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TETRA TECH NUS, INC.
661 Andersen Drive ▪ Pittsburgh, Pennsylvania 15220-2745
(412) 921-7090 ▪ FAX (412) 921-4040 ▪ www.tetratech.com

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December 28, 2000

Project Number 6966

Mr. David Douglas
Minnesota Pollution Control Agency
Site Response Section
Groundwater and Solid Waste Division
520 Lafayette Road
St Paul, Minnesota 55155

Reference: CLEAN Contract No. N62467-94-D-0888
Contract Task Order No. 0003

Subject: Remedial Investigation for Operable Unit 3
NIROP Fridley, Fridley, Minnesota

Dear Dave:

The data set for inclusion in the update to the OU 2 risk assessment was finally agreed on November 16, 2000. Since that time, TTNUS and MPCA risk assessors have been preparing and reviewing interim deliverables. With the consensus on the data set, the Navy is now able to address issues in MPCA's August 17, 2000 letter.

Sincerely,

Mark Sladic, P.E.
Task Order Manager

cc: Joel Sanders, SOUTHDIV
John Aubert, NAVSEA
Tom Bloom, EPA
Bob Jupin, TtNUS
Mark Perry/File 6966, TtNUS
Debra Wroblewski, TtNUS

ATTACHMENT I

MODIFICATION TO REMEDIAL INVESTIGATION FOR OPERABLE UNIT 3, VOLUME I OF IV, REVISION 2, DATED MAY 2000

1. **Comment**: **5a. First Bullet, page ES-11, third paragraph regarding evaluation of subsurface soil**: The screening HI was below 1 but the individual HQ for chromium did exceed 0.2. (Please note that this was Helen Goeden's error (she provided the text) but it should be corrected.)

   Response: The Navy agrees. The text will be revised as requested.

2. **Comment**: **5a. Third Bullet, page ES-12, fourth sentence**: This sentence should read, "[t]the incremental ELCR is below the U.S. EPA's acceptable ECLR range of 1 x 10-4 to 1 x 10-6 and the MPCA's acceptable chronic ELCR of 1 x 10-5."

   Response: The Navy agrees. The text will be revised as requested.

3. **Comment**: **5a. OU-3 Ground Water Risk Assessment, page ES-13, first bullet**: Please note that the chemical name, "cis-1 2-dichloroethene" should be changed to "cis-1,2 dichloroethene."

   Response: The Navy agrees. The text will be revised as requested.

4. **Comment**: **Executive Summary, Initial Screening of Possible Alternative Response Actions, page ES-17, second sentence**: The Navy should explain here and in Chapter 7 why the Navy is not proposing an active remedy for chromium when it has been identified as a contaminant of concern (COC). One way to do this would be to indicate that the no-action alternative involves leaving the building floor in place which is sufficient for addressing what appears to be a small area contaminated by chromium because chromium is not mobile there as long as the floor is in place.

   The text correctly states that the OU3 Remedial Action Investigation was adequate to determine if large-scale contamination was present but spatially localized sources of contamination may still exist. This situation also supports incorporation of institutional controls (e.g., require additional sampling prior to accessing soil) into the remedy. The MPCA staff does not consider the implementation of an institutional control a no-action alternative because it is required to restrict use and control potential exposure. EPA's draft guidance on institutional controls (OSWER 9355.0-74FS-p), March 2000) clearly indicates that a remedy decision under CERCLA which only requires the implementation of institutional controls is a "limited action", not a "no action".

   Response: The Navy will incorporate the first-paragraph language provided in this comment, by MPCA, to explain why a no-action remedy for chromium is possible.

5. **Comment**: **8. Executive Summary**: This section focuses exclusively on OU3. The MPCA staff requests that his section be rewritten to address both OU3 and OU2. As in New Modifications and Comments below, additional information should be evaluated before the risk characterization and identification of COCs for OU2 is finalized. The evaluation for OU2 should be finalized before this section is rewritten to include OU2.

