland		CWM			7.00	1 30	
12/22	Todd [illegible] Fields		CWM			7:00	1 30	
12/22	B.S. COLLAR		CWM			7:00	1 30	
12/22	CLIFF ENG		CRA			11:45 11:25	1:16 5 PM	
12/26	Dan Shoreton		Port O Let			10:05	12:12	
12/26	D Gruben		MDNR			12:30	5:30	
12/26	James Myers		MDNR			1245	530	
12/26	DAN HAMEL		NUS			130 2:00	542 1:50	
12/26	ROY CONLEY		NUS			130 2:00	542 1:50	
12-26	Mack Teal		Mister Rubbish			230	2:35	
12-26	Daryl R Kramer		Stearns Drilling			325	542	
12/27 1989	CLIFF ENG		CRA			7:30	5:35	
12/27 1989	DAN HAMEL		NUS			754	506	
12/27/89	DUANE DAVERMAN		STEARNS DRILLING			7:45	506	
12/27	Daryl R Kramer		STEARNS DRILLING			7:45	506	
12/27	D Gruben		MDNR			8:00	4:45	
12/27	James Myers		MDNR			8:10	4:45	
12/27	Barry E Bennett		CONWAY CENTRAL ELEC. (DRUMS) C C X (came to on CWM)			10:55	11:33	
12/27	Ken Peters		I.V.O.F. (GENERATOR CO.)			2:36	2:40	
12/27	SCOTT SWEN		COFFMAN ELEC			235	2:55	
12/28 1989	CLIFF ENG		CRA			7:30 AM	3:07 PM	
12/28 1989	Daryl R Kramer		STEARNS Drilling			7.45	505	
12/28 1989	DUANE DAVERMAN		STEARNS DRILLING			7:45	505	

REGISTER

001101

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
12/28 1989	DAN HAMEL		NUS			0750	205	
12/28 1989	ROY CONLEY		NUS			0750	205	
12/28	JAMES MYERS		MDNR			8:00	12:00	
12/28	D Gorbea		MDNR			8:00	12:00	
12/28	T. Lyons		Envir. Drilling			12:00	4:30	
12/29/89	Mike Patten		Corrigan O.C.			7:50	8:08	
12/29/89	T. Robertson		Guard			19:00	2400	
12/30/89	P. Grier		Guard			11:00 AM.		
JUNE 1990	CLIFFORD ENG		CRA			6:50 PM.	8:15 PM.	
JUNE 1990	CLIFFORD ENG		CRA			7:10 AM	6:30 PM	
1/2/90	KARL G. ROSENBERGER	USA	Kelly Services			8:00 AM	5:00	
1/2/90	JAMES W. ARCHIBALD		CRA			8:00 AM	5:30	
1/2/90	T. WEISSBECK		CRA			1030	6:30 PM	
1/2/90	Duane Doverman		Stearns Drilling			11:15	518	
1/2/90	Daniel R Hamel		NUS			1115	518	
1-2-90	THOMAS E CAIN JR		CWM			11:40	6:00	
1-2-90	Steve Runsen		Versar			7:10	1650	
1-2-90	GARY ARSCHOTT		C W M			11:30	5:30	
1/2/90	DARL DURANT		C W M			11:30	5:30	
1/2/90	D Gorbea		MDNR			12:00	6:45	
1/2/90	Todd Dietz		CWM			12:30	6:00	
1/2/90	Mike Malec		CWM			12:30	6:00	
1/2/90	Gun Wyss		MDNR			12:30	1640	

001102

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
1/2	Scott Collar		CWM			12 noon	5PM	
1/2	William McIntyre		CWM			12:00	5PM	
~~1/2/90~~	~~Bob Kriete~~		~~CWM~~			~~2:00~~	~~5PM~~	
1/3/90	~~Todd Teske~~		CWM			7:00	6:15	
1/3/90	Paul Durant		CWM			7:00	3:30	
1-3-90	Cary Ausseltoitz		CWM			7:00	3:30	
1-3-90	Thomas E Cain Jr		CWM			7:00	4:30	
1-3-90	Bob Kriete		CWM			7:00	4:30	
1-3-90	Mike Malec		CWM			7:00	6:15	
1-3-90	Bill McIntyre		CWM			7:00	4:30	
1-3-90	Steve Bunsen		Versar			7:00	3:45	
1/3	Scott Collar		CWM			7:00	4:40	
1/3	Jim Archibald		CRA			7:15	3:45	
1/3	Jim Wasbeek		CRA			7:15	5:00	
1/3	Conley Rey		NUS			0750	[illegible]	
1/3/90	David Ritchel		NUS			0750	1700	
1/3/90	Jim Grysika		STEARNS			0800	1700	
1/3	Duane Daverman		STEARNS			0800	1700	
Jan 3 1990	Clifford Ellis		CRA			07:30 AM	6:15 PM	
1/3	Karl G. Rosenberger	USA	Kelly			8:00	4:30	
1/3	Jim Myers		MDNR			8:05	17:02	
1/3	David Powell		Smith Cut			9:55	2:00	
1/3	Tim Lyons		Environ. Drilling			10:15	4:50	
1/3	Glenn [illegible]		WMF SUC			10:15	11:15	

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
1-3-90	SCOTT S[illegible]		COFFMAN ELEC			8:15	8:45	
1-4-90	Mike Malec		CWM			700	6:00	
1-4-90	Bill McIntyre		CWM			7:00	530	
1-4-90	THOMAS E CAIN JR.		CWM			7:00	6:00	WORK
1-4-90	Steve Bunsen		Versar			7:00	4:30	
1/4/90	Darl Durant		CWM			700	430	
1/4/90	Bob Kriete		CWM			700	6:00	
1/4	Tim Lyons		Enviro Drilling			8:45	12:30	
1/4	John Bulloch		Enviro Drilling			8:45	12:30	
1/4	Scott Lollar		CWM			7:00	5:30	
1/4/90	Todd Deters		CWM			700	6:00	
1-4-90	GARY ANSCHUETZ		CWM			7:00	4:30	
1/4	Jim Archibald		CRA			715	500	
1/4	Conley, Roy		NUS			0730	500	
1/4	Hamel, Dan		NUS			0730	500	
1/4	Gryska, Jim		Stearns			0730	500	
1/4	Dowerman, Duayne		Stearns			0730	500	
1/4	James Myers		MDNE			800	1630	
1/4	[illegible]		NUS			1400	500	
1/4	KARL G. ROSENBERGER		Kerr			IN 10:00 OUT [illegible]	2:00 3:00	
1-5-90	GARY A ANSCHUETZ		CWM			7:00	12:30	
1/5/90	TODD DETERS		CWM			7:00	4:00	
1/5/90	Steve Bunsen		Versar			7:00	3:00	

001104

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
1/5/90	Darl Durrant	Y	CWM			700	12:30	
1/5/90	Mike Malec		CWM			700	230	
1-5-90	Thomas E Cain Jr	Y	CWM			7:10	3:00	
1/5/90	Jim Archibald		CRA			715	12 45	
1/5/90	T. Weisbeck		CRA			7:10	3:00	
1/5	Scott Lollar		CWM			7:00	3:00	
1/5/90	Bob Krieta		CWM			720	3:00	
1/5/90	Issac McIntyre		CWM			7:00	3:00	
1/5	Karen G Rosengrant	✓	Kelly			8:00	2:00	
1/5	James Myers		MDNR			805	1300	
1/10/90	Todd Fitts		CWM			6:55	6:00	
1/6/90	T. Weisbeck		CRA			7:50	6:00	
1/6/90	Steve Bunsen		Versa			7:00	3:30	
1/6/90	STAN HUBER		CWM			8:20	6:00	
1/6/90	PAT DAVIDSON		CWM			8:20	6:00	
1/6/90	DAVE SCHWIEGER		USCSAR			1:40	6:00	
Jan 6 1990	CLIFFORD BLACK		CRA			2:30	4:25	
1/7/90	TODD TREES		CWM			9:00	1:00	
1/8/90	Mike Malec		CWM			700	6:00	
1/8/90	Darl Durrant		CWM			700	5:30	
1/8/90	Bob Krieta		CWM			7:00	5:45	
1/8/90	Bill McIntyre		CWM			7:00	5:45	
1/8	Scott Lollar		CWM			7:00	5:45	

REGISTER

001105

DATE	NAME	STREET	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
1-8-90	THOMAS E CAIN JR.	Y	CWM			7:00	6:00	
1-8-90	TODD D. TEETS	Y	CWM			7:00	6:00	
1-8-90	GARY R AUSCHUETZ		CWM			7:00	5:00	
1/8/90	Jim Archibald		CRA			7:00	5:30	
1/8/90	Dave Schwiegger		Vegesack			7:00	5:00pm	
JAN 08 1990	CLIFFORD [illegible]		CRA			7:45	12:50	
JAN 08 1990	TOM WEISBACK		CRA			7:45	6:00	
JAN 08 1990	MIKE OKAMOTO		CRA			7:45	6:00	
1-8-90	Ray Milejczak		MDNR			0810	1650	
1-8-90	Jim Myers		MDNR			930	1705	
1-9-90	Bob Kinietz		CWM			6:55	5:45	
1/9	BB Wilson		CWM			7	4:30	
1/9/90	THOMAS E CAIN JR		CWM			655	5:45	
1-9-90	BILL MCINTYRE		CWM			655	545	
1-9-90	DARYL DURANT		CWM			700	5:24	
1-9-90	GARY R RAUSCHUETZ		CWM			7:00	5:00	
1-9-90	TODD D. TEETS		CWM			7:00	5:45	
1-9-90	Michael R Malec		CWM			700	540	
1/9/90	Jim Archibald		CRA			7:00	5:00	
1-9-90	Jim Myers		MDNR			750	1605	
1/9/90	Dave Schwiegge		Vegesack			700	1609	
1/9	KARL ROSENBERGER	Y	KELLY SERVICES			8:00	5:00	
1/9/90	MIKE OKAMOTO		CRA			7:30	5:45	

001106

REGISTER

DATE	NAME	FIELD	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
1/10/90	THOMAS E CAIN JR	Y	CWM			6:55	5:30	
1/10/90	Bob Kuehn	✓	CWM			6:55	5:30	
1-10-90	CARL HAUSCHILDT		CWM			7:00	5:00	
1-10	SCOTT COLLAR		CWM			7:00	5:30	
1-10	BILL McINTYRE		CWM			7:00	5:30	
1-10-90	DAVE DURKOT		CWM			7:00	5:30	
1/10/90	TODD D. TEATS	Y	CWM			7:00	6:00	
1-10-90	Mike Maley		CWM			700	6:00	
1/10/90	Jim Archibald		CRA			7:00	5:30	
1/10/90	D Graham		MDNR			7:50	5:00	
1/10/90	Dave Schwiegar		VHASIC			700	5:17	
1/10	KARL ROSENBERGER	Y/N	KELLY SERVICES			8:00	5:00	
1/10	MIKE OKAMOTO		CRA			7:00	5:05	
1/10	Ann Bendle		WESTON TAT			1030	1055	
1/10	Maureen O'Mara		US EPA			1040	1055	
1/10	Paul Steadman		US EPA			1040	1055	
1/10	Ann Bendle		WESTON-TAT			1300	1650	
1/11/90	Todd D. Teats	Y	CWM			7:00	5:30	
1/11/90	Dave Schwiegar		VERSAR			7:00	530	
1/11/90	Jim Archibald		CRA			730	530	
1/11/90	Dan Shu		DNR			7:45	10:30	
1/11	Scott Hallen		CWM			780	5:30	
1/11	[illegible] McIntyre		CWM			7:80	5:30	
1/11	Mike Maley		CWM			755	530	

