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NIROP FRIDLEY  
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WORK PLAN ADDENDUM FOR REMOVAL ACTION AT NORTH 40 ADDENDUM TO  
REVISION B NIROP FRIDLEY MN  
2/21/1996  
MORRISON KNUDSEN CORPORATION

24

**WORK PLAN**

**ADDENDUM  
REMOVAL ACTION AT NORTH 40**

**NIROP FRIDLEY  
FRIDLEY, MINNESOTA**

**CONTRACT N62467-93-D-1106  
DELIVERY ORDER #0014  
STATEMENT OF WORK #015  
TASK 1**

**REVISION: ADDENDUM TO REV B  
FEBRUARY 21, 1996**

*Prepared For:*

**SOUTHERN DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
P.O. Box 190010  
2155 Eagle Drive  
North Charleston, South Carolina 29419-9010**

*Prepared By:*

**MORRISON KNUDSEN CORPORATION  
2420 Mall Drive  
Corporate Square 1 - Suite 211  
North Charleston, South Carolina 29406**

DELIVERY ORDER 0014  
STATEMENT OF WORK 015

TASK 1

NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT  
FRIDLEY, MINNESOTA

**ADDENDUM TO WORK PLAN**  
**REMOVAL ACTION AT NORTH 40**

Revision: Addendum to Revision B

February 21, 1996

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North Charleston, South Carolina 29406

**SET ID NO:**

12

**WORK PLAN**

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REMOVAL ACTION AT NORTH 40**

**NIROP FRIDLEY  
FRIDLEY, MINNESOTA**

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DELIVERY ORDER #0014  
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**ADDENDUM**  
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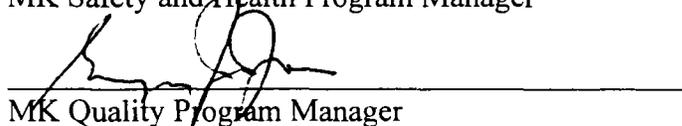
MORRISON KNUDSEN CORPORATION  
2420 MALL DRIVE  
CORPORATE SQUARE 1, SUITE 211  
NORTH CHARLESTON, SOUTH CAROLINA 29406

**APPROVALS**



MK Safety and Health Program Manager

06 Mar 96  
Date



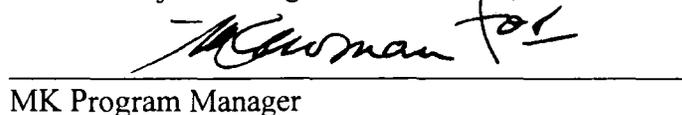
MK Quality Program Manager

6-Mar-96  
Date



MK Sr. Project Manager

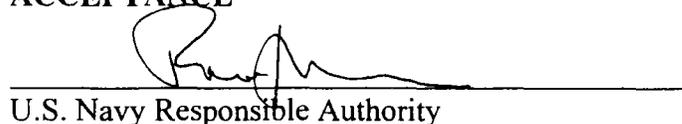
6 Mar 96  
Date



MK Program Manager

6 Mar 96  
Date

**ACCEPTANCE**



U.S. Navy Responsible Authority

22 MAR 96  
Date

**NIROP FRIDLEY  
FRIDLEY, MN  
WORK PLAN ADDENDUM TO REVISION B**

## **INTRODUCTION**

This addendum is to Revision B of the Work Plan issued August 24, 1995. The Minnesota Pollution Control Agency (MPCA) approved the Revision B documents, with comments, on December 26, 1995. These two documents, combined, outline the work activities to be performed by the Navy.

### **General Comment**

All activities on site will be referred to as a removal action.

#### **Page 2, Section 1.2.3**

Delete the last sentence.

#### **Page 4, Section 1.3.2**

Replace section **1.3.2 Recommendations** with the following section:

#### **1.3.2 Recommendations**

Based on results of the geophysical investigations, 9 anomalous areas (A1 through A9) have been identified as the most likely to contain drum-size metallic debris. These areas shall be excavated to determine the type of material buried and to remove potential contamination sources. The anomaly does not imply the presence of drums or contaminants, only the presence of drum-size metal objects. It is conceivable that the buried debris may consist of building debris with rebar, old railroad tracks, or a variety of other metallic rubble. Five of the 42 smaller anomalies were selected by geophysical intensity and shall be excavated to determine the cause of the anomaly. The five selected anomalies are B-5, B-11, B-12, B-28, and B-30. It is unlikely that these isolated anomalies are related to single buried drums, but more to metal rubble. If no drums are encountered, further excavation will not be performed. If drums are encountered in the smaller anomalies, notifications will be made as described in section 3.3.1. After notifications are made, the Navy, the MPCA staff and the USEPA shall review the information gathered in the field and determine how to proceed with investigation of the remaining small anomalies.

## **Page 5, Section 2.0**

Replace first two bullets with the following:

- SouthDiv must notify USEPA Region V and Minnesota Pollution Control Agency (MPCA) of the planned removal action.
- SouthDiv will provide NAVSEA a copy of the work plan.

## **Page 7, Section 3.2**

Replace the second paragraph with the following:

For each particular excavation area, 3PC will be used on each definable feature of work. Definable features of work are the individual work activities associated with the work scope (e.g., site clearing, excavation, drum handling, etc.). The three phases in 3PC are: (i) the preparatory phase; (ii) the initial phase; and (iii) the follow up phase. These phases, and their associated inspections, identify "hold points" or check points, to allow evaluation of the work progress and to ensure quality requirements are being met.

## **Page 8, Section 3.3.1**

Change the first sentence to read:

Local, state and federal agencies will be notified by MK of the removal action prior to commencing on-site work activities specified.

Replace the first two bullets with the following:

- The Navy shall provide public notification published in a local newspaper 60 days prior to commencement of the removal action with a 30 day public comment period.
- The Navy shall inform the Minnesota Pollution Control Agency (MPCA) of the work schedule two weeks before it is to start so that there is sufficient time to schedule on-site inspection of the excavation work.

Add the following bullet to the section:

- The Navy shall notify the MPCA if drums are encountered during the excavation of the five smaller anomalies.

**Page 8, Section 3.3.2**

First sentence, delete the word *interim*.

Replace the first two bullets with the following:

- Construction activities including:
  - a photographic log of each excavation.
  - a log and description of all removed objects.
- Discrepancies from the work plan;

**Page 10, Section 3.1.4.4**

Replace section **misnumbered 3.1.4.4** with the following:

**3.4.1.4 Construct Decontamination Facilities**

Prior to beginning work activities in conjunction with the removal action, decontamination facilities will be constructed as described in Section 7. Decontamination facilities will be constructed at or near each affected area within the North 40 as well as at a centrally located facility, as determined by field personnel.

**Page 11, Section 3.4.2**

Replace section **3.4.2** with the following:

**3.4.2 Delineate Depth and Perform Excavations**

A digging permit will be obtained after confirmation from the Site Safety and Health Officer (SSHO) prior to excavation. The soil in the anomaly area will be carefully excavated with a backhoe or trackhoe to a maximum depth of 10 feet or until obstructions are excavated or ground water is encountered. Metal detectors will also be used to scan each excavation following drum or debris removal to determine whether there is a possibility of buried and other debris. Each layer of soil will be removed and stockpiled. The process of careful probing by excavation will continue until the probing and metal detection techniques show that drums and other debris have been encountered. If drums are detected, the soil around the drum will be excavated to expose the drum sufficiently for proper inspection and removal. Visually impacted soil will also be excavated and staged with the drums.

Excavated soil will be temporarily stockpiled on a 6 mil polyethylene liner surrounded by strawbale berms. A stockpiling plan will be developed for each area, detailing planned locations for individual stockpiles and protective measures that will be used for protection of human health and the environment. Stockpile sampling will be as agreed to by MPCA and Navy for unanticipated conditions for apparently impacted soils. Any water entering the area of the excavation will be collected, containerized, characterized

and either transported off site for disposal or discharged to the sanitary sewer.

Subsurface removal of drums and debris shall require special precautions and safety considerations as detailed in the SSHP. Subsurface drum and soil removal will be conducted as described in Section 3.4.3.

### **Page 11, Section 3.4.3**

Replace the second paragraph with the following:

If a drum shows potential internal pressure, evidenced by bulging, the work around that drum will proceed with extreme care. Movement of a pressurized drum will be performed with the use of a drum grappler or similar unit equipped for safe containment. The bulged drum will be moved only as far as necessary to allow seating on firm ground. The bulging drum will be placed in secondary containment and transferred to the temporary staging area. The drum will then be vented using a mechanical drum punch to relieve pressure. The SSHO and/or Project Manager will supervise this operation. All drums will be accumulated in accordance with Minnesota Hazardous Waste Regulation Part 7045.0292; staged in a bermed storage area. If, during drum removal, a drum breaks or otherwise leaks its contents before it can be overpacked, every effort will be made to recover any spilled material or soil that may become contaminated as a result of the release. This material or soil shall be sampled and handled according to paragraph 2, Section 3.4.2. Notification of this spill will be in accordance with Section 3.3 Notifications.