   Also the MPCA staff requests that Tables 6-7 and 6-8 be combined. An example table is attached.

Response: The Navy agrees to insert a summary of the updated OU2 risk assessment into the OU3 risk assessment executive summary. The Navy also agrees that Tables 6-7 and 6-8 will be revised as suggested.

New Modifications and Comments

6. **Comment: 1. Page ES-16 OU2 Soil Evaluation: North 40 Area After the Removal Action:** The text under this heading is not consistent with the text in Revision 1 to the Supplemental Remedial Investigation Information Report. It appears that when Revision 1 to the Supplemental Remedial Investigation Information Report was completed to include additional data, the calculated risk values changed, but these changes were not incorporated into the text in Revision 2 to the OU3 Remedial Investigation Report (Executive Summary as well as Section 7) and in some areas of Revision 1 to the Supplemental Remedial Investigation Information Report itself (e.g., Section 3).

   Apparent inconsistencies in the Revision 2 to the OU3 Remedial Investigation Report are:

   (Navy needs to verify that all inconsistencies are addressed in both the Revision 2 to the OU3 RI Report and Revision 1 to the Supplemental Remedial Investigation Information Report.)

   Bullet 2 states the cancer risks for the industrial worker and minor frequent construction worker were within EPA's target risk range of 10^{-4} to 10^{-6} and less that MPCA's target risk level of 10^{-5}. This is not correct. Revision 1 to the Supplemental Remedial Investigation Information Report states that the calculated cancer risks for the industrial worker and minor frequent construction worker exceeded MPCA's target risk level.

   Bullet 5 states that the HI for the major infrequent construction worker was 0.93, however, Revision 1 to the Supplemental Remedial Investigation Information Report presents a value of 1.4. Also, as indicated in previous comments, the target HQ is 1 for the major construction worker since it is a subchronic exposure scenario; therefore, the HQ of 0.64 does not exceed MPCA's acceptable target level. The text should be revised as previously requested.

   Bullet 6 states that no COCs were identified for soil in the North 40 area. The screening risk characterization conservatively utilized the maximum concentrations within the top 12 feet as the exposure concentration. At the time this approach was selected and approved by the MPCA staff, Bob Jupin believed that the estimated risks would be below target risk levels. However, the screening results slightly exceed target risks and, therefore, the MPCA staff requests that a more detailed Risk Assessment be done that is consistent with the approach that was utilized in the OU3 Risk Assessment as explained below.

   For the industrial worker and minor construction worker the 95% upper confidence limit (UCL) of the mean is more representative of an exposure concentration. The MPCA staff requests that the Navy estimate the 95% UCL of the mean with consideration of patterns of contamination (horizontal and vertical) and in consultation with MPCA staff.

   Trichloroethylene (TCE) is a major contributor to the estimated potential risk. The Revision 2 to the OU3 Remedial Investigation Report states that TCE was detected in less than a third of the samples and only one sample had TCE concentrations greater than 1 mg/kg. This statement is not made in Revision 1 to the Supplemental Remedial Investigation Information Report and Table 2-1 of this Revision 1 to the Supplemental Remedial Investigation Information Report indicates that TCE was detected in nearly 47% of the samples. In addition to the summary information provided in Table 2-1, detailed analytical results for contaminants should be included (e.g., Tables 4-1 and 4-2 of Revision 2 to the OU3 Remedial Investigation Report).

   For the major infrequent construction worker. It was assumed that the individual would only be exposed to a limited area and, therefore, the maximum detected concentration would represent the

potential exposure concentration. This is consistent with the assessment of the major infrequent construction worker for OU3. The risk estimate for this receptor also exceeded the MPCA target risk levels. The location of the maximum concentrations of TCE (the major source of the risk) is critical in determining the need for potential remedial alternatives. Table 2-1of Revision 1 to the Supplemental Remedial Investigation Information Report provided the sample location of the maximum concentration. However without an accompanying figure depicting horizontal and vertical location this information has very limited use. Previous comments requested that a figure presenting the locations of the samples be included in the Supplemental Remedial Investigation Information Report. The MPCA staff again requests this figure be included and referenced in the report.