REGISTER

001107

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
1/11	Darl Durant		CWM			700	5:14	
1-11-90	Gary R Auschuetz		CWM			7:00	5:14	
1/11	Maureen O'Mara		US EPA			0755	4:00	
1/11/90	Bob Kriete		CWM			[illegible]	5:00	
1/11/90	Dan Cook Bob Allmendinger		DHA			8:00	4:46	
11 Jan 1990	Robert Tesh		DNR			9:05 A	10:30 A	
1/11/90	MIKE OKAMOTO		CRA			7:30	5:35	
1/11	KARL ROSENBERGER	USA	KELLY			8:00 AM	4:30	
1/11 90	D. Cook B. Allmendinger		D.H.A.			1:13 PM.	3:26 PM	
1/12/90	Bob Kriete		CWM			[illegible]	4:30	
1/12	Mike Mulee		CWM			700	4:30	
1-12-90	GARY Auschuetz		CWM			7:00	4:00	
1/12/90	Jim Archibald		CRA			7:00	2:00	
1/12/90	Dave Schwiegar		VERSAR			700	400	
1/12/90	Todd D Treets		CWM			7:00	4:30	
1/12/90	Darl Durant		CWM			700	400	
1/12	Bill McIntyre					7:00	4:30	
1/12	KARL G. ROSENBERGER	USA	KELLY SERVICES			8:15	3:00	
1/12	[illegible]		CWM-[illegible] METAWORK			8:00	4:30	
1/12	MIKE Okamoto		CRA			7:30	5:45	
1/13	DETROIT EDISON CO-					9:28 AM	9:29 AM	
1/13	FEDERAL EXPRESS					9:43 AM	9:45 AM	
1/15	TODD D TREETS	Y	CWM			7:00	7:00	

001108

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
1/15	Mike Malee		CWM			700	700	
1/15	THOMAS E CAIN JR		CWM			7100	700	
1/15/90	Dave Durrant		CWM			700	600	
1-15-90	GARY R ANSCHUETZ		CWM			7:00	6:00	
1-15-90	Dave Schwieger		Versair			7:00	6:00	
1-15-90	Ed. Kriete		CWM				6:30	
1/15/90	Jim Archbald		CRA			6:00	6:00	
1/15	Bill McIntyre		CWM			7:00	6:30	
1/16	KARL G. ROSENBERGER	U.S.	Kelly Services			8:00	4:00	
1/15	Michael Okamoto		CRA			7:00	6:00	
1/16	Mike Miller		CWM			700	6:15	
1-16-90	GARY ANSCHUETZ		CWM			7:00	5:09	
1/16	Bill McIntyre		CWM			7:00	6:15	
1/16	Jim Archbald	NO	CRA			7:00	5:00	
1/16	Dave Schwieger		Versair			700	500	
1/90	Bob Kriete		CWM			7:00	6:15	
1/16/90	[illegible]		CWM			700	6:15	
1/90	Darl Durrant		CWM			700	6:09	
1/16/90	KARL ROSENBERGER	U.S.	Kelly Services			8:00	5:00	
1/16/90	MIKE OKAMOTO		CRA			730	6:00	
1/16/90	[illegible]							
1/16/90	MIKE OKAMOTO		CRA			1155	1200	
1/16/90	THOMAS E CAIN JR		CWM			1:00	7:00	

REGISTER

001109

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
1/17	Mike Mulec		CWM			700	7:15	
1/17	THOMAS E CAIN JR	Y	CWM			7:00	7:15	
1/17	BILL McIntyre		CWM			700	12:30	
1/17/90	Bob Kriete		CWM			700	6 30	
1/17/90	DARL DURANT		CWM			700	6 70	
1.17.90	CARL R HUCKHUETZ		CWM			7.00	6:30	
1-17-90	TODD TEKTS	Y	CWM			~~700~~	~~6 30~~	
1/17/90	Jim Archibald		CRA			715	645	
1/17/90	DAVE SCHWIEGAR		VERSAR			730	615	
1/17/90	KARL ROSENBERGER	USA	KELLY SERVICES			8:00	5:00	
1/17/90	T. WEISBECK		CRA			7:00 E	6:30 E	
1/18/90	J. ARCHIBALD		CRA			7:00 E	6 00	
1/18/90	T.N EISBECK		"			700 E	—	
1.18.90	CARL R HUCKHUETZ		CWM			7:00	6:30	
1/18/90	DARL DURANT		CWM			700	6 5	
1/18/90	TODD TEKTS	Y	CWM			~~700~~	7:00	
1/18/90	Bob Kriete		CWM			701	7:00	
1/18/90	BILL McINTYRE		CWM			7:00	7:00	
1/18/90	Mike Mulec		CWM			700	7:15	
1/18/90	KARL G. ROSENBERGER	USA	KELLY SERVICES			8:00	5:00	
1/18/90	DAVE SCHWIEGAR		VERSAR			856	530	
1/18/90	D Cook B. Allmendinger		D.H.A.			9:15	11:13	
1/18/90	KEVIN MCGRATH		CWM			9:30	10:15	
1/18/90	Greg York		CWM			9:00	7:10	

001110

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
1/18/90	C Weaks		Mayday's		Brighton	10:30	1:30	
1/18/90	Jay Bernardino		Wadsworth Labs		Canton OH	1:00	1:30	
1/18/90	[illegible]		"		"	1:00	1:30	
1/18/90	Thomas E Cain Jr		CWM			7:00	7:15	
1/19/90	Mike Mulec		CWM			7:00	2:00	
1/19/90	Thomas E Cain Jr		CWM			7:00	2:00	
1/19/90	Darl Durant		CWM			7:00	1:50	
1-29-90	Carl R Anschultz		CWM			7:00	1:50	
1/19/90	T. Weisbeck		CRA			7:00	3:00	
1/19/90	J. Archibald		"			"	1:30	
1-19-90	B. Kriete		CWM			7:00	2:00	
1-19-90	Bill McIntyre		CWM			7:00	2:00	
1-19-90	Greg York		CWM			7:00	2:00	
1-19-90	David R. Wilson		Local 1026 CWM			7:00	2:00	
1-19-90	[illegible]	Y	CWM			7:00	2:00	
1/19-90	David Schwieger		Versar			7:59	2:00	
1/19/90	Carl G. Rosenberger	USA	Kelly Services			8:00	1:00	
1/19/90	Robert C Millar	Y	ALBIN			9:00	2:00	
1/19/90	Glenn Maynard		WMI Services			2:15	2:35	
1/22-90	Bob Kriete		CWM			7:00	6:30	
1/22/90	Bill McIntyre		CWM			7:00	6:30	
1/22/90	Darl Durant		CWM			7:00	6:30	
1-22-90	Carl Anschultz		CWM			7:00	6:30	

REGISTER

001111

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
1/22	Jim Archibald		CRA			7:00	6:00	
1/22	Mike Malec		CWM			7:00	6:30	
1/22	THOMAS E CAIN JR	Y	CWM			7:00	7:00	
1/22	Greg York		CWM			7:00	6:00	
1/22	MIKE MATHIS		CWM			7:00	6:00	
1/22/90	TODD D. TEETS	Y	CWM			7:00	6:30	
1/22/90	DAVE SCHWINGER		VERSAR			745	600	
1/22/90	KARL ROSENBERGER	USA	KELLY			8:00	(OUT 12:30 IN 3:30) OUT 4:30	
1/23/90	THOMAS E CAIN JR	Y	CWM			6:45	6:15	
1-23-90	CHAS R HAUSCHILDT		CWM			6:45	6:15	
1-23-90	DAVID DURANT		CWM			6:45	6:15	
1-23-90	[illegible]		CWM			7:00	6:15	
1-23-90	BILL McINTYRE		CWM			7:00	6:15	
1-23-90	Mike Malec		CWM			7:00	6:15	
1/23/90	J. Archibald		CRA			7:15	6:45	
1/23/90	DAVE SCHWINGER		VERSAR			7:58	6:00	
1 23 90	KARL G. ROSENBERGER	USA	KELLY			8:00	(OUT 9:30 IN 12:00) OUT 4:30	
1/23/90	TODD D TEETS	Y	CWM			7:00	6:15	
1/23/90	Denise Graham		MDNR			1:30 p	5:15 p	
1/24/90	THOMAS E CAIN JR	Y	CWM			6:50	6:35	
1-24-90	CHAS R HAUSCHILDT		CWM			6:50	6:30	
1-24-90	DAVID DURANT		CWM			6:50	6:30	

001112

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
1-24-90	Bill McIntyre		CWM			6:50	6:35	
1-24-90	Todd Treets	Y	CWM			700	6:35	
1-24-90	Bob Krietz		CWM			7:00	6:35	
1-24-90	Mike Malec		CWM			700	6:35	
1/24/90	Jim Archibald		CRA			7	6:00	
1/24/90	KARL ROSENBERGER	U S A	Kelly Services			8:00	4:30	
24 JAN 90	D. Cook B. Allmendinger		D.H.A.			9:12	10:52	
1/24/90	DAVE SCHWIEGER		VERSAR			10:36	6:18	
1/24/90	MARK HEINE		CWM-ENRAC			10:35	6:35	
1/25/90	Mike Malec		CWM			700	6:15	
1-25-90	CARL R HAUSDORFF		CWM			7:00	6:05	
1-25-90	Bob Krietz		CWM			700	6:15	
1/25/90	Jim Archibald		CRA			7:10	6:00	
1/25/90	Darl Durgan		CWM			700	6:05	
1/25/90	THOMAS E CAIN JR	Y	CWM			7:00	6:15	
1-25-90	TODD D. TREETS	Y	CWM			700	6:15	
1-25-90	DAVE SCHWIEGER		VERSAR			7:15	4:30	
1-25-90	KARL ROSENBERGER	U S A	KELLY			8:00	4:30	
1-26-90	Darl Durant		CWM			700	6:00	
1-26-90	Bob Krietz		CWM			7:00	6:00	
1/26/90	Jim Archibald		CRA			7:00	6:00	
1/26/90	[illegible]					7:00	6:00	
1-26-90	CARL R HAUSDORFF		CWM			7:00	6:00	

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
1-26	Michael Mulee		CWM			700	1:30	
1-26-90	~~Todd D. Teets~~	Y	CWM			~~700~~	1:30	
1/26/90	Thomas E Cain Jr	Y	CWM			7:00	6:00	
1/26/90	[illegible]	USA	Myself & CWM	12-1L Jackson ~~Lapeer, MI~~	LAPEER	0738	6:00	Mister Mike Mulee
1/26/90	Karl G. Rosenberger	USA	Kelly			8:00	3:30	
1/26/90	Dave Schwiegar		Versar			9:00	530	
1/26/90	[illegible]		Versar			9:00	1100	
1/26/90	D. Cook B Allmending		D.H.A.			9:30	10:30	
1/26/90	Chris Miller		ALBIN			122	241	
1-27-90	Darl Durant		Cwm			700	6:30	
1-27-90	Gary R Anschutz		CWM			700	6:30	
1/27/90	Jim Archibald		CRA			730	430	
1/27/90	Thomas E Cain Jr	Y	CWM			7:00	6:30	
1/27/90	Patrick H. Ley Dividy	Y	CWM			7:00	3:30	
1/27/90	Dave Schwiegar		Versar			1130	430	
~~[illegible]~~	~~[illegible]~~		~~[illegible]~~			~~7~~	~~3~~	
1-28-90	Thomas E Cain, Jr.	Y	CWM			8:00	4:30	
1-28-90	Gary R Anschutz		CWM			800	4:00	
1/28/90	Jim Archibald		CRA			800	100	
1/28-90	Darl Durant		CWM			800	4:00	
1-29-90	Gary R Anschutz		CWM			7:00	330	
1-29-90	Thomas E Cain Jr	USA	CWM			7:00	6:10	
1-29-90	Darl Durant		CWM			700	330	
1-29-90	Bill McIntyre		CWM			700	610	

