

# Minnesota Pollution Control Agency

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December 26, 1995

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. David Cabiness, Code 1862  
Commanding Officer  
Southern Division  
Naval Facilities Engineering Command  
P.O. Box 190010  
North Charleston, South Carolina 29419-9010

RE: Naval Industrial Reserve Ordnance Plant

Dear Mr. Cabiness:

The Minnesota Pollution Control Agency (MPCA) staff has reviewed the following five documents:

1. "Work Plan Removal Action at North Forty, NIROP Fridley, Fridley, Minnesota, Revision B," ( Work Plan), dated August 24, 1995;
2. "Geophysical Investigation of the North 40 Site at the Naval Industrial Reserve Ordnance Plant (NIROP) Fridley, Minnesota," (Geophysical Investigation), dated July 27, 1995;
3. "Quality Control Plan, Fridley North 40 Drum Removal Project Fridley, Minnesota, Revision B," (Quality Control Plan), dated August 24, 1995;
4. "Chemical Data Acquisition Plan" (Appendix C), dated August 24, 1995, and
5. "Site Safety and Health Plan, NIROP Fridley North 40 Project, Fridley, Minnesota," Revision B, (SSHP), dated August 18, 1995.

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These documents are for Operable Unit 3 (OU3) [formerly OU2] of the Naval Industrial Reserve Ordnance Plant (NIROP) Site and were submitted pursuant to the Federal Facility Agreement (FFA), dated March 27, 1991, between the MPCA, the U.S. Environmental Protection Agency (EPA), and the U.S. Navy (Navy).

### **Work Plan**

The Work Plan is hereby approved as modified pursuant to Attachment 1 to this letter.

### **Geophysical Investigation**

The Geophysical Investigation is hereby approved without modification or comment.

### **Quality Control and Chemical Data Acquisition Plans**

The MPCA staff approves of the Navy proceeding with the Quality Assurance Project Plan (QAPjP) for the barrel removal in one of two ways:

1. The Navy shall use a removal contractor whose laboratory is certified by either the Minnesota Department of Health or EPA, in which case, the Navy shall provide the MPCA staff with the name of the contractor and the contractor's laboratory; the methods to be used; laboratory quality assurance manual, and the reports to be produced by the laboratory; or
2. The Navy shall submit a QAPjP as specified below.

Regardless of the approach the Navy selects, the Navy shall prepare a separate QAPjP specific for OU3 in the future.

The MPCA staff believes that the Quality Control Plan and the Chemical Data Acquisition Plan do not constitute a QAPjP as defined by the FFA (Attachment A, Part C) and the EPA Region V Model Superfund QAPjP. Therefore, the MPCA staff cannot approve these two documents. Instead of proceeding with these plans, the Navy shall submit an addendum to the existing QAPjP, dated September 5, 1991, as amended by the MPCA staff letter of October 2, 1991 (1991 QAPjP), to cover the barrel removal. The Navy shall update the 1991 QAPjP pursuant to Attachment 2 to this letter. Additional rationale for this approach can be found in Attachment 2.

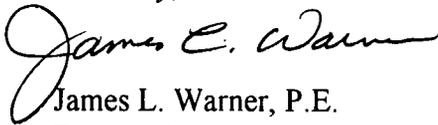
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**SSHP**

The MPCA staff has no comments on the SSHP.

If you have any questions regarding this letter, please contact David Douglas of my staff at (612) 296-7818.

Sincerely,



James L. Warner, P.E.  
Division Manager  
Ground Water and Solid Waste Division

JLW:ch

Enclosure

cc: Sidney Allison, Navy, Southern Division  
Robert Hlavacek, Morrison Knudsen Corporation  
Thomas Bloom, U.S. Environmental Protection Agency

## Attachment 1

### Modifications to the "Work Plan Removal Action at North Forty, NIROP Fridley, Fridley, Minnesota, Revision B," dated August 24, 1995

#### *General Modifications*

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

#### *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.
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.
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 contains 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.