Response: The Navy agrees. The text will be revised as requested. The original figures from the OU2 report will also be included. The figures, when used with the OU2 database, also included with the report, will provide the information requested by MPCA.

7. **Comment: 2. Page ES-17 OU2 Soil Evaluation: Areas excluding North 40 Area**: Bullet 4 states that "All individual HQs were less than the MPCA acceptable level of 0.2 with the exception of arsenic..." As previously indicated, the target HQ is 1 for the major construction worker, a subchronic exposure scenario. Therefore, the HQ for arsenic does not exceed the acceptable HQ for this exposure scenario.

   Bullet 5 states that no COCs were identified for soil excluding the North 40 area. The screening risk characterization conservatively utilized the maximum concentrations within the top 12 feet as the exposure concentration. At the time this approach was selected it was believed that the estimated risks would be below target risk levels. However, the screening results slightly exceed target risks; therefore the MPCA staff requests that the Navy do a more detailed Risk Assessment that is consistent with the approach that was utilized in the OU3 Risk Assessment.

   For the industrial worker and minor construction worker, the 95% UCL of the mean is more representative of an exposure concentration. The MPCA staff requests that the Navy estimate the 95% UCL of the mean with consideration of patterns of contamination (horizontal and vertical) and in consultation with MPCA staff.

   For the major infrequent construction worker. It was assumed that the individual would only be exposed to a limited area and, therefore, the maximum detected concentration would represent the potential exposure concentration. This is consistent with the assessment of the major infrequent construction worker for OU3. The risk estimate for this receptor also exceeded the MPCA target risk levels. The location of the maximum concentrations of carcinogenic PAHs (the major source of the risk) is critical in determining the need for potential remedial alternatives. Table 2-2, unlike Table 2-1, doe not provide the sample location of the maximum concentration. As with the evaluation of the North 40, a figure depicting horizontal and vertical location is needed. Previous comments requested that a figure presenting the locations of the samples be included in the report. The MPCA staff again requests this figure be included and reference in the report.

   Response: The Navy agrees. The text will be revised as requested. The original figures from the OU2 report will also be included. The figures, when used with the OU2 database, also included with the report, will provide the information requested by MPCA.

8. **Comment: 3. Risk Summary Table for Operable Units 2 and 3**: At the end of the section entitled, Human Health Risk Assessment, the MPCA staff requests that the Navy produce a table for the OU3 RI Report that combines the information found in Table 2-3 from Revision 1 to the Supplemental Remedial Investigation information Report and Table 6-7 of the OU3 RI Report. This should be done after the risk characterization and identification of COCs has been finalized for OU2. See comments on ES16 and 17.

Response: The Navy agrees. The requested table will be added to the human health risk assessment.

9. **Comment: 2. Section 7.4 Initial Screening of Possible Alternative Response Actions:** The MPCA staff requests that this section be revised to incorporate revisions recommended above for the Executive Summary since much of the text is repeated.

   Also the MPCA staff requests that this section be rewritten to address the unacceptable risks identified in the Risk Summary Table identified in new Comment 3 above. Unacceptable risks are those that exceed MPCA's cancer target risk of 1 x 10-5 and noncancer target risks of 1 for hazard index and 0.2 for hazard quotient for the Industrial Worker and the Minor Frequent Construction Worker; and the cancer target risk of 1 x 10-6 and noncancer target risks of 1 for hazard index and 1 for hazard quotient for the Major Infrequent Construction Worker. The target risk levels for the Industrial and Minor Frequent Construction Worker is an ARAR and the target risk levels for the Major Infrequent Construction Worker is To Be Considered for the Site.