### **Page 13, Section 3.4.4**

Replace the 5th bullet item with the following:

- Collect individual samples from each drum or combine compatible wastes to form a bulk waste and collect a sample from the bulk waste for disposal characterization;

### **Page 14, Section 3.4.6**

Replace Section 3.4.6 with the following:

#### **3.4.6 Backfill Placement**

All excavations shall be surveyed to record the extent of the excavation and backfill requirements. Each excavation will be backfilled to grade after samples have been collected from the bottom of each excavation. The excavations will be backfilled after permission is received from the Navy. If additional backfill is necessary, clean backfill will be obtained from an off-site borrow source. Backfill shall be placed in 2 foot lifts and compacted to 85 % compaction.

The backfill will meet the following requirements:

- Less than three inches in diameter
- pH 5.5 to 8.5
- Less than 25% organic material

In areas of underground utilities, the backfill compaction will be 95% within 5 feet of the obstruction and 90% within 10 feet.

#### **Page 15, Section 3.4.7**

Replace the last sentence of the paragraph with the following:

All decontamination fluids shall be collected and sampled according to the CDAP. Water which meets the criteria shown on Table C-6 in the CDAP shall be discharged to the sanitary sewer. Water with chemicals exceeding the criteria on Table C-6 will be disposed off-site.

#### **Page 20, Section 7.2**

Replace Section 7.2 with the following:

#### **7.2 DECONTAMINATION FACILITY**

The location and number of decontamination facilities will be determined by field personnel. Decontamination facilities may be utilized by multiple excavation sites as determined by field personnel. Material used to construct the decontamination facilities that is in good condition may be moved and reused at subsequent sites. The facility will consist of a high density polyethylene (HDPE) liner draped over sandbags and sloped to a sump or collection area. A single sheet of HDPE will cover the base of the decontamination facility. The liner will be visually inspected prior to use, on a daily basis, to detect possible failures of the liner material. This liner will be inspected:

- for evidence of tears and holes;
- for evidence of seepage;
- to ensure that the sheeting is adequately fastened to the side walls;
- to ensure that the liner adequately covers the sand bags at the end sections; and
- to ensure that generated liquids can be contained until collected for disposal.

If damage is detected, the liner will be repaired or replaced before further use. Records will be maintained specifying decontamination facility construction materials and methods, disposition of liquids, and any repairs and/or breaches of liner integrity.

When the decontamination facility is not in use, it will be covered to minimize accumulation of rainwater.

When the decontamination facility is dismantled, the underlying material will be visually inspected. Visibly contaminated material will be removed and managed as a

contaminated waste.

**Page 22, Section 8.0**

Replace Section 8.0 with the following:

**8.0 WASTE MANAGEMENT**

Waste management, including disposal functions, will be conducted in accordance with this Waste Management Plan. Waste streams expected to be generated during this project will include:

- Buried drums and their contents;
- Impacted soil exceeding backfill criteria;
- General debris consisting of possibly concrete, wood or metal;
- Inert wastes (wood, HDPE, etc.)
- Decontamination and incidental water; and
- Personal protective equipment, clothing and discarded sample equipment.

**Page 24, Section 8.4.1**

Replace Section 8.4.1 with the following:

**8.4.1 Produced Ground Water**

Ground water encountered during excavation of the contaminated soil must be pumped from the excavation. Potentially contaminated produced ground water will be collected at each excavation site and sampled. Based on sample results, water will be discharged to the sanitary sewer or transported off site for ultimate disposition.

**Page 25, Section 8.4.3**

Replace Section 8.4.3 with the following:

**8.4.3 Decontamination Water**

Decontamination water is generated during steam cleaning or high-pressure wash of debris, excavation equipment and during manual decontamination of sampling equipment. Since the decontamination water is expected to contain low concentrations of the contaminants potentially found at the site, it will be collected and sampled. All water used in decontamination will be temporarily collected in 55-gallon drums at the point of generation. Decontamination water from all locations will be transferred to one 2,000-gallon tank for storage prior to disposal. Based on sample results, water will either be discharged to the sanitary sewer or transported off site for ultimate disposition.

**Page 25, Section 8.4.5**

Replace Section 8.4.5 with the following:

#### **8.4.5 Spill Containment Plan**

If a spill or release of hazardous materials occurs in the work area, the Contracting Officer's representative will be notified. If a spill occurs, the Spill Containment Plan, Section 16, of the SSHP, shall be followed. The SSHP (Appendix A of the Work Plan), contains a list of safety and spill control equipment available on site in the event of an emergency.

#### **Page 33, Section 8, Attachment A**

Replace **Attachment A** with the following (page 8 of addendum).

#### **Page 42, Section 10 Schedule**

Replace pages 43-51 in the August 24 version with the attached pages 9 and 10. The revised milestones for the project are as follows:

|                                |               |
|--------------------------------|---------------|
| Mobilization                   | April, 1996   |
| Construction Complete          | July, 1996    |
| Construction Completion Report | October, 1996 |

#### **Add Section 13.0 PROJECT ORGANIZATION**

Add the following pages (addendum pages 11-13) to the end of the work plan, after page 57.

# ATTACHMENT A

## DISPOSAL COORDINATOR FIELD KIT MATERIAL LIST

### I. PROCEDURES AND REFERENCES

- 1) 49 CFR, PARTS 100-177;
- 2) MINNESOTA HAZARDOUS WASTE MANAGEMENT REGULATIONS;
- 3) 40 CFR, PARTS 260-299;
- 4) ALL APPLICABLE PROJECT SPECIFIC RULES, REGULATIONS, AND LICENSES (STATE HAZARDOUS MATERIAL REGULATIONS, ETC.);

### II. PAPERWORK

- 1) BLANK BILLS OF LADING;
- 2) BLANK US EPA UNIFORM HAZARDOUS WASTE MANIFESTS AND STATE MANIFESTS AS APPLICABLE;
- 3) ALL PROJECT SPECIFIC PAPERWORK (STATE OF MINNESOTA HAZARDOUS WASTE MANIFESTS, WASTE CERTIFICATION FORMS, PRIOR NOTIFICATION FORMS, ETC.).

### III. LABELS AND MARKINGS

- 1) WASTE CLASS AND STABILITY STICKERS;
- 2) ITEM NO. AND WEIGHT STICKERS;
- 3) HAZARDOUS MATERIALS LABELS;
- 4) "7A TYPE A" STICKERS;
- 5) HAZARDOUS WASTE CONTAINER LABELS;
- 6) PERMANENT MARKERS (2) AND PENS (2);
- 7) HAZARDOUS MATERIALS PLACARDS;
- 8) PROJECT SPECIFIC MARKINGS AND LABELS AS REQUIRED.

### IV. TOOLS AND MATERIALS

- 1) 12" CRESCENT WRENCH (1);
- 2) 15/16" COMBINATION WRENCH (2);
- 3) HALF ROUND NEOPRENE GASKETS AND SILICONE GREASE (IF SHIPPING DRUMS);
- 4) OTHER TOOLS, MATERIALS, AND INSTRUMENTATION AS REQUIRED BY PROJECT.