## Attachment 2

### Modifications to the Quality Assurance Project Plan, dated September 5, 1991, as amended by the MPCA Staff on October 2, 1991

The Minnesota Pollution Control Agency (MPCA) staff requires that all work and sampling activities undertaken as part of the proposed barrel removal project (Project) at the Naval Industrial Reserve Ordnance Plant (NIROP) Site follow a MPCA staff approved Quality Assurance Project Plan (QAPjP). Appendix C (Chemical Data Acquisition Plan) cannot be considered a QAPjP because it does not follow the format prescribed in Attachment A of the Federal Facilities Agreement (and further expanded upon in the Region V Superfund QAPjP Guidance). Moreover, there is little information applicable to the Project. Given these inadequacies, and due to the accelerated schedule of the Project, the MPCA staff believes that it is more efficient for the Navy to write an Addendum to the 1991 QAPjP rather than compose an entirely new one.

The Navy shall identify the laboratory contracted for the Project. In addition, approval of the Laboratory Quality Assurance/Quality Control Plan (see Attachment 3, "MPCA Template for Laboratory Quality Assurance/Quality Control Plan for Superfund Investigations," dated March 17, 1993) and all applicable Standard Operating Procedures (SOPs) is necessary prior to approval of the Addendum to the 1991 QAPjP.

The Navy shall modify the 1991 QAPjP as follows in order to produce an Addendum adequate for the Project. The Navy shall:

<u>Section</u>	<u>Comment</u>
1.0	Update the timeline given in the QAPjP and summarize any significant events from June 27, 1991, to the present.
1.2	Change/Add to this section to the update if it is applicable to the scope of the current project.
1.3	Rewrite this section (or reference Appendix B), as appropriate.
Table 1-3	Revise for parameters appropriate to the Project.
1.6	Identify the analytical and field Data Quality Objectives (DQOs) that are applicable to this project (level III, II and I are expected).
1.7	Identify the schedule of events.

- 2.0 Produce an organizational chart for the project. This shall include all principle staff involved in the project from, the Navy, Morrison Knudsen Corporation (MKC), the U.S. Environmental Protection Agency (EPA), MPCA, and all subcontractors. Include position descriptions, describe (and name) who has overall authority on the site, who has overall responsibility for the quality assurance/quality control (QA/QC), all subcontractors (including the laboratory), and responsibilities of the subcontractors on site. The laboratory officers must also be named.
- 3.0 Reference Table C-3 in Appendix C for the list of chemical groups and holding times/preservatives. Reference the Laboratory Quality Assurance Manual (QAM) for information on the laboratory precision, accuracy, sensitivity and comparability. The laboratory information must discuss limits for each of these categories; how they are generated; and how they are tracked. The completeness goal for the project should be given (95 percent was given in the appendices).
- Table 3-1 Report the laboratory specific quantitation limits.
- 3.2 The Contract Laboratory Program (CLP) methods are not being used and therefore specific limits must be given.
- 4.0 Reference the specific sections in the Field Sampling Plan (FSP) where applicable.
- 5.1.2 There is no "RAMP." Therefore, reference applicable sections in the FSP.
- 5.1.3 Supply a copy of the Chain of Custody (COC) form to be used on site. Prelabeling sample bottles may cause problems due to the unknown nature of the barrels; therefore, supply a sample label and discuss how sample bottles will be labeled to include a numbering system. The COC shall be double ziplock bagged and taped to the top of the cooler. The lid of the cooler shall be taped shut with custody tape (when samples are being transported off site).
- 5.2 Identify or reference specific laboratory COC procedures. Include how a laboratory logs in a sample, a custody record in the laboratory, disbursement of the samples, tracking, and disposal.
- 6.0 Supply the SOPs for the field equipment.
- 6.2 CLP will not be used. Therefore, reference specific SOPs and the laboratory QAM for equipment calibration. A discussion of how the instruments are calibrated shall include documentation maintained; number of points used in calibration; types of curves; calibration QA criteria; recalibration requirements;

standards verification; procedures undertaken when a calibration fails; and calibration check standards.