   Table 2-3 from Revision 1 to the Supplemental Remedial Investigation Information Report indicates that there are potentially unacceptable risks for each of the six risk scenarios. As indicated in the New Modifications and Comments, Items 1 and 2, additional risk assessments need to be conducted before the risk characterization can be finalized.

   It should also be noted that the contaminants that contributed greatest risk to the risk scenarios that have unacceptable risks are COCs for the site. These COCs were identified in the fifth column of Table 2-3, but not acknowledged as COCs in the text. Thus for the Minor Frequent Construction Worker in OU2 (excluding the North 40), the COCs are benzo(a)anthracene; benzo(b)fluoranthene; and dibenzo(a)anthracene. For the Major Infrequent Construction Worker in Table 6-7, the COCs are arsenic, chromium, copper, and mercury.

   Response: The EPA has agreed, with MPCA's agreement, to draft Section 7.4, so that it correctly references applicable guidance and other necessary site documents.

ATTACHMENT II

MODIFICATIONS TO THE SUPPLEMENTAL REMEDIAL INVESTIGATION INFORMATION REPORT, REVISON 1
DATED MAY, 2000

1. **Comment: 2. Section 2.1 North 40 Area after Removal Action and Section 2.3 Excluding the North 40:** The Navy did not include the figure representing the sampling locations in the report. The MPCA staff again requests that the Navy include the figure.

   Response: The Navy agrees. Copies of the sampling location maps from the Remedial Investigation Report for the Soils Operable Unit at the Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota, RMT, Inc., September 1993 and the Completion Report for Removal Action at North 40 Area, Morrison Knudsen, December 1996 will be added to the report.

2. **Comment: 3. Section 2.3 Major Infrequent Construction Worker Analysis**: The Navy identified the subchronic target HQ and HQ as being 1.0 in the section entitled North 40 Area After Removal Action, but not the section entitled, OU2 Excluding The North Area. The MPCA staff requests that the Navy correct this for the latter section.

   Response: The Navy agrees. The text will be revised as requested.

3. **Comment: 4. Table 2-2, All Soils Excluding the North 40**: For the record, the units for this table are milligrams per kilogram as noted in the table, not micrograms per kilogram.

   Response: The Navy agrees. The units will be corrected to milligrams per kilograms.

4. **Comment: 6. Section 3.0 Summary/Conclusions**: The text is not consistent with the text in Section 2. It appears that when the Supplemental Remedial Investigation Information Report was revised to include additional data, the calculated risk values changed. It appears that the text in Section 2 was revised to reflect the reevaluation, but the text in Section 3 was not revised. See requested modifications regarding the Executive Summary of Revision 2 to the OU3 RI Report. In addition see requested modifications to the Executive Summary of Revision 2 to the OU3 RI Report regarding an evaluation of the exposure concentrations utilized in the screening risk evaluation.

   Response: The Navy agrees. The Summary/Conclusions will be revised as requested.

ATTACHMENT III

MODIFICATIONS TO NEW NARRATIVE FOR THE FIRST 12 PAGES OF APPENDIX F, DATA VALIADATION, AND A NEW APPENDIX G.8, SCREENING EVALUATION FOR EXPOSURES TO SURFACE AND SUBSURFACE SOIL (0-12 FEET) INDUSTRIAL WORKS AND MINOR WORKERS, VOLUMEIV OF IV, DATED MAY 2000

1. **Comment: 1. All Audit Reports**: The Navy did not address this comment in the executive summary as the Navy agreed to do. The MPCA staff again requests that the Navy address this comment.

   Response: The Navy agrees. The text will be revised as requested. For 3,168 metals for OU-3 soils, 1,362 were qualified either J, UJ, R, or UR. Therefore, the percentage not qualified is 57%. The Navy notes that EPA risk assessment guidance permits the use of data qualified J or UJ in risk assessment.