| Activity description           | Early start | Early finish | Rem Dur | %   | 1996                           |     |     |     |     |     |     |     |     |     |     |  |
|--------------------------------|-------------|--------------|---------|-----|--------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
|                                |             |              |         |     | DEC                            | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT |  |
| <b>MOBILIZATION</b>            |             |              |         |     |                                |     |     |     |     |     |     |     |     |     |     |  |
| PREPARE BID PACKAGES           | 18DEC95A    | 14FEB96A     | 0       | 100 | PREPARE BID PACKAGES           |     |     |     |     |     |     |     |     |     |     |  |
| REVISE WP DOCUMENTS            | 18DEC95A    | 28FEB96      | 4*      | 93  | REVISE WP DOCUMENTS            |     |     |     |     |     |     |     |     |     |     |  |
| RECEIVE FUNDING                |             | 18DEC95A     | 0       | 100 | RECEIVE FUNDING                |     |     |     |     |     |     |     |     |     |     |  |
| BID PHASE                      | 22FEB96A    | 15MAR96      | 16*     | 6   | BID PHASE                      |     |     |     |     |     |     |     |     |     |     |  |
| BID WALK                       | 29FEB96     | 29FEB96      | 1       | 0   | BID WALK                       |     |     |     |     |     |     |     |     |     |     |  |
| WP APPROVED BY SD              |             | 15MAR96*     | 0       | 0   | WP APPROVED BY SD              |     |     |     |     |     |     |     |     |     |     |  |
| AWARD SUBCONTRACTS             |             | 29MAR96*     | 0       | 0   | AWARD SUBCONTRACTS             |     |     |     |     |     |     |     |     |     |     |  |
| MK MOBILIZATION                | 01APR96     | 05APR96      | 5       | 0   | MK MOBILIZATION                |     |     |     |     |     |     |     |     |     |     |  |
| SUBCONTRACTOR MOBILIZATION     | 01APR96     | 12APR96      | 10      | 0   | SUBCONTRACTOR MOBILIZATION     |     |     |     |     |     |     |     |     |     |     |  |
| <b>REMEDIATION ACTIVITY</b>    |             |              |         |     |                                |     |     |     |     |     |     |     |     |     |     |  |
| AREA A1 REMEDIATION            | 15APR96     | 06MAY96      | 16      | 0   | AREA A1 REMEDIATION            |     |     |     |     |     |     |     |     |     |     |  |
| REMEDiate ANOMALY AREA's B1-42 | 15APR96     | 13MAY96      | 21      | 0   | REMEDiate ANOMALY AREA's B1-42 |     |     |     |     |     |     |     |     |     |     |  |
| AREA A2 REMEDIATION            | 15APR96     | 15MAY96      | 23      | 0   | AREA A2 REMEDIATION            |     |     |     |     |     |     |     |     |     |     |  |
| AREA A3 REMEDIATION            | 30APR96     | 24MAY96      | 19      | 0   | AREA A3 REMEDIATION            |     |     |     |     |     |     |     |     |     |     |  |
| AREA A4 REMEDIATION            | 30APR96     | 04JUN96      | 26      | 0   | AREA A4 REMEDIATION            |     |     |     |     |     |     |     |     |     |     |  |
| AREA A5 REMEDIATION            | 15MAY96     | 13JUN96      | 22      | 0   | AREA A5 REMEDIATION            |     |     |     |     |     |     |     |     |     |     |  |
| AREA A6 REMEDIATION            | 15MAY96     | 24JUN96      | 29      | 0   | AREA A6 REMEDIATION            |     |     |     |     |     |     |     |     |     |     |  |
| AREA A7 REMEDIATION            | 30MAY96     | 03JUL96      | 25      | 0   | AREA A7 REMEDIATION            |     |     |     |     |     |     |     |     |     |     |  |
| AREA A8 REMEDIATION            | 30MAY96     | 12JUL96      | 32      | 0   | AREA A8 REMEDIATION            |     |     |     |     |     |     |     |     |     |     |  |
| AREA A9 REMEDIATION            | 14JUN96     | 23JUL96      | 28      | 0   | AREA A9 REMEDIATION            |     |     |     |     |     |     |     |     |     |     |  |
| <b>DEMOBILIZATION</b>          |             |              |         |     |                                |     |     |     |     |     |     |     |     |     |     |  |
| S/C DEMOBILIZATION             | 24JUL96     | 25JUL96      | 2       | 0   | S/C DEMOBILIZATION             |     |     |     |     |     |     |     |     |     |     |  |
| CONSTRUCTION COMPLETE          |             | 26JUL96      | 0       | 0   | CONSTRUCTION COMPLETE          |     |     |     |     |     |     |     |     |     |     |  |
| MK DEMOBILIZATION              | 29JUL96     | 02AUG96      | 5       | 0   | MK DEMOBILIZATION              |     |     |     |     |     |     |     |     |     |     |  |
| PREPARE FINAL REPORT           | 05AUG96     | 27SEP96      | 40      | 0   | PREPARE FINAL REPORT           |     |     |     |     |     |     |     |     |     |     |  |
| <b>SITEWIDE</b>                |             |              |         |     |                                |     |     |     |     |     |     |     |     |     |     |  |
| MK PROJECT ADMINISTRATION      | 01APR96     | 02AUG96      | 90      | 0   | MK PROJECT ADMINISTRATION      |     |     |     |     |     |     |     |     |     |     |  |

Project Start 01MAR94  
Project Finish 30APR97  
Data Date 23FEB96  
Plot Date 06MAR96

4324

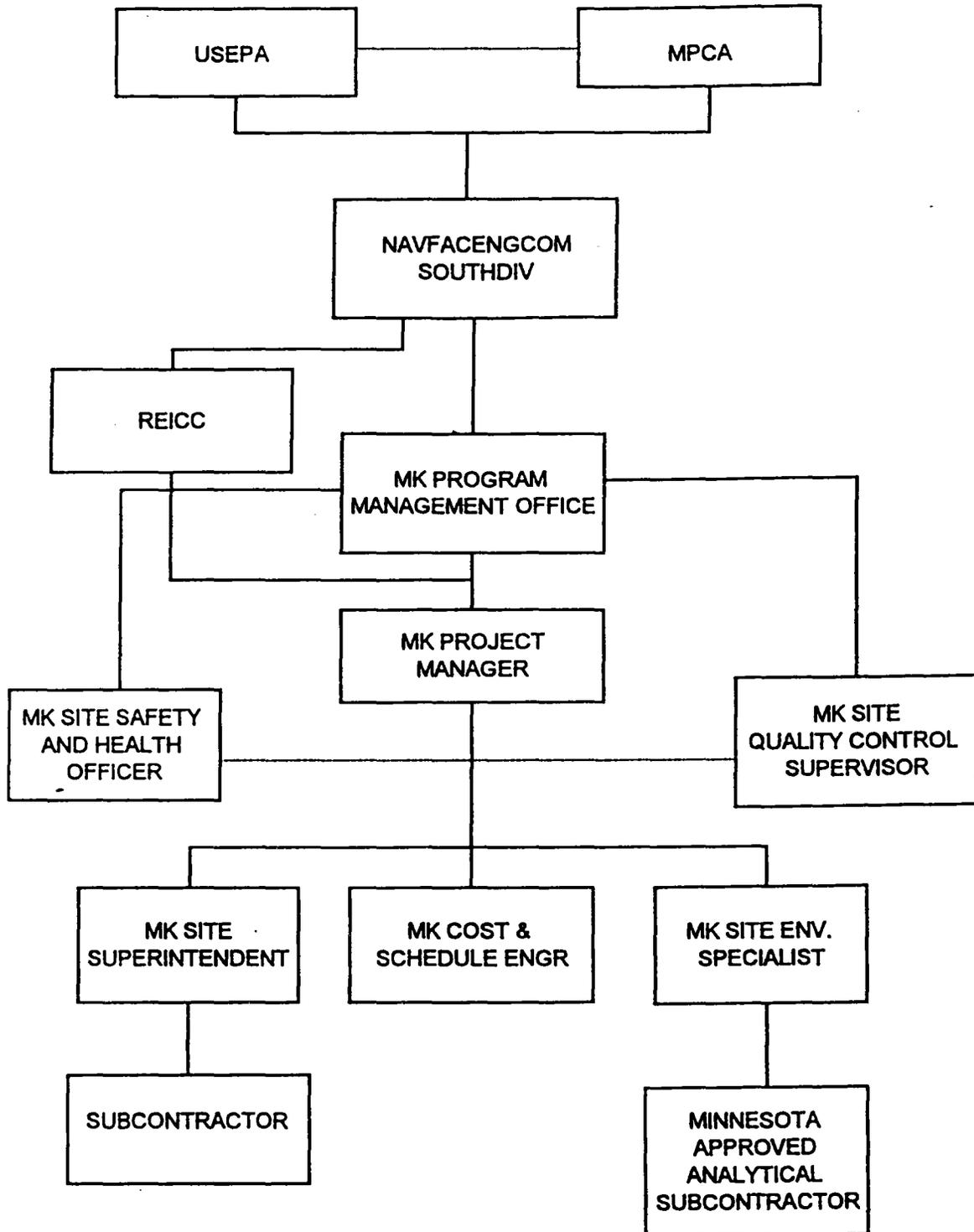
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SOUTH DIV ERAC PROGRAM - WO #4324  
NIROP FRIDLEY, MINNESOTA  
DO#0014, SOW#015, PH 3 SCHEDULE

Sheet 1 of 1

| MORRISON KNUDSEN CORPORATION |          |         |          |
|------------------------------|----------|---------|----------|
| Date                         | Revision | Checked | Approved |
|                              |          |         |          |
|                              |          |         |          |
|                              |          |         |          |