001114

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
1/29/90	Bob Kriete	Y	CWM			7:00	610	
1/29/90	Todd Teets	Y	CWM			7:00	615	
1/29/90	Jim Archibald		CRA			7:00	5:00	
1/29/90	Mike Malec		CWM			700	615	
1/29/90	Karl G Rosenberger	USA	Kelly			8:15	5:30	
1/29/90	Steve Bunsen		Versar			7:00	17:00	
1/29/90	Maureen O'Hara		US EPA			10:15	14:45	
~~1/30/90~~	~~Mike Malec~~		~~CWM~~					
1-30-90	Bob Kriete		CWM			7:00	5:40	
1-30-90	Gary Auschuetz		CWM			7:00	5:30	
1-30-90	Darl Durant		CWM			7:00	5:30	
1-30-90	Todd Teets	Y	CWM			7:00	5:40	
1-30-90	Bill McIntyre		CWM			7:00	5:[illegible]	
1/30/90	Steve Bunsen		Versar			7:30	5:15	
1/30/90	Mike Malec		CWM			700	5:40	
1/30/90	Jim Archibald		CRA			7:30	5:00	
1/30/90	Karl Rosenberger	USA	Kelly Services			8:15	4:30	
1/30/90	Thomas E Cain Jr	USA	CWM			7:00	6:00	
1/31/90	Thomas E Cain Jr	USA	CWM			7:45	11:00	
1-31-90	Bill McIntyre		CWM			7:45	12:00	
1-31-90	Bob Kriete		CWM			7:15	12:00	
1/31/90	Jim Archibald		CRA			7:30	11:?	
1/31/90	Todd Teets	Y	CWM			7:53	1:12	

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
1-31	Mike Malec		CWM			7:55	1[12]	
1-31-90	Dan L Dumont		CWM			8:02	11[00]	
1/31/90	Steve Bunnan		Unison			7:30	10:50	
[illegible]	Karl G. Rosenberger	USA	Karl Services			8:00	12:30	
1-31-90	Roy Breer		Local 959			10[00]	10[30]	
1-31-90	Gary [illegible]		CWM			8:00	11[00]	
2-2-90	[illegible]		Mech Cat [illegible] 936			8:45	9:45	
2-2-90	[illegible]		[illegible] EL300			1:30	2:15	
2/5/90	Karl G. Rosenberger	USA	Kelly			8:00	8:14	11:00 4:30
2/5/90	Dan Shouter		Pluto hot W.M.I			10[10] am	10[15] am	
2/5	Mike Malec		CWM			12:30	5:30	
↓	Tom E. Cain, Jr.		CWM			11:00	5[30]	
2/5	Todd Teets		CWM			12:30	5[30]	
2/5	John Bailey		CWM			11:00	5[30]	
2/5	Dennis Graber		MDNR			12:45	1:10	
2/6/90	Thomas E Cain JR		CWM			7:30	6:00	
2/6/90	Mike Malec		CWM			7:30	6[00]	
2/6/90	John Bailey		CWM			7:30	6[10]	
2/6/90	Todd D. Teets	Y	CWM			7[20]	6[00]	
2/6/90	Karl G. Rosenberger, Jr.	Y	Kelly			8:10	5:00	
2/6/90	Jim Aebeld		CRA			11[00]	4[00]	
2/7/90	John Bailey		CWM			7[20]	11[30]	
2/7/90	Mike Malec		CWM			7[30]	5:30	

001116

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
2/7/90	Jim Archibald		CRA			7:30	1:00	
2/7/90	Tom Cahill Jr.	Y	CWM			7:30	11:30	
2/7/90	Todd Teets	Y	CWM			7:30	5:00	
2/7/90	Karl Rosenborough	Y	Key			8:45	12:00	
2/8/90	Todd Teets		CWM			800	1200	
2/8/90	Mike Malec		CWM			800	1200	
7/3/90	R.G. Herrscher		CWM			7:00	1:00	
7-3-90	Tim Hiebaum		CWM			7:00	12:30	
7/3	Dan C Durant		CWM			7:00	1:00	
7/3	Greg York		CWM			7:00		
7/3	Steve Bunsen		Vernon/CRA			7:00		
7/3	Victor Nacher		CRA			7:00		
7/3	Chris Sykes		CWM			ON 7/2 8:20		
7/4	R. Herrscher		CWM			7:03	3:45	
7/4	Greg York		CWM			7:03	3:30	
7/4	Dan Durant		CWM			7:03	3:30	
7/4	Chris Sykes		CWM			7:03	3:30	
7/4	Steve Bunsen		Vernon/CRA			7:05	3:40	
7/4	Tim Hiebaum		CWM			7:40	3:45	
7/4	Victor Nacher		CRA			7:05	3:45	

REGISTER

001117

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
7/5	R.G. Herrscher		CWM			7:10	3:30	
7/5	Tim Thibaud		CWM			7:00	5	
7/5	Darl Durrant		CWM			7:00	3:30	
7/5	CHRIS SYKES		CWM			7:10		
7/5	Greg York		CWM			7:10		
7/5	Steve Bunsen		Vernon/EPA			7:10		
7-5	[illegible]		METRO			7:-		
7-5	Victor Nachar		CRA			7:00	3:30	
7-9	R.G. HERRSCHER		CWM			7:00	4:30	
7-9	John Bires		CWM			7:00		
7-9	Darl Durrant		CWM			7:00		
7-9	Greg York		CWM			7:00		
7-9	Tim Thibaud		CWM			7:00		
7-9	Chris Sykes		CWM			7:00		
7/9	Steve Bunsen		Vernon/EPA			7:10		
7/9	Victor Nachar		CRA			7:10	4:30	
7/10	R.G. HERRSCHER		CWM			5:30	5:00	
7/10	C. SYKES		CWM			5:30		
7/10	Greg York		CWM			5:30		
7/10	DARL DURANT		CWM			5:30		
7/10	Tim Thibaud		CWM			5:30		
7/10	John Bires		CWM			5:30	5:00	

001118

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
7/10	VICTOR NACHAR		CRA			5:30	5:00	
7/10	Steve Bunsen		Verson/EPA			5:45	5:00	
7/11	DARL DURANT		CWM			5:30	3:30	
7/11	Greg York		CWM			5:30		
7/11	Tim Thiebaud		CWM			5:30		
7/11	R. Gerhauser		CWM			5:30		
7/11	Chris Lyden		CWM			5:30		
7/11	John Bires		CWM			5:30		
7/11	Steve Bunsen		Verson/EPA			5:30	3:30	
7/12	R. G. HERRSCHER		CWM			6:00	4:30	
	TIM THIEBAUD					6:00	4:30	
	DARL DURANT					5:30	4:30	
	G. BIRES					6:00	4:30	
	C. SYKES						4:30	
7/12	G. YORK		CWM			6:00	4:30	
7/12	D Graham		MDNR			7:30	3:45	
7/12	VICTOR NACHAR					5:30	4:30	
7/12	Leslie E Smith III		MDNR			8:30	12:15	
7/12	Herb Harmer		MICH-CAT			9:30	10:45	
7/12	Jim Archibald		CRA			10:30	4:00	
7/12	Steve Bunsen		Verson/EPA			5:30	4:30	
7/12	Michael Maher		CWM			1230	3:30	
7/13	Tim Thiebaud		CWM			5:30	5:00	
7/13	Chris Lyden		CWM			5:30	5:00	

REGISTER

001119

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
7/13	DARL DURANT		CWM			5:30	5:00	
7/13	Greg York		CWM			5:30	5:00	
7/13	Steve Bunsen		Versar/EPA			5:40	5:00	
7/13	VICTOR NACHAR		CRA			5:30	5:00	
7/14 ✓	Tim THIEBAUD		CWM			5:30	4:30	
7/14	DARL DURANT		CWM			530	4:30	
7/14	Steve Bunsen		Versar/EPA			5:30	[illegible]	
7/14	Paul Lindsay		Versar/EPA			0530	4:30	
7/14	CHRIS SYKES		CWM			0530	4:30	
7/14	Greg York		CWM			05:30	4:30	
7/14	Victor Nachar		CRA			5:30	4:30	
7/14	Chris Voigt		CWM			0530	4:30	
7/14	JAMES YORK		CWM			05:30	4:30	
7/16 ✓	[illegible]		CWM			6.00	2:30	
7/16	Darl Durant		CWM			6:00	2:30	
7/16	Paul Lindsay		Versar/EPA			0600	2:30	
7/16	Greg York		CWM			6:00	2:30	
7/16	CHRIS SYKES		CWM			6:00	2:30	
7/16	John Bires		CWM			6:00	2:30	
7/16	VICTOR NACHAR		CRA			6:00	2:30	
7/16	Rusty Herscher		CWM			10:00	2:30	
7/17 ✓	Tim THIEBAUD		CWM			6:00	2:30	
7/17	John Bires		CWM			6:00	2:30	
7/17	CHRIS SYKES		CWM			6:00	2:30	

001120

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
7-17	Greg York		CWM			6:00	2:30	
7-17	Darl Durant		CWM			600	2:30	
7-17	Paul Linley		VERSAR/ EPA			0600	2:30	
7-17	VICTOR NACHAR		CRA			0600	2:30	
7-17	Russell Herrscher		CWM			600	2:30	
7-18	Tim THIEBAUD		CWM			6:00	3:00	
7-18	John Bires		CWM			6:00		
7-18	CHRIS SYKES		CWM			6:00		
7-18	Greg York		CWM			6:00		
7-18	Darl Durant		CWM			600		
7-18	Russell HERRSCHER		CWM			6:00		
7-18	VICTOR NACHAR		CWM			6:00		
7-18	Paul Linley		VERSAR/ EPA			0600		
7-18	VICTOR NACHAR		CRA			600	3:00	
7-19	Tim THIEBAUD		CWM			12:25		
7-19	Victor Nachar		CRA			800	4:30	
7-19	Jim Archibald		CRA			11:45	4:15	
7-19	Paul Linley		VERSAR/ EPA.			800	4:15	
7-24	R Herrscher		CWM			7:15	6:30	
7-24	PAUL LINLEY		VERSAR/ EPA			0715	6:30	
7/24	Darl. Durant		CWM			7:15	6:30	
7/24	Greg York		CWM			7:15	6:30	
7/24	TIM THIEBAUD		CWM			8:00	6:30	
7/24	CHRIS SYKES		CWM			8:00	6:30	

REGISTER

001121

N	DATE	NAME	OTHER	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
	7/24	VICTOR NACHER		CRA			7:30	6:30	
	7/24	PAUL LINLEY		VERSAR			7:15	6:30	
	7/24	Denise Gaiben		MONR			10:00	2:05	
	7/24	Maureen O'Hara		U.S. EPA			10:30	2:05	
	7/25	R.G. HERRSCHER		CWM			6:30	3:30	
	7/25	Dark Durant		CWM			6:30		
	7/25	Greg York		CWM			6:30		
	7/25	T. THIEBAUD		CWM			6:30		
	7/25	CHRIS SYKES		CWM			6:30		
	7/25	PAUL LINLEY		VERSAR			6:30		
	7/25	VICTOR NACHER		CRA			6:30	3:30	
	7/26	R.G. HERRSCHER					6:30	3:00	
	7/26	T. THIEBAUD					6:30		
	7/26	D. DURANT					6:30		
	7/26	G. YORK					6:30		
	7/26	C. SYKES					6:30		
	7/26	VICTOR NACHER					6:30		
	7/26	PAUL LINLEY					6:30	3:00	
	7/27	PAUL LINLEY					7:00	3:30	
	7/27	VICTOR NACHER							
	7/27	TIM THIEBAUD							
	7/27	DARK DURANT							
	7/27	GREG YORK							
	7/27	CHRIS SYKES					7:00	3:30	