- 7.0 Submit laboratory and field SOPs for all applicable methods.
- 8.0 Discuss the use of internal QC checks; the limits associated with these checks; how the limits are established; and what checks are done for which analyses. Identify specific information as it relates to the laboratory (most of which will be in the QAM) and what exactly MKC does for QC on the data (e.g. double blinds, audits, comparison to previous data, and data package checks performed).
- 9.1 Identify what review is done on field data. Identify where this information is reported.
- 9.2 Reference the laboratory SOPs and QAM. Discussion shall include the internal review procedures that cover the form data is generated in; how this is reviewed (peer review); the transfer process to the final report; and final review and reporting (sign off). Also, include information on blank handling (when contaminated); data validation; storage of data; an example report; what exactly is reported (units, reporting limits, QC, dates of receipt/extraction/digestion/analyses); and flags used. Discuss the final validation done by MKC.
- 10.1 Documentation associated with the field audits shall be included in the semiannual/annual reports. Identify a time schedule for the audit(s) and the protocol that will be used.
- 10.2 MKC shall audit (or have audited) the contract laboratory used for analyses of NIROP samples (unless a CLP laboratory is used). Include the laboratory certifications, a schedule of when the audit will occur, and the protocol(s) for the audit.
- 11.1 Supply a chart that lists all major field equipment that will be used and all preventive maintenance and corrective action that is performed upon the equipment, including a list of critical spare parts kept on hand. Also discuss maintenance log books.
- 11.2 Reference the QAM and SOPs for preventive maintenance that will be performed on major pieces of equipment. A chart showing all of this information for the laboratory (as discussed in 11.1) is recommended. Discuss all documentation that the laboratory keeps for the preventive maintenance.

- 12.1 Identify or reference the completeness goal for the project and the laboratory data. Identify the limits associated with precision in the field. Discuss accuracy for the field work.
- 12.2.1 Identify the laboratory limits for precision. Reference appropriate SOPs and the QAM.
- 12.2.4 Discuss laboratory sensitivity (to include method detection limits and reporting limits).
- 13.0 Include a discussion of MPCA requirements in this section.

Analytical problems would initially not be discussed with EPA unless the CLP is being used (which is unlikely due to the nature of the samples). Therefore, the initial contact on laboratory problems will be the Quality Assurance Officer of the laboratory. EPA and MPCA shall also be informed of problems as they occur and corrective action has been planned.

Provide a nonconformance report. Discuss who starts the process; follows up on it; and who has final sign off authority. Discuss how nonconformances are found, and type of groups that are used to make decisions on corrective action.

- 14.0 Quality assurance reports shall be submitted with all major reports that are required for the NIROP Site. These reports at a minimum, must include audit results; a summary of QA/QC findings for the data; deviations that have been taken from the FSP or the QAPjP; audit results; an assessment as to whether the DQOs are being met; QA problems encountered; corrective action done or purposed, and any changes in key personnel on the Site.

Attachment 3

Minnesota Pollution Control Agency  
Template for  
Laboratory  
Quality Assurance/Quality Control Plan  
For Superfund Investigations

March 17, 1993

## Table of Contents

- 1.0 Introduction of Laboratory
- 2.0 Laboratory Organization and Responsibilities
- 3.0 Sample Custody
- 4.0 Calibration Procedures and Frequencies
- 5.0 Internal Quality Control Checks
- 6.0 Data Reduction, Validation, and Reporting
- 7.0 Performance and System Audits
- 8.0 Preventative Maintenance
- 9.0 Routine Procedures to Assess Data Quality & Determine Reporting Limits
- 10.0 Corrective Action
- 11.0 Quality Assurance Reports to Management
- 12.0 File Handling and Storage

## Appendixes

- A. Analytical SOPs
- B. Resumes

## 1.0 INTRODUCTION TO LABORATORY

This section should give a general introduction to the laboratory and the different kinds of analyses performed on the premises.