13.0  
PROJECT ORGANIZATION



| <b>PROJECT RESPONSIBILITIES</b>                     |   |
|---|---|
| <b>TEAM MEMBERS</b>                                 | <b>RESPONSIBILITIES</b>   |
| NAVFACENGCOM<br>SouthDiv                            | Overview of project execution and coordination between Contractor, NIROP Fridley, and other agencies.   |
| Program Management Office (PMO)                     | Overall responsibility for all cleanup measures at all sites in the Southern Division of the Naval Facilities Engineering Command under Contract No. N62467-93-D-1106. The PMO is the point of contact for SouthDiv.  |
| Resident Engineer in Charge of Construction (REICC) | SouthDiv's on-site representative and is the liaison between NIROP officials and the Project Manager.   |
| Project Manager (PM)                                | Overall responsibility for implementing this Work Plan and all other project activities. The PM will control all on-site forces to ensure completion of project tasks. <ul style="list-style-type: none"> <li>• Single point of contact for liaison.</li> <li>• Coordinates the project resources to ensure compliance with the appropriate plans, procedures, and regulatory requirements,</li> <li>• Oversees all personnel on-site and coordinates with the Program Management Office (PMO).</li> </ul>  |
| Site Superintendent                                 | Reports to the PM and will act as the Assistant Project Manager. Has primary responsibility for the coordination and control of all field activities to ensure that all tasks included in this Work Plan are completed. <ul style="list-style-type: none"> <li>• Directs and coordinates the activities of all on-site subcontractors.</li> <li>• Provides daily reports to the PM on the status of field activities.</li> </ul>  |
| Cost and Schedule Engineer                          | Reports to the PM and has primary responsibility for the maintenance of the cost and schedule control systems, including regular assessments of performance. <ul style="list-style-type: none"> <li>• Provides administrative support services.</li> <li>• Evaluates cost and schedule information and provides status reports.</li> <li>• Prepares monthly progress reports.</li> <li>• Reviews cost/schedule submissions by subcontractors.</li> <li>• Verifies progress against payment requests.</li> <li>• Maintains the document control system.</li> <li>• Maintains contract change notice log and trend logs.</li> </ul> |

| <b>PROJECT RESPONSIBILITIES</b>        |  |
|--|--|
| <b>TEAM MEMBERS</b>                    | <b>RESPONSIBILITIES</b>  |
| Site Environmental Specialist          | <p>Reports to PM and has the responsibility for environmental and waste disposal issues.</p> <ul style="list-style-type: none"> <li>• Performs field screening.</li> <li>• Coordinates with Site Superintendent on sample collection and on-site laboratory testing.</li> <li>• Directs the activities of the off-site laboratory testing subcontractor.</li> <li>• Coordinates off-site waste disposal.</li> </ul>  |
| Site Safety and Health Officer (SSHO)  | <p>Reports to the PMO. Implements and ensures compliance with the Task-Specific Site Safety and Health Plan (SSHP). Tracks and reports on safety-related matters.</p> <ul style="list-style-type: none"> <li>• Responsible for the control and elimination of existing and potential industrial hazards.</li> <li>• Implements and executes personnel monitoring program to ensure proper monitoring of internal and external exposures.</li> <li>• Provides site-specific training to personnel as required by the SSHP.</li> <li>• Tracks all personnel training requirements, survey data, certifications, and records to ensure compliance with plans and regulations.</li> <li>• Assists in developing and implementing the SSHP.</li> <li>• Reviews and approves subcontractor Safety and Health Plans and Programs. Conducts audits as appropriate to ensure compliance.</li> <li>• Reviews and approves work permits for appropriate industrial hygiene and safety controls.</li> <li>• Provides monitoring to ensure the protection of project personnel, the public, and the environment,</li> <li>• Maintains an inventory of industrial hygiene and safety supplies as appropriate.</li> <li>• Maintains monitoring equipment and calibration records.</li> <li>• Stops work when necessary to ensure the safety of personnel and to prevent damage to the environment.</li> </ul> |
| Site Quality Control Supervisor (SQCS) | <p>Reports to the PMO and has primary responsibility for verifying a consistently high level of quality for the project.</p> <ul style="list-style-type: none"> <li>• Reviews and checks all documents, reports, and testing results.</li> <li>• Coordinates with procurement, engineering, and cost/schedule departments.</li> <li>• Observes all field activities to ensure compliance with this Work Plan and completes Field Inspection Checklists (Appendix B).</li> <li>• Keeps minutes of the periodic quality meetings.</li> <li>• Implements the three phases of quality control: Preparatory, Initial, and Follow-up inspections.</li> <li>• Ensures tracking and resolution of nonconformance/rework items.</li> </ul>  |

**ADDENDUM TO APPENDIX A  
SITE SAFETY AND HEALTH PLAN**

Replace Section 2.5.5 with the following:

**Page 7, Section 2.5.5**

Underground utilities have been identified in the Geophysical report and compared to facility utility drawings. All utility identification and markings will be coordinated by MK and surface markings shall be provided by the Excavation Subcontractor. The MK Project Engineer or designee will work with United Defense's Facilities Engineering Department and Subcontractor to reverify the facilities utility drawings against the Geophysical Survey results prior to excavation activities. MK will notify United Defense and the public utility locate service at least five working days in advance of excavation activities. A site walk shall be conducted after surface markings have been completed as a final check to assure agreement between all parties involved. Personnel attending the walk shall include facilities engineering, public utility locate service, MK, and the Excavation Subcontractor. An MK Excavation and Trenching Permit system shall be implemented. MK's Excavation Subcontractor shall use metal detectors during the excavation process to locate and quantify the size of the underground anomaly or designated utility. Energy control will be anticipated as necessary when excavating near the propane storage tanks related lines and the street light cable conduit. The extent of energy control on the interpreted utility corridor will be determined in the field. When energy control is anticipated for underground utilities, the requirements established in MK Project Procedure 01.1 shall be followed. See also Section 2.5.7 that follows.

**Page 7, Section 2.5.6**

Replace the second sentence of **Section 2.5.6** with the following:

The NIROP Fridley Hot Work Permit shall be obtained from the facility security office and completion of the report coordinated by the MK SSHO.

**Page 30, Section 9.1**

Replace the first sentence of the second paragraph of **Section 9.1** with the following:

Prior to the commencement of field activities, Work Zones shall be established by the Subcontractor with the approval of MK and United Defense as necessary to meet operational and safety objectives.

## **ADDENDUM TO APPENDIX C CHEMICAL DATA ACQUISITION PLAN**

The following changes shall be incorporated into the Chemical Data Acquisition Plan:

### **Section 2.0**

Replace Section 2.0 **OBJECTIVES** with the following text:

### **2.0 OBJECTIVES**

The overall objective of this removal action is to excavate and dispose of drums which may potentially cause an imminent threat to human health and the environment at the NIROP at Fridley. Based on previous geophysical surveys, several anomalies have been detected. Fourteen of the anomalous areas will be excavated to determine if buried drums exist.

Once drums are uncovered, the following sampling events will be performed:

- Field screen and make visual observations of unopened drums.
- Open drums and visually describe contents. Collect samples for compatibility testing by a mobile laboratory.
- Based on field characterization results and compatibility testing, bulk contents if possible.
- Collect composite samples for hazardous waste characterization parameter analysis by an offsite laboratory.
- Complete waste profiles for the bulked drum contents based on the offsite laboratory results.
- Collect confirmation soil samples from drum excavation areas.
- Collect samples from excavated soil proposed for use as backfill to determine if re-use criteria are met.
- Collect samples for off-site disposal from debris, visually-impacted soil and soil which exceeds the re-use criteria.
- Support health and safety requirements.

Data collection objectives are summarized in Table C-1.

Delete Sections 3.2 **EXCAVATION SUBCONTRACTOR** and 3.3 **DRUM SAMPLING SUBCONTRACTOR**, and replace with the following text:

### **3.2 SUBCONTRACTOR**

- Excavation of soil and drums within areas specified by MK and the NAVY.
- Removal of drums from excavation.
- Removal and repacking of drum contents from deteriorated drums.
- Opening of bulging or unstable drums (automatic).
- Manual opening of drums, as directed by the Site Superintendent, Project

- Manager and/or Project Engineer.
- Collection of samples from drums.
- Field characterization of samples (service to be provided by on-site laboratory).
- Oversight and contracting, as applicable, of mobile laboratory facilities.
- Inventory and documentation of drums and contents.
- Removal and overpacking of leaking drums.
- Movement of drums, containers or pallets between staging areas and the excavation areas.
- Bulking drum contents, under the direction of MK.

### **Section 6.0**

Insert the following text at the beginning of **Section 6.0 SAMPLING AND ANALYSIS - OFFSITE CHARACTERIZATION**.

## **6.0 SAMPLING AND ANALYSIS - OFF-SITE CHARACTERIZATION**

Off-site analysis of confirmatory soil samples and disposal samples shall be performed by a laboratory approved by the United States Environmental Protection Agency or listed in *Certified Environmental Testing Laboratories* (Public Health Laboratory Division - Minnesota Department of Health, January 10, 1996).

### **Section 6.1.5**

Replace **Section 6.1.5, Rolloff or stockpiled soils/debris** with the following text:

#### **6.1.5 Stockpiled soils/debris**

Soil and debris removed during the drum excavation shall be placed in temporary stockpiles. Material which is potentially impacted, based on visual observation, will be segregated and sampled. Impacted soils from each excavation shall not be commingled.

Wastes shall be stored at the site for a period not to exceed 90 days.

Samples will be collected from impacted soil in a manner and at a frequency agreed to by the MPCA and the Navy. Target compounds are listed in Table C-4 (attached). This list may be abbreviated based on evaluation of drum contents.