001122

REGISTER

DATE	NAME	CITIZEN	REPRESENTING	STREET ADDRESS	CITY	Time of Arrival	Time of Departure	CALLING ON
7/27	R. G. HERRSCHER					7:00	3:30	
7/30	TIM THIEBAUD					7:00	3/30	
7/30	CARS SYKES					7:00	3/30	

APPENDIX D

DRUM LOG SUMMARY

TABLE 1

DRUM LOG SUMMARY
Rasmussen Immediate Response Action

001124

DRUM # / SAMPLE ID	Size	Type	CONTAINER Lid	Condition	O/P	Markings	CONTENTS Color	Phase	Description	%Full	Sampled	HNu(ppm)
NEBD AREA												
RAS 1	55	S	OT	P	-	-	gray	solid	paint sludge	50	Y	0
RAS 2	55	S	OT	P	-	-	brown	solid	soil	25	Y	0
RAS 3	55	S	OT	P	-	-	brown	solid	soil	25	Y	1
RAS 4	55	S	OT	P	-	-	brown	solid	soil	25	Y	0
RAS 5	5	S	OT	P	-	-	-	-	-	empty	-	0
RAS 6	55	S	OT	P	-	-	brown	solid	soil	25	Y	2
RAS 7	5	S	OT	P	-	-	-	-	-	empty	-	2
RAS 8	5	S	OT	P	-	-	brown	solid	soil	100	Y	1
RAS 9	55	S	OT	P	-	-	gray	solid	soil	50	Y	1
RAS 10	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS 11	55	S	OT	P	-	-	brown	solid	paint sludge	75	Y	0
RAS 12	5	S	OT	P	-	-	-	-	-	empty	-	10
RAS 13	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS 14	55	S	OT	F	Y	-	gray	solid	paint sludge	100	Y	6
RAS 15	55	S	OT	P	-	-	gray	solid	paint sludge	75	Y	25
RAS 16	55	S	OT	P	-	-	black	solid	paint sludge	50	Y	20
RAS 17	55	S	OT	P	-	-	-	-	-	empty	-	5
RAS 18	55	S	OT	P	-	-	gray	solid	paint sludge	75	Y	5
RAS 19	55	S	OT	P	-	-	-	-	-	empty	-	5
RAS 20	55	S	OT	P	-	-	gray	solid	paint sludge	25	Y	10
RAS 21	55	S	OT	P	-	-	gray	solid	paint sludge	100	Y	5
RAS 22	55	S	OT	P	-	-	gray	solid	soil	25	Y	2
RAS 23	5	S	OT	P	-	-	-	-	-	empty	-	10
RAS 24	55	S	OT	P	-	-	gray	solid	paint sludge	25	Y	10
RAS 25	55	S	OT	P	-	-	gray	solid	paint sludge	25	Y	15
RAS 26	5	S	OT	P	-	-	gray	solid	paint sludge	75	Y	1
RAS 27	5	S	OT	P	-	-	-	-	-	empty	-	40
RAS 28	5	S	OT	F	-	-	gray	solid	paint sludge	75	Y	40
S 29	5	S	OT	P	-	-	-	-	-	empty	-	1
S 30	5	S	OT	G	-	-	brown	solid	paint sludge	100	Y	0
RAS 31	55	S	OT	P	Y	-	black	solid	sludge	50	Y	10
RAS 32	55	S	OT	P	-	-	gray	solid	cinders	50	Y	5
RAS 33	55	S	OT	P	-	-	-	-	-	empty	-	30
RAS 34	55	S	OT	P	-	-	gray	solid	cinders	50	Y	15
RAS 35	5	S	OT	P	-	-	-	-	-	empty	-	0
RAS 36	5	S	OT	P	-	-	black	solid	sludge	100	Y	30
RAS 37	55	S	OT	P	-	-	gray	solid	cinders	75	Y	40
RAS 38	55	S	OT	P	-	-	-	-	-	empty	-	5
RAS 39	55	S	OT	P	-	-	gray	solid	soil	25	Y	30
RAS 40	55	S	OT	P	-	-	gray	solid	paint sludge	25	Y	40
RAS 41	55	S	OT	P	-	-	gray	solid	paint sludge	50	Y	90
RAS 42	55	S	OT	P	Y	-	brown	solid	sludge	50	Y	30
RAS 43	55	S	OT	P	-	-	brown	solid	soil	25	Y	15
RAS 44	55	S	OT	F	Y	-	gray	solid	sludge	100	Y	200
RAS 45	5	S	OT	P	-	-	gray	solid	paint sludge	100	Y	7
RAS 46	55	S	OT	P	-	-	gray	solid	cinders	50	Y	25
RAS 47	5	S	OT	P	-	-	-	-	-	empty	-	6
RAS 48	55	S	OT	P	Y	-	tan	solid	putty	100	Y	250
RAS 49	55	S	OT	P	-	-	gray	solid	-	50	Y	25
RAS 50	55	S	OT	P	-	-	gray	solid	paint sludge	100	Y	150
RAS 51	55	S	OT	P	-	-	gray	solid	cinders	75	Y	3
RAS 52	5	S	OT	P	-	-	-	-	-	empty	-	50
RAS 53	55	S	OT	P	-	-	brown	solid	paint sludge	75	Y	3
RAS 54	55	S	OT	P	Y	-	black	solid	sludge,soil	25	Y	200
RAS 55	55	S	OT	P	-	-	-	-	-	empty	-	100
RAS 56	55	S	OT	P	-	-	brown	solid	soil	25	Y	60
RAS 57	55	S	OT	P	Y	-	beige	solid	-	100	Y	50
RAS 58	55	S	OT	P	-	-	-	-	-	empty	-	25
RAS 59	55	S	OT	P	-	-	green	solid	paint sludge	50	Y	50
RAS 60	55	S	OT	P	-	-	-	-	-	empty	-	30
RAS 61	55	S	OT	F	-	-	gray	solid	paint sludge	75	Y	100
RAS 62	55	S	OT	F	-	-	gray	solid	paint sludge	75	Y	20
RAS 63	55	S	OT	P	-	-	gray	solid	-	25	Y	100
RAS 64	55	S	OT	P	-	-	gray	solid	-	75	Y	20
S 65	55	S	OT	P	-	-	brown	solid	soil	25	Y	30
S 66	55	S	OT	P	-	-	-	-	-	empty	-	20
RAS 67	55	S	OT	P	-	-	brown	solid	soil	25	Y	20

DRUM LOG SUMMARY
Rasmussen Immediate Response Action

DRUM # / SAMPLE ID		CONTAINER Size	Type	Lid	Condition	O/P	Markings	CONTENTS Color	Phase	Description	%Full	Sampled	HNu(ppm)
RAS	68	55	S	OT	P	Y	-	black	solid	sludge	100	Y	10
RAS	69	55	S	OT	P	-	-	-	-	-	empty	-	1
RAS	70	55	S	B	P	-	-	-	-	-	empty	-	2
RAS	71	55	S	OT	P	-	-	gray	solid	paint sludge	50	Y	100
RAS	72	55	S	OT	F	-	-	brown	solid	soil	100	Y	30
RAS	73	55	S	OT	P	-	-	-	-	-	empty	-	5
RAS	74	55	S	OT	F	-	-	brown	solid	-	100	Y	5
RAS	75	55	S	OT	F	-	-	brown	solid	soil,debris	100	Y	100
RAS	76	55	S	OT	P	-	-	-	-	-	empty	-	15
RAS	77	55	S	OT	P	-	-	brown	solid	-	50	Y	5
RAS	78	55	S	B	P	-	-	-	-	-	empty	-	8
RAS	79	55	S	OT	P	Y	-	black	solid	-	50	Y	10
RAS	80	55	S	OT	P	Y	-	brown	solid	sludge	25	Y	250
RAS	81	55	S	OT	P	-	-	gray	solid	-	50	Y	30
RAS	82	55	S	B	P	-	-	-	-	-	empty	-	5
RAS	83	55	S	B	P	-	-	gray	solid	-	25	Y	40
RAS	84	5	S	OT	P	-	-	-	-	-	empty	-	2
RAS	85	55	S	OT	F	-	-	yellow	solid	paint sludge	75	Y	5
RAS	86	55	S	OT	P	-	-	-	-	-	empty	-	1
RAS	87	55	S	OT	P	-	-	-	-	-	empty	-	1
RAS	88	55	S	B	P	-	-	gray	solid	-	50	Y	30
RAS	89	55	S	B	P	-	-	-	-	-	empty	-	50
RAS	90A	55	S	OT	P	Y	-	black	solid	sludge	50	Y	25
RAS	90B	(contaminated soil from 90A)				Y	-	brown	solid	sludge,soil	25	Y	25
RAS	91(l)	55	S	OT	P	Y	-	brown	liquid	paint sludge	10	Y	30
	91(s)	(drum contains two phases)						brown	solid	-	40	Y	30
RAS	92	55	S	OT	P	-	-	-	-	-	empty	-	20
RAS	93	55	S	B	F	-	-	white	solid	-	75	Y	100
RAS	94	55	S	OT	P	-	-	brown	solid	-	25	Y	70
RAS	95	55	S	OT	P	-	-	green	solid	-	25	Y	70
RAS	96	55	S	OT	P	-	-	blue	solid	paint sludge	25	Y	30
RAS	97	55	S	OT	F	-	-	white	solid	powder	100	Y	50
RAS	98	55	S	OT	P	Y	-	black	solid	paint sludge	50	Y	200
RAS	99	55	S	OT	P	-	-	gray	solid	paint sludge	25	Y	50
RAS	100	55	S	OT	P	-	-	black	solid	-	25	Y	20
RAS	101	55	S	OT	P	-	-	gray	solid	sludge	25	Y	20
RAS	102	55	S	OT	P	-	-	black	solid	-	50	Y	60
RAS	103	55	S	OT	G	-	-	black	solid	-	100	Y	10
RAS	104	55	S	OT	P	-	-	gray	solid	-	25	Y	60
RAS	105(l)	55	S	B	F	Y	-	brown	liquid	-	25	Y	20
	105(s)	(drum contains two phases)						green	solid	-	25	Y	20
RAS	106	55	S	OT	P	-	-	-	-	-	empty	-	30
RAS	107	55	S	OT	P	-	-	-	-	-	empty	-	30
RAS	108	55	S	OT	F	-	-	black	solid	-	100	Y	10
RAS	109	55	S	OT	F	-	-	gray	solid	-	25	Y	40
RAS	110	55	S	B	P	-	-	-	-	-	empty	-	80
RAS	111	5	S	OT	P	-	-	gray	solid	paint sludge	75	Y	5
RAS	112	55	S	B	F	-	-	-	-	-	empty	-	20
RAS	113	55	S	B	P	-	-	brown	solid	-	50	Y	30
RAS	114	55	S	B	F	-	-	gray	solid	sludge	50	Y	60
RAS	115	55	S	OT	P	-	-	green	solid	-	50	Y	100
RAS	116	55	S	B	P	-	-	gray	solid	-	50	Y	6
RAS	117	55	S	OT	P	-	-	-	-	-	empty	-	100
RAS	118	55	S	B	P	-	-	-	-	-	empty	-	1
RAS	119	5	S	OT	P	-	-	-	-	-	empty	-	0
RAS	120	55	S	OT	P	-	-	-	-	-	empty	-	3
RAS	121	55	S	B	P	Y	-	black	solid	sludge	50	Y	100
RAS	122	55	S	OT	P	-	-	black	solid	soil,cinders	75	Y	20
RAS	123	55	S	B	F	-	-	black	solid	-	25	Y	0
RAS	124	55	S	B	F	-	-	gray	solid	-	50	Y	0
RAS	125	55	S	B	P	-	-	-	-	-	empty	-	0
RAS	126	55	S	B	P	-	-	-	-	-	empty	-	0
RAS	127	55	S	OT	F	Y	-	green	solid	sludge	75	Y	40
RAS	128	55	S	OT	P	-	-	-	-	-	empty	-	10
RAS	129	55	S	OT	P	-	-	tan	solid	-	75	Y	5
RAS	130	55	S	OT	F	-	-	gray	solid	-	75	Y	2
RAS	131	55	S	OT	P	-	-	-	-	-	empty	-	4
RAS	132	55	S	B	F	Y	-	brown	solid	-	25	Y	60
RAS	133	55	S	OT	F	-	-	gray	solid	paint sludge	100	Y	50