- 1.1 Mission Statement of Lab
- 1.2 Quality Assurance Policy of Laboratory
- 1.3 Size of Lab
  - 1.3.1 Dimensions and Layout
  - 1.3.2 Equipment List (major items)
- 1.4 Definition of Terms
- 1.5 Lab Certifications

## 2.0 LABORATORY ORGANIZATION AND RESPONSIBILITIES

This section should introduce the reader to the different key personnel in the Laboratory.

- 2.1 Organization Chart
- 2.2 Description of Lines of Communication
- 2.3 Units in Laboratory
- 2.4 Brief Description of Key Positions

## 3.0 SAMPLE CUSTODY

This section should completely describe the procedure from the receipt of the samples until the samples are disposed of (cradle to grave).

(Note: Standard Operating Procedures (SOPs) may be referred to where applicable.)

- 3.1 Sample Receipt policies
- 3.2 Sample Log-in
- 3.3 Example Lab Chain of Custody (COC)
- 3.4 Sample Storage and Preservation
- 3.5 Tracking of Samples
- 3.6 Evidence Files (for Legal Samples)
- 3.7 Sample Disposal

#### 4.0 CALIBRATION PROCEDURES AND FREQUENCIES

This section shall describe the procedures used by the lab to calibrate instrumentation and equipment in the lab. SOPs may be referred to (where appropriate). Organic and Inorganic analyses must both be discussed.

- 4.1 Frequency of Calibration of All Instruments
  - 4.1.1 Minimum Number of Points for a Curve
  - 4.1.2 Type(s) of Curve(s)
- 4.2 Criteria for Acceptance of Calibration
- 4.3 Updating and Verification of Calibrations
  - 4.3.1 Continuing Calibration Verification Standards
  - 4.3.2 Continuing Calibration Blanks
  - 4.3.3 Frequency of Updates of Curves
- 4.4 Labeling of Records of Calibration for Instruments
- 4.5 Limited Calibration Procedures
- 4.6 Standards
  - 4.6.1 Expiration Dates
  - 4.6.2 Testing for Purity & Validation
  - 4.6.3 Records of Receipt and Tracking
  - 4.6.4 Disposal of Unused Standards
- 4.7 Analyses Needing No Calibration
- 4.8 Standard Additions

#### 5.0 INTERNAL QUALITY CONTROL CHECKS

The lab shall describe in detail all Quality Assurance practices that are used in the laboratory. It is recommended that a flow chart showing a sample from receipt to the reports generation, be included to give a visual picture of the path a sample takes and the QA/QC associated with it. The items listed below describe some of the parameters associated with the Internal Quality in a laboratory. This list is not intended to be conclusive as to all the Quality Assurance a lab performs.

The limits associated with specific parameters and how they are developed should be described by the laboratory (when applicable). Control Charting and any other method of tracking the limits should also be included.

- 5.1 Matrix Spikes and Matrix Spike Duplicates
- 5.2 Spiked Blanks
- 5.3 Surrogates and Internal Standards
- 5.4 Blanks (Field, Trip, Reagent, Instrument...)
- 5.5 Zero and Span Gases
- 5.6 Confirmation with a Second Column (for GC Analyses)
- 5.7 Mass Spec Tuning
- 5.8 Calibration Standards
- 5.9 Proficiency Testing of Analysts
- 5.10 Proficiency Testing of the Specific Analysis
- 5.11 Sample Preservation and Holding Times
- 5.12 Lab Water Purity
- 5.13 Reagent Storage and Purity
- 5.14 Bottle and Bailer Cleaning

## 6.0 DATA REDUCTION, VALIDATION, AND REPORTING

The laboratory will describe, in detail, the in-house data reduction and validation procedures. It is strongly recommended that someone besides the analyst review all raw data and final reports that are generated in the analytical process. Any SOPs associated with these procedures should be referenced.