General procedures for stockpile sampling include the following:

1. Using a hand-auger, trier, scoop or other appropriate sampling equipment, collect grab samples from the stockpile. Locations will be designated by the Project Engineer or designee. The sampling device shall be inserted approximately six inches into the soil. Mix the grab samples from a single stockpile in a stainless steel bowl to form a single composite sample. Assure that sufficient volume has been collected and composited to fill all sample containers, with the exception of volatile organic compounds.

2. Samples to be tested for VOCs shall not be composited. Collect a single grab sample from the center of the pile, or from an area potentially high in contamination (i.e. oily soil).
3. Transfer the grab sample (VOCs) or composite sample material (all other analyses) to the appropriate certified clean sample containers. See Table C-4 (formerly Table C-3 - see note under Tables below) for bottle size requirements and holding times. Fill the containers in the order shown on the table. The sampler shall also collect sufficient sample volume for disposal analyses (reactivity, ignitability, TCLP-VOCs, TCLP-SVOCs, TCLP-pesticides and TCLP-inorganics). Each of the disposal analysis bottles shall be labeled "Hold Until Further Notice." These sample containers shall be stored on site in a refrigerator or cooler designated for this purpose, pending evaluation of results from the regular analysis.
4. Soil pH shall be measured by the laboratory for the regular samples. Corrosivity (pH) samples have a short holding time (2 days) and will not be stored. If corrosivity samples are collected (disposal analysis), they will be submitted immediately with the regular samples.
5. Clean the exterior of the sample container and ensure that the container is tightly sealed before applying the sample label.
6. Submit samples of stockpiled soil for regular analysis. The parameters listed in Table C-5 will be analyzed.

The results of the regular analysis will be compared to the screening levels listed in Table C-5. If screening levels are exceeded for a particular sample, disposal samples will be submitted for analysis. If screening levels are not exceeded, the MK Project Manager and Navy representative will evaluate the use of the associated stockpiled soil for use as backfill. If the stockpiled soil is used as backfill, the disposal samples will be discarded into the stockpile from which they originated. Empty sample containers shall be disposed with the other solid sampling wastes.

7. Submit samples from impacted soil (i.e. not potential backfill) for disposal analyses as shown on Table C-4.

### **Section 6.3**

Replace **Section 6.3, WATER SAMPLES** with the following text:

### **6.3 WATER SAMPLES**

During remedial activities, surface water may infiltrate into the excavation. This water will be pumped from the excavation into a tank or drum, depending on the volume. A water sample shall be collected from each container in accordance with the procedure

included in Section 6.1.3. Care shall be taken not to disturb the settled solids at the tank or drum bottom when collecting the sample.

If a pump is utilized, water will be pumped from the tank at a low rate (<200 ml/min for VOCs) and 5 gpm or less for other constituents. Samples shall be collected and submitted for analysis of the sanitary sewer discharge parameters, as indicated on Table C-4. If any discharge criteria are exceeded, the samples shall be analyzed for additional disposal requirements (also shown on Table C-4).

It is anticipated that data from discharge parameter analysis will be used for disposal characterization, if necessary. Additional volume will be sampled and analyzed for reactivity, ignitability and other parameters as required by the disposal facility. Water pH will be measured during discharge parameter analysis.

## **TABLES**

**Changes to tables are summarized below:**

**Table C-2:** Replace the current version with the attached revision.

**Tables C-3/C-4:** Change Table C-3 to Table C-4, and replace with the attached revision. Insert new Table C-3 titled "Data Collection Locations" between Table C-2 and Table C-4.

**Table C-5:** Insert the attached new Table C-5 titled "Screening Levels for Soil Analyses."

**Table C-6:** Insert the attached new Table C-6 titled "Sanitary Sewer Water Discharge Limitations."



**Table C-2. Field Equipment List**

| <b>Category/item</b>                 | <b>Quantity</b> | <b>Collected</b> | <b>Category/item</b>          | <b>Quantity</b> | <b>Collected</b> |
|--------------------------------------|-----------------|------------------|-------------------------------|-----------------|------------------|
| <b>Health and Safety</b>             |                 |                  | <b>Health and Safety</b>      |                 |                  |
| (rentals)                            |                 |                  | (consumables)                 |                 |                  |
| OVM, FID or PID                      |                 |                  | CPR Pocket Masks              |                 |                  |
| Combustible Gas Indicator (CGI)      |                 |                  | Dual station/eyewash station  |                 |                  |
| Isobutylene or other cal gas (PID)   |                 |                  | Moist towelettes              |                 |                  |
| Methane (FID, CGI)                   |                 |                  | UL listed hazardous locations |                 |                  |
| regulator (ask rental place)         |                 |                  | Smoke Alarms                  |                 |                  |
| Dust Monitor (mini-ram)              |                 |                  | (support documents)           |                 |                  |
| Draeger tubes and handpump           |                 |                  | copy of MK Safety manual      |                 |                  |
| (consumables)                        |                 |                  | (SouthDiv specific)           |                 |                  |
| Kimwipes (medium/large)              |                 |                  | Copy of MK Industrial Hy-     |                 |                  |
| Respirators (note size)              |                 |                  | giene Procedures Manual       |                 |                  |
| Chemical cartridges                  |                 |                  | Copy of MK Safety and         |                 |                  |
| HEPA cartridges                      |                 |                  | Health Program Desc. for      |                 |                  |
| Cleaner/sanitizer for respirators    |                 |                  | Haz. Waste Site Operations    |                 |                  |
| PPE Covering Size: _____:            |                 |                  | Copy of MK Accident Prev.     |                 |                  |
| Type: _____ Size: _____:             |                 |                  | Plan for SouthDiv Contract    |                 |                  |
| PPE gloves: Size: _____ Type: _____: |                 |                  | OSHA posters/ 2 OSHA          |                 |                  |
| PPE foot protection Size: _____:     |                 |                  | 200 forms                     |                 |                  |
| Foam earplugs                        |                 |                  | Tool Box Talks (orange book)  |                 |                  |
| Safety Glasses                       |                 |                  | EM 85-1-1 Corps Safety Man.   |                 |                  |
| Silver cloth duct tape               |                 |                  | Signed off SSHP/Work Plan     |                 |                  |
| Personal first aid kit               |                 |                  | MK Accident Data Report       |                 |                  |
| Reflective safety vests              |                 |                  | Form # 678/91                 |                 |                  |
| Yellow "Caution" tape                |                 |                  | MK Supervisor Accident In-    |                 |                  |
| PID Lamp Cleaner bottles             |                 |                  | vestigation Report Form #     |                 |                  |
| Two 10-foot tygon tubing:            |                 |                  | CAS 24/77                     |                 |                  |
| 10 feet - 0.25 inch I.D.             |                 |                  | MK Daily Logbook Report       |                 |                  |
| 10 feet - 0.125 inch I.D.            |                 |                  | from SSHP                     |                 |                  |
| Two 20lb. ABC dry chemical fire      |                 |                  | MK Weekly Inspection          |                 |                  |
| extinguishers                        |                 |                  | Checklist forms from SSHP     |                 |                  |
| Bloodborne pathogen kits             |                 |                  | PMO project procedures:       |                 |                  |
|                                      |                 |                  | PHSP 001.1, 002.1, 003.1,     |                 |                  |
|                                      |                 |                  | 004.1, 005.1                  |                 |                  |
|                                      |                 |                  | Hardhats                      |                 |                  |
|                                      |                 |                  | 29 CFR 1910, 29 CFR 1926      |                 |                  |

**Notes:**

1. A checkmark is placed under the column "Collected" once the item is inventoried at the site.
2. The above list should be reviewed carefully, prior to work beginning, to make sure all necessary items are accounted for.

**TABLE C-3  
DATA COLLECTION LOCATIONS**

| Medium   | Test Parameters  | Number of Samples or Locations      | QA/QC Samples <sup>1</sup> |                  |                 |     | Purpose  |
|--|--|-------------------------------------|----------------------------|------------------|-----------------|-----|--|
|  |  |                                     | TB <sup>2</sup>            | ERB <sub>3</sub> | FD <sup>4</sup> | F B |  |
| <b>Field Measurements</b>                      |  |                                     |                            |                  |                 |     |  |
| Field Screening of drums (outside and inside)  | residual organic vapor, presence of explosive atmospheres  | per drum (assume 50 for estimating) | N/A                        | N/A              | N/A             | N/A | Initial screening data to support health and safety requirements and characterize drums    |
| Drum Contents                                  | hazardous category/compatibility criteria  | per drum (assume 50 for estimating) | N/A                        | N/A              | 1 per 10 drums  | N/A | Compatibility of drum contents for bulking; preliminary data for disposal characterization |
| <b>Analytical (offsite) laboratory testing</b> |  |                                     |                            |                  |                 |     |  |
| Base of Excavation Soil                        | select VOCs <sup>6</sup> , select SVOCs <sup>7</sup> , select metals <sup>9</sup> , total cyanide, phenolics, sulfur, and total organic halogens | TBD (assume 26 for estimating)      | 7                          | 5                | 3               | 1   | Confirmation Sampling  |
| Hazardous Soil                                 | paint filter, ignitability, corrosivity, reactivity, TCLP-VOCs, TCLP-SVOCs, TCLP-metals, TCLP-pesticides   | TBD (assume 3 for estimating)       | 0                          | 1                | 0               | 1   | Disposal characterization <sup>5</sup>   |
| Stockpiled Soil (and debris)                   | select VOCs <sup>6</sup> , select SVOCs <sup>7</sup> , select metals <sup>9</sup> , total cyanide, phenolics, sulfur, and total organic halogens | TBD (assume 23 for estimating)      | 7                          | 5                | 2               | 1   | Determine suitability for use as backfill <sup>8</sup>                                     |