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TABLE 1

DRUM LOG SUMMARY
Rasmussen Immediate Response Action

DRUM # / SAMPLE ID		CONTAINER Size	Type	Lid	Condition	O/P	Markings	CONTENTS Color	Phase	Description	%Full	Sampled	HNu(ppm)
RAS	134	55	S	OT	F	-	-	brown	solid	-	75	Y	15
RAS	135	55	S	OT	P	-	-	-	-	-	empty	-	5
RAS	136	55	S	B	P	-	-	-	-	-	empty	-	10
RAS	137	55	S	OT	F	-	-	brown	solid	-	75	Y	70
RAS	138	55	S	OT	P	-	-	black	solid	-	50	Y	10
RAS	139	55	S	B	P	-	-	gray	solid	paint sludge	25	Y	40
RAS	140	55	S	B	P	-	-	gray	solid	paint sludge	50	Y	20
RAS	141	55	S	OT	F	-	-	gray	solid	paint sludge	75	Y	20
RAS	142	55	S	OT	P	-	-	-	-	-	empty	-	10
RAS	143	55	S	OT	P	-	-	-	-	-	empty	-	10
RAS	144	55	S	B	P	Y	-	brown	solid	-	50	Y	10
RAS	145	55	S	B	P	Y	-	-	-	-	empty	-	60
RAS	146	55	S	OT	F	-	-	black	solid	paint sludge	100	Y	100
RAS	147	55	S	OT	F	-	-	gray	solid	paint sludge	75	Y	20
RAS	148	55	S	OT	P	-	-	-	-	-	empty	-	40
RAS	149	55	S	B	P	-	-	brown	solid	-	25	Y	20
RAS	150	55	S	B	P	-	-	brown	solid	-	25	Y	15
RAS	151	55	S	B	P	-	-	-	-	-	empty	-	30
RAS	152	55	S	B	P	Y	-	gray	solid	sludge	25	Y	50
RAS	153	55	S	B	F	Y	-	black	solid	-	50	Y	40
RAS	154	5	S	OT	P	Y	(1)	gray	solid	pellets, soil	50	Y	5
RAS	155	55	S	OT	P	Y	-	gray	solid	-	50	Y	-
RAS	156	55	S	OT	P	Y	-	gray	solid	-	50	Y	-
RAS	157	55	S	OT	P	-	-	gray	solid	paint sludge	50	Y	50
RAS	158	55	S	OT	P	-	-	-	-	-	empty	-	5
RAS	159	55	S	OT	P	-	-	brown	solid	-	75	Y	15
RAS	160	55	S	OT	F	-	-	brown	solid	paint sludge	75	Y	50
RAS	161	55	S	OT	F	-	-	gray	solid	paint sludge	100	Y	30
RAS	162	55	S	OT	F	-	-	gray	solid	-	100	Y	10
RAS	163	55	S	OT	P	-	-	-	-	-	empty	-	3
RAS	164	55	S	OT	F	-	-	gray	solid	-	75	Y	50
RAS	165	55	S	B	P	-	-	-	-	-	empty	-	5
RAS	166	55	S	OT	F	-	-	orange	solid	-	100	Y	10
RAS	167	55	S	B	F	Y	(2)	gray	solid	-	25	Y	50
RAS	168	55	S	OT	F	-	-	gray	solid	-	75	Y	30
RAS	169	55	S	B	P	-	-	-	-	-	empty	-	40
RAS	170	5	S	OT	P	-	-	-	-	-	empty	-	3
RAS	171	55	S	OT	F	Y	-	black	liquid	-	75	Y	500
RAS	172	55	S	OT	F	-	-	brown	solid	-	75	Y	20
RAS	173	55	S	OT	P	-	-	gray	solid	-	50	Y	100
RAS	174	55	S	OT	P	-	-	tan	solid	-	50	Y	20
RAS	175	55	S	OT	F	-	-	black	solid	-	50	Y	100
RAS	176	55	S	B	P	-	-	gray	solid	-	25	Y	15
RAS	177	55	S	OT	P	-	-	black	solid	-	25	Y	15
RAS	178	55	S	B	P	-	-	gray	solid	-	25	Y	40
RAS	179	55	S	OT	P	Y	-	black	solid	sludge	25	Y	20
RAS	180	55	S	OT	P	-	-	-	-	-	empty	-	15
RAS	181	55	S	B	F	-	-	-	-	-	empty	-	10
RAS	182	55	S	OT	P	-	-	-	-	-	empty	-	5
RAS	183	5	S	OT	F	-	-	black	solid	paint sludge	100	Y	10
RAS	184	55	S	B	P	-	-	-	-	-	empty	-	5
RAS	185	55	S	B	F	Y	-	gray	solid	sludge	25	Y	20
RAS	186	55	S	B	F	-	-	black	solid	-	75	Y	5
RAS	187	55	S	OT	F	-	-	-	-	-	empty	-	20
RAS	188	55	S	OT	F	-	-	tan	solid	-	50	Y	10
RAS	189	55	S	OT	F	-	-	red	solid	-	75	Y	30
RAS	190	55	S	OT	P	-	-	-	-	-	empty	-	20
RAS	191	55	S	B	F	-	-	brown	solid	-	25	Y	5
RAS	192	55	S	OT	P	-	-	-	-	-	empty	-	5
RAS	193	55	S	OT	P	-	-	white	solid	-	50	Y	20
RAS	194	55	S	B	P	-	-	gray	solid	-	50	Y	20
RAS	195	55	S	OT	P	-	-	tan	solid	paint sludge	50	Y	20
RAS	196	55	S	OT	P	-	-	green	solid	paint sludge	50	Y	10
RAS	197	55	S	OT	P	-	-	black	solid	paint sludge	75	Y	5
RAS	198	55	S	OT	P	-	-	gray	solid	paint sludge	75	Y	30
RAS	199	55	S	B	P	-	-	black	solid	-	10	Y	30
RAS	200	55	S	OT	P	-	-	gray	solid	paint sludge	75	Y	30
RAS	201	55	S	B	F	-	-	green	solid	-	50	Y	20
RAS	202	55	S	OT	P	-	-	green	solid	-	25	Y	5

DRUM LOG SUMMARY
Rasmussen Immediate Response Action

DRUM # / SAMPLE ID		CONTAINER Size	Type	Lid	Condition	O/P	Markings	CONTENTS Color	Phase	Description	%Full	Sampled	HNu(ppm)
RAS	203	55	S	OT	P	-	-	black	solid	-	50	Y	5
RAS	204	55	S	OT	P	-	-	gray	solid	-	75	Y	8
RAS	205	55	S	OT	P	-	-	black	solid	-	75	Y	6
RAS	206	55	S	OT	P	-	-	gray	solid	-	50	Y	7
RAS	207	55	S	OT	P	-	-	brown	solid	-	25	Y	15
RAS	208	55	S	B	P	-	-	brown	solid	-	10	Y	10
RAS	209	5	S	OT	G	-	-	gray	solid	paint sludge	100	Y	4
RAS	210	5	S	OT	P	-	-	-	-	-	empty	-	5
RAS	211	5	S	OT	G	-	-	gray	solid	paint sludge	50	Y	30
RAS	212	55	S	OT	F	-	-	brown	solid	-	75	Y	30
RAS	213	55	S	OT	F	-	-	yellow	solid	-	75	Y	30
RAS	214	55	S	OT	P	-	-	-	-	-	empty	-	8
RAS	215	55	S	OT	F	-	-	beige	solid	-	100	Y	8
RAS	216	55	S	OT	F	-	-	black	solid	paint sludge	100	Y	40
RAS	217	55	S	OT	F	-	-	black	solid	sludge	75	Y	2
RAS	218	55	S	OT	F	-	-	brown	solid	-	75	Y	2
RAS	219	55	S	OT	F	Y	-	blue	liquid	-	50	Y	5
RAS	220A	55	S	OT	P	Y	-	gray	solid	-	25	Y	5
RAS	220B	(contaminated soil from 220A)				Y		brown	solid	soil	25	Y	5
RAS	221	55	S	OT	F	-	-	brown	solid	paint sludge	75	Y	120
RAS	222	55	S	B	P	-	-	-	-	-	empty	-	30
RAS	223	5	S	OT	P	-	-	gray	solid	-	25	Y	30
RAS	224A	55	S	B	P	Y	-	brown	liquid	-	25	Y	30
RAS	224B	(contaminated soil from 224A)				Y		brown	solid	soil	25	Y	30
RAS	225	55	S	OT	P	-	-	brown	solid	-	25	Y	250
RAS	226	55	S	OT	P	-	-	gray	solid	-	50	Y	50
RAS	227	55	S	OT	P	-	-	gray	solid	paint sludge	25	Y	20
RAS	228	55	S	OT	F	-	-	orange	solid	-	75	Y	20
RAS	229	5	S	OT	P	-	-	gray	solid	-	25	Y	10
RAS	230	5	S	OT	P	-	-	green	solid	paint sludge	25	Y	10
RAS	231	5	S	OT	P	-	-	black	solid	-	25	Y	100
RAS	232	5	S	OT	P	-	-	black	solid	-	75	Y	7
RAS	233	55	S	OT	G	Y	-	black	solid	-	100	Y	-
RAS	234	55	S	B	P	Y	-	maroon	solid	-	10	Y	40
RAS	235	55	S	OT	P	-	-	beige	solid	-	25	Y	50
RAS	236	55	S	OT	P	-	-	black	solid	soil,cinders	25	Y	40
RAS	237	30	S	OT	G	Y	-	yellow	solid	-	25	Y	200
RAS	238	55	S	OT	P	-	-	beige	solid	-	75	Y	120
RAS	239	5	S	OT	P	-	-	black	solid	-	50	Y	100
RAS	240	55	S	OT	P	-	-	gray	solid	-	50	Y	50
RAS	241	55	S	B	P	-	-	orange	liquid	-	50	Y	20
RAS	242	55	S	OT	P	-	-	black	solid	-	50	Y	-
RAS	243	55	S	OT	P	-	-	gray	solid	-	50	Y	-
RAS	244	5	S	OT	P	-	-	gray	solid	paint,debris	100	Y	-
RAS	245	5	S	OT	P	-	-	gray	solid	paint sludge	50	Y	-
RAS	246	5	S	OT	P	-	-	maroon	solid	-	25	Y	-
RAS	247	5	S	OT	F	-	-	brown	solid	soil	75	Y	-
RAS	248	5	S	OT	P	-	-	black	solid	-	25	Y	-
RAS	249	55	S	OT	P	-	-	-	-	-	empty	-	60
RAS	250	55	S	OT	P	-	-	gray	solid	-	50	Y	50
RAS	251	55	S	OT	P	-	-	brown	solid	-	25	Y	60
RAS	252	55	S	OT	P	-	-	black	solid	-	10	Y	3
RAS	253	5	S	OT	P	-	-	black	solid	-	50	Y	5
RAS	254	55	S	B	F	-	-	white	solid	paint sludge	50	Y	7
RAS	255	55	S	OT	P	-	-	green	solid	paint sludge	25	Y	2
RAS	256	5	S	OT	P	-	-	red	solid	-	25	Y	5
RAS	257	55	S	OT	P	-	-	-	-	-	empty	-	30
RAS	258	55	S	OT	P	-	-	black	solid	-	25	Y	2
RAS	259	55	S	OT	P	-	-	gray	solid	sr	50	Y	30
RAS	260	55	S	OT	P	-	-	black	solid	paint sludge	50	Y	10
RAS	261	55	S	OT	P	-	-	gray	solid	paint,rags	25	Y	100
RAS	262	55	S	OT	F	-	-	lavender	solid	paint sludge	75	Y	20
RAS	263	55	S	OT	P	-	-	brown	solid	foam	50	Y	8
RAS	264	55	S	OT	P	-	-	-	-	-	empty	-	9
RAS	265	55	S	OT	P	-	-	brown	solid	-	10	Y	60
RAS	266	55	S	B	P	-	-	green	solid	-	25	Y	30
RAS	267	5	S	OT	P	-	-	gray	solid	paint sludge	50	Y	20
RAS	268	55	S	OT	F	-	-	gray	solid	debris	50	Y	40
RAS	269	55	S	OT	P	-	-	brown	solid	-	25	Y	-