- 6.1 The procedures of rerunning data
- 6.2 A description of the different flags and procedures for flagging data
- 6.3 Use of spikes and duplicates in accessing data.
- 6.4 Use of reference standards in accessing data.
- 6.5 Use of surrogates in accessing data.
- 6.6 Data reporting format
- 6.7 Electronic data checking
- 6.8 Use of performance evaluation standards
- 6.9 Blanks
- 6.10 Holding Times
- 6.11 Practical Quantitation Limits
- 6.12 External QA/QC groups (i.e. Twin City Round Robin)

## 7.0 PERFORMANCE AND SYSTEM AUDITS

The laboratory should have a policy of internal audits to verify the QA/QC plan is being followed. The audit should include an examination of the sample receipt documentation, sample log-in, sample storage, chain of custody procedures, sample preparation and analysis, instrument operating records, etc.. Blind QC samples should be submitted to the lab to verify system performance (internally and externally if possible).

External audits done on the laboratory should be discussed as to who will perform them, who has performed them, what will be and has been audited, and the results of these audits.

## 8.0 PREVENTIVE MAINTENANCE

The laboratory shall describe the routine Preventive Maintenance program used to minimize equipment failure and breakdown. There should be trained staff on the premises to repair equipment and/or a contract with a vendor to do so in a timely manner. All maintenance performed on the equipment shall be recorded in individual books that are kept with the instrument. The lab shall submit a table of its instrumentation and all preventive maintenance regularly performed.

9.0 ROUTINE PROCEDURES TO ASSESS DATA QUALITY & DETERMINE REPORTING LIMITS

The procedures that are used by the laboratory to assess data shall be annotated.

- 9.1 Precision
- 9.2 Accuracy
- 9.3 Representativeness
- 9.4 Completeness
- 9.5 Reporting Limits
  - 9.5.1 IDLs
  - 9.5.2 MDLs
  - 9.5.3 PQLs

10.0 CORRECTIVE ACTION

Corrective Action may be required for instruments or in the analytical process. The laboratory must list common problems associated with corrective actions and corresponding actions taken by the analysts to correct the situation. If the corrective action of the analyst can not correct the problem there should be a procedure in place for informing management and the QA/QC Officer. The procedures that management will take should be listed. All corrective action taken should be documented on appropriate forms and in the maintenance book for the specific instrument (when applicable).

11.0 QUALITY ASSURANCE REPORTS TO MANAGEMENT

The laboratory must submit quality assurance reports to the Contractor's Project Manager (and to the MPCA liaison, upon request). The report should include:

- 11.1 Any changes or modifications to the QA/QC Plan
- 11.2 Any changes to any of the SOPs.
- 11.3 Any significant QA/QC problems and recommended solutions
- 11.4 Results of Corrective Action
- 11.5 Any limits that shall be imposed on data
- 11.6 Holding times that have been missed
- 11.7 Management changes that affect MPCA work
- 11.8 Any other issues that will affect the project

12.0 FILE HANDLING AND STORAGE

This section shall describe the procedures used by the laboratory to file data for immediate and long term storage. Discussion of longevity of files and data, Laboratory Information Management System (LIMS) backups, and any other items applicable can be included.

## APPENDICES

### A. ANALYTICAL SOPs

The format given by USEPA is the suggested format for the SOPs. Include all steps done to perform the method. Do not make a reference or submit a copy of an Instrument Manual, SW-846, or Standard Methods in lieu of an SOP. The SOPs are to show, in detail, how the laboratory is actually performing the methods.

### B. RESUMES

Items minimally required include; education, experience, current area of assignment, and responsibilities of personnel.