**TABLE C-3  
DATA COLLECTION LOCATIONS**

| Medium  | Test Parameters  | Number of Samples or Locations | QA/QC Samples <sup>1</sup> |                  |                 |     | Purpose  |
|---|--|--------------------------------|----------------------------|------------------|-----------------|-----|--|
|   |  |                                | TB <sup>2</sup>            | ERB <sub>3</sub> | FD <sup>4</sup> | F B |  |
| Bulked Drum<br>Contents:<br>solids/sludges            | Paint filter, ignitability, corrosivity, reactivity, TCLP-VOCs, TCLP-SVOCs, TCLP-metals, TCLP-pesticides   | TBD (assume 12 for estimating) | 0                          | 2                | 1               | 0   | Disposal Characterization <sup>5</sup>                         |
| Bulked Drum<br>Contents: liquids                      | Ignitability, corrosivity, reactivity, VOCs (TCL), SVOCs (TCL), pesticides, RCRA metals  | TBD (assume 4 for estimating)  | 0                          | 0                | 1               | 0   | Disposal Characterization <sup>5</sup>                         |
| Drummed oil   | Btu, total chlorine, PCBs, fuel fingerprint (diesel range, gasoline range and total chromatographical organics), and ignitability  | TBD (assume 2 for estimating)  | 0                          | 0                | 1               | 0   | Disposal characterization <sup>5</sup>                         |
| Decontamination water, incidental water in excavation | VOCs (method to be determined; either EPA 8021, EPA 601/602 or 8010/8020), cadmium, chromium, copper, cyanide, lead, mercury, nickel, zinc, pH, total petroleum hydrocarbons, total suspended solids, chemical oxygen demand | TBD (assume 3 for estimating)  | 1                          | 0                | 1               | 1   | Determine if acceptance criteria have been met (see Table C-6) |

**TABLE C-3  
DATA COLLECTION LOCATIONS**

| Medium | Test Parameters | Number of Samples or Locations | QA/QC Samples <sup>1</sup> |                  |                 |        | Purpose |
|--------|-----------------|--------------------------------|----------------------------|------------------|-----------------|--------|---------|
|        |                 |                                | TB <sup>2</sup>            | ERB <sub>3</sub> | FD <sup>4</sup> | F<br>B |         |

Notes:

TBD = to be determined (estimated totals are subject to change +/- 100%)

<sup>1</sup>QA/QC samples include trip blank (TB), equipment rinsate blanks (ERB), field duplicate (FD) and field blank (FB).

<sup>2</sup>Trip blanks will be analyzed for VOCs only.

<sup>3</sup>Rinsate blanks will be collected following completion of decontamination procedures. Blanks will be analyzed for associated parameters sampled for that day. N/A = not applicable

<sup>4</sup>Field duplicates will be collected at a rate of 1 per 20 (or less) samples collected for disposal characterization samples. Field duplicate samples will be collected at the rate of one in ten samples for excavation base and stockpile samples.

<sup>5</sup>Disposal parameters will be finalized pending discussion with the disposal facility.

<sup>6</sup>VOCs will include toluene, ethylbenzene, 1,1-dichloroethane, 1,1-dichloroethene, total 1,2-dichloroethene, 1,1,1-trichloroethane, trichloroethene, and tetrachloroethene.

<sup>7</sup>SVOCs will include carbazole, benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, benzo(b)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene.

<sup>8</sup>Screening levels in Table C-5 will be used to evaluate the suitability of excavated soil for use as backfill.

<sup>9</sup>Select metals include antimony, barium, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc.

**TABLE C-4  
SUMMARY OF ANALYTICAL METHODS**

| Analyte   | Analytical Method                 | Sample Container                              | Preservation  | Holding Time   |
|---|-----------------------------------|---|---|--|
| <b>Water Samples (blanks)</b>   |                                   |   |   |  |
| Volatile Organics <sup>5</sup>  | CLP SOW for organics <sup>2</sup> | 3 40-mL glass vials                           | HCL to pH < 2,<br>Ice to 4°C                            | 10 days  |
| Semivolatile Organic Compounds (SVOCs) <sup>6</sup>   | CLP SOW for organics <sup>2</sup> | 2 1-liter amber glass jar                     | Ice to 4°C  | Extract in 5 days after receipt                            |
| Total Organic Halogens  | 9020A                             | 1 500-mL glass jar                            | H <sub>2</sub> SO <sub>4</sub> to pH < 2;<br>Ice to 4°C | 28 days  |
| Phenolics   | 9066                              | 1 1-liter amber glass jar                     | H <sub>2</sub> SO <sub>4</sub> to pH < 2;<br>Ice to 4°C | 28 days  |
| Select Metals <sup>8</sup>  | 6010A, 7471 (mercury)             | 1 1-liter plastic; 1 500-mL plastic (mercury) | HNO <sub>3</sub> to pH < 2,<br>Ice to 4°C               | 28 days (mercury) <sup>1</sup><br>80 days for other metals |
| Total Cyanide   | 9012                              | 1 500-mL plastic                              | NaOH to pH > 12, Ice to 4°C                             | 14 days  |
| Sulfur  | ASTM D-129-64                     | 1 100-mL plastic                              | N/A   | N/A  |
| <b>Water Samples for Sanitary Sewer Discharge (incidental water, decontamination water, etc.)</b> |                                   |   |   |  |
| Volatile Organics   | 8010/8020, 8021, or 601/602       | 3 40-mL glass vials                           | HCL to pH < 2,<br>Ice to 4°C                            | 14 days  |

**TABLE C-4  
SUMMARY OF ANALYTICAL METHODS**

| Analyte  | Analytical Method                            | Sample Container                              | Preservation  | Holding Time                                   |
|--|--|---|---|--|
| pH   | EPA 150.1                                    | 1 50-ml plastic                               | Ice to 4°C  | ASAP <sup>3</sup>                              |
| Total Petroleum Hydrocarbons   | EPA 418.1                                    | 2 1-liter amber glass jars                    | H <sub>2</sub> SO <sub>4</sub> to pH < 2;<br>Ice to 4°C | 28 days  |
| Metals: chromium, mercury, cadmium, copper, lead, nickel and/or zinc | 6010A, 7470 (mercury)                        | 1 1-liter plastic; 1 500-mL plastic (mercury) | HNO <sub>3</sub> to pH < 2; Ice to 4°C                  | mercury:<br>28 days<br>all others:<br>180 days |
| Cyanide (Total)  | 9012   | 1 500-mL plastic                              | Ice to 4°C,<br>NaOH to pH > 12                          | 14 days  |
| Total Suspended Solids <sup>7</sup>                                  | EPA 160.2                                    | 1 500-mL plastic                              | Ice to 4°C  | 7 days   |
| Chemical Oxygen Demand <sup>7</sup>                                  | EPA 410.4                                    | 1 100-mL plastic                              | H <sub>2</sub> SO <sub>4</sub> to pH < 2,<br>Ice to 4°C | 28 days  |
| <b>Water Samples - Additional Analyses Required for Disposal</b>     |  |   |   |  |
| Ignitability   | 1010   | 1 1-liter plastic                             | None  | ASAP <sup>3</sup>                              |
| Corrosivity-pH   | 9040B  | 1 1-liter plastic                             | Ice to 4°C  | ASAP <sup>3</sup>                              |
| Sulfide Reactivity   | SW-846 Methods:<br>Volume C, Section 7.3.4.1 | 1 1-liter plastic                             | Ice to 4°C  | 7 days   |