DRUM LOG SUMMARY
Rasmussen Immediate Response Action

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DRUM # / SAMPLE ID		CONTAINER Size	Type	Lid	Condition	O/P	Markings	CONTENTS Color	Phase	Description	%Full	Sampled	HNu(ppm)
RAS	270	55	S	OT	P	Y	-	gray	solid	metal cuttings	50	Y	50
RAS	271	55	S	OT	P	-	-	gray	solid	soil	25	Y	30
RAS	272	55	S	OT	P	-	-	lavender	solid	paint sludge	25	Y	30
RAS	273	55	S	B	P	-	-	red	solid	-	25	Y	6
RAS	274	55	S	OT	F	-	-	brown	solid	debris	75	Y	0
RAS	275	55	S	OT	G	-	-	black	solid	hard	100	Y	5
RAS	276	55	S	OT	F	-	-	purple	solid	-	50	Y	5
RAS	277	55	S	OT	P	-	-	gray	solid	-	25	Y	7
RAS	278	55	S	OT	P	-	-	gray	solid	debris	25	Y	10
RAS	279	55	S	OT	G	-	-	gray	solid	hard	100	Y	15
RAS	280	55	S	OT	P	-	-	green	solid	paint sludge	50	Y	20
RAS	281	55	S	OT	P	-	-	brown	solid	-	75	Y	2
RAS	282	55	S	OT	P	-	-	brown	solid	-	25	Y	5
RAS	283	55	S	OT	G	-	-	beige	solid	foam	75	Y	10
RAS	284	55	S	OT	P	-	-	black	solid	-	25	Y	5
RAS	285	55	S	B	P	-	-	maroon	solid	paint sludge	25	Y	50
RAS	286	55	S	OT	P	Y	-	gray	solid	-	50	Y	50
RAS	287	55	S	OT	P	-	-	gray	solid	debris	25	Y	0
RAS	288	(no drum, green solid in shape of 55 gallon drum)						green	solid	hard	25	Y	0
RAS	289	55	S	OT	F	-	-	beige	solid	debris	75	Y	0
RAS	290	55	S	B	P	-	-	-	-	-	empty	-	0
RAS	291	55	S	OT	P	-	-	black	solid	-	50	Y	2
RAS	292	55	S	OT	P	-	(3)	-	-	-	empty	-	0
RAS	293	55	S	OT	P	-	-	brown	solid	-	50	Y	0
RAS	294	55	S	OT	P	-	-	brown	solid	-	25	Y	0
RAS	295	55	S	B	P	-	-	-	-	-	empty	-	0
RAS	296	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	297	55	S	OT	P	-	-	orange	solid	debris	50	Y	1
RAS	298	55	S	OT	P	-	-	green	solid	-	25	Y	0
RAS	299	55	S	OT	P	-	-	-	-	-	empty	-	0
	300	30	S	OT	P	-	-	-	-	-	empty	-	0
SD AREA													
RAS	301	30	S	OT	P	Y	(4)	blue,pink	solid	sludge	50	Y	0
RAS	302	30	S	OT	P	Y	(4)	blue,pink	solid	sludge	50	Y	0
RAS	303	30	S	OT	P	Y	(4)	blue,pink	solid	sludge	50	Y	0
RAS	304	30	S	OT	P	Y	(4)	blue,pink	solid	sludge	50	Y	0
RAS	305	55	S	B	P	-	-	-	-	-	empty	-	8
RAS	306	30	S	OT	P	-	(4)	-	-	-	empty	-	1
RAS	307	55	S	OT	P	-	-	red	solid	-	50	Y	1
RAS	308	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	309	30	S	OT	P	-	(4)	blue,pink	solid	sludge	50	Y	0
RAS	310	55	S	B	P	-	-	brown	solid	-	25	Y	3
RAS	311	30	S	OT	P	-	(4)	orange	solid	-	25	Y	0
RAS	312	55	S	OT	P	-	-	brown	solid	-	25	Y	0
RAS	313	55	S	OT	P	-	-	black	solid	-	50	Y	1
RAS	314	55	S	OT	P	-	-	black	solid	-	50	Y	1
RAS	315	30	S	OT	P	-	(4)	blue	solid	-	25	Y	10
RAS	316	55	S	OT	P	-	-	black	solid	-	25	Y	1
RAS	317	30	S	OT	P	-	(4)	orange	solid	-	25	Y	3
RAS	318	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	319	55	S	OT	F	-	-	black	solid	-	50	Y	3
RAS	320	55	S	OT	G	-	-	gray	solid	intact	100	Y	0
RAS	321	55	S	OT	F	-	-	brown	solid	soil	25	Y	0
RAS	322	30	S	OT	P	-	(4)	blue,pink	solid	-	25	Y	0
RAS	323	30	S	OT	P	-	-	blue,pink	solid	-	25	Y	0
RAS	324	55	S	OT	P	-	-	brown	solid	-	25	Y	0
RAS	325	5	S	OT	P	-	-	-	-	-	empty	-	0
RAS	326	30	S	OT	P	Y	(4)	blue,pink	solid	sludge	50	Y	0
RAS	327	30	S	OT	P	Y	(4)	blue,pink	solid	sludge	50	Y	0
RAS	328	30	S	OT	P	Y	(4)	blue,pink	solid	sludge	50	Y	0
RAS	329	30	S	OT	P	Y	(4)	blue,pink	solid	sludge	50	Y	0
RAS	330	55	S	OT	P	-	-	gray	solid	soil	25	Y	1
RAS	331	55	S	OT	P	-	-	black	solid	-	25	Y	40
	332	55	S	OT	P	-	-	brown	solid	soil	25	Y	2
	333	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	334	30	S	OT	P	-	(4)	-	-	-	empty	-	20

DRUM LOG SUMMARY
Rasmussen Immediate Response Action

DRUM # / SAMPLE ID		CONTAINER Size	Type	Lid	Condition	O/P	Markings	CONTENTS Color	Phase	Description	%Full	Sampled	HNu(ppm)
RAS	335	30	S	OT	P	-	(4)	blue	solid	-	25	Y	0
RAS	336	30	S	OT	P	-	(4)	blue	solid	-	25	Y	0
RAS	337	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	338	30	S	OT	P	-	(4)	blue	solid	-	25	Y	0
RAS	339	30	S	OT	P	-	(4)	-	-	-	empty	-	0
RAS	340	5	S	OT	G	-	-	-	-	-	empty	-	0
RAS	341	55	S	OT	P	-	-	black	solid	-	50	Y	0
RAS	342	30	S	OT	P	-	(4)	-	-	-	empty	-	2
RAS	343	30	S	OT	P	-	(4)	blue	solid	sludge	50	Y	4
RAS	344	30	S	OT	P	-	(4)	blue	solid	-	25	Y	2
RAS	345	30	S	OT	P	-	(4)	orange	solid	-	50	Y	0
RAS	346	55	S	B	P	-	-	-	-	-	empty	-	2
RAS	347	55	S	OT	P	-	-	brown	solid	-	25	Y	6
RAS	348	30	S	OT	P	-	-	blue	solid	-	25	Y	5
RAS	349(l)	55	S	OT	F	-	-	brown	liquid	-	10	Y	100
	349(s)	(drum contains two phases)						black	solid	-	10	Y	100
RAS	350	55	S	OT	P	-	-	green	solid	-	25	Y	12
RAS	351	30	S	OT	P	Y	(4)	blue,pink	solid	sludge	50	Y	0
RAS	352	55	S	OT	F	-	-	gray	solid	-	50	Y	1
RAS	353	55	S	OT	P	-	-	black	solid	-	50	Y	0
RAS	354	30	S	OT	P	-	(4)	blue	solid	-	25	Y	0
RAS	355	30	S	OT	G	-	(4)	blue	solid	-	100	Y	0
RAS	356	55	S	OT	P	-	-	black	solid	sludge	25	Y	0
RAS	357	55	S	OT	P	-	-	black	solid	-	25	Y	3
RAS	358	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	359	55	S	OT	P	-	-	black	solid	sludge	25	Y	3
RAS	360	55	S	OT	P	-	-	black	solid	-	50	Y	3
RAS	361	55	S	OT	P	Y	-	red	solid	sludge	25	Y	300
RAS	362	55	S	OT	P	Y	-	black	solid	-	25	Y	20
RAS	363	55	S	OT	P	-	-	brown	solid	soil	50	Y	10
RAS	364	55	S	OT	P	-	-	green	solid	-	25	Y	3
RAS	365	55	S	B	P	-	-	-	-	-	empty	-	10
RAS	366	55	S	OT	P	-	-	brown	solid	-	25	Y	4
RAS	367	55	S	OT	P	-	-	brown	solid	-	25	Y	3
RAS	368	30	S	OT	P	-	(4)	blue	solid	sludge	25	Y	0
RAS	369	55	S	OT	P	-	-	brown	solid	-	25	Y	0
RAS	370	55	S	OT	G	-	-	gray	solid	-	50	Y	0
RAS	371	55	S	OT	P	-	-	gray	solid	-	25	Y	2
RAS	372	30	S	OT	P	-	(4)	blue,pink	solid	sludge	25	Y	1
RAS	373	55	S	OT	P	-	-	black	solid	-	25	Y	10
RAS	374	55	S	OT	P	-	-	black	solid	sludge	25	Y	0
RAS	375	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	376	55	S	OT	P	-	-	brown	solid	-	25	Y	0
RAS	377	30	S	OT	P	-	(4)	-	-	-	empty	-	0
RAS	378	55	S	B	G	-	-	black	solid	-	75	Y	0
RAS	379	55	S	OT	P	-	-	brown	solid	rags,debris	25	Y	1
RAS	380	30	S	OT	P	-	(4)	blue,pink	solid	-	25	Y	0
RAS	381	5	S	OT	P	-	-	-	-	-	empty	-	0
RAS	382	5	S	OT	F	-	-	black	solid	-	50	Y	0
RAS	383	55	S	OT	P	-	-	black	solid	-	75	Y	1
RAS	384	30	S	OT	P	-	(4)	blue,pink	solid	-	25	Y	10
RAS	385	30	S	OT	P	-	(4)	blue,pink	solid	-	50	Y	0
RAS	386	30	S	OT	P	-	(4)	blue,pink	solid	-	25	Y	0
RAS	387	30	S	OT	P	Y	(4)	blue,pink	solid	sludge	50	Y	0
RAS	388	55	S	B	P	-	-	black	solid	sludge	50	Y	0
RAS	389	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	390	55	S	OT	P	-	-	brown	solid	-	25	Y	0
RAS	391	55	S	OT	P	-	-	orange	solid	-	50	Y	1
RAS	392A	55	S	OT	P	Y	-	brown	solid	resin	50	Y	400
RAS	392B	(contaminated soil from 392A)				Y		brown	solid	resin,soil	25	No	-
RAS	393	55	S	OT	P	-	-	gray	solid	-	25	Y	0
RAS	394	55	S	OT	P	-	-	brown	solid	-	25	Y	1
RAS	395	55	S	OT	P	-	-	gray	solid	-	50	Y	3
RAS	396	55	S	OT	P	-	-	beige	solid	rags	50	Y	10
RAS	397	55	S	OT	P	-	-	purple	solid	-	50	Y	10
RAS	398	55	S	OT	P	-	-	beige	solid	-	25	Y	5
RAS	399	55	S	OT	P	-	-	gray	solid	-	50	Y	5
RAS	400	55	S	OT	P	-	-	brown	solid	-	25	Y	1
RAS	401	55	S	OT	P	-	-	black	solid	-	25	Y	0