**TABLE C-4  
SUMMARY OF ANALYTICAL METHODS**

| Analyte  | Analytical Method                         | Sample Container    | Preservation | Holding Time                                    |
|--|---|---------------------|--------------|---|
| Cyanide Reactivity   | SW-846 Methods: Volume C, Section 7.3.3.2 | 1 1-liter plastic   | Ice to 4°C   | 14 days   |
| <b>Soil Testing: Stockpiles (suitability for use as backfill) and Excavation Base (confirmatory)</b> |   |                     |              |   |
| Volatile Organics <sup>5</sup>   | CLP SOW for organics <sup>2</sup>         | 1 4-ounce glass jar | Ice to 4°C   | 10 days   |
| Semivolatile Organics <sup>6</sup>   | CLP SOW for organics <sup>2</sup>         | 1 8-ounce glass jar | Ice to 4°C   | 10 days until extraction                        |
| Total Organic Halogens   | Modified 9020A                            | 1 8-ounce glass jar | Ice to 4°C   | N/A   |
| Phenolics  | 9066                                      | 1 8-ounce glass jar | Ice to 4°C   | 28 days   |
| Select Metals <sup>8</sup>   | 6010A, 7471 (mercury)                     | 1 8-ounce glass jar | Ice to 4°C   | 28 days (mercury) 180 days for all other metals |
| Total Cyanide  | 9012                                      | 1 8-ounce glass jar | Ice to 4°C   | 14 days   |
| Sulfur   | ASTM D-129-64                             | 1 8-ounce glass jar | N/A          | N/A   |

**TABLE C-4  
SUMMARY OF ANALYTICAL METHODS**

| Analyte   | Analytical Method                               | Sample Container     | Preservation | Holding Time                                |
|---|---|----------------------|--------------|---|
| <b>Soil and Drum Solids Disposal Testing</b>          |   |                      |              |   |
| Paint Filter Test                                     | 9095  | 1 8-ounce glass jar  | none         | N/A   |
| Ignitability  | 1010  | 1 8-ounce glass jar  | none         | ASAP <sup>3</sup>                           |
| Corrosivity-pH  | 9045C   | 1 8-ounce glass jar  | Ice to 4°C   | ASAP <sup>3</sup>                           |
| Sulfide Reactivity                                    | SW-846 Methods:<br>Volume C, Section<br>7.3.4.1 | 1 8-ounce glass jar  | Ice to 4°C   | 7 days                                      |
| Cyanide Reactivity                                    | SW-846 Methods:<br>Volume C, Section<br>7.3.3.2 | 1 8-ounce glass jar  | Ice to 4°C   | 14 days                                     |
| TCLP -<br>Organics and<br>extraction<br>(Method 1311) | 8240  | 1 4-ounce glass jar  | Ice to 4°C   | 14 days                                     |
|   | 8270  | 2 8-ounce glass jars | Ice to 4°C   | 7 days until extraction                     |
|   | 8080A or 8081<br>(pesticides only)              | 1 8-ounce glass jar  | Ice to 4°C   | 7 days until extraction                     |
| TCLP -<br>inorganics <sup>1</sup>                     | 1311 (extraction),<br>6010A, 7470A<br>(mercury) | 2 8-ounce glass jars | Ice to 4°C   | Mercury:<br>28 days;<br>Metals:<br>180 days |

**TABLE C-4  
SUMMARY OF ANALYTICAL METHODS**

| Analyte                             | Analytical Method                 | Sample Container      | Preservation | Holding Time                        |
|-------------------------------------|-----------------------------------|-----------------------|--------------|-------------------------------------|
| <b>Drum Samples (Oil - non-CLP)</b> |                                   |                       |              |                                     |
| Ignitability                        | 1010                              | 1-250 mL glass        | N/A          | 30 days                             |
| BTU                                 | ASTM D-240-76                     | 1-100 mL glass jar    | N/A          | ASAP <sup>3</sup>                   |
| PCBs                                | 8080A or 8081                     | 1 50-mL glass jar     | none         | 7 days                              |
| Fuel Fingerprint (DRO, GRO, TCO)    | Modified 8015A <sup>4</sup>       | 1 100-mL glass jar    | N/A          | 7 days                              |
| Total Chlorine                      | ASTM D 808-81                     | 1 4-ounce glass jar   | Ice to 4°C   | 28 days                             |
| <b>Drum Samples (Liquids)</b>       |                                   |                       |              |                                     |
| VOCs - TCL                          | CLP SOW for organics <sup>2</sup> | 4 40-mL glass vials   | Ice to 4°C   | 10 days from extraction to analysis |
| SVOCs - TCL                         | CLP SOW for organics <sup>2</sup> | 1 1-liter amber glass | Ice to 4°C   | Extract in 5 days after receipt     |
| Pesticides                          | 8080A or 8081                     | 1 1-liter amber glass | Ice to 4°C   | 7/40 days                           |

**TABLE C-4  
SUMMARY OF ANALYTICAL METHODS**

| Analyte   | Analytical Method                               | Sample Container                                      | Preservation | Holding Time   |
|---|---|---|--------------|--|
| Ignitability  | 1010  | 1 1-liter plastic                                     | N/A          | ASAP <sup>3</sup>  |
| Corrosivity - pH  | 9040B   | 1 1-liter plastic                                     | N/A          | ASAP <sup>3</sup>  |
| Sulfide Reactivity  | SW-846 Methods:<br>Volume C, Section<br>7.3.4.1 | 1 1-liter plastic                                     | Ice to 4°C   | 7 days   |
| Cyanide Reactivity  | SW-846 Methods:<br>Volume C, Section<br>7.3.3.2 | 1 1-liter plastic                                     | Ice to 4°C   | 14 days  |
| RCRA Metals<br>(arsenic,<br>barium, lead,<br>mercury,<br>chromium,<br>cadmium,<br>selenium and<br>silver) | 6010A, 7470<br>(mercury)                        | 1 1-liter plastic;<br>1 500-mL plastic for<br>mercury | Ice to 4°C   | 28 days<br>(mercury) <sup>1</sup><br>80 days<br>for all<br>other<br>metals |

**Notes:**

1. Graphite Furnace methods may be used to meet reporting limits for TCLP.
2. CLP SOW = Contract Laboratory Program Statement of Work. Reference is "Statement of Work for Organic Analysis" USEPA Contract Laboratory Program, Latest version. TCL = Target Compound List
3. "ASAP" indicates the sample must be analyzed as soon as possible. The sample will be shipped the day it is collected. Actual holding times will be provided by the lab.
4. The fuel fingerprint method will include analysis for diesel range organics (DRO), gasoline range organics (GRO), and total chromatographical organics (TCO).
5. VOCs will include toluene, ethylbenzene, trichloroethene, tetrachloroethene, 1,2-Dichloroethene (total), 1,1 Dichloroethene, 1,1,1-Trichloroethane and 1,1 Dichloroethane.
6. SVOCs will include carbazole, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)anthracene, chrysene, dibenzo(ah)anthracene and indeno(1,2,3-cd)pyrene.
7. Total Suspended Solids and Chemical Oxygen Demand may not be required for every water sample. Coordinate required analyses for water discharges with the appropriate base personnel.
8. Select metals include antimony, barium, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc.

**TABLE C-5  
SCREENING LEVELS FOR SOIL ANALYSES**

| Compound   | Screening Level<br>mg/kg | Compound                                | Screening Level<br>mg/kg |
|--|--------------------------|---|--------------------------|
| <i>Volatile Compounds- (CLP SOW)</i>   |                          | <i>Semivolatile Compounds (CLP SOW)</i> |                          |
| Ethylbenzene   | 7,800 <sup>b</sup>       | Benzo(a)Anthracene                      | 12 <sup>c</sup>          |
| 1,1-Dichloroethane   | 0.08 <sup>a</sup>        | Benzo(a)pyrene                          | 12 <sup>c</sup>          |
| 1,1-Dichloroethene   | 22.6 <sup>a</sup>        | Benzo(b)fluoranthene                    | 12 <sup>c</sup>          |
| Total 1,2-Dichloroethene   | 780 <sup>b</sup>         | Benzo(k)fluoranthene                    | 12 <sup>c</sup>          |
| 1,1,1-Trichloroethane  | 249.5 <sup>a</sup>       | Chrysene                                | 12 <sup>c</sup>          |
| Tetrachloroethene  | 802 <sup>a</sup>         | Dibenzo(ah)anthracene                   | 12 <sup>c</sup>          |
| Trichloroethene  | 1.2 <sup>a</sup>         | Indeno (1,2,3-cd)pyrene                 | 12 <sup>c</sup>          |
| Toluene  | 16,000 <sup>b</sup>      | Carbazole                               | 12 <sup>c</sup>          |
| <i>Inorganics<sup>d</sup></i>  |                          |   |                          |
| Antimony   | 31 <sup>b</sup>          | Nickel                                  | 1,600 <sup>b</sup>       |
| Barium   | 5,500 <sup>b</sup>       | Silver                                  | 390 <sup>b</sup>         |
| Cadmium  | 39 <sup>b</sup>          | Zinc                                    | 23,000 <sup>b</sup>      |
| Chromium   | 390 <sup>b</sup>         | Copper                                  | 3,100 <sup>e</sup>       |
| Lead   | 400 <sup>b</sup>         | Cyanide                                 | 1,600 <sup>c</sup>       |
| Mercury  | 23 <sup>b</sup>          |   |                          |
| <b>Notes:</b>  |                          |   |                          |
| <sup>a</sup> Value is from the document entitled "Attachment 3 to comments on the October 20, 1994, Letter from RMT Regarding Revisions to MPCA Soil Leaching Model Cleanup Numbers for OU2 Soils at NIROP." |                          |   |                          |
| <sup>b</sup> Value is from the USEPA document EPA 540/R-94/101 "Soil Screening Guidance", December, 1994. Values are for a pathway to surface soil (residential ingestion limit).                            |                          |   |                          |
| <sup>c</sup> Per conversation between Elise Allen (MK) and David Douglas (MPCA). Values are in relation to benzo(a) pyrene as an equivalent.   |                          |   |                          |
| <sup>d</sup> These levels may be changed to background levels, pending discussion with the NAVY and review of data from previous investigations.   |                          |   |                          |
| <sup>e</sup> Value is from Region III US EPA document entitled, "Risk-Based Concentration Table, July - December 1995," by Roy L. Smith, Ph.D. (residential ingestion limit).                                |                          |   |                          |