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DRUM LOG SUMMARY
Rasmussen Immediate Response Action

DRUM # / SAMPLE ID		CONTAINER Size	Type	Lid	Condition	O/P	Markings	CONTENTS Color	Phase	Description	%Full	Sampled	HNu(ppm)
RAS	402	55	S	OT	P	-	-	black	solid	-	25	Y	0
RAS	403	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	404	55	S	OT	P	-	-	beige	solid	-	75	Y	0
RAS	405	5	S	OT	P	-	-	brown	solid	-	50	Y	0
RAS	406	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	407	5	S	OT	P	-	-	brown	solid	-	50	Y	10
RAS	408	55	S	B	G	-	-	brown	solid	-	25	Y	5
RAS	409	55	S	OT	P	-	-	gray	solid	sludge	50	Y	3
RAS	410	55	S	OT	P	-	-	brown	solid	-	25	Y	7
RAS	411	55	S	OT	P	-	-	gray	solid	-	25	Y	20
RAS	412	55	S	OT	P	-	-	brown	solid	-	25	Y	100
RAS	413	55	S	OT	P	-	-	red	solid	-	25	Y	10
RAS	414	55	P	B	P	-	-	black	solid	debris	25	Y	6
RAS	415	55	P	B	P	-	-	brown	solid	debris	25	Y	10
RAS	416	55	S	OT	P	-	-	green	solid	-	25	Y	5
RAS	417	55	S	B	P	-	-	-	-	-	empty	-	4
RAS	418	55	S	OT	P	-	-	brown	solid	soil	25	Y	1
RAS	419	55	S	OT	G	Y	-	white	solid	powder	75	Y	10
RAS	420	55	S	OT	P	-	-	brown	solid	-	25	Y	30
RAS	421	55	S	OT	P	-	-	gray	solid	-	25	Y	10
RAS	422	55	S	OT	F	-	-	black	solid	-	75	Y	2
RAS	423	30	S	OT	P	-	-	-	-	-	empty	-	0
RAS	424	55	S	OT	P	-	-	gray	solid	-	25	Y	10
RAS	425	55	S	OT	G	-	-	gray	solid	soil	100	Y	2
RAS	426	55	S	OT	F	-	-	gray	solid	-	50	Y	10
RAS	427	55	S	OT	P	-	-	gray	solid	rags	50	Y	7
RAS	428	55	S	OT	P	-	-	-	-	-	empty	-	4
RAS	429	55	S	OT	P	-	-	gray	solid	-	25	Y	10
RAS	430	55	S	B	F	-	-	amber	liquid	-	25	Y	10
RAS	431	55	S	OT	P	-	-	brown	solid	-	25	Y	2
	432	55	S	OT	P	-	-	brown	solid	-	25	Y	6
RAS	433	55	S	OT	P	-	-	gray	solid	-	25	Y	6
RAS	434	55	S	OT	P	-	-	gray	solid	-	25	Y	10
RAS	435	55	S	OT	P	-	(5)	gray	solid	-	25	Y	10
RAS	436	55	S	OT	P	-	-	black	solid	-	50	Y	2
RAS	437	55	S	OT	P	-	-	black	solid	rubbery	25	Y	500
RAS	438	55	S	OT	P	-	-	brown	solid	-	25	Y	60
RAS	439	55	S	OT	P	-	-	gray	solid	-	25	Y	10
RAS	440	55	S	OT	P	-	-	-	-	-	empty	-	10
RAS	441	55	P	OT	P	-	-	black	solid	-	50	Y	7
RAS	442	55	S	OT	P	-	-	gray	solid	-	25	Y	20
RAS	443	55	S	OT	P	-	-	gray	solid	-	25	Y	10
RAS	444	30	S	OT	P	-	-	-	-	-	empty	-	5
RAS	445	30	S	OT	P	-	-	-	-	-	empty	-	30
RAS	446	5	S	OT	P	-	-	gray	solid	paint sludge	50	Y	10
RAS	447	55	S	OT	F	-	-	black	solid	-	50	Y	4
RAS	448	55	S	OT	P	-	-	-	-	-	empty	-	10
RAS	449	55	S	OT	P	-	-	brown	solid	soil	25	Y	10
RAS	450	55	S	OT	P	-	-	black	solid	sludge	25	Y	10
RAS	451	55	S	OT	P	-	-	black	solid	-	25	Y	2
RAS	452	55	S	OT	P	-	-	rust	solid	-	25	Y	20
RAS	453	55	S	OT	P	-	-	white	solid	-	25	Y	200
RAS	454	55	S	OT	P	-	-	red	solid	-	50	Y	40
RAS	455	55	S	OT	P	-	-	brown	solid	-	25	Y	7
RAS	456	55	S	OT	P	-	-	black	solid	-	25	Y	40
RAS	457	55	S	OT	G	Y	-	brown	solid	-	25	Y	10
RAS	458	55	S	OT	P	Y	-	brown	solid	-	25	Y	20
IW AREA													
RAS	459	55	S	OT	P	-	-	brown	solid	soil	25	Y	1
RAS	460	55	S	OT	P	-	-	gray	solid	-	25	Y	5
RAS	461	55	S	OT	F	-	-	gray	solid	rags	100	Y	300
RAS	462	55	S	OT	P	-	-	gray	solid	-	50	Y	30
RAS	463	55	S	OT	P	-	-	-	-	-	empty	-	1000
	464	55	S	OT	P	-	-	brown	solid	-	75	Y	3
RAS	465	55	S	OT	F	-	-	gray	solid	-	75	Y	2
RAS	466	55	S	B	P	-	-	gray	solid	soil	50	Y	8

DRUM LOG SUMMARY
Rasmussen Immediate Response Action

DRUM # / SAMPLE ID		CONTAINER Size	Type	Lid	Condition	O/P	Markings	CONTENTS Color	Phase	Description	%Full	Sampled	HNu(ppm)
RAS	467	55	S	OT	P	-	-	black	solid	sludge	50	Y	5
RAS	468	55	S	OT	P	-	-	brown	solid	-	25	Y	2
RAS	469	55	S	B	P	-	-	gray	solid	-	25	Y	3
RAS	470	55	S	OT	P	-	-	blue	solid	-	25	Y	1
RAS	471	55	S	B	F	-	-	red	solid	-	25	Y	1
RAS	472	55	S	OT	P	-	-	gray	solid	-	25	Y	5
RAS	473	55	S	B	P	-	-	black	solid	-	25	Y	400
RAS	474	55	S	OT	P	-	-	gray	solid	-	25	Y	40
RAS	475	55	S	OT	P	-	-	black	solid	-	25	Y	100
RAS	476	55	S	OT	P	-	-	gray	solid	sludge	25	Y	1
RAS	477	55	S	OT	F	-	-	gray	solid	-	75	Y	0
RAS	478	55	S	OT	P	Y	-	brown	solid	sludge	25	Y	2
RAS	479	55	S	OT	P	-	-	black	solid	-	50	Y	0
RAS	480	55	S	OT	G	-	-	gray	solid	hard	100	Y	5
RAS	481	55	S	B	P	-	-	-	-	-	empty	-	100
RAS	482	55	S	B	P	-	-	gray	solid	-	50	Y	30
RAS	483	55	S	OT	P	-	-	brown	solid	-	100	Y	3
RAS	484	55	S	B	P	-	-	gray	solid	-	25	Y	400
RAS	485	55	S	OT	G	-	-	brown	solid	-	25	Y	3
RAS	486	55	S	B	P	-	-	gray	solid	-	25	Y	5
RAS	487	55	S	OT	P	-	-	black	solid	-	25	Y	2
RAS	488	55	S	(fragments)		-	-	-	-	-	empty	-	0
RAS	489	55	S	OT	P	-	-	black	solid	-	50	Y	2
RAS	490	55	S	OT	P	-	-	brown	solid	-	25	Y	1
RAS	491	55	S	OT	P	-	-	brown	solid	-	50	Y	9
RAS	492	55	S	OT	P	-	-	-	-	-	empty	-	2
RAS	493	55	S	OT	P	-	-	rust	solid	rags	25	Y	200
RAS	494	55	S	OT	P	-	-	-	-	-	empty	-	10
RAS	495	55	S	OT	P	-	-	-	-	-	empty	-	2
RAS	496	55	S	OT	F	-	-	brown	solid	soil	50	Y	0
RAS	497	55	S	OT	P	-	-	brown	solid	-	25	Y	0
RAS	498	55	S	OT	P	-	-	brown	solid	-	25	Y	1
RAS	499	55	S	B	P	-	-	gray	solid	-	25	Y	400
RAS	500	55	S	OT	P	-	-	gray	solid	-	25	Y	1000
RAS	501	55	S	OT	P	Y	-	brown	solid	resin	25	Y	7
RAS	502	55	S	OT	P	Y	-	black	solid	sludge	75	Y	1000
RAS	503	55	S	OT	P	Y	-	black	solid	sludge	75	Y	7
RAS	504	55	S	B	F	-	-	black	solid	sludge	50	Y	10
RAS	505	55	S	OT	P	Y	-	white	solid	powder	75	Y	20
RAS	506	55	S	OT	P	-	-	brown	solid	-	50	Y	30
RAS	507	55	S	OT	P	-	-	gray	solid	soil	50	Y	8
RAS	508	55	S	OT	P	-	-	brown	solid	-	75	Y	6
RAS	509	55	S	B	P	-	-	black	solid	sludge	25	Y	600
RAS	510	55	S	OT	P	-	-	gray	solid	-	75	Y	10
RAS	511	55	S	OT	P	-	-	-	-	-	empty	-	3
RAS	512	55	S	B	P	-	-	brown	solid	rags	50	Y	3
RAS	513	55	S	OT	P	-	-	gray	solid	-	50	Y	3
RAS	514	55	S	OT	P	-	-	brown	solid	-	50	Y	1000
RAS	515	55	S	OT	F	-	-	black	solid	-	100	Y	7
RAS	516	55	S	OT	P	-	-	-	-	-	empty	-	10
RAS	517	55	S	OT	P	-	-	-	-	-	empty	-	9
RAS	518	55	S	OT	P	-	-	black	solid	-	75	Y	4
RAS	519	55	S	B	P	-	-	gray	solid	-	50	Y	3
RAS	520	55	S	OT	P	-	-	black	solid	-	75	Y	4
RAS	521	55	S	OT	P	-	-	black	solid	-	75	Y	2
RAS	522	55	S	OT	P	-	-	gray	solid	-	50	Y	4
RAS	523	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	524	55	S	OT	P	-	-	-	-	-	empty	-	1
RAS	525	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	526	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	527	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	528	55	S	OT	G	-	-	red	solid	rags	100	Y	2
RAS	529	55	S	OT	P	-	-	black	solid	sludge	25	Y	1
RAS	530	55	S	B	P	-	-	-	-	-	empty	-	0
RAS	531	55	S	B	P	-	-	gray	solid	soil	50	Y	7
RAS	532	(no drum, solid in shape of 55 gallon drum)						brown	solid	hard	75	Y	0
RAS	533	55	S	OT	P	-	-	brown	solid	-	50	Y	1
RAS	534	55	S	OT	P	-	-	black	solid	sludge	50	Y	1
RAS	535	55	S	OT	P	-	-	-	-	-	empty	-	1