**TABLE C-6.  
SANITARY SEWER WATER DISCHARGE LIMITATIONS  
NIROP FRIDLEY**

| ANALYTE  | STANDARD (mg/L) |
|--|-----------------|
| Cadmium  | 2               |
| Chromium - total                                       | 8               |
| Copper   | 6               |
| Cyanide - total  | 4               |
| Lead   | 1               |
| Mercury  | 0.1             |
| Nickel   | 6               |
| Zinc   | 8               |
| pH - maximum (units)                                   | 11              |
| pH - minimum (units)                                   | 5               |
| Single Toxic Organic                                   | 3               |
| Total Toxic Organics (total VOCs)                      | 10              |
| Total Hydrocarbons (from petroleum-related discharges) | 100             |

Notes:

1. These standards are listed in the permit entitled, "Industrial Discharge Permit - Special Discharges," Permit No. 2154, Spill Location Code MP-NE-04-FR, issued by the Metropolitan Waste Control Commission.



**NIROP Fridley, MN**  
**DO 0014-015-21**  
**Response to Comments, Work Documents**  
**Rev B**

**Comments from David Cabiness, Code 1869**  
**September 20, 1995**

- 1) Section 2.0, page 5: Change first bullet to read: SOUTHDIV must notify USEPA Region 5 and MPCA of the planned removal action. Change the second bullet to read: SOUTHDIV will provide NAVSEA a copy of the work plan.
  - A) Modified as directed in the Addendum.
- 2) Section 3.3.1, Page 8: Change first sentence to read: "Local, state and federal agencies will be notified by Morrison Knudsen of the removal...."
  - A) Modified as directed in the Addendum.
- 3) Section 3.4.6, Page 14: Compaction requirements for backfill will be necessary for any excavations in close proximity to roadways, storm sewers, buildings and rail trackage.
  - A) MK consulted the RPM and Base for the defined compaction requirements. Within five (5) feet of any utility (sewer etc) compaction shall be to 95%. From five to ten feet, compaction shall be 85%. In other area, the compaction shall begin at 85%. In the areas that are not adjacent to utilities or structures, the compaction will stay as stated, as backfilled. See Section 3.4.6 (page 4 of Addendum) for revision.
- 4) All soils analysis shall be consistent with the guidance provided in a letter from the MPCA to the Navy dated January 26, 1995, attached. The Navy will be provided with the soil analysis and survey locations (X,Y,Z locations) in a data base that is consistent with the SOUTHDIV GIS format.
  - A) See CDAP Addendum.

**Site Safety and Health Plan**

- 1) Section 2.5.5, Page 7: The underground utilities were identified during the geophysical work. Recommend that the crew conducting this phase of work coordinate with the crew conducting the geophysical work for this information.
  - A) The geophysical report was completed and report published by Subcontractor. Their effort is completed so that coordination of work crews will not be applicable at this time. Section 2.5.5 of the SSHP will be revised to indicate the Geophysical

Survey report did identify underground utilities and will serve as the basis for field marking. The document will be revised as follows: "Underground utilities have been identified in the Geophysical report and compared to facility utility drawings. All utility identification and markings will be coordinated by MK and surface markings shall be provided by the Excavation Subcontractor. The MK Project Engineer or designee will work with United Defense's Facilities Engineering Department and Subcontractor to reverify the facilities utility drawings against the Geophysical Survey results prior to excavation activities. MK will notify United Defense and the public utility locate service at least five working days in advance of excavation activities. A site walk shall be conducted after surface markings have been completed as a final check to assure agreement between all parties involved. Personnel attending shall include facilities engineering, public utility locate service, MK, and the Excavation Subcontractor. An MK Excavation and Trenching Permit system shall be implemented. MK's Excavation Subcontractor shall use metal detectors during the excavation process to locate and quantify the size of the underground anomaly or designated utility. Energy control will be anticipated as necessary when excavating near the propane storage tanks related lines and the street light cable conduit. The extent of energy control on the inter-utility corridor will be determined in the field. When energy control is anticipated for underground utilities, the requirements established in MK Project Procedure 01.1 shall be followed. See also Section 2.5.7 that follows."

- 2) Section 2.5.6, Page 7: A hot work permit is required to be obtained from the security office at NIROP Fridley for all hot work.
  - A) Revise Section 2.5.6 second sentence to read as follows: "The NIROP Fridley Hot Work Permit shall be obtained from the facility security office and completion of the report coordinated by the MK SSSH." This replaces the requirement for an MK Hot Work Permit to be used.
- 3) Section 9.1, Page 30: The location of all CRZs and EZs shall be placed in a location that will not interfere with the plant operations, approval for the location of the EZ and CRZ will be required by United Defense.
  - A) Section 9.1, second paragraph, first sentence shall be revised to indicate that United Defense approval for Work Zone Maps is required. The sentence will be rewritten as follows: "Prior to the commencement of field activities, Work Zones shall be established by the Subcontractor with the approval of MK and United Defense as necessary to meet operational and safety objectives."

#### **Comments From MPCA:**

Comments from MPCA as provided in the December 26, 1995 letter from Mr. James Warner to Mr. David Cabiness. The Work Plan was approved as modified pursuant to Attachment 1 of the

letter (attached). The CQC and CDAP were approved if a laboratory certified by Minnesota Department of Health or EPA were used. The five laboratories that were selected for the bidding process were either from the MDOH Laboratory list (January 1996) or were USEPA CLP laboratories. As of February 1996, MK is still in bidding process and has not determined the successful bidder.

## ATTACHMENT 1

### GENERAL MODIFICATIONS

1. The Navy shall inform the Minnesota Pollution Control Agency (MPCA) staff of the work schedule two weeks before it is to start so that there is sufficient time to schedule on-site inspection of the excavation work.

**Response:** That will be done. The anticipated mobilization/start date is April 15, 1996.

2. The Navy shall produce a photographic record of each excavation to document the findings of each area investigated. Copies of photographs shall be made available to the MPCA staff in the final report.

**Response:** That will be done.

3. As the excavations progress, the Navy shall ensure that its contractor looks at the geophysical data to see if the objects uncovered have particular geophysical signatures that can be related to those objects. If geophysical signatures emerge, this may help to evaluate the data for some of the other unexcavated anomalies.

**Response:** That will be done.

### SPECIFIC COMMENTS

4. **Page 4, Section 1.2.3 - Recommendations:** The rationale for how the three smaller anomalies (to be excavated to determine the cause of the anomaly) and the 10 smaller anomalies (to be excavated to only five feet) are to be chosen from the 43 smaller anomalies shall be included in the report. If drums are encountered in the smaller anomalies the Navy, the MPCA staff and the U.S. Environmental Protection Agency (EPA) shall review the information gathered in the field and determine how to proceed with investigation of the remaining small anomalies.

**Response:** The current removal philosophy is to excavate all 9 primary areas to a depth of 10 feet or groundwater (whichever is first). Then, five of the secondary anomalies will be investigated to the same depth. The five secondary areas that have been tentatively selected are: B-28, B-30, B-11, B-12, B-5.

After excavation of these five areas, the results will be forwarded to the Navy for a decision on additional excavation.

5. **Page 11, Section 3.4.3 - Drum Handling and Staging:** If, during drum removal, a drum breaks or otherwise leaks its contents before it can be overpacked, the Navy shall make every effort to recover any spilled material or soil that may become contaminated as a result of the release. This material or soil shall be sampled and handled according to paragraph 2, Section 3.4.2.

**Response:** Spilled materials will be collected and staged with the drum. Please see the WP and CDAP Addendum for specifics.

6. **Page 13, Section 3.4.4, Drum Contents Sampling Characterization and Disposition:** The Navy shall not composite individual samples collected from separate drums. This practice makes the identification of the barrel(s) that contain an identified hazardous substance problematic, leading to the conclusion that every barrel tested contains all of the analytes found. In addition, MPCA policy prohibits compositing of volatile organic compounds for analytical purposes.

**Response:** Clarification is needed, the individual drum samples will be for onsite Hazardous Categorization (HAZCAT) analysis. Once the category is determined, the waste streams will be combined and sampled for disposal. This was discussed between MK and the MPCA in January 1996.