DRUM LOG SUMMARY
Rasmussen Immediate Response Action

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DRUM # / SAMPLE ID		Size	Type	CONTAINER Lid	Condition	O/P	Markings	CONTENTS Color	Phase	Description	%Full	Sampled	HNu(ppm)
RAS	536	55	S	OT	P	-	-	brown	solid	debris	50	Y	1
RAS	537	55	S	OT	P	-	-	rust	solid	rags	50	Y	100
RAS	538	55	S	OT	P	-	-	blue	solid	rags	50	Y	2
RAS	539	55	S	B	F	-	-	red	solid	-	75	Y	2
RAS	540	55	S	OT	P	-	-	yellow	solid	-	25	Y	3
RAS	541	55	S	OT	F	-	-	brown	solid	-	75	Y	10
RAS	542	55	S	OT	P	-	-	beige	solid	-	50	Y	1
RAS	543	55	S	(badly crushed)		-	-	-	-	-	empty	-	2
RAS	544	55	S	OT	P	-	-	black	solid	-	75	Y	1
RAS	545	55	S	(badly crushed)		-	-	pink	solid	-	50	Y	1
RAS	546	55	S	B	P	-	-	gray	solid	-	25	Y	3
RAS	547	55	S	OT	P	-	-	black	solid	rubbery	25	Y	3
RAS	548	55	S	OT	P	-	-	-	-	-	empty	-	6
RAS	549	55	S	OT	P	-	-	gray	solid	-	50	Y	1000
RAS	550	55	S	OT	P	-	-	brown	solid	rags	50	Y	3
RAS	551	55	S	OT	P	-	-	purple	solid	-	50	Y	80
RAS	552	55	S	B	P	-	-	-	-	-	empty	-	2
RAS	553	55	S	OT	P	-	-	-	-	-	empty	-	1
RAS	554	55	S	OT	P	-	-	purple	solid	-	50	Y	300
RAS	555	55	S	OT	F	-	-	brown	solid	-	75	Y	10
RAS	556	55	S	OT	P	-	-	-	-	-	empty	-	2
RAS	557	55	S	B	P	-	-	-	-	-	empty	-	2
RAS	558	55	S	OT	P	-	-	brown	solid	-	75	Y	1
RAS	559	55	S	OT	P	-	-	-	-	-	empty	-	10
RAS	560	55	S	B	P	-	-	-	-	-	empty	-	5
RAS	561	55	S	OT	P	-	-	-	-	-	empty	-	2
RAS	562	55	S	OT	F	-	-	gray	solid	-	50	Y	0
RAS	563	55	S	OT	P	-	-	beige	solid	-	75	Y	1
RAS	564	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	565	55	S	OT	F	-	-	black	solid	sludge	75	Y	0
?	566	55	S	OT	P	-	-	brown	solid	-	75	Y	20
?	567	55	S	OT	P	-	-	brown	solid	debris	75	Y	10
RAS	568	55	S	B	P	-	-	-	-	-	empty	-	2
RAS	569	55	S	B	P	-	-	-	-	-	empty	-	1
RAS	570	55	S	OT	P	-	-	brown	solid	soil	50	Y	1
RAS	571	55	S	OT	P	-	-	black	solid	-	100	Y	2
RAS	572	55	S	OT	P	-	-	-	-	-	empty	-	2
RAS	573	55	S	OT	F	-	-	varied	solid	rags	100	Y	6
RAS	574	55	S	OT	P	-	-	varied	solid	rags	100	Y	30
RAS	575	55	S	OT	P	-	-	brown	solid	soil,rags	75	Y	1
RAS	576	55	S	B	F	-	-	brown	solid	-	100	Y	3
RAS	577	55	S	OT	P	-	-	rust	solid	-	75	Y	10
RAS	578	55	S	OT	P	-	-	gray	solid	-	75	Y	1
RAS	579	55	S	OT	F	-	-	gray	solid	plastic liner	50	Y	2
RAS	580	55	S	B	F	-	-	red	solid	-	75	Y	1
RAS	581	55	S	OT	P	-	-	brown	solid	rags	75	Y	0
RAS	582	55	S	OT	F	-	-	gray	solid	-	100	Y	0
RAS	583	55	S	OT	P	-	-	brown	solid	-	25	Y	0
RAS	584	55	S	B	P	-	-	brown	solid	-	25	Y	0
RAS	585	55	S	OT	P	-	-	-	-	-	empty	-	1
RAS	586	55	S	OT	P	-	-	-	-	-	empty	-	1
RAS	587	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	588	5	S	OT	P	-	-	black	solid	-	75	Y	5
RAS	589	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	590	55	S	OT	P	Y	-	white	solid	-	75	Y	0
RAS	591	55	S	OT	P	-	-	gray	solid	-	25	Y	30
RAS	592	55	S	OT	P	-	-	-	-	-	empty	-	5
RAS	593	55	S	OT	P	-	-	-	-	-	empty	-	1000
RAS	594	55	S	OT	P	-	-	varied	solid	rags	50	Y	500
RAS	595	55	S	OT	P	-	-	pink	solid	-	25	Y	10
RAS	596	55	S	OT	P	-	-	brown	solid	-	25	Y	8
RAS	597	55	S	B	P	-	-	brown	solid	soil	50	Y	3
RAS	598	55	S	OT	P	-	-	-	-	-	empty	-	1
RAS	599	55	S	OT	P	-	-	gray	solid	-	25	Y	4
RAS	600	55	S	OT	P	-	-	gray	solid	-	25	Y	100
RAS	601	55	S	OT	P	-	-	brown	solid	-	25	Y	6
	602	55	S	OT	P	-	-	black	solid	rags	75	Y	20
?	603	55	S	B	P	-	-	gray	solid	soil	50	Y	10
RAS	604	55	S	OT	P	-	-	brown	solid	rags	100	Y	60

DRUM LOG SUMMARY
Rasmussen Immediate Response Action

DRUM # / SAMPLE ID		CONTAINER Size	Type	Lid	Condition	O/P	Markings	CONTENTS Color	Phase	Description	%Full	Sampled	HNu(ppm)
RAS	605	55	S	OT	P	-	-	black	solid	-	50	Y	1
RAS	606	55	S	OT	P	-	-	black	solid	sludge	50	Y	3
RAS	607	55	S	OT	P	-	-	gray	solid	-	50	Y	10
RAS	608	55	S	OT	P	-	-	gray	solid	sludge	25	Y	1
RAS	609	55	S	B	P	-	-	gray	solid	-	50	Y	7
RAS	610	55	S	OT	P	-	-	gray	solid	-	50	Y	6
RAS	611	55	S	OT	P	-	-	gray	solid	-	75	Y	10
RAS	612	55	S	OT	P	-	-	gray	solid	-	50	Y	10
RAS	613	55	S	OT	P	-	-	black	solid	-	75	Y	2
RAS	614	55	S	OT	P	-	-	black	solid	-	75	Y	4
RAS	615	55	S	OT	P	-	-	-	-	plastic liner	empty	-	7
RAS	616	55	S	OT	F	-	-	black	solid	-	100	Y	10
RAS	617	55	S	B	P	-	-	-	-	-	empty	-	300
RAS	618	55	S	OT	P	-	-	blue	solid	sludge	50	Y	400
RAS	619	55	S	OT	P	-	-	brown	solid	-	50	Y	8
RAS	620	55	S	OT	P	-	-	white	solid	-	75	Y	7
RAS	621	55	S	OT	P	-	-	gray	solid	rags	50	Y	5
RAS	622	55	S	OT	P	-	-	red	solid	rags	50	Y	7
RAS	623	55	S	OT	P	-	-	gray	solid	-	75	Y	20
RAS	624	55	S	OT	P	-	-	gray	solid	rags	75	Y	5
RAS	625	55	S	B	P	-	-	brown	solid	-	75	Y	30
RAS	626	55	S	OT	P	-	-	brown	solid	-	25	Y	6
RAS	627	55	S	OT	P	-	-	black	solid	-	50	Y	5
RAS	628	55	S	OT	P	-	-	-	-	-	empty	-	3
RAS	629	55	S	OT	P	-	-	black	solid	-	75	Y	10
RAS	630	55	S	OT	P	-	-	-	-	-	empty	-	3
RAS	631	55	S	OT	P	-	-	black	solid	-	50	Y	4
RAS	632	55	S	OT	P	-	-	-	-	-	empty	-	60
RAS	633	55	S	OT	P	-	-	-	-	-	empty	-	20
RAS	634	55	S	OT	P	-	-	gray	solid	-	25	Y	1000
RAS	635	55	S	B	P	-	-	black	solid	-	25	Y	200
RAS	636	55	S	B	P	-	-	purple	solid	-	75	Y	40
RAS	637	55	S	B	P	-	-	-	-	-	empty	-	6
RAS	638	55	S	OT	P	-	-	black	solid	-	25	Y	4
RAS	639	55	S	B	P	-	-	-	-	-	empty	-	20
RAS	640	55	S	OT	P	-	-	gray	solid	soil	25	Y	100
RAS	641	55	S	OT	P	-	-	brown	solid	-	75	Y	5
RAS	642	55	S	OT	P	-	-	black	solid	-	75	Y	10
RAS	643	55	S	B	P	-	-	gray	solid	-	25	Y	4
RAS	644	55	S	OT	P	-	-	black	solid	rags	25	Y	1
NEBD AREA													
RAS	645	55	S	OT	F	-	-	gray	solid	-	75	Y	2
RAS	646	55	S	OT	P	-	-	-	-	-	empty	-	7
RAS	647	55	S	OT	P	-	-	-	-	-	empty	-	3
RAS	648	55	S	OT	P	-	-	-	-	-	empty	-	3
RAS	649	55	S	OT	P	-	-	-	-	-	empty	-	0
RAS	650	55	S	OT	P	-	-	-	-	-	empty	-	1
RAS	651	55	S	OT	P	-	-	-	-	-	empty	-	7

LEGEND

SIZE	(in gallons)	MARKINGS	(1) DuPont .....
TYPE	S - steel		(2) Dow Chemical - LA.....
	P - plastic		(3) Gliddon
LID	OT - open top drum		(4) NP National Polychemicals Inc. Wilmington Mass.
	B - bung type drum		
CONDITION	G - good		(5) Cyanamid
	F - fair		
	P - poor		
O/P	Overpacked(Y - Yes)		

DOCUMENT #979 CONTINUED IN VOLUME 4